

Yanoula Athanassakis
Renan Larue
William O'Donohue *Editors*

The Plant-based and Vegan Handbook

Psychological and Multidisciplinary
Perspectives

 Springer

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Introduction

In the dark of night, the princes of ancient Ethiopia had large quantities of boiled and prepared meat placed in a meadow not far from the country's capital. The anecdote is reported by Herodotus circa 426–415 B.C.E. (1904, p. 160), in the third book of his *Histories*. During the day, wrote Herodotus, the city's residents went to this place to feast. When travelers asked them where they thought this bounty of food came from, the Ethiopians replied that it was the land itself that produced it.

We may smile at the naiveté of these men and women of antiquity, in the same way that we may find it amusing that the fish drawn by schoolchildren are breaded and have a rectangular shape. However, there could be a touch of envy mixed with our amusement. When we wander through the supermarket aisles, many of us wish to be convinced that the finely cut meats on display naturally grew on some fruit tree or in some garden—that they are “offered up” to us by the Earth. In a way, we are grateful to the middlemen for helping us forget that what we are buying is part of the body of a once-living animal that someone has raised for slaughter and others have recently slaughtered. When the macabre idea of the actual origins of meat presents itself to us, we likely hasten to bury it in a corner of our consciousness.

This individual and collective blindness is occasionally undermined by the dissemination of images secretly recorded in industrial livestock farms, aquaculture facilities, on trawlers, or in slaughterhouses. Faced with these images, most of us wish to look away in order to protect ourselves psychologically and perhaps morally. Besides, we feel helpless in the face of such an avalanche of pain—particularly when billions of animals are slaughtered each year. The cruel paradox of the suffering of these creatures is that it overwhelms our imagination and can make us feel useless. So much so that we are dissuaded from even trying to remedy it. This weight is too heavy to carry. And since we know that no one is expected to achieve the impossible, our collective resignation triumphs and the cycle continues.

Despite everything, some people decide to engage in a kind of self-examination. They remember that they felt—in their childhood and perhaps even later—a sort of reluctance to eat an animal, or at the very least, they felt a kinship with one. They see a connection between the pet that they love and care for and the food on their plate. They sometimes feel a little guilty when shopping or cooking. Perhaps they

decide to no longer eat meat. After a few weeks or months, once-enjoyable and familiar foods now seem strange and even dreadful. Meat, fish, leather, wool, the subjugation of animals, the systemic violence used against them: none of this is self-evidently normal, acceptable, or justified anymore. The ham sandwiches, the lobsters with tied claws that are displayed in fish markets, the Thanksgiving turkey, the sardines in small cans, the leather shoes, the fur collars of winter coats: the remnants of living animals are everywhere and they hadn't really noticed them. The presence of demise and suffering is now overwhelmingly palpable. The gigantic scale of exploitation—and its concurrent normalization—makes them dizzy. These new vegetarians and vegans open up about their thoughts to their friends and parents. Even today, at least in certain circles, their reflections face teasing and reproaches. They are asked: what is this ridiculous habit of wanting to distinguish oneself from others? Isn't this a fad or a cult and isn't it dangerous? Won't you inevitably lack protein and thus get sick? Will we still be able to share a meal together?

Many people who give up animal-derived products still experience such small annoyances in their daily lives. Many disagreements are due, we believe, to an ignorance of the network of evidence and arguments associated with veganism, and a concomitant ignorance of the possibilities of a vegan future. Veganism is such a bold thing, its implications are so vast, that it is often difficult to accurately delineate it.¹ Despite these challenges, the vegan movement as a whole has experienced remarkable growth in the last two decades, and alongside it, the plant-based food market is burgeoning (2021, Bloomberg).²

The goal we have given ourselves in bringing together the chapters contained in this book is to help fill the gaps in knowledge and awareness of what it means to be vegan or to adopt a plant-based diet. The method we followed is that of multiple but interlocking perspectives and disciplines, from medicine to history, including environmental sciences and economics. Readers will find, perhaps much to their surprise, that there are many ways of considering plant-based and vegan lifestyles, and that the underlying ideologies are far from monolithic. Some of its proponents, for example, base animal rights on religious, or at least spiritual, foundations; others, on the contrary, adopt a resolutely atheist and rationalist perspective. Some believe that the operation of slaughterhouse chains must be hampered, while others consider that only indirect and pragmatic approaches will be able to hasten the liberation of animals.

¹For fuller discussions of the debates surrounding veganism, and vegan business models and economics, see: “New Omnivorism,” by Andy Lamey; “Pragmatism,” by Tobias Leenaert; “Economics of Circumfauna: a Fashion Case Study,” by Joshua Katcher and Tracey Katof; and “An Oath for Business and Animals” by Clair Linzey.

²For novel approaches to agriculture and plant-based foods, see: “Stockfree Organic-Farming for the Future Needs of the Planet,” by Iain Tolhurst; “More of the Flavor and None of the Flaws: Marketing Plant-Based Foods as Authentic to American and British Consumers,” by Carrie P. Freeman, Matthew Cole, & Allen Zimmerman; “Cellular Agriculture,” by Jan Dutkiewicz; and “The Ethics of Plant-Based Pet Food,” by Josh Milburn.

Some of the most heated debates are between ethicists and philosophers who are all in favor of improved lives for animals. For example, many people associate the birth of “the” animal rights movement in Western civilization with Peter Singer’s *Animal Liberation*, published in 1975. But Singer doesn’t believe in the notion of “rights” for animals. While Singer’s work has a stronger global presence than that of his contemporary, Tom Regan, it was Regan’s *The Case of Animal Rights* (1983) that arguably solidified ideals of animal liberation using a deontological (moral/ethical imperative) theory of animal rights. Peter Singer himself classifies his work as utilitarian, a type of consequentialism that judges by the outcome of actions; the best consequences inform the “morally right” decision (Singer, 2023).³ Simply put, within groups of individuals that claim to be working toward animal welfare and/or animal rights, there are factions. One person could be advocating for improved conditions for cows in industrial agriculture, while another person could be working to eradicate all forms of cruelty against animals—there are debates within factions on animal sentience, empathy, capacity to suffer, and the ethics of confining and slaughtering animals. Speciesism, the prioritizing of one species over another, is at the heart of many debates (and also essays in this collection) about zoos, aquariums, medical experimentation, animal sanctuaries, companion animals, and more urgently, industrial agriculture.⁴

Vegan or Plant-Based?

While animal advocates may have conflicting views about the best way to protect the well-being and rights of animals, there can also be great differences between people who share the same diet.⁵ You might be an ethical vegan, or you may follow a vegan diet for other reasons and not want to identify as “being vegan.” People can “eat” or “are” plant-based, or are vegan, or eat mostly vegan, or are lacto-ovo

³The chapters in this collection that explicitly focus on the histories of ethical and moral debates regarding animals include: “Can Animals Be Moral Agents? Why the Debate Matters for Animal Ethics,” by Virginie Simoneau-Gilbert; “Abolitionism,” by Valéry Giroux; and “Anthropocentrism and Its Discontents: An Intellectual History,” by Gary Steiner.

⁴Chapters on animal sanctuaries specifically include: “Farm Sanctuaries,” by Gene Baur; “Sanctuary Communities,” by Sue Donaldson. Chapters that focus on the concept of speciesism or employ it as a foundation of their work are: “Ableism and Speciesism: Tensions and Convergence between Animal Rights and Disability Rights,” by Frédéric Côté-Boudreau; “Speciesism,” by François Jaquet; “Zoopolis: imagining a just multi-species world,” by Kristin Voigt; and “Aliens, Antispeciesism and Vegan Advocacy,” by Estiva Reus.

⁵Chapters on subcultures of veganism and chapters that are “food for thought” about inherent contradictions of vegan culture include: “Is Veganism Socially Just?” by Savannah Quach & William O’Donohue; “Veganism and Capitalism,” by Robert C. Jones & John Sanbonmatsu; “If Carnism is World Ending, Ought Vegans Proselytize?: The Logic and Rhetoric of Veganism,” by William O’Donohue; and lastly, on understanding social resistance to veganism and paths forward, “Vegan Stigma,” by Kelly L. Markowski.

vegetarians, pescatarians, flexitarians, reducetarians ... the possibilities are nearly endless. In the introductory chapter to their excellent collection on *Ethical Vegetarianism and Veganism* (2019), Andrew Linzey and Clair Linzey write on the different definitions and approaches to veganism and vegetarianism. A key difference of the present collection is that not everybody who chooses to “eat vegan” or “eat plant-based” does it for ethical and moral reasons, and the chapters reflect that. Many, in fact, do it for some combination of ethical, environmental, and health reasons. Whatever one’s reason for reading this collection and wanting to learn more, know this: dietary decisions are supremely powerful ones with deep economic, philosophical, environmental, legal, social, and health repercussions. They are also threatening to the status quo and especially to corporate conglomerates associated with agriculture and food. That fact alone begs further research and exploration.

Although many things remain to be explored in the field of nutrition, the community of researchers agrees on one point: provided that it is balanced, plant-based diets are healthy. They also have quite remarkable prophylactic and curative virtues, as demonstrated by the latest studies presented in this collection.⁶ This is particularly true of the diseases that hit our contemporaries the hardest: diabetes, hypertension, cardiovascular disease, obesity, various types of cancer, and mental health.

The plant-based diet, which some adopt at least temporarily possibly for medical or other reasons (e.g., a social media challenge, as part of a weight-loss diet, to support a roommate), makes it possible to avoid certain health disasters such as antibiotic resistance (World Health Organization, 2017) and zoonoses (Jones et al., 2013), which already threaten our societies and will threaten them even more in the coming decades. Covid-19 has increased people’s awareness of the threat to human beings caused by the widespread use of antibiotics in industrial agriculture (including aquaculture) and the links to global pandemics (Lymbery, 2020; Petrikova et al., 2020). The latest dietary data go against what has for too long been presented as common sense: you have to eat the muscles of large mammals to have big muscles yourself, and you must consume calcium and dairy produced by other animals so that you yourself will have healthy bones.

The new medical consensus on plant-based diets also thwarts certain gigantic economic interests whose power was felt, among many other examples, during the development of the 2015 Dietary Guidelines for North Americans. While there was no longer any doubt in 2015 that red meat and processed meats are carcinogenic, the American meat lobby had managed to convince the USDA not to present these harmful foods as unhealthy (USDA, 2016). This aroused indignation and

⁶Contributions to this collection that are specifically on the health benefits of a plant-based diet are: “Plant-Based Diets & Diabetes,” John Sebastian Babich & Mahima Gulati; “The Impact of Plant-Based Diets on Cardiovascular Disease and its Risk Factors,” by Kathleen Allen, Sandhya R. Bassin, & Robert J. Ostfeld; “Plant-Based Diets and Hypertension,” by Leonie Dupuis & Shivam Joshi; “Plant-Based Diets and Cancer,” by Leonie Dupuis & Urvi A. Shah; “Lifestyle Medicine: Mental Health and Nutrition,” by Gia Merlo & Gabrielle Bachte; and a personal essay, “A science-based personal investigation into what a plant-based diet can and cannot do to address cardiovascular diseases,” by Paul Greenberg.

complaints from the experts of the Advisory Committee and the scientific community as a whole. Not only did the US government disregard their opinion as well as current scientific data, but it knowingly lied to the American people and endangered their health in order to satisfy the financial interests of a few large corporations (Heid, 2015). The war of influence over national guidelines is currently raging worldwide, especially when it comes to addressing the status of animal-derived foods.

This collection of essays addresses all of the above, but the majority of the authors advocate for a diet that eschews all food products that come from animals. They may have come to this conclusion for different reasons but the destination is the same. The difference in their approaches is of great interest. In fact, it's their choice to question the way that we are functioning as a global populace in the time of the Anthropocene that may garner the most attention.⁷ In part because it sits outside of the mainstream, and in part because this is a time when *homo sapiens* urgently need change.

Food and the Anthropocene

Naomi Oreskes (2024), a leading scholar of the history of science and climate denialism, argues that we need to vigilantly apply the term “Anthropocene” (Crutzen & Stoermer, 2000) to the current era because it reminds us of the gravity of changes to our planet, and the need to act quickly. Her focus on terminology crystallizes the increased attention to the importance of it in the discourse of climate change. Oreskes concludes her article by stating, “In myriad ways—large and small—the past may no longer be a reliable guide to the future. When taken seriously, that means we must rethink core assumptions about how we build our economies and our infrastructures, how we travel, how we plan for global pandemics, and even how we eat” (2024). Food, here, is the last frontier to tackle because it is a highly personal topic, and it involves decision-making about one's own culture, everyday practices, and long-held beliefs. Oreskes navigates the thin line between losing your audience (because advice about food can feel like curtailments of one's personal freedoms), and stating facts about the impact of food systems on the acceleration of climate change.

In the Anthropocene, food is never just about food. It never was. The web of ethical, political, fiscal, and health decisions that are made *for* you when you “choose”

⁷Most chapters in this collection are taking unexpected approaches, but the ones listed here are directly addressing historically underrepresented traditions of veganism that hold promise for more informed iterations of it: “Indigenous Veganism,” by Margaret Robinson; “‘One shall not make their stomach a cemetery’: A Musical and Philosophical Approach to Rastafari's Environmental and Animal Ethics,” by Solaire Denaud; “From Lifestyle to Activism and Back: Young People's Participation in Vegan Movements,” by Alexia Renard; and “Ahimsā,” by Jonathan Dickstein.

to eat a certain way or consume a single item, are complex and jarring.⁸ In a recent investigative piece, Ian Urbina (2023) found that US public schools were serving fish sticks to children that had been produced under conditions of forced labor in Chinese processing plants. There are human rights, health and safety, ethical, and sustainability considerations that immediately come to mind, but what is often absented is the suffering and death of the animals.

Squarely at the center of any discussions regarding food and the environment are animals (Schlottmann & Sebo, 2019). And here, by “animals,” we mean human and nonhuman animals both directly and indirectly impacted by animal agriculture. Most people consider the treatment of nonhuman animals in industrial slaughter to be unethical and cruel, but the dominant argument to end it is often couched in environmental or health terms. Additionally, the actual mechanisms used to “render” nonhuman animals into food are cordoned off from our everyday lives (Pachirat, 2011).

As human population numbers rise and food production becomes more heavily industrialized, the ethics and connections between our food choices and their ripple effects become ever more pressing. It is, however, still rare to see nonhuman animals researched as subjects of their own narratives, much less as individuals caught in the machinery of industrial agriculture. The lesson we are living in the Anthropocene is that industrial slaughter and the economically driven erasure of nonhuman animal rights and lives is to the great detriment of global public health.

Many of the essays are by humanists that put front and center the question of “the animal” (where once, we might have said, “the human”). Instead of focusing on how *homo sapiens* “became” human, it is time to embrace the shared animality of all animal species and ask instead, how, when, or *did* we “unbecome” animal? Many of the contributors to this book are putting nonhuman animals at the center of philosophical and ethical debates in novel and creative ways.

The collection of essays represents viewpoints from experts in medicine, psychiatry, climate change, sociology, marine ecology, philosophy, agriculture, psychology, animal rights, religion, animal welfare, economics, literature, business, and law. Not all of them would think of themselves as being vegan, or being plant-based, or as animal rights advocates. But all of them are presenting very strong evidence and arguments that society should move away from the current model of human and nonhuman animal relationships.

Astrophysicist Adam Frank writes, “from an astronomical point of view, the Anthropocene is a kind of planetary adolescence. . . . to survive climate change, we need to grow into a new kind of cooperative relationship with the rest of the

⁸Contributions focused on how to make ethical food choices, with either animals or the environment in mind (and usually both), include: “Plant-based v. Omnivorous Diets: Comparative Environmental Impacts,” by David Arthur Cleveland & Jennifer Ayla Jay; “‘Beasts of Burden’: An Ethical Vegan Perspective on ‘BioDiesel,’” by Kay Peggs; “Edible Insects and Entoveganism,” by MacKenzie Wade; “Pescatarians Should Give up Eating Fish but Not Give up Entirely,” by Becca Franks & Jennifer Jacquet; and “Animals and Environmental Justice at Sea,” by Yanoula Athanassakis.

biosphere and the rest of the planet” (Frank, 2023). Zooming out like an astrophysicist gives one a sobering view of consequences and scale, and like other public intellectuals including Yuval Harari (2011), he offers a bird’s-eye view of the Earth. We wonder if what we need to do is alongside that view, we might zoom in on our own enmeshed animality. In the times of Herodotus, some 2500 years ago, perhaps you could more easily cover your eyes and imagine, like the ancient princes of Ethiopia, that “the land” simply “offers” up its bounties: that there is no labor or cost involved, no death involved, and no limits to—or impact on—the Earth’s resources. That is no longer a defensible viewpoint and while a number of experts debate the logistics of how human beings will *survive* on Earth, we are more concerned with how they will *thrive*. As evidenced by the authors in this collection, it will involve a reconsideration of the way our species relates to the planet and to other species.

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Part I
Ethics and Social Justice

Chapter 1

Anthropocentrism and Its Discontents: An Intellectual History



Gary Steiner

As a philosopher who has been writing about the moral status of nonhuman animals for nearly 30 years, I am asked quite frequently whether I have the sense that human sensibilities have changed in the recent past on questions such as the permissibility of consuming nonhuman animal products. That question gestures beyond itself to an entire area of inquiry: What, if anything, has actually changed (or begun to change) in our sensibilities? Which sorts of sensibilities prevailed before the present moment in the evolution of societal values? Why have some people found it necessary to rethink those values? And what sort of prevailing ethos has begun to take the place of these former commitments, assuming again that such a sea change in our commitments has in fact begun to take place?

While I do see increasing attention being paid to the inner lives and moral status of nonhuman animals in Western society, the society with which I am most intimately familiar, I must confess that I am not so confident that there has been anything like a major reset in our society's sensibilities about nonhuman animals. Some very insightful research has been conducted in recent decades to draw our attention to the rich subjective lives of many nonhuman animals and the moral obligations that we ought to acknowledge and honor toward them (e.g., see Balcombe (2017) and Bekoff and Pierce (2010)). If one were to take this research as an indication of a shift in larger societal sensibilities, however, one would be drawing a rather premature conclusion. The United Nations Food and Agriculture Organization (2023) publishes statistics on the extent of nonhuman animal husbandry worldwide; the number of sentient land animals killed for human consumption is increasing drastically each year, numbering in the many tens of billions, and the United States is a world leader in the industrialized slaughter of the sentient creatures currently so vaunted in contemporary philosophical and literary discourse.

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Over a decade ago, Sezgin (2008) observed that at that time we were killing more nonhuman animals for human consumption in a year and a half than the total number of human beings ever to have existed (p. 233). One might conclude from this disconnect between emerging philosophical sensibilities and actual human practice that we simply need to be patient and let the lessons of intellectuals percolate into the interstices of society. And while there is certainly some truth to that, I remain convinced that the whole truth is just a bit messier.

My efforts to unravel this mess have led me to the insight that there are currently two main, competing approaches to the effort to rethink the moral status of nonhuman animals and the question of how our living practices need to change in order to acknowledge and honor that status. One of them is the approach taken by contemporary thinkers such as Peter Singer (2011), Martha Nussbaum (2006), and Christine Korsgaard (2018), which proceeds from the traditional view that the idea of *the individual* is axiomatic for understanding and assigning a moral value to sentient life. The other prevailing approach might loosely be characterized as “postmodern” in its endeavor to challenge the very idea of the individual as a surreptitious means for reinforcing human dominance over nonhuman animals; this latter approach was given tremendous impetus by the thought of Jacques Derrida (2008), particularly in the English-speaking world and most particularly in North America. Whereas the comparatively traditional approach continues to draw on the notions and ideals inherited from the broad history of Western philosophical thought, the postmodern approach views the very idea of stable, identifiable categories such as the individual with understandable suspicion—understandable particularly in light of the nefarious ways in which notions such as agency and individuality have been used to reinforce hierarchical distinctions within the human community based on considerations such as race and gender.

Each of these approaches has genuine insights to afford, and each ultimately has some tragic limitations. The fact that each approach can sometimes be seen to traffic a bit promiscuously in the other does nothing to change the fact—indeed, it underscores it—that we, as a society, remain profoundly uncertain about our relationship with our sentient fellow creatures. Whereas the tradition-bound approach rightly stresses the importance of viewing sentient creatures as individuals, the postmodern approach offers the vital corrective that the very idea of the individual is a cognitive construction that does not necessarily correspond to the irreducible mystery of matters such as life and sentience—that all such boundaries are potentially and perhaps unavoidably porous and thus to some extent fictive. At the same time, the tradition-bound approach suffers from the fatal drawback that it retains some deeply anthropocentric commitments about the prerogative of human beings to pass definitive judgment not only on the experiential capacities but also on the moral entitlements of nonhuman animals, while the postmodern approach defaults on its promise to provide anything like a coherent conception of justice in its repeated proclamations about the injustices we visit on our fellow sentient creatures.

What I would like to do in the following remarks is set the stage for exploring both the virtues and limitations of each of these approaches, by presenting some key commitments about human and nonhuman animals expressed in the thought of

some highly influential historical figures in the Western philosophical tradition. It can be tempting to suppose that questions bearing on the experiential capacities and moral status of nonhuman animals can be answered simply through careful reflection and that the ideas of thinkers from our distant past are not only superfluous but might also simply best be forgotten. A sustained reflection on that very history, however, proves highly illuminating—not only for rethinking the nature and moral status of nonhuman animals, but just as importantly for understanding the inherent limitations of tradition-bound and postmodern efforts to redress the historical wrongs we have visited on sentient nonhumans.

When I first undertook a large-scale examination of the history of Western thinking about nonhuman animals, I characterized that history as tracing out a phenomenon that I called “anthropocentrism and its discontents.” That characterization strikes me as every bit as apt today as it was 20 years ago. Anthropocentrism is the prevailing ethos of the Western philosophical tradition extending at least as far back as Aristotle and leading up to the present; according to that global ethos, human beings are the preeminent species in creation, not only in terms of our putative cognitive superiority to all other beings but also in terms of our entitlement to pass judgment on and make use of all nonhuman beings. That anthropocentric viewpoint is so fundamental, pervasive, and historically rooted that it is difficult even for the most determined among us to escape its deep influence: we humans are “naturally” and obviously superior to all other creatures, both in terms of our understanding of ourselves and the world and in terms of our entitlements to use everything nonhuman as resources for the satisfaction of our needs and desires.

The element of discontent in this history can be seen in the oft-repeated lament that the anthropocentric ethos fails to do justice to the actual lives and fortunes of nonhuman sentient beings. As far back as Greek antiquity, we find voices of dissent in the midst of our culture’s confident proclamation of human superiority, particularly in the thought of Plutarch and Porphyry (Steiner, 2005). And yet these voices are repeatedly drowned out by the overwhelming force of self-serving anthropocentric prejudice, and, in some cases, the very thinkers who challenge the anthropocentric ethos quickly fall back into it without acknowledging that they have done so. In the brief overview of historical commitments that follows, both the terms of anthropocentrism and the reasons for this discontent should come into clear relief.

Greco-Roman Antiquity

The core elements of the anthropocentric ethos have their origin in a shared commitment found in early Greek thought and early Christian doctrine. That commitment is the conviction that *logos*, linguistic rationality, is both necessary and sufficient for a being to possess the highest level of moral worth—indeed, in some views, such as Peter Carruthers’s (1992), it is the necessary criterion for possessing any moral worth at all—and in the related conviction that *logos* is the exclusive possession of human beings. This is what contemporary thinkers (see, for example,

Swartz and Mischler (2022)) are addressing when they speak of “human exceptionalism”: the endeavor to identify some special experiential capacity unique to human beings that confers the highest moral status on us as well as special prerogatives to use nonhuman animals and treat the rest of nature as what Heidegger (1966) once characterized as “a gigantic gasoline filling station” (p. 50). Consider the opening verse of the Book of John: “In the beginning was the *logos*”—in the beginning was the word. While this must seem a far cry from the conferring of license on human beings to treat nonhuman animals and the rest of nature as mere playthings created for our use and entertainment, the very idea that creation itself is the product of a linguistic act brings with it some pointedly anthropocentric implications that become more apparent when we reflect on what the term “*logos*” actually signifies for ancient thinkers.

I noted a moment ago that this term signifies linguistic rationality. In antiquity, “*logos*” functions as a sort of umbrella term: It carries a variety of significations, ranging from “word” to “sentence” to “speech” to “logic” and a variety of related meanings. The gathering sense of these significations finds its basis in the notion that reason and language are ultimately inseparable, that to be rational is to be linguistic, and that any being endowed with language is necessarily a rational being. Language in this connection is conceived as the employment of discrete concepts in the formulation of plans for action that happen to be predicatively structured. The proclamation “let there be light” relies implicitly, as does “in the beginning was the word,” on this conception of linguistic rationality: The imperative expresses a wish or command that a specific state of affairs be the case, while the declarative statement describes one that has already come to pass. Both implicitly conceive of God as a linguistic agent who speaks things into being rationally, through predictively structured linguistic acts. On this view, reason and language precede and condition the real. Seen in this light, the proposition that human beings and human beings alone were created in the image of God takes on a special significance. It signifies that we humans, and we alone, participate in *logos*, which is to say that we are unique among sublunary beings in possessing anything like genuine understanding and the capacity for true agency. It is this conviction that would lead John of Damascus to assert categorically that nonhuman animals *non agunt sed magis aguntur*—that they do not actually act but instead are acted upon, inasmuch as the ability to act (*ago, agere*) depends precisely on *logos* (Aquinas, 1995, p. 47).

This is not simply a Judeo-Christian idea. Aristotle characterized reason (*nous*) as “eternal,” and, some ancient thinkers, notably the Stoics, conceived of an entire *logos* of nature, by which they meant its eternal logic, way, or structure. The Stoic Cleanthes went so far as to suggest that even Zeus, after uttering the *logos*, himself became subject to it (Long & Sedley, 1990, 54I). And for Aristotle and the Stoics, as for Judeo-Christian tradition, the logic or structure of reality contains the foundations of ethics. Reality, in other words, has not only the sorts of constancies describable by science but also *certain constant commitments about value* that in our cultural history have often been disseminated in the form of sacred tablets.

Aristotle (1995a, b) does more than any other thinker in antiquity to sketch the terms of what Derrida (1976) would later call “logocentrism,” the intensive focus on

(predicative) language as the coin of the realm when it comes to articulating and coming to grips with meaning. Aristotle's intensive focus on *logos* as the definitive criterion for assessing moral status stands in an uneasy tension with the hundreds of pages he wrote detailing the resourcefulness and ingenuity of a wide variety of non-human animals (Steiner, 2005, pp. 69–76). In his studies of nonhuman animal behavior, Aristotle expresses an openness to attributing terms such as “phronesis” (which signifies practical wisdom) to some nonhuman animals, whereas in his ethical, political, and psychological texts, he hews narrowly to the proposition that human beings are unique in possessing linguistic rationality. In these latter texts, Aristotle explicitly excludes nonhuman animals from any sort of community (*koinoia*) with human beings on the grounds that they are *aloga*, i.e., bereft of *logos* (Aristotle, 1995b, p. 1835). Human beings, he asserts, have been endowed by nature “with the gift of speech [*logos*],” whereas nonhuman animals merely possess “voice [*phone*],” which is nothing more than an indication of feelings of pleasure and pain (Aristotle, 1995b, p. 1888). To possess speech is to be endowed with reason (*nous*) and the capacity for genuine choice (*proairesis*) (Aristotle, 1995b, p. 1748). Nonhuman animals, by comparison, “cannot even apprehend reason [*logou*]; they obey their passions” (Aristotle, 1995b, p. 1990). From the standpoint of the ethical, political, and psychological texts, the natural purpose or *telos* of nonhuman animals is “with their bodies [to] minister to the needs of life,” by which Aristotle means unequivocally the needs of *human* life (Aristotle, 1995b, p. 1990).

Aristotle's views on the relationship and respective entitlements of human beings and nonhuman animals are succinctly summarized in his lapidary assertion early in *The Politics* that in the teleology of nature, plants exist for the sake of nonhuman animals and nonhuman animals exist for the sake of human beings (Aristotle, 1995b, p. 1926). The *telos* or natural purpose (more precisely, the fruition of the natural capacities) of human beings is the pursuit of virtue in common with our fellow humans, and this requires the capacity for rational deliberation—a capacity, in Aristotle's view, that is conspicuously absent in plants as well as nonhuman animals (Aristotle, 1995a, p. 340). Nonhuman animals are capable of volition but not genuine choice; they are moved by bodily desire, with no capacity to stand back and evaluate their desires as a rational human being can (Aristotle, 1995b, p. 1941). It is in this sense that nonhuman animals, in Aristotle's view, cannot genuinely act but are merely acted upon. This is the origin of the proposition that nonhuman animals, from the cosmic standpoint, are nothing more than instrumentalities created expressly for the satisfaction of human needs and desires.

The Stoic philosophers, such as Epictetus (2000), formalize this proposition into a metaphysical principle. Like Aristotle, the Stoics characterize nonhuman animals as *aloga*, and, like Aristotle, they categorically exclude nonhuman animals from community with human beings (Cicero, 1999, p. 287). They conceive of community in terms of the notion of *oikeiosis*, which is a notion of belonging or inclusion based on the idea of membership in a household (Cicero, 1999, p. 283). The Stoics recognize that nonhuman animals have a rudimentary sense of community, first seen in a sense of regard for one's own embodiment and subsequently in a sense of family association, most particularly seen in care for one's offspring; thus, the Stoics

conceive of *oikeiosis* or the sense of belonging as tracing out an ever-expanding range of concern that in its initial stages includes nonhuman animals (Cicero, 1999, pp. 232–3). Indeed, on Cicero’s view, “when we observe the labor that [nonhuman animals] spend on bearing and rearing their young, we seem to be listening to the actual voice of nature” (Cicero, 1999, pp. 281–2). In this respect, human beings share an intimate bond with nonhuman animals in possessing a sense of loving devotion for our closest relations (Epictetus, 2000, p. 147).

But at this point, on the Stoic view, human beings part company with nonhuman animals in possessing the capacity to ascend to an even broader circle of belonging. In virtue of our possession of *logos*, we human beings are able to extend the scope of inclusion to humanity as a whole. The parental bond exhibited in the behavior of nonhuman animals “is the source to which we trace the origin of the human race in communities. . . . We derive from nature herself the impulse to love those to whom we have given birth. From this impulse is developed the sense of mutual attraction which unites human beings as such” (Cicero, 1999, p. 283). The “as such” here has a very specific meaning for the Stoics: It confers on human beings, and human beings alone, the capacity to take on a *universal* standpoint from which humanity as a whole forms the highest kind of community. “The outermost and largest circle [of *oikeiosis*], which encompasses all the rest, is that of the whole human race” (Long & Sedley, 1990, 57G). “The mere fact of their humanity requires that one man should feel another man to be akin to him” (Cicero, 1999, p. 283).

This sense of intimate kinship with all of humanity makes certain sorts of conduct incumbent upon us, which Cicero characterizes in terms of two interrelated roles or “characters.” “We are invested by nature with two characters [*personae*], as it were: one of these is universal, arising from the fact of our being all alike endowed with reason and that superiority which lifts us above the brute. From this all morality and propriety are derived. . . . The other character is the one that is assigned to individuals in particular” (Cicero, 2001, p. 109). Both of these characters or ways of being in the world are, due to our exclusive possession of *logos*, unique to human beings. Not only are human beings unique in being capable of taking on individual characters but we are also alone in possessing both the capacity and the naturally endowed obligation to care for all of humanity. Nonhuman animals, on this view, are not capable of anything like the distinct individuality (selfhood) in terms of which we understand the human condition. They can and do express affection, some sort of nonrational regard, for their immediate circle, but they do so without any internal sense of self of the kind that enables human beings to step back from their individuality and contemplate what we owe to all of humanity, even to complete strangers. Much later thinkers, such as John Rawls (2001), draw implicitly on this dual notion of human character when they attribute to human beings the capacity to conceive of themselves as distinct individuals in relation to a community of other individuals; thinkers such as Rawls conceive of civic obligation in terms of the notions of individual agency (selfhood), equality, and reciprocity—all capacities that require linguistic rationality and presuppose a concern for the human community in toto (Rawls, 2001). The Stoic vision of humanity is one that aspires to Diogenes of Synope’s ideal of becoming “a citizen of the world [*kosmopolites*]”

(Diogenes Laertius, 2000, p. 65). And it is one that so categorically excludes nonhuman animals from community with human beings that nothing we do to nonhuman animals can possibly be considered an injustice (Steiner, 2005, p. 91).

Medieval Christian Thought

The Fathers of the Church adhere quite closely to this verdict about the moral status of nonhuman animals. Following the intensive focus in the Gospels on the human capacity for inwardness, thinkers such as Saint Augustine sketch a picture of the relationship between human beings and nonhuman animals in terms that closely recall Aristotle's denial of any ultimate community or commonality between the two. Like Aristotle, Augustine proceeds from the assumption that nonhuman animals are governed "by the pursuit of pleasures and the avoidance of physical pains," whereas human beings resemble God in virtue of being capable of regulating our impulses by submitting them to the authority of reason (Saint Augustine, 1993a, p. 14). Beings that are fundamentally bodily in nature perceive only the flux of change, inasmuch as "no criterion of truth [resides] in the senses" (Augustine, 1982, p. 41). Rational beings, on the other hand, share in the light of truth as well as faith and thus are endowed with the two capacities requisite for attaining "the highest good" (Augustine, 1995, p. 140; 1993a, p. 56). Human beings are unique among sublunary beings in possessing the understanding that is "the recompense of faith" (Augustine, 1993b, p. 18).

Like the Greeks before him, Augustine conceives of a *scala naturae* according to which "human beings are superior [to nonhuman animals] in a certain respect" and nonhuman animals are part of the "earth and water and sky" that God has given us "to serve us in our weakness" (Augustine, 1993a, p. 15; 1961, p. 235). Augustine is firmly committed to the proposition that goods of the soul are categorically superior to goods of the body—one need only think of the Christian conviction that it is our soul rather than our embodiment that places us in proximity to God—and concludes that the "beasts" are naturally subordinate to rational souls by virtue of divine law (Augustine, 1998, p. 941; 1992, pp. 365, 372).

This subordination of nonhuman animals stands in a bit of tension with Augustine's Christian Platonism, according to which all earthly things reflect the divine wisdom and beauty. In the *Confessions*, Augustine repeatedly appeals to the wisdom of Romans I:20 that we know God through his creatures, the context of this remark militating against any sense that we have been granted license to make use of nature in any way we please. Augustine's Platonic strain is tempered by a conspicuous spirit of *contemptus mundi* or hatred of the world: Even though we are superior to all other sublunary beings in virtue of our intimate kinship with God, we ought not become so intensively focused on goods of the earth that we neglect our higher obligations to the divine. But this has few if any specific implications for the ways in which we ought to treat nonhuman animals. God granted human beings "lordship over...irrational creatures...man over the beasts" (Augustine, 1998,

p. 942). With this lordship comes the prerogative to kill and otherwise make use of nonhuman animals in any way we deem fit. The biblical commandment against killing does not “apply to the non-rational animals which fly, swim, walk, or crawl, for these do not share the use of reason with us. It is not given to them to have it in common with us; and, for this reason, by the most just ordinance of their Creator, both their life and their death are subject to our needs” (Augustine, 1998, p. 32). Augustine’s reasoning recalls Aristotle’s verdict that there is nothing *koinon*—nothing in common—between us and “the beasts”: “To refrain from the killing of animals and the destroying of plants is the height of superstition...there are no common rights between us and the beasts and the trees” (Augustine, 1966, p. 102).

This last passage about the absence of common rights between ourselves and nonhuman animals recalls the Stoic exclusion of nonhuman animals from the sphere of justice. From this, one might urge the conclusion that even though we have no duties of justice toward nonhuman animals, we ought nonetheless to express a sense of compassion for them. This is the approach taken by many people today who take the “welfarist” approach to animal rights, the approach according to which we ought to treat nonhuman animals as kindly as possible in the process of using and killing them. Welfarists believe that the practices themselves, including killing, are morally unobjectionable provided that we take pains to ensure that the suffering we inflict is as little as possible. And while it might be tempting to conceive of Augustine as a proto-welfarist, he turns out to be nothing of the kind. In the *Confessions* (1961), he cites a number of passages of Scripture to justify the practice of meat eating (p. 237), and, in an important but lesser-known text, he makes the following observation: “We can perceive by their cries that animals die in pain, although we make little of this since the beast, lacking a rational soul, is not related to us by a common nature” (Augustine, 1966, p. 105).

Stripped to its bare essentials, Augustine’s position amounts to this: Nonhuman animals, like all created beings, participate in God’s goodness; but any being that lacks rationality, even if it is the kind of being that is fully sentient and capable of suffering, is essentially an instrumentality created expressly for our use. That suffering, however, means “little” to us because it is experienced by beings that are cosmically inferior to us. This set of convictions about the moral status of nonhuman animals persists virtually unmodified throughout the balance of the Christian Middle Ages. The only exception is that subsequent thinkers in this tradition devote attention to the question of whether, and to what extent, we ought to express compassion for nonhuman animals. Origen (1982), Basil of Caesarea (1963), and John Chrysostom (1990) all adhere to the conventional wisdom set forth by Augustine that *logos* renders human beings superior and that nonhuman animals are essentially objects of use in virtue of being *aloga* (Steiner, 2005, pp. 119–26). Of these three thinkers, early Father of the Church Chrysostom comes the closest to proclaiming a duty to be compassionate toward nonhuman animals, at one point stating that “we ought to show kindness and gentleness to animals for many reasons, and chiefly because they are of the same origin as ourselves” (Attwater, 1959, pp. 59–60). But Chrysostom’s reasoning remains pointedly anthropocentric: he believes that the goal of including nonhuman animals in our covenant with God is not to honor them

for their own sakes but rather “to induce confidence and security in the human race” (Chrysostom, 1990, p. 188). Any compassion that we exhibit toward nonhuman animals redounds not on them but on our own worthiness in the eyes of God.

A millennium later, Saint Thomas Aquinas would seize upon this notion. Aquinas invokes the wisdom of John of Damascus discussed earlier: that animals *non agunt sed magis aguntur*, i.e., they do not act but instead are acted upon (Aquinas, 1995, p. 47). Recognizing that this constitutes a denial of anything like agency in nonhuman animals, he seeks to account for the seeming ingenuity of nonhuman animals by suggesting that they function essentially as mechanisms and that any apparent choices they make are actually products of divine intervention. In the behavior of nonhuman animals, “we notice certain marks of sagacity,” but this apparent sagacity is merely a simulacrum of the kind that “may be seen in the movements of clocks [*in motibus horologiorum*]” (Aquinas, 1997, p. 281). Nonhuman animals are moved not by anything like cognition but are moved purely by natural instinct—that black box of causality to which dualistic thinkers have been forced to appeal in their efforts to reserve the idea of true agency to beings who are linguistic and rational in a specifically human sense (Steiner, 2005, p. 128). This makes it necessary for Aquinas to account for the seeming ingenuity of nonhuman animals by maintaining that “brutes do not judge about their own judgment but follow the judgment implanted in them by God. Thus they are not the cause of their own decision nor do they have freedom of choice” (Aquinas, 1995, p. 138).

Aquinas’s verdict about the need to show compassion toward nonhuman animals follows from his characterization of them as biological mechanisms with the capacity to feel both pleasure and pain. From a purely rational standpoint, “it matters not how man behaves to animals, because God has subjected all things to man’s power” (Aquinas, 1997, p. 905). In particular, there is no impropriety in killing nonhuman animals, “for by the divine providence they are intended for man’s use according to the order of nature. Hence it is not wrong for man to make use of them, either by killing or by any other manner whatsoever” (Aquinas, 1997, p. 222). At the same time, Aquinas stops short of utter indifference about the ways in which we use nonhuman sentient creatures, establishing a view that Kant would later characterize in terms of “indirect duties.” This is the view according to which we ought to refrain from inflicting gratuitous cruelty on nonhuman animals, not because we owe anything directly to them but rather because such cruelty redounds badly on *us*. “Since it happens that even irrational animals are sensible to pain, it is possible for the affection of pity to arise in a man with regard to the sufferings of animals...if a man practice a pitying affection for animals, he is all the more disposed to take pity on his fellow-men” (Aquinas, 1997, p. 904). Inflicting unnecessary cruelty on nonhuman animals, in other words, is wrong not because we owe anything directly to them but rather because such insensitive treatment “leads to the temporal hurt of man” (Aquinas, 1997, p. 222).

Lest one supposes that the arch anthropocentrism of the Christian Middle Ages has since undergone a process of radical enlightenment, such that the traditional prejudice of categorical human superiority has been overcome toward a more inclusive sense of belonging that makes a place for nonhuman animals as full and direct

members of the moral community, Pope Francis's Encyclical *Laudato Si'* (2015) merits careful examination. In it, the Pope decries the "tyrannical anthropocentrism" that gives rise to needless cruelty toward nonhuman animals, but he repeatedly proclaims the categorical superiority of human beings over nonhuman animals and openly sanctions practices such as hunting and fishing (Steiner, 2018). Anyone looking for the elements of a vegetarian or vegan ethic would do best to look elsewhere. Whether we should go as far as Lynn White and lay our entire environmental crisis at the feet of the orthodox Christian doctrine is a highly controversial question. In confronting it, we should consider very carefully White's conclusion that "the whole concept of the sacred grove is alien to Christianity and to the ethos of the West" (White, 1974, p. 28).

Early Modern Thought and the Enlightenment

More than any other thinker, Descartes (1985) sets the tone for modern assessments of the moral status of nonhuman animals. Writing in the midst of the scientific revolution of the seventeenth century, Descartes asserts a metaphysical dualism according to which all embodied beings are to be understood as physical mechanisms (Steiner, 2004). The bodies of human beings and nonhuman animals are governed entirely by the laws of the new mathematically based physics; human beings are distinguished, as in Greek and Christian thought, by the possession of a rational soul and the capacity for genuine agency. Like Aquinas before him, Descartes characterizes the behavior of nonhuman animals as being essentially no different than the functioning of clocks, but Descartes goes a step further and denies that nonhuman animals have any subjective awareness of states such as pain. Descartes (1985) maintains that nonhuman animals are, like any mechanical device made by human beings, bereft of reason and language (pp. 139–40). He makes a fundamental distinction between the subjective awareness of rational beings and the behavior of nonhuman animals, arguing that the latter is due exclusively to "the corporeal soul [*anima corporea*]," which "is purely mechanical" in contrast with "the mind [*mentem*] or soul [*animam*] which I have defined as thinking substance" (Descartes, 1991, p. 365).

Descartes is less explicit about the precise nature of sensation in nonhuman animals, but he makes it fairly clear that he considers nonhuman animals to be nothing more than mechanisms fashioned by the creative intellect of God. He states as much in the *Discourse on Method* (Descartes, 1985, p. 140), and he elaborates on this claim by stating that "we know of absolutely no principle of movement in animals apart from the disposition of their organs and the continual flow of the spirits which are produced by the heat of the heart as it rarefies the blood" (Descartes, 1984, pp. 161–2). Here, Descartes maintains fidelity to the strict metaphysical dualism between mind and body that underwrites his physics, a fidelity that forces him to make a fundamental distinction between sensory experience in rational beings and beings endowed with merely a corporeal soul. He states in his correspondence that

nonhuman “animals do not see as we do when we are aware that we see, but only as we do when our mind is elsewhere. ... In such a case we too move just like automata” (Descartes, 1991, pp. 61–2). Nonhuman animals do not actually experience sensation but instead simply undergo “movements similar to those which result from our imaginations and sensations” (Descartes, 1991, pp. 203–4). With specific reference to the capacity to experience states such as pain, Descartes asserts without qualification that “I do not explain the feeling of pain without reference to the [rational] soul. For in my view, pain exists only in the understanding. What I do explain is all the external movements which accompany this feeling in us; in animals it is these movements alone which occur, and not pain in the strict sense” (Descartes, 1991, p. 148; Steiner, 2005, p. 148).

Descartes’s denial of feeling in nonhuman animals is part and parcel of a dualism designed to promote his Promethean ideal of employing the new physics to render human beings “the lords and masters of nature [*les maîtres et possesseurs de la nature*]” (Descartes, 1985, pp. 140–1). He freely sanctions vivisection (Steiner, 2005, p. 149) and exhibits no trace of Augustine’s treatment of theoretical curiosity as *concupiscentia oculorum* or concupiscence of the eye, that lustful gazing at nature that for Augustine threatens to distract us from the prospect of eternal salvation (Augustine, 1961, p. 241). Descartes’s views on the experiential capacities of nonhuman animals are so extreme that he was excoriated in his own time by the Cambridge Platonist philosopher Henry More for proposing such an “internecine and cutthroat idea” (Steiner, 2005, p. 132).

By the time of the Enlightenment, the implausibility of Descartes’s characterization of nonhuman animals in terms of sheer mechanism had become all but universally recognized. But thinkers in this period differed in the implications they drew from the insight that nonhuman animals are sentient creatures capable of states such as pain. Both Jeremy Bentham (1948, p. 310n) and Immanuel Kant (2008, p. 328) openly acknowledged that nonhuman animals possess subjective states of awareness, but they differ on the question whether from a moral standpoint we owe anything directly to nonhuman animals. And yet in spite of this difference, Bentham and Kant both came to conclusions about the moral status of nonhuman animals that bear the unmistakable imprint of anthropocentric prejudice.

Bentham is famous for basing his utilitarian moral theory on the notion of sentience rather than linguistic rationality. In a famous passage, he proposed that just as the color of a human being’s skin should play no role in assessing that individual’s moral worth, nor should the possession of *logos*. In contemplating the moral status of nonhuman animals, he insists, “the question is not, Can they *reason*? nor, Can they *talk*? But, Can they *suffer*?” (Bentham, 1948, pp. 310–11n). Derrida (2008) would later seize upon this assertion in arguing that Bentham “changes everything” in our thinking about the moral status of nonhuman animals (p. 27). The acknowledgment that nonhuman animals can suffer, however, is not a novel insight, and it is worth assessing Bentham’s shift of focus from *logos* to suffering by considering what he goes on to state in the same passage in which he undertakes this shift. He states confidently that when we kill nonhuman animals for food, “we are the better for it and they are never the worse. They have none of those long-protracted

anticipations of future misery which we have. The death they suffer in our hands commonly is, and always may be, a speedier, and by that means a less painful one, than that which would await them in the inevitable course of nature. ... We should be the worse for their living, and they are never the worse for being dead” (Bentham, 1948, p. 311n).

Bentham, in other words, is one in a long line of thinkers who characterize non-human animals as living essentially in an eternal present, with no recollection of the past and no anticipation of the future. The contemporary utilitarian Peter Singer hews closely to this thinking when he suggests that the death of a nonhuman animal, one that lacks self-awareness at any rate, is functionally no different and no worse than falling asleep and never waking up (Singer, 2011, p. 112). In spite of their shift from rationality to sentience as the basis for assessing moral worth, both Bentham and Singer implicitly appeal to the same *scala naturae* or great chain of being that motivated Aristotle. Both believe that nonhuman animals have direct moral worth, but both adhere to a very traditional conception of hierarchy according to which rational beings, in virtue of being able to contemplate the remote past and distant future, have more to lose by dying than a merely conscious being has. There simply is no room in this kind of thinking for an authentic embrace of Schopenhauer’s dictum that “in all essential respects, *the animal* is absolutely identical with us. ... The difference lies merely in the accident, the intellect, not in the substance which is the will. The world is not a piece of machinery and animals are not articles manufactured for our use” (Schopenhauer, 2000, p. 375).

Just as Descartes had proclaimed that human beings are destined to become the masters and possessors of nature, Immanuel Kant would assign to the human being the status of “titular lord of nature [*betitelter Herr der Natur*]” in virtue of being “the sole being on earth who has reason, and thus a capacity to set voluntary ends for himself” (Kant, 2008, p. 298). Kant rejects Descartes’s characterization of non-human animals as machines and maintains that they in fact “act in accordance with representations... and that in spite of their specific difference [from humans in virtue of lacking reason], they are still of the same genus as human beings (as living beings)” (Kant, 2008, p. 328). Like Bentham, Kant acknowledges an inner life in nonhuman animals. But unlike Bentham, Kant denies anything like direct moral duties toward nonhuman animals and invokes Thomistic reasoning to conclude that our duties pertaining to nonhuman animals are merely “indirect,” which is to say that any duties that involve nonhuman animals are really duties to our fellow human beings (Kant, 1996, p. 193). At one point, Kant suggests that it makes perfect sense to express a sense of gratitude toward a creature such as a horse that has served one well in the fields (Kant, 1996, p. 193). But he insists that only “persons,” those beings endowed with *logos*, merit anything like direct duties, whereas all non-rational beings are by comparison mere “things” possessing no inherent worth (Kant, 1981, pp. 35–6). Thus, nonhuman animals, being *aloga* (bereft of *logos*), are classified as mere “things.” At one point Kant goes so far as to assert that nonhuman animals, domesticated ones at any rate, possess the same moral status as fertile fields and crops such as potatoes (Kant, 1996, p. 115).

Contemporary Tradition-Bound Approaches

Kant's equation of domesticated nonhuman animals with insensate things such as potatoes is firmly in line with the long-standing classification of nonhuman animals in Anglo-American jurisprudence as property. The loss of a beloved nonhuman companion animal is considered legally as no more worthy of recompense (where the loss is due to actionable misconduct by someone other than the owner) than the loss of a piece of furniture. In contemporary work being done on the moral status of nonhuman animals, increasing attention has been paid to the manifest inadequacy of such a legal fiction. As I noted at the outset, there are two main approaches to rethinking the moral status of nonhuman animals, and they stand in an uneasy tension with one another. What I have been referring to as "tradition-bound" approaches are those that retain a commitment to the primacy of *logos* in assessments of moral status. Most but not all take their cue from Kant's deontology, with its focus on notions such as individual agency and responsibility. The two most influential thinkers currently taking this approach are Christine Korsgaard (2018) and Martha Nussbaum (2006). Both seek to vindicate the status of nonhuman animals as creatures possessing direct moral worth and meriting justice. But by retaining the traditional premium on linguistic rationality, they both, if only unwittingly, reinforce the commitment to hierarchy that is characteristic of traditional anthropocentric thought.

Korsgaard seeks to rehabilitate Kant's views on the moral status of nonhuman animals by exploring "the wider aspirations of Kant's philosophy" (Korsgaard, 2018, p. 132). On Korsgaard's view, those aspirations are to acknowledge that the moral community includes not only linguistic rational agents but also any and all beings who value their own lives, regardless of whether a given such being is able to contemplate that value in a detached manner. "The value of a life is, first and foremost, its value *for the creature himself or herself*" (Korsgaard, 2018, p. 65). In contrast with Singer, who proposes that, given the choice, one should prefer to be a human being rather than a horse, Korsgaard asserts that there is in fact no external, objective standard for making value comparisons between human beings and nonhuman animals (Singer, 2011, p. 92; Korsgaard, 2018, p. 59). In my own work, I have suggested as much in urging the conclusion that my dear, departed companion cat Pindar valued his life every bit as much as I value my own, which is to say, incalculably (Steiner, 2008, p. 110).

From this, one might expect Korsgaard to argue for the kind of moral parity between human and nonhuman animals for which I have argued in my own work. But instead of doing this, Korsgaard appeals to the Kantian conviction that human beings, precisely in virtue of possessing rationality, have a special priority over nonhuman animals. On Korsgaard's view, nonhuman animals do not think about what is good for them, they lack selfhood and autonomy, and their behavior is governed by instinct (Korsgaard, 2018, pp. 23n8, 7, 119). Korsgaard (2018) tempers these statements with the occasional suggestion that these seem "likely" to be the case about nonhuman animals (pp. 46, 97). But the overwhelming weight of her discussion leads to the conclusion that, even though we ought to consider nonhuman

animals to be ends in themselves, we humans retain special prerogatives to determine the fate of our so-called “fellow creatures.” On Korsgaard’s view, “treating an animal as an end in itself only requires treating the animal in a way that is consistent with her good” (Korsgaard, 2018, p. 226). Given her characterization of nonhuman animals as lacking selfhood and being unable to contemplate their own good, Korsgaard hews closely to the traditional prejudice that the “good” of nonhuman animals is simply to survive, procreate, and seek a life as free from external interference as possible. Human beings, in being able to contemplate their own good, are capable of setting ends for themselves and thus of being “moral beings” (Korsgaard, 2018, p. 51). Thus, while nonhuman animals merit the status of ends in themselves, we humans, as contemplative beings, retain the right to make determinations about what is best for our nonhuman fellow creatures. Instead of continuing to treat them as property, we should view nonhuman animals as “something more like a subordinate population” (Korsgaard, 2018, p. 227). Here, Korsgaard seems to have in mind the status of members of society that Kant refers to as “passive” citizens, those who in Kant’s view lack full agency but nonetheless enjoy rights and rely on more mature members of society to protect their rights for them; Kant classifies as passive citizens apprentices, domestic servants, “all women and, in general, anyone whose preservation in existence (his being fed and protected depends not on his management of his own business but on arrangements made by another (except by the state))” (Kant, 1996, p. 92). By employing the term “subordinate,” Korsgaard assigns to nonhuman animals the status of beings who require human control. That confers on human beings the status of beings entitled to exercise control, and the historical record shows what we have overwhelmingly tended to do with that power. The notion that nonhuman animals are essentially “subordinate” is, as I have shown in these remarks, part of a long history of anthropocentric valuing that ultimately sees nonhuman animals as inherently less than human beings in the moral scheme. Signs that Korsgaard remains to some extent within the anthropocentric mindset include her sanctioning at least some instances of living with pets and her conspicuously stopping short of calling for anything like categorical vegetarianism or veganism (Korsgaard, 2018, pp. 237, 210–11).

Martha Nussbaum has articulated views about the moral status of nonhuman animals that bear distinct affinities with the approach taken by Korsgaard. Like Korsgaard, Nussbaum places a special priority on the moral status of rational beings, arguing that a variety of traditional uses of nonhuman animals should be deemed entirely permissible provided that we respect nonhuman animals and afford them space to cultivate and realize their natural capabilities. Like Korsgaard, Nussbaum attributes to nonhuman animals a more limited range of capabilities than she sees in human beings; this is evident from the respective lists of capabilities that she assigns to human beings and nonhuman animals (Nussbaum, 2006, pp. 76, 393–401), with the most conspicuous differences being the human capacities for practical reason and political engagement. Nussbaum argues that nonhuman animals are direct subjects of justice (Nussbaum, 2006, p. 389). But she implicitly embraces the proposition that nonhuman animals enjoy a “subordinate” status in urging the conclusion that a wide variety of uses of nonhuman animals are perfectly permissible, such as

eating them, experimenting on them, making them work for us, and using them for various sources of entertainment such as horse racing and dressage, provided that we do so without infringing on their natural potential (Nussbaum, 2006, pp. 393, 400, 377).

To think past traditional anthropocentric prejudice is to proceed in a fallibilistic spirit of humility. It is to render ourselves vulnerable to the prospect that we humans do not know quite as much as we think we do about the precise nature and limits of experience in various nonhuman animals (Steiner, 2023). It is to take very seriously the Austrian ethicist Herwig Grimm's suggestion that we would do better to consider the possibility that nonhuman animals precisely *can* set ends for themselves and that our entire conception of nonhuman animals and the respective entitlements of human and nonhuman animals might prove to be quite different than what the anthropocentric tradition has led us to suppose (Grimm, 2013, p. 65).

Exactly how this is to be accomplished is an elusive matter because it calls on us to attempt to set aside the influence of several millennia of anthropocentric prejudice regarding the respective (moral) entitlements of human and nonhuman animals. As I have argued in my work on postmodernism (Steiner, 2013), rational arguments alone are not sufficient to bring about a real change in people's deeply felt sense of values, which I believe is essential for the formation and actualization of genuine moral commitments. What seems to be needed instead is some sort of unusual experience with sufficiently shocking impact to bring us in touch with the essential sameness of all sentient life, but in such a manner that the sense of shock remains with us rather than passing after a short while. In my book on postmodernism (Steiner, 2013, p. 232), I note that my own first such deeply moving experience was reading Sinclair's (1985) *The Jungle* as a young teenager: I had always had a fascination with nonhuman animals, but reading that text brought before me the horrors of how we treat nonhuman sentient creatures simply because we can. What forms the similar experiences of others might take is hard to predict. But what seems clear to me is that whatever form the experience ultimately takes, its enduring influence will ideally be to keep us keenly aware of the essential sameness between you or me and sentient nonhumans—that we are vulnerable, mortal beings simply struggling to survive and make at least limited sense of the world.

Postmodern Approaches

The other main strain in contemporary thinking about nonhuman animals takes its cue from Derrida and the project of deconstruction. Derrida's critique of logocentrism (the centrality and primacy placed on *logos*) involves the endeavor to challenge and undermine the sorts of stable categories and distinctions asserted by the Western philosophical tradition. Derrida (2008) subjected the traditional appeal to the authority and autonomy of reason to a deconstructive practice intended to give primacy to the fundamental instability, "equivocality," and "undecidability" of meaning (p. 119). Rather than proceeding from the conviction that *logos* affords us

access to enduring truths, Derrida implicitly separates language from reason and focuses on the ways in which language functions as the site of ever-shifting meanings that emerge through phenomena that he calls *différance* (a play on the notion of difference meant to imply the inexhaustibility of meaning) and “the trace.” Derrida (1982) states that “*différance* is the non-full, non-simple, structured and differentiating origin of differences,” and that “differences...are effects which do not find their cause in a subject or substance” (pp. 6, 11). With the deconstruction of reason comes the deconstruction of traditional building blocks of truth such as subjectivity (rational autonomy) and substance. In their place, we are confronted with the free play of *différance*, “the limitlessness of play” that is fundamentally prior to all purportedly stable categories and distinctions (Derrida, 1976, p. 47).

The priority of *différance* and undecidability has significant implications for the traditional endeavor to declare categorical distinctions between human beings and nonhuman animals, not to mention for a wide variety of categories traditionally considered to be unassailable. Every purported boundary must be recognized to be porous and subject to the free play of *différance*, which manifests itself through an infinite multiplicity of traces or “singularities” (Derrida, p. 77). This, in turn, means that there are no authoritative criteria for discriminating among discourses; instead, the linguistic coordination of action is based on fictions, and the best we can hope for in our ethical dealings is “the concerted deployment of new fictions against whatever fictions are socially in force” (White, 1999, p. 27).

As I noted earlier, this does not prevent Derrida and the contemporary writers who seek to cultivate the insights of his thought from making rather clear assertions about the injustices we visit on nonhuman animals. Derrida’s approach has the virtue of being open to the idea that the lives of nonhuman animals remain a mystery to us—he coined the term *animot* to express this openness. The *animot* is “neither a species nor a gender nor an individual [but rather] an irreducible living multiplicity of mortals” (Derrida, 2008, p. 41). As such mortals, nonhuman animals share in and merit justice. This aspect of Derrida’s thought affords us a crucial insight into the arbitrariness of the tradition’s exclusion of nonhuman animals from the sphere of justice. And yet the very terms of deconstruction make claims about justice and injustice very difficult to sustain in a meaningful way. Derrida calls the killing of nonhuman animals by human beings a “monstrosity,” and, yet he goes on to say that he is “not recalling this in order to start a support group for vegetarians, ecologism, or for the societies for the protection of animals” (Derrida, 1991, p. 112). *Différance* “is not opposed to ethics or politics, but is their condition” (Derrida, 1999, p. 77). In other words, *différance*, which signifies the priority of the undecidable or ambiguous over the clear and distinct, is the basis or foundation of ethics and politics—which, if Derrida is right, means that the foundation of ethics and politics is not any sort of enduring principles or laws but instead the ever-shifting meanings or traces that emerge in the process of discourse. In spite of ascribing a fundamental priority to the undecidability of meaning over any stable principles or commitments, Derrida considers it vital that we seek to reduce the widespread violence and cruelty that we inflict on nonhuman animals (Derrida and Roudinescu, 2004, p. 73). But he also eschews anything like a categorical proclamation of ethical vegetarianism, let alone

veganism. How or why does Derrida refrain from offering any sort of categorical duty, even though he openly recognizes the horrors involved in our exploitation of nonhuman animals? Because the terms of Derrida's thought entail that such categorical proclamations, if only unwittingly, actually do violence to the mortal beings they purport to protect. The entire enterprise of "juridico-political or juridico-theological discourse...serves only to maintain good conscience. ...the customary discourse on man, humanism, and human rights...has encountered its effective and as yet unthought limit" (Derrida, 1995, p. 298). The entire discourse of rights, whether human or nonhuman, is effectively bankrupt. In its place, we must confront living singularities and situations ever anew.

The difficulty with which Derrida's approach leaves us is this: "It embraces two notions that are fundamentally incompatible with one another: a commitment to the indeterminacy of meaning and a sense of justice that presupposes the very access to a sense of determinacy that postmodern epistemology dismisses as illusory. Postmodern appeals to justice [and, for the same token, to injustice] are fundamentally incoherent in the absence of humanistic notions such as agency and responsibility" (Steiner, 2013, p. 4). One does not simply "see" or experience injustice and feel the need for its overcoming; we always come to such sensibilities on the basis of *prior commitments* on the basis of which we find the world disclosed to us as meaningful (Steiner, 2023). This is the juncture at which a fruitful synthesis of insights from tradition-bound and postmodern approaches holds the promise of a new approach to thinking about and acting on the notion of what we owe to nonhuman animals: a recognition that human agency confers not prerogatives but rather special responsibilities on us to extend genuine respect to sentient life, both human and nonhuman, all the while bearing in mind that we have no definitive access to the real and that the tasks of ethics remain infinite.

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Chapter 2

Farm Sanctuaries



Gene Baur

Industrial animal agriculture has become dominant in our food system, despite being extractive, dysfunctional, and unsustainable. We are abusing animals, packing them in crates in which they can't move, feeding them drugs, and sending diseased animals into the food system. This is an affront to our humanity and undermines our health and well-being.

Farm Sanctuary was founded in 1986 to help change how human animals view and treat nonhuman “farm” animals and to challenge the factory farming system, which is cruel and destructive. Since the founding of Farm Sanctuary, thousands of similar operations have been established around the globe. In addition to providing safety for cows, pigs, chickens, sheep, and other animals rescued from exploitation and slaughter, these sanctuaries also exemplify relationships with former “food” animals as companions instead of commodities—as friends, not food, and as someone, not something. However, since farm sanctuaries can only rescue and care for a tiny percentage of the billions of animals who need help, it's vitally important to implement education and advocacy programs to combat the abuses of animal agriculture.

Farm animals are victims of systemic oppression, subjected to routine mutilations, genetic manipulations, and extreme confinement. They are perceived and valued primarily as economic units, not living beings, by agribusiness. Farm Sanctuary was founded to challenge this callousness and began by investigating and exposing abuses at farms, stockyards, and slaughterhouses with the hope that consumers would empathize with the animals' plight and make food choices that avoided causing unnecessary harm. Some people, appalled by the cruelty, decided to go vegan. However, most have continued eating animal products. Human beings are very good at deluding themselves and rationalizing their cruel and irresponsible conduct.

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Too often, when the topic of factory farming is raised, people say, “Don’t tell me—I don’t want to know.” This reaction implies that people empathize with other animals, despite their discomfort about facing these issues or making lifestyle and dietary changes. In 1986, when Farm Sanctuary was founded, six billion farm animals were being raised and slaughtered in the United States annually (Food and Agriculture Organization of the United Nations, 2019). Now, that number has grown to around 10 billion, in spite of increased concerns about factory farming and greater awareness about the cognitive and emotional lives of farm animals. On top of this, each year, trillions of aquatic animals are killed for food (FishCount, 2019). They, too, are increasingly mass-produced in crowded and inhumane conditions, despite growing evidence about their sentience (Proctor et al., 2013; Broom, 2022; Webster, 2022).

In addition to encouraging people to recognize farm animals as friends instead of as food, Farm Sanctuary has consistently encouraged people to live in alignment with their values. We believe that most people are humane and would prefer to avoid causing unnecessary harm to other animals. We have also encouraged people to act according to their interests, assuming they would rather eat food that supports good health and is produced in a way that does not destroy the environment. I continue to believe in this approach, which comports with Farm Sanctuary’s long-standing interest in finding common ground among different communities and building from there. Unfortunately, I’ve also witnessed humans routinely acting in ways that are inconsistent with our human values and interests.

We call ourselves “*Homo sapiens*,” which means “wise man” in Latin, and we pride ourselves on being “rational” animals. But, it seems more accurate to say that we are “rationalizing” animals; we have constructed belief systems and social structures that normalize the idea that humans are superior and entitled to exploit, kill, and eat other animals. This viewpoint, that certain lives matter more than others, has caused enormous suffering, oppression, and injustice; it undermines the well-being of ourselves and others. People with more power tend to suffer a loss of empathy, and those with less power experience direct assaults on their health and well-being. Can you imagine what it would be like to work in a slaughterhouse cutting the throats of animals for 8 hours a day? This violence undermines our humanity, and it is not necessary. If we can live healthier, more compassionate lives without killing other animals, why wouldn’t we?

In my 2008 book, *Farm Sanctuary: Changing Hearts and Minds about Animals and Food*, I wrote: “In an ideal world, there would be no need for Farm Sanctuary. There would be no factory farms or stockyards, and cattle, pigs, chickens, and other farmed animals would not be abused. They would be free to feel the sun and the breeze, scratch at the earth, and generally enjoy life. Human beings have a great capacity to act with sensitivity and compassion, as well as a frightening ability to disregard the feelings of others. The more we act with indifference and cruelty, the more pervasive and defining these qualities become in our world. But when we behave with understanding and kindness, these qualities can spread and flourish.” (p. xvii)

I still believe in this sentiment, and I dream of a day when there is no need for farm sanctuaries and for rescuing animals from the abuses of agriculture. I've also continued thinking about what it means for farm animals to enjoy life without being mistreated, and I have contemplated the quality of life experienced by animals who have been genetically engineered for traits to serve the agricultural industry's economic goals. Cows, pigs, chickens, and other animals who are used in "animal" agriculture have been selected for fast growth or excessive milk or egg production, and this impacts their ability to enjoy good lives—even with medical interventions in the best environments. At Farm Sanctuary, rescued animals are commonly given pain medications to mitigate the chronic discomforts they experience.

Animals who are raised for meat on factory farms have been designed to grow fast and large and to be killed young. Chickens bred for meat grow six times faster than they did a century ago (National Chicken Council, 2011), and their bodies become so large so quickly that they develop painful foot and leg disorders that make it difficult for them to walk (Julian, 1998; Kapell et al., 2012). Others, like turkeys, have been so profoundly altered that they cannot reproduce naturally (Erasmus, 2018), and the industry now relies on artificial insemination for reproduction. If we stopped inseminating and mass-producing these fast-growing turkeys, they would not exist, and that's probably a good thing. I believe it would be preferable if genetic strains of animals developed specifically for exploitation and those whose biological make-up undermines their well-being ceased to exist.

A fundamental question to contemplate is how and where farm animals would fit into a future world where they are regarded as friends, not food. With questions like this that are difficult to answer, I think it's helpful to apply the principle of "mutuality." How can humans live with other animals, including those who traditionally have been exploited, in mutually beneficial ways? This position is in stark contrast to our relationships with farmed animals today, which are predicated on ownership, exploitation, commodification, and extraction.

Elements of this unjust factory farm pattern are also replicated in our relationships with the earth, people, and other animals. Reshaping our relationships with farm animals, and shifting from extraction to mutuality, could positively affect how we relate to others more broadly. Abuses of power central to animal agriculture have normalized forms of entitlement and helped enable broader structures of oppression.

Humans have lived around other animals, wild and domesticated, since our emergence on Earth. However, factory farming represents an unprecedented level of human control over every aspect of the lives of nonhuman animals, from conception to consumption. These sentient beings are treated like inanimate tools of production on the assembly line, where conditions are so harsh that hundreds of millions die before reaching the slaughterhouse every year (National Chicken Council, 2011; U.S. Department of Agriculture, 2022). Their deaths are written off as acceptable economic losses to a callous industry lacking in empathy and basic decency.

Industrial animal agriculture is an affront to our humanity, and citizens are appalled to see how farm animals are mistreated. People are also surprised when they learn that farm animals have been excluded from the federal Animal Welfare Act (U.S. Department of Agriculture, n.d.-a). Plus, many state anti-cruelty laws also

exempt farming practices that are considered to be “acceptable” or “normal” agricultural operations (Wolfson, 1996). These laws and regulations allow agribusiness to define what is “normal,” and therefore legal, regardless of how cruel it may be. During our investigations, Farm Sanctuary has documented numerous cases of egregious cruelty that were legally permitted, including when we found living animals discarded in trash cans or on piles of dead animals.

Our first rescued animal, Hilda, was a debilitated sheep who had been dumped on a pile of dead animals behind a stockyard in Lancaster, Pennsylvania. We contacted local law enforcement officials, urging them to file cruelty charges, but they refused.

In another case, I found a trash can filled with dead birds when I was documenting conditions at a battery cage egg farm in New Jersey where thousands of hens were packed in cages so tightly that they couldn’t even stretch their wings. When I looked closer in the trash can, I noticed two of the birds were moving. They were still alive, so I took them from the trash and provided veterinary care. I then contacted local law enforcement to report what I’d witnessed and asked them to prosecute the egg factory. They declined, but, thankfully, there was a provision in state law that allowed Farm Sanctuary’s attorneys to bring charges, so we did.

During our court hearing, the egg industry’s lawyer defended the practice of treating farm animals like garbage, saying it was legal for these birds to be treated like manure. Shocked by this assertion, the judge asked if there was a legal difference between live birds and manure, and the industry attorney said “no.” I was pleased when the judge ruled the egg factory to be guilty of animal cruelty. However, this conviction was overturned on appeal because we couldn’t prove that someone had intended to discard these birds in the trash can.

Besides routinely denying sick and injured animals the necessary veterinary care and leaving them to die of neglect, agribusiness also slaughters and uses diseased and “downed” animals (i.e., animals too sick to stand) for human food. This is inhumane—involving animals being dragged with chains or moved with forklifts (Rollin, 2012)—and also presents obvious health risks to humans.

When human fatalities were linked to eating cows as with mad cow disease in the 1990s, restrictions on using downed cows in the food supply were proposed because mad cow disease is one cause of downed cows (U.S. Department of Agriculture, n.d.-a). Alarming, the United States Department of Agriculture (USDA) continued to allow and defend the use of downed and diseased animals in the food supply, so Farm Sanctuary took them to court. Finally, after years of delays, and as Farm Sanctuary was having success in court, the USDA agreed to prohibit the use of downed cows in food supply in 2004 (Pond et al., 2011). Despite this, other downed animals, including downed pigs, continue to be slaughtered and used for human food along with diseased animals of every species. We are continuing our efforts to prevent the inhumane transport and slaughter of all downed animals.

Animals in the food system are seen as commodities—as “meat on the hoof”—and they are sold by the pound. I’ve visited stockyards and auction rings across the United States, where animals are paraded in front of buyers as the auctioneer calls out prices seeking the highest bid. Purchasing agents for slaughterhouses focus on

the animals' body parts and muscle conformation—and the cuts of meat that could be extracted from their carcasses—without thinking about the fear and distress clearly present in the animals' faces and eyes.

The lack of empathy at stockyards and slaughterhouses pervades the entire system as animals are packed in warehouses and exploited as production units. Female pigs used for breeding are confined in barren two-foot-wide gestation crates during their 15-week pregnancies, then moved to similarly restrictive farrowing crates to give birth and nurse their young for a few weeks (Lammers et al., 2007). When their piglets are taken away to be raised for slaughter (and killed at 6 months of age), the sows are artificially inseminated and returned to gestation crates to repeat the process (De Vries & Marcondes, 2020). They live a constant cycle of impregnation, birth, and re-impregnation. In other words, their quality of life is abysmal, and one could argue that this is a form of sustained torture, assuming that one recognizes that pigs have intelligence and form emotional bonds with their friends and kin.

Like breeding sows, cows in the dairy industry also experience continuous cycles of birth and re-impregnation because it's necessary for them, like other mammals, to have babies to stimulate lactation. The cows' babies are taken away at birth so the milk can be sold for human consumption. Female calves born in dairies are raised as "replacement heifers" to become milking cows because modern dairy cows only average 2.5–4 years in production before being sent to slaughter (Oltenucu & Broom, 2010). The cows are bred to produce up to 10 times more milk than what their calf would need, if allowed to nurse. Baby calves consume approximately 10% of their body weight each day (Cornell University College of Veterinary Medicine, n.d.), which is commonly between 6 and 10 pounds, but modern dairy cows average more than 60 lbs of milk per day (Holsteinusa, n.d.). As a result, they suffer from a wide range of health and welfare issues, and most are sent to slaughter at a young age (VandeHaar & St-Pierre, 2006).

Male calves who are born in dairies will never produce milk and are thus not profitable to dairies, so the veal industry was created to take advantage of this plentiful supply of unwanted calves in order to generate additional income. In this industry, it was common for baby calves to be tethered by their necks and confined in crates, unable to walk or even turn around for their entire lives (Alcasabas, 2007). The public was appalled to learn of the miserable conditions these animals experienced. After decades of campaigns and legislative victories by animal advocates, the veal industry announced plans to phase out the crates (Vansickle, 2002).

Farm Sanctuary has actively worked to educate consumers and ban the worst factory farming cruelties. We helped lead the nation's first successful ballot initiative that was passed by Florida voters in 2002 to outlaw gestation crates (Kim, 2022). Other states followed suit, and, now, more than 10 have laws prohibiting extreme confinement systems, including gestation crates, veal crates, and battery cages, which are used for hens in egg production. Battery cages are barren wire enclosures that are lined up in rows and stacked in tiers in warehouses that hold tens of thousands of birds. The hens are crowded so tightly that they can't stretch their wings. Their feathers are worn off, and their bodies become bruised from constantly

scraping against their wire enclosures. The birds are typically confined in these intolerable conditions for more than a year.

Laws restricting extreme confinement help prevent suffering. However, they are often too modest, only requiring that animals have at least enough space to turn around and stretch their limbs. Perhaps more significantly, however, these laws are positive signs of our society's changing attitudes and growing concern about the intolerable abuses endured by farm animals. Still, agribusiness is accustomed to operating without oversight or accountability. It has fought intensely against basic humane legislation, including multiple court challenges and appeals all the way up to the US Supreme Court.

Animal agriculture is deeply entrenched in Washington, DC, and in state legislatures. It has wielded undue political influence to gain preferential access to increasingly scarce resources like land and water, as well as to exempt itself from labor, environmental, and other laws. Agribusiness has actively fought to silence critics, passing "ag-gag" laws to prevent investigations that expose its misconduct (Cowan, 2016). They want to conceal unjust and inhumane practices because they are upsetting to consumers and inconsistent with societal values. In stark contrast to factory farms, which don't want people thinking about farm animals, sanctuaries are open to the public and encourage visitors to meet and get to know these animals as individuals.

In addition to removing animals from the meat grinder—literally—farm sanctuaries encourage empathy and a deeper understanding of cows, pigs, chickens, and other animals. These are living, feeling beings who experience pain and joy and who form memories and develop relationships with humans and other animals. For decades, a sign at the entrance to Farm Sanctuary has encouraged visitors to respect our sanctuary residents who exist for their own purposes, not for human entertainment. It says: "You are now entering the animals' sanctuary. Please remember that you are a guest in their home."

Terms like "sanctuary" and "home" are meaningful. They could also apply to our shared home, Earth. Our vision at Farm Sanctuary is for sanctuary to replace slaughter, and we can push for incremental steps toward creating an idealized place like the Garden of Eden in the Bible—a paradise where it's worth noting that animals were our companions and plants were our food.

Humans are social animals. We tend to follow others' cues and do what we see others do. Most of us grew up eating animals without thinking very much about it. We saw people around us eating animals and picked up the habit.

Seeing other people interacting with cows, pigs, chickens, and other farm animals as friends can spur us to rethink our perceptions, assumptions, and behaviors. Just as callousness and disregard for farm animals have been normalized in societies where factory farming is prevalent, seeds of kindness can also spread. By modeling mutually beneficial relationships and empathy with these animals, sanctuaries can play an important role in influencing culture. We can learn to relate to and understand these animals' traumas, joys, and lived experiences. This can lead to personal epiphanies and increased awareness about the consequences of our food choices.

Farm sanctuaries are often located on agricultural lands that can be used to provide models for plant-based agriculture. It is important to demonstrate how we can sustain ourselves on Earth through a more resilient food system that doesn't exploit animals. While initially symbolic, these efforts could grow from the ground up into a widespread, geographically diverse network that is part of a broader food system shift away from industrialized animal agriculture. Besides helping mitigate the need to rescue animals in the first place, shifting to plant-based farming would also benefit diverse ecosystems and all life on Earth.

Providing shelter to victims of factory farming is an acute response to a chronic problem, so we need to work on broader structural reforms. Sanctuaries can leverage our land and other assets to develop viable solutions to pressing issues. Taking a more holistic approach will also enable farm sanctuaries to create diverse income streams in agriculture, hospitality, education, and related enterprises that don't rely on charitable donations. Plus, there are vast government resources, both funding and technical assistance, available from the USDA for farming operations (EWG, [n.d.](#)).

Billions of public dollars are allocated to agriculture and food programs every year, but most of it is used to support animal agriculture, including the crops grown to feed animals. Most direct-to-farmer subsidies support feed or fuel crops such as corn (Merrill & Leatherby, 2018). Policymakers have unwittingly prioritized agribusiness' interests at the public's expense. Like mainstream consumers, lawmakers have been subjected to the advertising and influence of Big Ag and erroneously believe that meat, milk, and eggs are a normal and beneficial part of the human diet.

Further, policymakers, like much of society, incorrectly assume that factory farms produce food efficiently. We need to challenge these myths and exemplify how humans can live well without consuming animal products. Farm sanctuaries are very well-positioned to do this.

By growing food and engaging with the USDA, sanctuaries can reach new audiences, including farmers, and gain access to financial and other resources. This also facilitates exchanges of ideas that can educate local, state, and federal agents about the benefits of a diversified plant-based food system. Applying for institutional and government support influences the funding ecosystem and can tilt public resources toward plant-based agriculture. For decades, factory farms have shown up to claim government assistance. Sanctuaries can too and can actively shift resources by engaging with government officials whose job involves giving grants and other support to farmers.

Animal agriculture uses 10 times more land than plant-based agriculture in the United States (Smith, 2019) and receives unwarranted benefits from tax breaks and other financial incentives. Our industrialized animal-based model has taken advantage of preferential access to land, water, and other resources, which it often obtains at below-market value (Grey & Associates Limited, 2010). It is not held accountable for externalities and the harm it causes to the environment, people, or other animals.

Government programs have funded shortsighted, irresponsible practices that cause ecological destruction and then require additional public funding to mitigate these harms. The extent to which agribusiness profits are underwritten by public

largesse was illustrated in a study that found that 73% of US dairy industry income came from government programs (Chiesa, 2019).

Animal agriculture demands excessive amounts of land to graze farm animals and grow crops to feed them, leading to the loss of forests, wetlands, and other native ecosystems and wildlife habitats around the globe (Steinfeld et al., 2006). It is a leading contributor to the Earth's most significant ecological threats, including the loss of biodiversity and the climate crisis (Tilman et al., 2017; Tilman & Clark, 2014; Dellasala et al., 2018). Scientists are now warning of unprecedented levels of species extinction (Stuart & Gunderson, 2020; Ritchie, 2022). A survey of the mammals on Earth found that 96% are either human or domesticated, while only 4% live in the wild (Crutzen, 2021).

We live amidst the sixth great extinction in a geological period called the Anthropocene (Smith, 2017), which is marked by human dominance on the planet. It will be memorialized in the fossil record with the ubiquitous presence of plastic and chicken bones. Shifting to a plant-based food system is critically important if we hope to heal our planet and protect habitats for diverse species.

Farm sanctuaries can help protect nature, biological diversity, and wild species by engaging in sustainable and regenerative management practices. In some cases, this is as simple as leaving wetlands and other natural areas alone and nurturing the well-being of native ecosystems where diverse species can thrive. It can also involve managing shelter areas more holistically so that they are not overgrazed or otherwise denuded, which is harmful to the well-being of domesticated animals and the environment. Farm sanctuaries can also become models of resilience and self-reliance by growing food for humans and other animals, including through well-managed pastures and gardens, and by growing annual and perennial crops in eco-friendly ways. We have organic apple trees at Farm Sanctuary in Watkins Glen, New York, for example, whose fruit is eaten by humans and other animals.

By implementing regenerative, organic, and permaculture practices and creating mutually beneficial relationships between plants, animals, and the earth, farm sanctuaries can present examples of how we can live and nourish ourselves without causing unnecessary harm.

Unlike factory farms and slaughterhouses, which are violent and stressful, and where workers suffer from high rates of injury (Navarro et al., 2010), sanctuaries can embody peace and healing. Instead of exploiting and killing animals and deadening our empathy, humans can delight in seeing happy animals free to run, play, and frolic. Sharing such joy in sanctuary communities enlivens our humanity. The contrast between visiting sanctuaries and visiting slaughterhouses is palpable. Sanctuaries nurture life, while slaughterhouses take it.

Along with the inspiration from living with other animals, sanctuaries can educate visitors and provide tools to support compassionate vegan living. These can include culinary training programs and techniques for preparing healthy, satisfying food, and imparting knowledge about foraging and farming.

Humans depend on the earth for sustenance, and, for thousands of years, most of us were engaged in cultivating and gathering our food. These skills have atrophied, especially in affluent societies where people are disconnected from nature. This has

contributed to our dependency on an industrial food system that is making us sick. Farm sanctuaries can reconnect us with the land and the source of our food through initiatives including hands-on training, “pick your own” operations, on-site farmers markets, and “farm-to-table” events. This can help sanctuaries reach new audiences, especially with a growing consumer interest in knowing where their food comes from and burgeoning opportunities in agritourism and ecotourism.

Engaging in farming elevates farm sanctuaries’ credibility and voice in more extensive conversations about our food system. It generates empirical knowledge and experience that can inform advocacy efforts and policy reforms. It can also enhance our ability to counter assumptions held by farmers—including the belief that animals must be used for farms to be economically viable. Unfortunately, animal exploitation is also being encouraged on regenerative farms and in urban settings where systems that use fish, birds, or other animals are now being marketed. By implementing healthy and responsible agricultural practices, sanctuaries can demonstrate approaches to nourishing ourselves without exploiting other animals.

We can learn from traditional and indigenous foodways that are predominantly plant-based. These have nourished diverse human societies around the globe for millennia and can present models for the future (Sarkar et al., 2020; Calo & Petersen-Rockney, 2018). Farm sanctuaries can play a role in recognizing and encouraging these sustainable techniques while learning from and supporting the skilled farmers who practice them. Government and other institutions need to invest and help build infrastructure to support this kind of agriculture.

I believe conscientious farmers, whether conventional or progressive, can collaborate with sanctuaries in mutually beneficial ways to grow food and nourish our populace without causing unnecessary harm. A significant obstacle to farmers, especially new farmers, is access to land (Figueroa & Penniman, 2020; Farm Service Agency, n.d.), and sanctuaries with extra acres can play a vital role in helping fill this gap. By engaging with farmers, we have important opportunities for learning, cross-pollination, and increased respect and understanding.

Vegans and farmers have often been at odds, despite sharing common interests around combatting the predatory, cruel, and extractive practices of industrial animal agriculture. Collaborations can help develop farming skills and present opportunities to grow and harvest food in sanctuaries, thus possibly increasing engagement of urban and suburban audiences connected to the sanctuary movement.

Meanwhile, the vegan movement can bring different perspectives and ideas as well as economic opportunities to rural areas, thus benefiting all involved. There is much common ground in a nascent food movement to replace factory farming with a more just, diversified, community-oriented system that supports the well-being of people, other animals, and the planet.

The farm sanctuary movement has roots in animal protection and has historically engaged with citizens concerned with ending animal suffering. Sanctuaries can benefit from engaging broader and more diverse audiences, including people who’ve grown up in agriculture and who have farming experience.

While it is common for children raised on farms to be acculturated to exploiting animals and seeing them as commodities, some farm kids have become vegetarian

or vegan because they were upset by the cruelty they witnessed. In some cases, youth programs requiring children to raise animals and then send them to slaughter have had profound impacts on young people who befriended sheep, cows, pigs, and other animals and didn't want them to be killed.

It is also important to acknowledge that people growing up in metropolitan areas have also been acculturated to eating animals without thinking very much about it. Their primary experience is eating packaged products or prepared meals containing dead animals instead of directly interacting with living beings. As in rural areas, there are social pressures to adopt practices and beliefs that conform to an inhumane status quo.

We can engage with diverse urban, suburban, and rural communities to unite around common interests and goals by advocating for meaningful food system reforms. Agribusiness and government policies have promoted extractive techniques to maximize short-term profits, undermining human health and ecological sustainability. We need to challenge this.

Many farmers have personally witnessed and experienced the harms of industrial animal agriculture, and some are interested in exploring alternatives. People with farming backgrounds can share firsthand experiences, and they have skills that can be employed at sanctuaries. Individuals with roots in agriculture can facilitate connections, shared understanding, and support in farming communities, which, along with their knowledge of agriculture, can help build new opportunities in a plant-based food system. They can play a pivotal role in helping sanctuaries grow food and manage farmland in eco-friendly and sustainable ways.

Our resource-intensive, petrochemical-dependent food system is harmful to communities and our nation as a whole, but it has been unwisely supported by USDA's vast network of federal, state, and county agents. Conscientious farmers and sanctuaries can engage the same network and utilize its funding and other resources to develop and promote more sustainable practices. USDA conservation programs are available to help protect native habitats and biodiversity, mitigate invasive species and soil erosion, conserve water and other resources, and build healthy prairies and soils (Schulze et al., 2018). By interfacing with the USDA and other agricultural institutions, we can start instilling new ideas and approaches to help reshape farm policies.

Instead of continuing to bolster factory farming, government support can incrementally be shifted toward diversified, community-oriented, plant-based agriculture. Instead of concentrating power into fewer hands, we can feed ourselves by distributing means of production across a diverse network and create scale productivity through replication instead of consolidation.

Public funding is supposed to serve the common good, but it has done the opposite in the case of our food system. Policymakers in Washington, DC, and across the United States have irrationally incentivized destructive and wasteful practices to produce food that makes us sick. Factory farming operatives with their eyes on short-term profits even joke about "farming the government." The industry is deeply entrenched in legislative bodies and academic institutions where they have advanced self-serving policies and narratives to consolidate power and create the unjust

system we have today. This has hurt small and more diversified farms, agricultural communities, and society at large.

Sanctuaries and conscientious farmers can team up to engage effectively with policymakers and institutions to educate them about factory farming's negative impacts and to lobby for investments in healthier, more humane, and sustainable farming. One important aspect of this involves farm sanctuaries showing up and participating in government programs and applying for grants and other public assistance. Government dollars should enable practices that serve the common good, including preserving water, ecosystems, biodiversity, and other precious resources, and growing healthy and nourishing plant foods. By asking for support and demonstrating the demand for more just and sustainable farming practices, we can incrementally reshape the subsidy ecosystem.

Industrialized animal farming operates outside the bounds of acceptable conduct, depends on a lack of transparency and accountability, and actively promotes misleading narratives. Their sophisticated marketing campaigns have contributed to inaccurate ideas about the benefits of eating meat, dairy, and eggs and to the false notion that factory farming is the most efficient way to feed our nation and the world. Such assumptions have allowed well-intentioned government programs to be hijacked as a result. USDA programs intended to promote good health and proper nutrition are too heavy in meat and dairy, a diet that is associated with chronic disease (U.S. Department of Agriculture, 2017). Meanwhile, public funding that's supposed to protect the environment has been appropriated and used by factory farms to manage the excessive quantities of excrement they generate by crowding thousands of animals in filthy warehouses. Government programs incentivize the use of vast expanses of farmland and inordinate amounts of energy and other resources to grow feed crops for farm animals when it makes more sense to grow food directly for human consumption (GRAIN, 2022).

Besides normalizing and encouraging the habit of eating animals, agribusiness marketers are masterful in their Orwellian greenwashing of toxic practices (Murray et al., 2017). One example that has garnered enormous capital as well as positive media coverage for both factory farms and the petroleum industry claims to reduce global greenhouse gas emissions by using excrement from factory farms to make energy (Erickson et al., 2023; Rabensteiner et al., 2015), even though most of the greenhouse gas emissions occur earlier in the process (Pender, 2019). We can eliminate vast quantities of noxious waste and greenhouse gas emissions—and lessen the harm caused by growing millions of acres of feed crops with petrochemical fertilizers and biocides—by growing plants directly for human consumption instead of growing crops to feed animals in concentrated animal feeding operations (CAFOs).

Factory farming is dominant because it has consistently invested time and energy to entrench its agenda and collect on government largesse. Plant-based and veganic farms can do the same. A few USDA grants have already been given to farm sanctuaries and alternative protein research, and the USDA has even published stories mentioning “veganic” farming and the value of using plant foods as medicine (Lyon, 2017). We need to encourage and expand fledgling USDA programs that are beginning to incentivize the consumption of more fruits and vegetables (Gallo, 2021).

There are also new efforts to support urban farming and acknowledge how these farms can provide healthy food as well as a peaceful respite in stressful environments. These are important and positive steps, but so much more is necessary. Sanctuaries, farmers, and conscientious consumers can be powerful allies working together to defund and disincentivize factory farming and to urge government resources to be allocated more equitably to a larger number of more responsible and diversified operations.

We can feed more people with less land and fewer resources by eating plants instead of animals, especially when we consider that plant-based farming requires a fraction of the acreage required to raise and feed farm animals (Gerbens-Leenes et al., 2013). In the United States, 10 times more land goes to animal agriculture than to plant-based farming (Smith, 2019). Raising animals for food also uses more water, fossil fuels, and other resources that are becoming increasingly scarce (Steinfeld et al., 2006; Hobbs, 2020).

Farm sanctuaries can play a positive role in transitioning farms and land that had been used to exploit animals—helping redefine our relationships with other animals and also transforming our relationships with the earth and our food. Farm Sanctuary’s location in Watkins Glen, New York, had previously been used to raise and slaughter animals, and, now, animals are allowed to live there in peace and freedom. Before acquiring our farm in New York State in 1989, we operated on donated space on a tofu farm in Pennsylvania, using land and buildings that had previously been a dairy farm. We removed stanchions in a barn that had confined cows to open up space, and we turned the milking parlor into an education center. By their very nature, farm sanctuaries are transformational.

The fragility of our industrial food supply was exposed to disruptions during the COVID-19 pandemic, which, along with growing uncertainties related to the climate crisis and resource constraints, have increased interest in a more resilient and sustainable agriculture system (Steinhauer, 2020). There is also a burgeoning popular desire to reconnect with nature and the source of our food, including among urban dwellers who are moving to farming areas. Farm sanctuaries are uniquely positioned to tap these sentiments and convene farmers and citizens from all walks of life to manifest alternatives to industrial animal agriculture. Sanctuaries can become working, learning, and evolving models, “walking the talk” of responsible, mindful, and healthy ways of living. This is particularly relevant in the Anthropocene age with *Homo sapiens*’ deleterious environmental impact and our expansive ecological footprint.

In addition to growing food in traditional farming areas, we can also grow a significant amount of food in urban and suburban areas. During World War II, “victory gardens” produced 40% of our nation’s produce (Lawson, 2014)—and I’m excited about today’s nascent “food-not-lawns” movement, which is encouraging people to reenvision tens of millions of acres currently being kept as lawns and to grow nutritional food instead (Kaufman & Lohr, 2022; Milesi et al., 2005). It doesn’t make sense that lawns occupy more acres than we use to grow fruits and vegetables in the United States, especially given our unfulfilled need for fresh produce. Rather than spending time and energy mowing grass, gardeners and residents could plant, tend,

and harvest fruits, vegetables, and other crops that would travel mere feet from farm to table. Producing food this way could also yield surpluses that could be sold, bartered, or given away in the neighborhood, providing fresh, healthy nourishment and building connections in the community (Wolch et al., 2014).

Farm sanctuaries can engage with educational and community institutions to provide training and skills for living sustainably and nourishing our bodies and souls through gardening and other agricultural endeavors. Natural areas and green spaces support personal and societal health and help mitigate summer heat and other stresses in crowded cities. These can be encouraged through urban farming and similar efforts and supported by farmer-oriented youth programs like 4-H and Future Farmers of America. In addition to producing fresh local food, community-based agriculture can also embody resilience and efficiency, including composting organic waste and recycling nutrients in the soil to build fertility and lower greenhouse gas emissions (Brinkley & Vitiello, 2014).

Some municipalities are now creating food forests and using empty lots to grow food, which is positive and can support food access and nutritional security. Farming in urban areas is mainly plant-based, but, unfortunately, some operations purchase chickens or other animals to exploit. This is concerning since problems occur whenever animals are considered mainly to be a food source. On numerous occasions, farm sanctuaries have been called to care for and help animals from backyard farms and other so-called humane operations. Engaging with urban, regenerative, and other farmers allows us to share our perspective and provide a much-needed voice in discouraging animal exploitation and hopefully lessening the need to rescue animals.

Municipal ordinances and regulations have been enacted to address if and how farm animals can be kept, and sometimes they restrict slaughter (Cornell University College of Veterinary Medicine, n.d.). Such laws and policies could go further and require that all animals within the jurisdiction be treated as companions (i.e., friends, not food) and be provided the space, conditions, and care they need to thrive. Local policies could also do more to incentivize growing plant foods by providing easier access to land, water, and other resources. With appropriate space and conditions for rescued animals, it might be possible for sanctuaries to care for animals as well as to grow food and encourage compassionate vegan living in nonrural locations. Some entities, called micro-sanctuaries, are already doing this.

Along with challenging industrial agriculture and promoting veganism, farm sanctuaries can play a critical role in addressing assumptions about pigs, chickens, cows, goats, and other so-called “food animals” exploited on organic and purportedly “humane” farms, which are supposed to offer preferable alternatives to factory farming. Consumers are being misled by a growing number of agricultural endeavors selling animal products, often at premium prices, with exaggerated claims about their virtues and sustainability. In addition, these farms commonly perpetuate the myth that it is necessary to use animals in agricultural production. Sanctuaries are well-positioned to educate consumers about misleading marketing claims and to model the efficacy of growing food and nourishing ourselves without exploiting other animals.

One of Farm Sanctuary’s founding goals was to end “factory farming,” which we have defined as a system that “commodifies sentient life and the natural world.” This definition would also apply to animals who are treated less cruelly as long as they are still regarded as sellable or consumable commodities. Ultimately, when you think about it, the words “humane” and “slaughter” don’t fit well together. If we are engaged in unnecessary killing, we are still causing unnecessary harm, and if we can live well without causing unnecessary harm, why wouldn’t we? All of us eat, and how we nourish ourselves has profound consequences. The immense cruelty and destruction caused by industrial animal agriculture is undeniable, and we are all affected. Farm sanctuaries can inspire us to transform relationships from extraction to mutuality and to live more harmoniously with other animals, the earth, and our own humanity. Most people want to avoid causing unnecessary harm, but, unfortunately, as a species, we haven’t lived up to our potential or according to our better instincts.

I hope we will reflect and learn from our mistakes and ultimately take steps to live in better alignment with our values and interests. We can evolve and aspire to cocreate a more inclusive, vibrant, and peaceful world where everyone lives with agency, grace, and dignity. Farm sanctuaries can serve as catalysts for such a world by creating actual spaces of healing where human and nonhuman animals can live together and thrive.

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Chapter 3

Sanctuary Communities



Sue Donaldson

In a world where humans subject non-human animals to overwhelming violence and deprivation, an important dimension of advocacy involves creating “sanctuary” spaces for animals. But what are animal “sanctuaries”, and what role can they play in advancing justice for non-human animals?

Animal sanctuary takes multiple forms. Consider, for example, wildlife refuges that protect some species of wild animals and their habitats¹; sanctuaries for animals “retired” from research facilities, zoos, and the entertainment industry; and farmed animal sanctuaries for cows, pigs, chickens, and others who escape the usual fate of confinement, slaughter, and commodification as food and clothing. There are also rescue and rehabilitation sanctuaries that provide temporary refuge and care to injured wild animals until they can safely return to their native habitats. There are sanctuaries for abandoned animal companions like parrots, rabbits, cats, dogs, horses, and others. Typically, these also operate as temporary refuges until adoptive

¹ But note that wildlife “refuge” is often a misnomer. Many so-called wildlife refuges engage in extensive violence against some animals (euphemistically called “management”) to protect other, more favoured species, and many function quite intentionally as stocking zones to produce animals for hunters to kill.

This chapter is a revised version of “Refuges d’animaux”, which appeared in *La pensée végétale: 50 regards sur la condition animale*. Renan Larue (ed). Paris: Presses Universitaires de France, 2020. It began as a talk called “Co-citizens in Resistance, Community Building and Knowledge Formation” delivered at the “Sanctuary: Reflecting on Refuge” conference at Wesleyan University in 2017.

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homes can be found. And there are urban sanctuaries for free-roaming cats, dogs, donkeys, and other city residents, providing food, shelter, and medical care on an ongoing “as-needs” basis for animals who come and go.

In the human context, the term “sanctuary” is used in at least two different senses (apart from its religious meaning). It can refer to a temporary requirement for refuge by individuals fleeing violence or upheaval caused by war, natural disaster, state persecution, or breakdown of the rule of law. In such cases, there is a reasonable hope and expectation that individuals will be restored to their home community within a matter of time, perhaps months or years (or failing that, be integrated into a new community). But the need for sanctuary isn’t always about response to a temporary upheaval and eventual return to a stable and peaceful status quo ante. There is also a more political or resistance-based conception of sanctuary, which responds to ongoing and entrenched structures of exclusion, injustice, and oppression. This kind of sanctuary, in the form of safe spaces or solidarity networks, typically provides unofficial social, economic, and legal assistance to members of oppressed or excluded groups and engages in political advocacy on their behalf. Examples include sanctuary cities and support networks for undocumented migrants and/or members of racialized and other oppressed minorities.

A similar distinction between two types of sanctuaries is helpful and relevant in the animal case. Many existing animal sanctuaries focus on temporary care for injured wild animals or abandoned animal companions, with the hope of restoring them to a home elsewhere. However, I would argue that it is the second sense of sanctuary—as a political response to structural injustice and normalized violence—which is the most relevant for advancing the cause of interspecies justice. Animal oppression and exploitation are routine across all human societies, not a temporary disruption or destabilization of heretofore peaceful relations. Animal sanctuaries, of whatever kind, exist within a larger and ongoing “topography of enmity” (Pachirat, 2018, p. 339), and this is particularly true for the billions of farmed animals (on an annual basis) whose brief, tormented lives are snuffed out in what Barbara Noske first described as the “animal-industrial complex” (Noske, 1989, p. 20). While animal shelters and sanctuaries that provide temporary refuge often do heroic work in caring for abandoned or injured animals, and in this way bear witness to the value of animal lives, their work leaves largely untouched the structures that render animals vulnerable and expendable. As in the human case, however, there are some animal sanctuaries that see themselves as sites of political action. This chapter will focus on the case of sanctuaries for (formerly) farmed animals and the multi-dimensional role these communities play not just as spaces of refuge and care but also as spaces for advocacy, education, and resistance and, most importantly, as possible incubators for new kinds of relationships between human and non-human animals and as seedbeds of interspecies justice and democratic community.

Since the creation of Farm Sanctuary in New York State in 1986 (see Bauer, this volume), hundreds of similar sanctuaries have been established around the world, offering a safe and caring “forever home” to a diversity of farmed animals who escape during transport to slaughter, or are seized during cruelty investigations, or are liberated in open rescues and by other means. While the total number saved may

be a drop in the bucket in the larger sea of violence, it represents thousands of individual lives—lives that mean everything to those who are rescued. For these animals, finding their way to sanctuary with humans who provide permanent refuge, food, shelter, medical attention, and loving care is like winning the lottery. And this activity of organized care for individual animals is a powerful and ongoing rebuke to the larger human society which discounts their lives utterly.

Moreover, with decades of experience, the farm sanctuary movement is making significant contributions to human knowledge about good care for farmed animals, especially regarding their species-specific physical and psychological needs, most particularly medical treatment for acute injury or infection; for managing chronic disease, disability, and the challenges of aging; and for responding to psychological trauma. Traditional vets know remarkably little about healing farmed animals. They work for industries in which injured, diseased, traumatized, and disabled animals are usually killed or left to die rather than receiving treatment. And since most animals are slaughtered in infancy/youth, vets don't have occasion to treat goats or pigs with cancer, cataracts, or chronic disease; nor do they learn to respond to the psychological trauma experienced by cows forcibly separated from their babies or sheep who've watched their friends being killed.

In addition to providing care and healing, many sanctuaries also engage in advocacy and education—working for legal transformation of animal agriculture, educating the public about the lives of farmed animals, supporting vegan outreach, challenging anthropocentric and human supremacist ideologies, and so on. This emphasis on advocacy and education is, in some ways, an obvious extension of the rescue and care work of sanctuaries—a way of trying to change the system, not simply attend to its endless supply of victims. But there are also risks, especially if sanctuaries end up compromising the agency and privacy of animal residents in the service of maximizing the educational impact on human visitors—e.g. by requiring animal residents to be visible and available to human visitors or by organizing their lives to optimize pedagogical and advocacy aims, not the interests or preferences of the animals themselves (Donaldson & Kymlicka, 2015). Elan Abrell describes the animal residents of many animal sanctuaries as “sacrificial citizens,” whose rights are regularly subordinated to human advocacy goals and management exigencies (Abrell, 2016, p. v).

These structural dangers are well recognized in the human sanctuary movement (and in care institutions more generally), which therefore seek to avoid asymmetrical relationships between saviours and victims (or caregivers/recipients; protectors/protected). Human sanctuary movements often disavow this kind of “pastoralism” in favour of a more solidaristic and non-hierarchical model that centres the agency and citizenship of individuals requiring sanctuary. In my view, the same principle should apply to animal sanctuaries. A degree of pastoralism may be tolerable in cases of temporary refuge if the animals will soon be returned or restored to a community in which their agency and rights are respected. But in most farmed animal sanctuaries, the animal residents will spend the rest of their lives, possibly decades, in situ. This means that the unquestioned and unilateral power of human saviours, rescuers, caregivers, and managers over animal victims, rescues, or wards must be

questioned. Sanctuaries should conceive of themselves not just as refuges but also as communities of equals—communities in which animals are fully respected as agents with their own knowledge, skills, norms, and preferences about everything from how to shape the physical environment to social practices and the organization of community life. They should be full citizens of these communities, in other words, not “sacrificial” citizens.

To say that the rights and freedoms of permanent animal residents should not be sacrificed in pursuit of human advocacy projects on their behalf is not to say that sanctuaries cannot play an important educational role in the animal rights movement. On the contrary, I would argue that they can play a vital role as seedbeds of new forms of interspecies relationship and society—places where humans and animals can learn to do democracy together and chart a new path forward (Donaldson & Kymlicka, 2015; Meijer, 2021). After all, even if/when the “topography of enmity” is transformed, many domesticated animals will continue to live in interdependent relationships with humans for the foreseeable future (although their descendants may be able to choose other options). A central task for the animal rights movement, therefore, is to explore what kinds of relationships these animals might want to have with us, and sanctuaries can play a vital role here. For example, some animals, or animal communities, might look to humans for health care, or protection from violence, or emergency food provision but otherwise prefer to organize their lives and communities for themselves. Others might prefer much closer involvement with humans—participating in play, or co-design of spaces, or aesthetic creation, or development of interspecies communication.

Indeed, sanctuaries for domesticated animals may be in a unique position to inspire social transformation by prefiguring more egalitarian interspecies relations. The focus on relationality is key—on process and new “starting points” (Meijer, 2021), not specifying outcomes. Sanctuary communities present the opportunity to move beyond pastoralism and to learn with and from animals about new non-hierarchical forms of interaction, deliberation, and response and how to share power and decision-making. Consider the example of co-designing a public space. In the human case, citizens can contribute to the design of public spaces in multiple ways. For example, city planners take note of “desire lines”—the unofficial pathways that humans will forge to cut across a train track or a make a more convenient route through a park. These human walkers don’t intend to send a message to planners, but their desire lines can be read and the space redesigned in response (e.g. by adding a pedestrian bridge over the tracks). In other cases, city planners might undertake a deliberate consultation with members of the public, offering different visions of a new public building or space, making modifications based on feedback, then putting it to a vote. And ultimately, of course, humans can elect representatives who offer different visions of community life and public space.

Similar processes are possible with animals when humans take seriously their claims as users and creators of public space. Sometimes their desires are obvious (e.g. a short cut trampled from A to B). Other times, animal’s preferences or purposes might take more time and patience to discern. Imagine a group of goats who keep jumping a sanctuary fence at the same location, next to a busy highway where

one goat has been struck and killed by a vehicle. Why are the goats jumping the fence? Careful observation reveals that they are attracted by a grove of mastic trees, which they may be seeking out as treatment for gastrointestinal nematodes. To resolve the issue, mastic shrubs are planted within the sanctuary so that the goats can self-mediate at will, avoiding the dangerous trip near the highway. This is a “desire lines” example, in which the goats aren’t aware that they are influencing design decisions. But animals can also be directly consulted—presented with options which they then choose amongst or modify (like range of nesting box styles) or by learning to manipulate symbols and touch pads to make requests. With practice, many animals can learn to learn—i.e. they can get better at understanding choice situations and taking decisions (Mejdell et al., 2016). When it comes to scaling up to more collective decision-making, animals may be able to participate in choosing human representatives (Donaldson, 2020). And careful attention to how social animals make group decisions (leadership structures, voting behaviours) means that humans can observe, or consult, groups or communities of animals, not just individuals (Kerth, 2010; Sueur et al., 2021).

Perhaps, most crucially, animals can learn that humans are intelligent beings, capable of communicating and responding appropriately, and not just unresponsive idiots or tyrannical bullies. And some animals may come to see us as worth engaging with and worth sharing knowledge or ideas or desires with. Barbara Smuts describes this process beautifully, recounting the transformation in her treatment by the baboon community she was studying once she abandoned her role as an inert and objective scientific observer and instead learned some basic baboon social and communicative norms and started responding appropriately (Smuts, 2001). There is no way of knowing in advance the possibilities, or limits, once we begin this process in which humans and animals recognize that they are in a mutually responsive relationship in which communication, negotiation, and accommodation are possible.

Some readers will be anxious about the very idea of humans learning from animals about how better to live together. All too often, animals have been instrumentalized in the pursuit of human knowledge. From classroom chicks and hamsters to invasive laboratory experiments, animals are widely seen as resources to stimulate human curiosity and learning. The academic fascination with animals as “good to think [with]”, in the words of Claude Lévi-Strauss (1964, p. 89), perpetuates the idea that animals exist to further human ends. Only a tiny percentage of learning from and about animals, especially farmed animals, has been motivated by a desire to understand questions that animals themselves might ask (Despret, 2016), to learn what matters to them, what they might want from humans, and their ideas about how we might live together (or apart) more justly. Even research that claims to focus on animal agency in mutualistic relationships (Porcher & Schmitt, 2012; Haraway, 2007) often remains wedded to assumptions about domesticated animals’ lives being locked into forms of human-defined use (e.g. on the farm, in sport, in the lab). Great caution is required to ensure that sanctuaries don’t become yet another site where human interests define the purposes and parameters of learning with, from, and about animals.

So what would it mean to learn with and from animals in sanctuaries in genuinely respectful and mutual terms? Animal ethicists, geographers, and ethologists have begun to address this question. One crucial first step is to challenge the current framework of “research ethics” that governs academic research involving animals in universities and other institutions. Researchers whose works involve animals are required to get “ethics approval” (by institutional review boards) for their studies, but the current paradigm is premised on the permissibility of human exploitation of animals in the pursuit of knowledge—so much so that this basic assumption goes completely unstated. The only questions asked are about whether the pain and suffering that animals will be subjected to are in service of a scientific goal. As many critics have noted, this is in stark contrast to the research ethics frameworks designed to protect human research subjects, which are based on bedrock ethical principles of non-maleficence, beneficence, informed consent/assent/dissent, fair distribution of benefits of research, and so on (Collard & Gillespie, 2015; Van Patter & Blattner, 2020). An essential task, therefore, is to think about how these bedrock principles might apply to the process of learning with and from animals in sanctuaries. (For example, as concerns dissent/assent/consent, imagine a sanctuary where, on very hot days, large cooling sprinklers are activated in a designated area. Individual animals can dissent from using the cooling system by simply walking away, as long as they have the freedom to do so. If they know they are free to leave, but choose to stay, then they are assenting to participation. If this activity is repeated regularly such that an animal comes to know and anticipate it, racing down the path to make sure she doesn’t miss out, her participation can be described in terms of informed consent.) The task of finding appropriate ways of conceptualizing values like consent or benefit or vulnerability when it comes to learning with/from animals in sanctuaries (and elsewhere) is in its infancy, as is the development of basic human capacities of imagination, interpretation, and communication required to implement them.

Challenging the reigning research paradigm is a crucial step in challenging human exceptionalism and entitlement, but it risks retaining the structure of pastoralism—in this case, of researcher/research subject. A more profound challenge is to think beyond an *extractive research* paradigm of learning, in which learning with/from animals in sanctuaries is primarily a process for generating or extracting knowledge to guide human treatment of, and decision-making about, animals (Van Patter et al., 2021). The paradigm instead should be learning as a collaborative endeavour and a key dimension of the democratic process of sharing power. From pastoralism to citizenship, in other words. Instead of outside researchers descending on communities, conducting studies, and departing again, the goal is to integrate mutual learning and research into sanctuary community life on an ongoing basis, as a process that co-citizens engage in together. Participatory ideas of learning, deliberating, creating, and imagining with co-citizens sit at the heart of contemporary ideas of democracy and are especially important for citizens who cannot vote on abstract conceptions of the good but can share experience, knowledge, and decision power through embedded, ongoing, and trusting relationships (Silvers & Francis, 2005).

Looked at this way, sanctuaries could become more like “experiments in living” (Anderson, 1991, p. 4.), for exploring ideas of the good (interspecies) life rather than conforming to, or exploring, existing human ideas about animals. Rather than being places where humans refine and implement their ideas about who animals are and what they need, they would be places where humans and animals explore ideas of community and the public good by living together day to day, observing, engaging, responding, and being directed by one another.² Animals might take part in these explorations by asserting leadership, by making proposals or responding to or modifying proposals made by others (through their embodied actions), by engaging in refusal or resistance, by voting with their feet, by evolving and enforcing norms for keeping the peace, and so on (Donaldson & Kymlicka, 2015; Meijer, 2019; Blattner et al., 2020; Donaldson, 2020). In this re-framing, animal residents are themselves researchers/learners, figuring out each other and humans, learning how to care, and how to create community given the exigencies in which they find themselves. This requires that human participants in sanctuaries step back from the role of rescuer, caregiver, protector, knowledge-keeper, or researcher and learn to embrace identities like learner, follower, facilitator, translator (Meijer, 2019), friend (Scotton, 2017), neighbour, ally, and democratic co-citizen (Donaldson & Kymlicka, 2015).

What might these experiments in living reveal about how so-called “farm” animals negotiate power and decision-making and how they create and govern community? For example, might they develop the kind of fission-fusion decision-making dynamics that many wild animal communities use—e.g. spending part of the day in small groups which make decisions (e.g. where to graze) by consensus and at other times in larger groups which make decisions (e.g. where to bed down for the night or where to seek water during a time of drought) through deference to a leader or through quorum voting? (Kerth, 2010). That’s an exciting question, and glimpses of what could unfold are already emerging in sanctuary communities, despite the enormous limitations and ongoing dangers posed by the larger topography of enmity. It’s important not to idealize sanctuary communities, and what they can accomplish. Whether it’s their social composition, geographic location, physical set-up, financial footing, or countless other features, most existing sanctuaries simply struggle to survive—they are engaged in triage, with minimal resources, while dealing with the ongoing challenges of hostile humans, unsuitable geographical conditions, zoonoses, and other realities.³ Even under these challenging conditions, however,

²This isn’t to say that there is no role for visiting researchers but rather to propose that their research agendas be primarily shaped by the needs and decisions of the sanctuary community.

³For example, if animals wander outside the perimeter of the sanctuary, or if avian influenza or other disease outbreaks occur, then sanctuary residents might be seized and/or killed; most animal residents arrive at a sanctuary with histories of trauma and deprivation that affect the ways they can create community; most sanctuaries feel that they must limit the reproductive freedom of their residents given the constant pressure to take in more animals; many sanctuaries are economically precarious limiting the opportunities they can help create with residents; and sanctuaries are often located in geographic regions that are far from ideal for residents in terms of temperature, precipitation, terrain, flora, etc.

some sanctuary communities are taking important steps towards transforming the exercise of power in human–animal relationships.

And, what is already abundantly clear from these experiments in living is that, given some measure of freedom, support, and decision power, animals can and will devise ways of living together that exceed in every dimension the impoverished ideas that most humans have about “farm” animals, whether that concerns the activities they undertake (from creating mud wallows to collecting bedding materials); the forms of association they engage in (including many kinds of associations across species both domesticated and wild); the forms of care they practice (like adopting orphans or showing newcomers the ropes of sanctuary life); their polymorphous sexualities; their politics (decision-making, conflict resolution); the social roles and norms they develop; or the games, artwork (like elaborate nests), and rituals they create.⁴ This is knowledge, practice, and community that animals create in response to the novel affordances of their situation. And while it operates within biological and ecological constraints (as does human self-determination and creation), it is fundamentally social and cultural behaviour, which is not reducible to biological and behaviorist concepts like “breeding”, “natural instinct”, “conditioning” or “species-specific behaviour”—the traditional boxes to which humans have confined their ideas of animals.

This chapter has considered different meanings of animal sanctuary: as a place of refuge from violence; as a place where humans learn how better to care for animals; as a support network focused on political advocacy and resistance to the status quo; and as an alternative community or counter-public seeding new forms of inter-species relationship and community. These different dimensions are in some ways compatible and mutually reinforcing. But there are also tensions in the kinds of relationship ethos they instantiate. Are sanctuaries places where humans learn how to better look after and advocate for animals, while retaining all decision power in the roles of rescuer, protector, guardian, knower, researcher? Or are sanctuaries seedbeds of new kinds of democratic relationships and community in which animals take the lead in shaping what is possible in our relations going forward? This latter perspective, I believe, is crucial to help us initiate, imagine, and prefigure more just relationships and, finally, to start moving beyond anthropocentrism and the moral catastrophe of the animal–industrial complex.

⁴For example, one recent paper has explored the social roles and social norms, modification of space and place, negotiation of routine and practice, and the emergence of meaning and ritual, as co-created by the human and non-human residents of VINE sanctuary in Vermont, USA (Blattner et al., 2020). Other works describe animals’ ways of place-making and world-making at VINE (Van Patter et al., 2020), map the complex interconnections between the social, ecological, and physical environments (Shen, 2022), and explore VINE’s queer world of eros and friendship (Jones, 2014b). VINE is explicitly committed to animals’ self-determination and to being a community in which animals participate and make representations in the decision-making processes of the sanctuary (Jones, 2014a).

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Chapter 4

Can Animals Be Moral Agents? Why the Debate Matters for Animal Ethics



Virginie Simoneau-Gilbert

Non-human animals¹ have most often been described as entirely incapable of moral behaviour throughout the history of Western thought. In animal ethics, philosopher Tom Regan defines animals as moral patients, who are beings towards whom we have obligations, for instance, the obligation not to cause them unnecessary suffering, but who do not have obligations towards us. Indeed, Regan (1985) describes moral patients as lacking “the prerequisites that would enable them to control their own behavior in ways that would make them morally accountable for what they do” and “the ability to formulate, let alone bring to bear, moral principles in deliberating about which one among a number of possible acts it would be right or proper to perform” (p. 152). Moral patients cannot take right or wrong actions. Similarly, philosophers like James Rachel (1990) and Christine Korsgaard (2006) have argued that animals cannot meet the demands of morality.

As noted by philosopher Christiane Bailey (2014, p. 34), the moral patiency paradigm in animal ethics has been incredibly helpful in arguing in favour of two things: first, that individuals do not need to have moral duties to be rights holders and, second, that in order to have rights, individuals are not required to possess sophisticated moral capacities. That being said, describing animals *solely* as moral patients comes with significant conceptual and practical costs. As pointed out by philosophers Sue Donaldson and Will Kymlicka (2012), such a sharp distinction can support paternalistic theories of our moral obligations towards animals, according to which human beings are the only agents capable of making moral decisions and animals are merely the passive beneficiaries or victims of our actions.

¹Hereafter, animals.

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Starting from the 1980s, several philosophers have challenged this paradigm and have adopted definitions of moral agency that find their inspiration in sentimentalism and virtue ethics. These new philosophical developments have also been supported by extensive work in ethology on empathetic, cooperative, and normative behaviour in communities of apes, monkeys, cetaceans, canines, felines, rodents, and other species (Bekoff & Pierce, 2009, pp. 24–54). In this chapter, I will first provide a brief overview of the scientific literature on the moral capacities of animals (§1). Second, I will discuss the current state of the philosophical debate on animal morality (§2), before exploring its possible implications for animal ethics (§3), especially on the rights, well-being, and moral responsibility of animals.

Before examining the literature on animal morality in ethology and philosophy, I should specify that this chapter will not address the epistemological issues that can arise from studying animals' emotional and cognitive lives. For instance, I will not address the challenges posed by scientific sceptics such as Irwin Bernstein (2000), who argue that we should refrain from ascribing higher moral capacities to animals when their behaviour can be explained by lower, non-moral capacities. This rule is known as "Morgan's canon" or the law of parsimony in cognitive science. Similarly, this chapter will not address the question of whether we can derive firm conclusions about animals' capacities from anecdotes or whether we can use anthropomorphism as a method to know what it is like for a dog to feel empathy.² I will rather focus my attention on the animal morality debate and some of its implications for animal ethics.

Animals' Moral Capacities: An Overview of the Scientific Literature

Over the last few decades, several capacities essential to the exercise of moral agency have been observed in animals. One of them is moral emotions, which are a category of emotions that seem to bear some relationship with morality, although there is no univocal definition of moral emotions in the philosophical literature. These emotions can be moral because they can motivate us to act altruistically, lead us to take right or wrong actions, or enable us to see others' actions as right or wrong and states of affairs as good or bad (Cova et al., 2015; Mulligan, 2009). They usually include compassion, sympathy, guilt, shame, indignation, and moral pride, to name a few.

Evidence indicates that animals can feel these emotions. For instance, orangutans may feel moral pride and chimpanzees may feel guilt, although the evidence on these cognitively complex moral emotions is extremely scarce and anecdotal (Hart & Karmel, 1996 and de Waal, 1996, p. 109). Indeed, most animals may not be

²On the use of anthropomorphism, see de Waal, Frans B. (1996, p. 64) and de Waal, Frans (2006a, pp. 64–65).

capable of such sophisticated emotions, for moral pride and guilt require a very high degree of self-awareness and perhaps metacognition, which is the capacity to think about one's thoughts. For example, studies on guilt in dogs suggest that dogs' *apparently* guilty reactions could derive from fear of punishment or bad consequences rather than a genuine feeling of guilt (de Waal, 1996, p. 109).

Nevertheless, one emotion or emotional capacity has been studied in a wide range of animal species: empathy. In the debate on animal morality and the psychology literature, empathy is often defined as an emotional capacity rather than a unitary emotion like fear or joy. It is rather the capacity to feel and understand the emotions of others. Empathy is thus better understood as an umbrella concept that covers various reactions to the emotions of others, and these responses can be primary or more cognitively demanding. For example, Daniel Batson (2009) has identified eight definitions of empathy in the psychology literature. In the same vein, primatologist Frans de Waal (2009) has developed a Russian doll account of empathy in human and non-human animals that includes three degrees of sophistication: (1) emotional contagion, which consists of catching the emotions of others, (2) sympathetic concern, which requires a greater understanding of others' emotions and often comes with attempts to comfort the sufferer, and (3) perspective-taking, which involves imaginative capacities. Animals who are capable of more sophisticated empathy include great apes such as Kuni, a female bonobo who one day picked up an unconscious bird who had fallen in her zoo enclosure and tried to make it fly from the top of a tree, indicating that she was perhaps aware of the bird's normal behaviour and perspective (de Waal, 2009, p. 92). Other animals capable of empathy, either basic or sophisticated, include dolphins, elephants, rats, pigeons, and farmed animals such as chickens, pigs, and cows, among many species.³ The category of empathetic animals generally encompasses mammals and birds, as biologists suspect that empathy might have appeared in evolution to allow some animals to care for their young (de Waal, 1996, p. 109).

Animals also seem to respond to norms. The latter can be defined broadly as rules of behaviour that specify what actions are permissible, forbidden, and required (Monsó and Andrews, 2022). As argued by philosophers Susana Monsó and Kristin Andrews (2022), animals can be sensitive to various norms, such as obedience, reciprocity, care, social responsibility, and solidarity norms. For instance, animals like bats and several species of primates usually give more food or groom more frequently those individuals who reciprocate, which suggests that they are responsive to reciprocal exchanges of goods and services (de Waal, 2006a, p. 43). As noted by de Waal (1996, p. 106), domesticated animals like dogs can internalize norms and act in accordance with them.

Animals also seem to have expectations about how other individuals should treat them. For example, many animals engage in social play, an activity bounded by the rules of fair play, cooperation, and reciprocity. The list of animals who engage in

³On empathy in rats and pigeons, see de Waal, Frans (2008, pp. 282–283). On empathy in farmed animals, see Colvin, Christina, Allen, Kristin, and Marino, Lori (2017), Marino, Lori and Colvin, Christina (2016), and Marino, Lori and Colvin, Christina (2020).

social play includes rats, red-necked wallabies, dogs, polar bears, gorillas, chimpanzees, bat-eared foxes, gazelles, elephants, wildebeests, cows, and magpies, among many (Balcombe, 2006, p. 71 and 83). Furthermore, animals who play have expectations about how their playmates should treat them, and vice versa. When playing, animals monitor others' behaviour, learn how roughly they can interact with their playmates, and send play signals like play bows to express their desire to play and to maintain a playful mood (Bekoff & Pierce, 2009, and Bekoff & Allen, 2002). Even though animals who engage in social play may not be aware of play norms qua norms, and even though we may not define animals' interpersonal expectations as norms, we intuitively think of social play as a rules-based activity. Individuals must follow them if they do not want to be excluded from the game. Social play thus raises important questions about animals' sense of normativity and if animals' interpersonal expectations qualify as norms.

Studies also suggest that some animals could possess a sense of justice and be sensitive to the fair distribution of resources. In a now-famous experiment, primatologists Sarah Brosnan and Frans de Waal (2003) submitted some capuchin monkeys to an experiment in which they had to exchange tokens for two types of rewards: a piece of cucumber or a grape—a reward that monkeys favour much more. After seeing a cage mate receive a grape for the same task, exchanging the token, but receiving a piece of cucumber instead of a grape, monkeys usually had a strong negative reaction. This response could imply that they are sensitive to inequity and have expectations about how they should be treated for the same effort (van Wolkenten et al., 2007). Over the last decade, the same experiment was carried out in dogs, ravens, crows, and various primate species and similar results were observed (Brosnan & de Waal, 2014).

Great apes also seem to show greater awareness of norms, especially norms related to harm. Indeed, chimpanzees often react very strongly to infanticide or aggression by vocally protesting, even though they were not involved in the interaction. In other words, uninvolved bystanders react to the ill-treatment of young chimpanzees. According to primatologists Claudia Rudolf von Rohr, Judith Burkart, and Carel van Schaik (2011), this behaviour shows that chimpanzees may have quasi or proto-social norms, which, unlike personal expectations and norms involved in social play, are norms that seem to be collectively shared by group members and usually trigger third-party reactions.

Finally, besides moral emotions and sensitivity to norms, other behaviours that may have moral significance have also been observed in animals, such as adoption, food sharing, and cooperation. For instance, many animals, such as bats, share food (Wilkinson, 1984). Social animals also cooperate for various activities, such as grooming and hunting. In the same vein, many animals adopt orphaned babies or care for young individuals who are not their offspring. The latter phenomenon is known as “alloparenting”. This behaviour is widespread among animals and has been observed in more than 120 mammalian and 150 avian species (Riedman, 1982). More recently, magpies have dumbfounded scientists in Australia by removing their tracking devices and helping each other in doing so (BBC, 2022). Such examples of cooperative behaviour could be fostered by altruistic motivation, like

motivation to benefit others. The moral significance of adoption, food sharing, and cooperation among animals is yet to be more thoroughly studied by philosophers.⁴

The Philosophical Debate on Animal Moral Agency: A Summary

Philosophers have increasingly acknowledged these findings, especially over the last decade. Yet they do not agree on how we should interpret them or how they may impact the way we think of animals' capacities. The diversity of views we find in the debate on animal morality can be classified under three categories: (1) authors who claim that animals can be moral agents, (2) those who do not deny that animals have moral capacities but prefer to define animals as "proto-moral agents" or as "moral subjects" rather than moral agents, and (3) those who claim that animals' behaviour cannot be described as moral tout court.

As noted by philosopher Simon Fitzpatrick (2017), researchers often address the question of animal morality with two different approaches: one that is natural, primarily descriptive, and empirical and that often relies on the biological foundations of morality, the history of evolution, and the functions of morality and the other that is conceptual and consists of answering the philosophical question of how we *should* define morality.

Animal Moral Agents

The first family of views encompasses the work of authors who have argued that animals can be moral agents. Within the contemporary debate on the definition of moral agency, Stephen Clark (1984) was the first philosopher to challenge the claim that animals cannot be moral agents and has proposed a theory of animal moral agency inspired by virtue ethics. In *The Nature of the Beast*, Clark (1984, p. 107) argues that animals can be aware of the key features of a situation and act in a way that reflects certain stable personality traits. In other words, animals can respond to the good- or bad-making components of a situation in the same way as a virtuous human being. This capacity makes them moral agents, though to a lesser degree than neurotypical adult human beings. Clark hence departs from the Aristotelian theory of virtues and puts forward a minimal and non-intellectual criterion for virtuous action. Unlike the virtuous agents described in Aristotle's *Nicomachean Ethics*, animals do not need to know that they are performing virtuous actions and to choose

⁴It is worth noting that Bekoff and Pierce, Jessica have dedicated the third chapter of *Wild Justice* to cooperation in animals.

to perform these actions for themselves, though they may satisfy Aristotle's criterion of acting from stable character traits.⁵

In the same vein, Steve Sapontzis (1987) acknowledges that animals can act for the right reasons, in the sense that they can "recognize [...] the moral value of the action that moves him to act" (p. 32), even if they cannot do moral theory, grasp moral principles, or provide reasons for their actions. Moreover, animals exhibit flexibility and intentionality, and their behaviour can also reflect some of their character traits like courage and empathy (pp. 32–34). Even if we condition domesticated animals to act in a certain way, and even if we teach them some norms, this does not mean that their actions do not possess moral value, for animals can still be responsive to the good- and bad-making features of situations. As Sapontzis notes in *Morals, Reason, and Animals* (1987), even maternal instincts are flexible "reactions to the needs of the baby" (p. 34) and are not devoid of a moral dimension. Because animals can show "intentional, straightforward acts of kindness, courage, and the like" (p. 147), they are capable of virtuous acts.

In their book *Wild Justice*, ethologist Mark Bekoff and philosopher Jessica Pierce (2009) have taken an entirely different approach and have claimed that morality is "context-specific" and "species-specific" (p. 144). More precisely, they argue that morality should be defined as "a suite of other-regarding behaviors that cultivate and regulate complex interactions within social groups" (p. 7) and whose function is to facilitate cooperation among group members. In that sense, morality is specific to animal species and communities because the members of these various animal groups will not act in accordance with the same norms. Nevertheless, Bekoff and Pierce warn their readers against the temptation of seeing their theory of animal moral agency as moral relativism, for animal communities show great behavioural similarities and common attitudes like empathy, altruism, cooperation, and perhaps a sense of fairness (pp. 147–149). Indeed, Bekoff and Pierce identify three moral "clusters" that are shared by most social mammals: (1) cooperation, which includes attitudes of altruism, reciprocity, honesty, and trust (p. XIV), (2) empathy, in which we can find various emotions like sympathy, grief, and consolation (p. XIV), and (3) justice, which they define very broadly as "a set of expectations about what one deserves and how one ought to be treated" (p. 113) and includes capacities for sharing, equity, fair play, and forgiveness.

More recently, several philosophers have argued that animals can be moral agents. Some have highlighted that animals can manifest virtues in their actions and can act in a way that is not merely instinctive or conditioned (DeGrazia, 1996) or that some animals like great apes can have a sense of normativity (Andrews, 2009). Authors like Kristin Andrews and Lori Gruen (2014) have also stressed the importance of empathy for moral conduct and have argued that great apes are capable of more cognitively complex forms of empathy. Evelyn Pluhar (1995, p. 55) has also

⁵In *Nicomachean Ethics*, Aristotle claims that an action expresses a virtue when (1) the agent knows that she is performing a virtuous action, (2) chooses that action because it is virtuous, and (3) that action expresses a stable trait in the agent. See Aristotle, *Nicomachean Ethics*, 11105a27-35, Rowlands, Mark (2013, p. 17) and Dixon, Beth (2008a, pp. 71–75).

defended a more limited attribution of moral agency to several species of animals. According to her, animals possess capacities necessary for full-fledged moral agency, like emotions, memory, and purposive behaviour.

To sum up, all these authors share these two fundamental theses: first, that moral agency comes in different degrees and forms and, second, that some animals can be described as moral agents to some extent. They exhibit a degree of moral agency.

Proto-Moral Agency and Moral Subjecthood in Animals

Other scientists and philosophers have taken a different approach, which consists of claiming that animals possess several emotional and social capacities related to moral agency, that animals' moral behaviour and humans' full-fledged moral agency should be put on the same continuum, but that animals cannot be described as moral agents. They lack more sophisticated cognitive capacities essential to moral agency.

The view that animals possess some moral capacities but are not moral agents is often traced back to the Scottish Enlightenment (Clement, 2013). Two philosophers are often cited as important influences: David Hume (1739) and Adam Smith (1759). According to Hume, sympathy, which he defines as our ability to render others' sentiments "present to us", is central to moral agency (1739, Section 2.1.11). Indeed, Hume argues that moral judgements are grounded in feelings of moral approbation and disapprobation and that these feelings are influenced by our sympathetic capacities (1739, Sections 2.2.2 and 3.2.2). Furthermore, Hume recognizes that several animals are also capable of empathy and possess numerous "natural abilities" like love and friendliness (1739, Section 2.2.12). However, animals lack reason and thus cannot perceive moral obligations nor can they acquire a point of view that departs from their immediate situation (1748, Sections 9.5–9.7). Hence, animals possess some capacities related to morality, but some passages in Hume's work suggest that morality is exclusively human (Beauchamp, 1999, p. 328).

Adam Smith also stresses the central role that moral emotions play in our moral judgements of approval and disapproval. Smith recognizes that sympathy, which he associates with the cognitive capacity of placing oneself in another's position or "changing places in fancy with the sufferer" (Section "Greco-Roman Antiquity" in Chap. 1), can be limited in scope if it arises only in immediate situations. According to Smith, emotions qualify as moral when they reach a more abstract level and lead us to make judgements of approval or disapproval about how *anyone* should be treated (Section "Greco-Roman Antiquity" in Chap. 5). Emotions become moral when agents can take the point of view of an impartial spectator. As Philip Kitcher (2006) explains, Smith defines sympathy as involving "reflecting upon – mirroring – the judgements of those with many perspectives around us, until we can combine each point of view, with its peculiar biases, into an assessment that expresses a genuinely *moral* sentiment" (p. 132). Without this propension to impartiality, animals can have a primary type of sympathy, but the latter cannot be described as

moral, although it may be necessary for the development of the more abstract and impartial form of sympathy felt by human beings.

Scientists have also highlighted how animals and human beings share some similarities regarding their moral capacities. According to Charles Darwin (1871), who read Hume and Smith, human morality is deeply rooted in our “social instincts”, which are common to all social animals (pp. 149–150). However, though social instincts may lie at the heart of morality, they are insufficient to make animals moral agents because full moral agency requires two additional capacities: the capacity to compare our past and future actions and motivations and the capacity to approve or disapprove of them (pp. 170–171 and 933). According to Darwin, the emergence of these capacities is closely tied to the development of higher rational capacities, which animals do not possess. Nevertheless, there exists an evolutionary continuity between human and non-human animals regarding their moral capacities. The recognition of this continuity led Darwin to famously write in *The Descent of Man* (1871) that “[a]ny animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its mental powers had become as well, or nearly as well developed, as in man” (pp. 149–150).

Frans de Waal (2006b) also defends a Darwinian thesis regarding animal proto-moral agency. Indeed, de Waal describes morality as a “tower” that rests on three building blocks: (1) moral sentiments, which include empathy, reciprocity, retribution, conflict resolution, and a sense of fairness, (2) social pressure, which he defines as a pressure “to contribute to common goals and uphold agreed-upon social rules” (p. 169) and which encompasses attitudes of conformism, community concern, and conflict resolution, and (3) judgement and reasoning (p. 165). According to de Waal, the third building block is uniquely human, but moral sentiments and social pressure are “evolutionary ancient” (p. 7) and may be found in various species of social animals. However, humans have developed a more sophisticated sense of morality with the development of language and the influence of warfare, which induced greater solidarity among group members (p. 55). Furthermore, human beings explicitly teach the importance of respecting moral standards and favouring the community’s interests over selfish desires (p. 54). Human beings thus have moral systems, unlike other animals.

Philosopher Mark Rowlands (2012, p. 175) also claims that animals cannot be moral agents but does so by arguing that the concept of moral agency has been too closely tied to the notions of moral responsibility, praiseworthiness, and blameworthiness. He argues that moral responsibility and, by extension, moral agency are grounded in moral understanding. Moral agents can understand moral facts and why they matter, and this understanding can come in various degrees. More precisely, moral understanding rests on four capacities: the capacity to make qualitative distinctions between positive and negative states like others’ happiness and pain, to grasp moral facts, to understand why something is right or wrong, and to understand the moral principles that underwrite moral facts (p. 239).

Yet Rowlands does not deny that animals can have morality but argues instead that animals' capacities can be best captured by the concept of "moral subjecthood" rather than the one of "moral agency". Rowlands defines the notion of "moral subject" as follows:

X is a moral subject if X possesses (1) a sensitivity to the good- or bad-making features of situations, where (2) this sensitivity can be normatively assessed, and (3) is grounded in the operations of a reliable mechanism (moral module). (p. 230)

It is important here to clarify what Rowlands' means by "sensitivity", "normatively assessed", and "moral module". First, Rowlands claims that animals can show a form of sensitivity to moral features that is emotional and experimental. Animals can feel emotions, and these are moral when (1) they are intentional, in the sense that they involve a content, (2) there exists a proposition *p* that expresses a moral proposition like "suffering is bad", and (3) emotions track the proposition *p* (p. 69). We can illustrate these three conditions with a familiar example. Suppose a young boy is drowning in a lake, and his dog jumps into the water to help him. In that situation, the dog's empathy (1) takes the child's distress as content, (2) there exists the moral proposition that the child's suffering is bad, (3) and the dog's empathy tracks the proposition. The dog's empathy is not misguided.

Second, Rowlands argues that animals' sensitivity can be normatively assessed if one adopts an *externalist* and *consequentialist* account of morality (pp. 222–223). According to Rowlands, there exist features of situations that make them good or bad, and these features are objective moral facts that are external to an agent's psychological processes. Thus, an animal's action is good if the animal's sensitivity detects the good- and bad-making features of situations and if the action enhances the good-making features.

Third, animals' moral sensitivity should be grounded in the operations of a reliable mechanism, which Rowlands calls a "moral module". The idea here is quite simple: a dog's sensitivity should not be contingent or accidental but should rest on a stable mechanism that guarantees that this sensitivity is always aroused when the dog faces a similar situation (pp. 145–146). Though Rowlands does not provide an exact definition or example of such a reliable mechanism, Susana Monsó (2015) has suggested that the perception-action model (PAM) proposed by Stephanie Preston and Frans de Waal (2002) could play the role of a moral module in human beings and other animals. The PAM is a biological mechanism that ensures that social mammals detect motor movements and emotions in other individuals. In sum, most social mammals are moral subjects who exhibit a moral sensitivity that can be normatively assessed and grounded in a moral module, but they lack sufficient intellectual capacities to understand moral facts deeply. As a result, they cannot be held morally responsible for their actions and cannot be described as moral agents, according to Rowlands.

Moral Agency: A Uniquely Human Capacity

Finally, some philosophers have categorically denied that animals can be moral agents. One of the most influential representatives of this option is Christine Korsgaard (2006), for whom morality is not merely a matter of empathic intentions. It rather rests on normative self-government. According to Korsgaard, animals can be guided by perception (p. 108) and are capable of intentional action (p. 110) but cannot be guided by rational principles. Human beings are the only animals who can formulate maxims and universalize them, and it is the Kantian universalizability criterion that enables them to adopt or reject purposes. What distinguishes human agents from other animals is that, although humans' goals can arise from their emotions, they can rationally assess them as universalizable and see them as grounds for their actions. Korsgaard (2006) thus writes:

A nonhuman agent may be conscious of the object his fear or desire, and conscious of it as a *fearful* or *desirable*, and so as something to be avoided or to be sought. That is the ground of his action. But a rational animal is, in addition, conscious *that* she fears or desires the object, and that she is inclined to act in a certain way as a result. That's what I mean by being conscious of the ground as a ground. (p. 113)

The difference between human and non-human animals is not merely a matter of degree but rather all or nothing. According to Korsgaard, our rational capacities “break with our animal past” (p. 104) and make us truly moral, while animals' empathic behaviour simply *cannot* be described as moral nor can it be seen as participating in morality in some ways. Animals do not possess one iota of morality.

Korsgaard's theses on animal moral agency come with *internalist* and *constructivist* views on the nature of normativity and moral facts (Fitzpatrick, 2017, p. 1170). Indeed, according to Rowlands (2012, p. 152), Kantian philosophers like Korsgaard think of moral agency as taking what he calls “the ASCNM route” (access–scrutiny–control–normativity–moral). In other words, an agent's access (A) to her purposes and desires enables her to scrutinize (S) them, and this capacity is a necessary condition for the agent to have control (C) over her inclinations. This capacity for normative self-government provides a normative (N) and moral (M) status to these desires, which exercise a normative power on the agent. Korsgaard's meta-ethical theory is thus *internalist* in the sense that the good or bad quality of an agent's motivations is determined by her psychological processes. Similarly, her theses on animal moral agency are heavily loaded with *constructivist* views on moral facts, according to which the correctness of moral facts and judgements is not entirely independent of agents' practical deliberation.

Philosopher Francisco Ayala (2010) also thinks that animals cannot be moral agents and argues that morality is a uniquely human phenomenon. In an article entitled “The Difference of Being Human: Morality”, Ayala defines morality as resting on three necessary conditions: “(i) the ability to anticipate the consequences of one's own actions; (ii) the ability to make value judgements, especially moral judgements; and (iii) the ability to choose between alternative courses of action” (p. 9015). The first criterion is the “most fundamental” of all, according to Ayala. This

can be explained by the fact that an action becomes “moral” when we can anticipate its morally relevant consequences, and the ability to anticipate these consequences also allows us to see the connection between means and ends (p. 9018). Although Ayala does not deny that some moral norms may be favoured by natural selection, such as norms of parental care, he claims that moral codes are the product of cultural evolution. The latter is a human mode of evolution that goes beyond mere biological inheritance (p. 9021). Morality is what makes human beings unique, and their high moral capacities have no equal among non-human animals.

The Practical Implications of Recognizing Animals as Moral

At first, this summary of the debate on animal morality may leave readers with the impression that this topic is merely theoretical and highly technical. This debate is also strongly related to various meta-ethical questions about the nature of moral facts, as we have seen. Yet a positive answer to the question of whether or not animals qualify as moral subjects or moral agents could have tremendous implications for animal ethics and how we treat animals. I shall briefly explore two of them here: (1) how the recognition of morality in animals leads us to widen our understanding of key notions such as animal rights and animal well-being and (2) how some views on animal morality could lead us to recognize that some animals are morally responsible and have obligations towards us.

First, if we recognize that some animals are capable of moral agency or moral subjecthood, this will certainly lead us to widen our understanding of the notion of “flourishing”, which has been used by philosopher Martha Nussbaum (2006) as a ground for her theories of animal rights and animal well-being. Nussbaum’s theory of animal rights and well-being rests on the following core idea: for each animal species, there exists a set of basic capabilities that are available to the members of such species and that are essential for animals to flourish and live a good life. The list of basic capabilities includes life, bodily health, bodily integrity, senses, imagination, thought, emotions, practical reason, affiliation, relationships with members of other species, play, and control over one’s environment (Chap. 6). According to Nussbaum, animals are entitled to develop such capabilities, and these must be included in our theories of animal rights and well-being.

Following Nussbaum’s approach, Susana Monsó, Judith Benz-Schwarzburg, and Annika Bremhorst (2018) have recently argued that Nussbaum’s capabilities approach can be extended to the development of moral capacities and that we can understand animals’ moral emotions as basic capabilities if we define them as character traits, namely, as “dispositions to feel and behave in certain ways” (p. 295), rather than mere motivations. As noted by the authors, this interpretation is also compatible with Nussbaum’s list of capabilities, which includes emotions and affiliations (p. 296).

Defining animals’ moral emotions as capabilities has several implications for animal well-being. The study of animals’ moral capacities may lead us to widen our

understanding of the notion of well-being and to adopt a pluralistic account of well-being that does not reduce animals' well-being to pleasure. Although the latter is an important component of both human and non-human animals' well-being, the debate on animal morality raises new important questions, such as the value of animal agency and animal morality, its relationship with pleasure and preference satisfaction, and whether animals' well-being can be reduced to pleasure. According to Monsó, Benz-Schwarzburg, and Bremhorst, moral emotions possess both instrumental and intrinsic value in relation to animals' well-being. Indeed, an emotion or emotional capacity like empathy is instrumentally valuable "because of the good it brings to the world" (p. 296). For instance, it can motivate animals to help others in need and thus bring about consequences philosophers would regard as good. But it can also be intrinsically valuable if we consider that attitudes and relationships of care have value in themselves and should be included in our definition of animal well-being. Hence, perhaps animals' well-being should not be understood merely as depending on subjective mental states such as pleasure but should also include objective capabilities like moral ones.

In the same vein, Monsó, Benz-Schwarzburg, and Bremhorst (2018) argue that this approach leads us to widen our understanding of how we can harm animals. The harm we can cause to animals may not be entirely captured by a hedonistic account of harm that defines that concept mostly in terms of subjective states such as suffering. According to the authors, we can doubly harm animals: first, by making them suffer and, second, by hindering the development or the exercise of their moral capacities (p. 297). Such harm can be caused by practices that imply forcing animals to witness the suffering of other animals without the possibility of helping them (p. 301) or that involve denying animals the possibility to exercise their moral capacities (p. 302). We can think of industries that require keeping animals in small enclosures such as the crates we can find in industrial farms, zoos, and laboratories. Finally, some practices involve intentionally precluding animals from developing their moral capacities, like the training of dogs and bulls used for animal fights or experiments that involve keeping laboratory animals in total isolation to study the psychological effects of confinement (p. 303). In these cases, human beings harm animals not only by causing them great physical and psychological pain but also by blocking the development of their moral capacities, which are, in turn, necessary for them to flourish and live a good life. Taking animal morality seriously can have immense consequences on the way we think about the rights and well-being of animals, especially farmed animals.

Second, the debate also has implications for various questions related to the moral responsibility of animals. Indeed, recognizing morality in animals and, more precisely, moral agency, may lead us to recognize them as morally responsible to some degree. So far, the dominant approach in animal ethics has consisted of arguing that animals cannot be held morally responsible for their actions. Philosophers appeal to the fact that animals lack either sufficiently robust moral capacities to be held morally responsible, such as moral understanding in the case of Mark Rowlands (2012), or self-control and normative self-government, such as in the case of Kantian philosophers like Christine Korsgaard (2006).

However, some authors have seriously examined the possibility of recognizing animals as moral agents who are morally responsible at least to some degree. As mentioned earlier, Bekoff and Pierce (2009) have argued that morality is “context-specific” and “species-specific”. This entails that animals who are moral agents are morally responsible only in an intra-species context. More recently, philosopher Dorna Behdadi (2020) has stressed the importance of the social context and social interactions. Drawing from evidence on canines’ social play and moral capacities, Behadid has argued that these animals are moral agents who engage in moral responsibility practices. In the same vein, philosopher Asia Ferrin (2019) has argued that animals can be morally responsible because they can manifest good or ill will and that they may be morally responsible to other members of their species but that human beings should refrain from holding animals morally responsible because of the “lack of overlapping social context” (p. 146). Philosopher Paul Shapiro (2006) has also argued that animals can be morally responsible but only for actions they can morally understand. For instance, animals who are empathetic, who can care for other individuals, and who can understand that others suffer but who nevertheless choose to harm others without a good reason, such as for survival, can be morally responsible and blameworthy (p. 365). For example, a dog who attacks her family members exhibits a morally problematic behaviour because she is a moral agent to some degree and can even have obligations towards her family members. A dog may have the negative obligation not to attack her guardians or even the minimal positive obligation to protect them against intruders (p. 369).

Thus, recognizing animals as moral agents, and not only as proto-moral agents or moral subjects, may profoundly affect the way we see animals’ moral responsibility and obligations. That said, three precisions need to be made concerning animals’ responsibility. First, moral responsibility does not entail legal responsibility, especially if we acknowledge that moral agency and moral responsibility are a matter of degree. Although legal responsibility bears a strong connection to moral responsibility, legal systems usually require a certain clear threshold for individuals to be held legally responsible. This may not be the case with moral responsibility, and there may be no contradiction between holding an individual morally responsible to some degree while denying that this individual cannot meet some additional criteria or threshold to be held legally responsible. For instance, one could argue that even though children cannot be held legally responsible, they could be held morally responsible to some degree by their parents, caregivers, and teachers, although the question of children’s moral responsibility is contentious among philosophers.⁶ In contrast, the claim that legal responsibility is a distinct notion that requires a high degree of moral responsibility, as well as knowledge of laws and

⁶For an overview of the debate, see Burroughs, Michael D. (2020, pp. 77–101), Dixon, Beth (2008b, pp. 20–30), Traina, Cristina L. H. (2009, pp. 19–37), and Dwyer, Susan (2003, pp. 181–199).

legal systems, is a fairly uncontroversial one.⁷ Animals will *never* be able to meet such a high standard to be held *legally* responsible in animal trials.

Second, recognizing a form of mitigated moral responsibility to moral agents does not necessarily lead to mitigated responsibility for every action, unlike what Mark Rowlands (2013) seems to suggest in some of his arguments against recognizing animals as moral agents. When philosophers claim that a moral agent possesses a lower degree of moral agency and moral responsibility, they usually do not simply mean that the agent should be held morally responsible to a lesser degree for *all* her actions. Rather, several of them argue that moral agents have moral responsibility for the actions they can control or morally understand and that they cannot be held morally responsible for actions that fall outside the scope of their moral understanding or capacity for self-control (DeGrazia, 1996 and Shapiro, 2006). To illustrate the point, we can take the following example proposed by Paul Shapiro (2006) :

[W]hile it would be appropriate to hold a four-year-old human responsible for hitting his sister, it would not be appropriate to hold him responsible for publicly calling attention to a disabled person on the street (assuming he couldn't be expected to grasp the potential for hurt feelings). In short, the less mentally developed a moral agent, the fewer obligations she will have. (p. 365)

In that case, the 4-year-old cannot understand *how* and *why* calling attention to a disabled person publicly can be harmful to that individual. It would thus be inappropriate to hold a young child responsible for calling attention to a disabled person on the street, although a parent could explain to her child why she should not do this and could hold her morally responsible in the future.

Third, recognizing that animals are morally responsible to some degree does not entail that we should hold *all animal moral agents* morally responsible to some extent because responsibility practices can vary across different social contexts and because our diverse relationships with animals may give rise to different practices. For instance, it could make sense to hold domesticated animals morally responsible to some degree because the relational context begets such practices. We can think of the shared norms that we “teach” domesticated animals, the empathetic responses we nurture in them, and the close relationships grounded in love, trust, and mutual expectations we have with them. Conversely, this relational approach to moral responsibility and responsibility practices allows us to argue that it would be inappropriate *for us* to hold wild animals morally responsible *while* recognizing at the same time that they are moral agents who engage in practices of holding other members of their group responsible for their actions.⁸

⁷For an overview of the differences between moral responsibility and legal responsibility, see Hart, H. L. A. (2008), Ripstein, Arthur (1999, pp. 617–635), and Moore, Michael S. (2009).

⁸I owe this intuition to Christiane Bailey. See Bailey, 2014, p. 32.

Concluding Remarks

In sum, the recent findings on animals' moral capacities and the growing philosophical literature on animal morality can deeply affect what we once held true about animals' cognitive and emotional lives. It may also lead us to reconsider the traditional binary division in animal ethics between moral patients and moral agents. The implications of this shift are tremendous for animal ethics.

Yet the consequences of recognizing moral capacities in animals are far from being limited to the few topics I have explored in this chapter. For example, the debate on animal morality may also affect the way we think of philosophical issues related to the moral status of animals, paternalism, blameworthiness, praiseworthiness, reward, and punishment.⁹ It may also lead us to develop new arguments in favour of veganism, given the possible double harm that industries inflict on farmed animals. Philosophers have only started to acknowledge and explore these new questions.

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⁹For an overview of the literature on animal agency and moral status, see Wilcox, Marc (2020) and Sebo, Jeff (2017). For an account of punishment and animals, see Garthoff, Jon (2020).

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Chapter 5

Abolitionism



Valéry Giroux

In the Slavery Convention, adopted in 1926 by the Assembly of the League of Nations, slavery is defined as “the status or condition of a person over whom any or all of the powers attaching to the right of ownership are exercised” (1926, art. 1). Slavery would thus consist of depriving an individual of their fundamental liberties, through the implementation of legal norms that turn them into legal property subject to being sold, rented, given away, seized, or destroyed, at the discretion of their owner. More than the appropriation of their labor, it is the *possession* and *control* of their entire being by someone else that is characteristic of their enslavement (Grenouilleau, 2014; Patterson & Zhuo, 2018). The categorization of an individual as a slave is contingent not (or not only) on their material circumstances but rather on their subordinate status. This status subjects them to the capricious whims of their master, who may decide to confer an elevated social standing on them, impose on them laborious tasks, exhibit them as a symbol of affluence, or engage in their sale. “[W]hat is typical is not what the enslaved person does or how they live, as this depends on the master’s good pleasure; it is not even what the master *does* with them, but what they *could do*, their *right* to treat them as they please” (Testart, 1998, p. 32).

Another recurrent feature found in the historical phenomenon of human slavery is the deliberate exclusion of the enslaved individual from a fundamental dimension of societal life, referred to as their “social death” by sociologist Orlando Patterson (1982). The slave is a dependent whose status is marked by the exclusion of a dimension considered fundamental by society (Testart, 2001, p. 24), thus stripped of their social identity (and assigned a new marginal one) or deprived of citizenship, civic belonging, or affiliation with a religious community (Kopytoff, 1982; Testart, 1998). In short, the defining characteristic of slavery is the slave’s status of

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“absolute subjection to the individual will of an owner” (Du Bois, 1935/1998, pp. 9–10) and their absolute othering, marginalization, or transformation into a foreigner (Grenouilleau, 2014, p. 176).

Involuntary servitude has many faces, such as forced labor, trafficking and sexual exploitation, or sham marriage. Some authors contend that these forms of exploitation constitute disguised slavery (Hartman, 1997), positing that when interpreted in light of the 1956 Supplementary Convention, the Slavery Convention stipulates that slavery exists as soon as the powers associated with ownership are de facto exercised, regardless of whether these powers are recognized de jure (Allain, 2009, 2012). Others consider most of these institutions and practices to be “analogous” to slavery, or resembling slavery in certain respects, albeit not being a direct derivative or a modern version of it (Patterson & Zhuo, 2018). In brief, it is as if “[a]s the law abolished slavery as a *status*, it reconceptualized the *condition* of slavery as the most extreme form of exploitation” (Rossi, 2021, p. 102).

Despite its persistent prevalence in various locations and historical epochs, slavery has never gained universal acceptance and has always been criticized, at least since the time of the Sophists. It was not until the end of the eighteenth century in the West, however, that the antislavery sentiment gave rise to a true abolitionist movement, uniting activists who were convinced not only that slavery should be universally abolished but also that it was necessary to work concretely toward its demise (Grenouilleau, 2017; Dorigny, 2018).

Today, many racialized people continue to endure the disastrous psychological, social, and political repercussions of their ancestor’s enslavement, which can manifest in various ways, from “transcendent racial anxiety” to widespread “post-slavery or contemporary encounters with discrimination and injustice” (Cross, 1998, p. 388). Other individuals directly experience the devastating impacts of the new and subtler manifestations of slavery or its aftermath (Hartman, 1997). Nevertheless, legislations allowing for its traditional version—sometimes called “chattel slavery,” where enslaved persons are legally considered the personal property of their masters—have been abolished (although not necessarily criminalized) in all countries (Patterson & Zhuo, 2018). Along with the Holocaust, slavery has become the very symbol of human suffering and of the most perverse and unbearable injustice.

The Analogy Between Human Slavery and Animal Exploitation

For strategic reasons, numerous social movements make reference to slavery and its abolition and borrow vocabulary associated with it (Kim, 2011, 2015). Thus, we talk about the emancipation of women, gay/queer liberation, and the abolishment of prisons, torture, and prostitution. The animal rights cause is no exception. Animal rights activists demand that animals be freed, that they be granted rights, and that their moral, legal, and political fundamental equality be recognized. Some explicitly

draw analogies between the institutions of human slavery and those of animal exploitation (Bentham, 1843; Salt, 1892; Regan, 1983; Cavalieri, 2001, 2016). A few are not content with a simple comparison between the two phenomena, but argue instead that animals exploited by humans are quite literally our slaves (Wise, 2003; Best & Nocella, 2004; Chauvet, 2017; Burgat, 2018). Despite these divergences, all agree that it is necessary and urgent to abolish animal exploitation, just as we officially abolished human slavery (at least in its explicit state forms).

Of all the animal ethics scholars, law professor Gary L. Francione is the one who has most extensively defended the so-called “abolitionist” perspective. In his various publications, his blog (<https://www.abolitionistapproach.com/>), and the book he coauthored with Anna Charlton titled *Animal Rights: The Abolitionist Approach* (Francione & Charlton, 2015), he stands out from other animal activists through his critique of strategies that target improvements in the treatment of the animals we exploit, rather than the abolition of the exploitation itself. He also insists on the necessity of granting the *prelegal* right not to be treated as property to all sentient beings. Finally, his perspective is characterized by the central role it gives to veganism, both as a means to achieve the eradication of fishing, livestock farming, vivisections, zoos, and so on and as the ultimate goal of the abolitionist efforts. According to Francione, ending the exploitation of animals basically consists of generalizing an individual lifestyle that excludes products and services derived from animals, as all animal use, in the context in which animals are subject to the legal regime of property, is exploitative. In his view, a critical mass of citizens needs to adopt veganism before we can hope to see major institutional changes take place and finally meet the demands of justice by granting all sentient beings legal personhood and having all forms of animal exploitation prohibited by law.

Apart from Francione, numerous other authors have condemned the commodification and commercialization of nonhuman animals by comparing it to the slave trade and slavery (Regan, 1983; Cavalieri & Singer, 1993; Cavalieri, 2001, 2016; Wise, 2003; Best & Nocella, 2004; Best, 2014; Chauvet, 2017, 2018; Burgat, 2018). This analogy is inspired by and grounded upon the similarities in treatments suffered by the victims of both types of practices and institutions as well as the justifications offered by those trying to defend and perpetuate them.

Similarities in the Techniques of Subjugation and Rhetoric

In his memoirs written in 1845, abolitionist leader Frederick Douglass gave an account of his life as a slave on a Maryland plantation until his escape in 1838. He writes that upon the death of his legal owner, when it came time to evaluate the estate to be passed on to his heirs, his value as a slave was estimated alongside that of the man’s other possessions:

We were all ranked together at the valuation. Men and women, old and young, married and single, were ranked with horses, sheep, and swine. There were horses and men, cattle and women, pigs and children, all holding the same rank in the scale of being, and were all subjected to the same narrow examination. (1999, p. 45)

To emphasize the dehumanizing nature of slavery, former slaves also compare the conditions in which they were kept to those of domestic animals. Both were subjected to strict control of their reproduction, their attitudes, and their movements with the use or threat of violence (whipping, shackling, branding, castration, etc.) (Jacoby, 1994). “Identifying not with their masters’ dependent children but with their masters’ four-legged chattel, ex-slaves remembered being fed like pigs, bred like hogs, sold like horses, driven like cattle, worked like dogs, and beaten like mules” (Bay, 2000, p. 119). Moreover, the mechanisms and general organization of human chattel slavery were intentionally designed based on the model of animal domestication (Davis, 2006; Nibert, 2013).

In her book *The Dreaded Comparison*, Marjorie Spiegel explores the numerous troubling similarities between the racial slavery of the antebellum period and the treatment we now reserve for animals (Spiegel, 1996). She shows that enslaved persons were hunted, bought, sold, separated from their families, deprived of freedom, and considered and treated as personal property, just as domesticated animals are today. She meticulously describes what the situations endured by both share in common. Her demonstrations are accompanied by illustrations depicting striking resemblances between the methods of the past and of today: the enslaved woman behind the bridle and the muzzled dog; the slave wearing a spiked collar and the rabbit immobilized for cosmetic tests; the slave at the pillory and the laboratory monkey in a straitjacket; the overcrowded holds of slave ships and the masses of birds in factory farms; the enslaved mother whose child is taken away so that she can breastfeed that of her mistress and the cow whose calf is torn away from her in order to take her milk. Spiegel also devotes a chapter to the words of domination. She explains, for example, that in order to get slaves to completely submit to them, masters could use the services of “n* breakers,” which recalls equestrian vocabulary where training entails “breaking the horse” to make him more obedient.

The parallels do not end there. In response to the moral objections of their critics, enslavers of the eighteenth century and those who were pro-slavery put forth arguments that are scarcely different from those of breeders and farmers of the twenty-first century. The former insisted that they care greatly for the women and men under their authority, whose dedication and loyalty they praised and cynically even boasted about. All things considered, their situation was said to be enviable—at the very least, much preferable to what they would have known in their country of origin, where true injustice reigned. As the eighteenth-century pro-slavery writer James Boswell explains, the abolition of slave trade “would be extreme cruelty to the African savages [*sic*], a portion of whom it saves from massacre, or intolerable bondage in their own country, and introduces into a much happier state of life” (1857, p. 386). Moreover, in any case, what interest would the masters have in mistreating their slaves? Didn’t their profit depend on the good health of those who harvested their sugarcane or cotton? In their apologies for the slave system, some parliamentarians went so far as to assert that the slaves seemed to them so content that they were considering starting to work on plantations themselves (Thomas, 1997)! To those that were upset by the fact that men, women, and children were reduced to being the property of others, it was explained that it was best not to fall

into the trap of placing all human beings on equal footing. There exists an immense divide between the slave and the civilized man, they asserted. To attribute to the former the kinds of desires, aspirations, and needs that only the latter was able to experience would only lead to unfortunate misunderstandings. Could it even be certain that a slave suffered in the same way as a free man? At any rate, it was necessary to be reasonable: slavery being an economic necessity, bringing an end to it would lead to nothing less than the ruin of nations. The very same defenses used to uphold human slavery are parroted verbatim by the contemporary proponents of animal exploitation.

Aside from the arguments advanced by pro-slavery supporters, care was taken to hide the cruel reality of slavery. “Painters and illustrators,” explains Marcel Dorigny, the historian of slavery in French colonies, “showcased beautiful island landscapes, with domestic slaves in sparkling livery, ‘women of color’ whose beauty quickly became legendary” (Dorigny, 2018, p. 7). These representations—which deceptively contrasted with the brutality of working in the fields and the violence of punishments—are akin to the images used by the dairy industry, for example, to advertise its products: rather than showing locked stables and the fattening of immobilized calves, milk cartons display cows peacefully grazing, with calves below their mothers.

The justification for restricting public access to certain slave workplaces like plantations, on the grounds of protecting visitors unaccustomed to being around slaves from being overly emotional or misunderstanding what they witnessed, bears striking similarities to the mechanisms used to keep the treatment of domesticated animals hidden from public scrutiny. Notably, legislative measures such as *ag-gag laws* are employed to prevent the filming or photographing of factory farms and slaughterhouses without the owner’s permission, thereby maintaining a veil of secrecy around the cruelty inflicted upon these animals.

Finally, the notion that animals are morally inferior to us because they lack certain sophisticated cognitive capacities or because they exist to serve humanity (as resources placed on earth by God for us or, in the case of domesticated animals, as the result of our selective breeding for that very purpose) matches the essentializing pro-slavery discourse of the nineteenth century. Enslavers claimed that slaves were less intelligent and even turned to phrenology to provide scientific proof (Branson, 2017). By belittling the intellectual abilities of slaves and emphasizing their physical strength and endurance, this discourse asserted that slaves were made to be controlled and to obey and were naturally suited to hard physical labor.

Thus, the analogy between human slavery and animal exploitation rests upon the fact that from its inception, slavery was conceived by enslavers and understood by enslaved persons themselves in reference to animals. It is no surprise that the means used to maintain the subordination of the slaves of the past and of the animals of today are similar. Of course, what is morally unacceptable in one case is not necessarily so in the other. Slavery was despicable, it is said, because it consisted of treating human beings like animals (Sinha, 2016). However, one may ask, what is wrong with treating animals like animals?

The Comparison at the Moral and Political Levels

Between human slavery and animal exploitation, we have observed that numerous similarities can be identified, ranging from the material and structural aspects of both phenomena to the strategies deployed to appease or avoid criticism and maintain them. The question now arises as to whether this comparison can be extended to morality and justice. Animal exploitation and human slavery are *descriptively* similar, but are they *normatively* comparable?

It is perhaps not insignificant that many opponents of slavery also cared about the fate of animals (Cary, 2020). Take Condorcet, a celebrated member of the Society of the Friends of the Blacks, who gave up hunting and advised his daughter to extend her empathy to animals by teaching her that causing them unnecessary pain was “a veritable injustice...an insult to nature” (Condorcet, 1968, p. 355). Consider also William Wilberforce, a member of the English Parliament in the late eighteenth century who was highly involved in the movement to abolish slavery and was also one of the cofounders of the Royal Society for the Prevention of the Cruelty to Animals. Finally, one cannot but call to mind Victor Schœlcher, one of the principal architects of the abolition of slavery in France, who also took the side of domesticated animals by participating in the adoption of laws against their mistreatment. Such a commitment to the liberation of enslaved humans and the protection of animals can undoubtedly be explained by an aversion to the causing of suffering to others.

These intellectuals and politicians of the past would undoubtedly have agreed with their contemporary Humphrey Primatt, who wrote in 1776:

Pain is pain, whether it be inflicted on man or beast; and the creature that suffers it, whether man or beast, being sensible of the misery of it while it lasts, suffers *evil*.... [T]he white man... can have no right, by virtue of his color, to enslave and tyrannize over a black man.... [F]or the same reason, a man can have no natural right to abuse and torment a beast. (1776/1992, pp. 21–22)

During the same era, Jean-Jacques Rousseau argued that the criterion for moral consideration was not the possession of reason, but rather the capacity to feel pain (Rousseau, 1754/1964, t. III, p. 126). In the same vein, Jeremy Bentham famously asserted that biological characteristics such as the *blackness of the skin* as well as the *number of legs*, *pilosity of the skin*, or *termination of the os sacrum* could not justify denying an individual’s rights any more than the capacity for reasoning or for talking could (Bentham, 1780/1948, pp. 310–311, n. 1). Like Rousseau, he considered the capacity to suffer to be the relevant criterion. As most present-day moral philosophers accept, being endowed with this faculty seems sufficient—and possibly necessary—for an individual to have well-being and interests, in the sense that “things matter *for him, for his sake*” (van der Deijl, 2021, p. 193; see also Feinberg (1974)).

From these observations, several authors have drawn normative conclusions regarding our moral obligations and our duties of justice toward other animals. The vast majority of contemporary moral philosophers acknowledge their moral

considerability, meaning that they contend that we ought to take their interests into account to some extent when making decisions affecting them. Some animal ethicists go further and denounce *speciesism*, a concept developed by analogy with racism and sexism to refer to prejudice or discrimination based on species membership (Singer, 1975; Rachels, 1976; Horta, 2010; Ryder, 2011). These authors argue that it is illegitimate to attribute more consideration to the interests of one individual over the similar interests of another on the grounds that the former is a human being and the latter is not. Like skin color or sex, species as such—no matter which conception of species or of the specific taxon *Homo sapiens* is favored in biology—doesn't have the type of relevance required to morally justify hierarchy between individuals or the attribution of more or less importance to their comparable interests. In their view, we should give *equal* consideration to like interests, whoever's interests they are (Singer, 1975).

In addition to their interest in not suffering, animal ethicists have convincingly argued that sentient animals have an interest in continuing to live and even in living freely. Since they are capable of not only feeling pain but also experiencing pleasure, being killed harms them because it deprives them of all the good things they could otherwise have benefited from (Regan, 1983; DeGrazia, 1996; Nussbaum, 2006; Simmons, 2009; Harman, 2011; Bradley, 2016; Giroux, 2017). Moreover, being considered and treated as property undermines their interests independently of the pain or the threat to their life it often entails, as it consists of a form of harmful domination. Indeed, their status as mere property leaves these intentional agents, who have preferences and the will to pursue them, at the mercy of their owner's arbitrary power. Indeed, owners can decide as they wish and with impunity to constrain the will of their property and prevent them from doing what they want, with or without paternalist motivations (Giroux, 2016; Wilcox, 2020; Paez, 2023).

Following the Aristotelian principle of equality (Aristotle, 1999), which posits that like cases should be treated alike, equivalent interests must be accorded not only equal consideration but also commensurate protections, regardless of the species of those who bear those interests, unless morally valid reasons justify differential treatment of similar interests. In the case of human beings, the basic individual interests in avoiding suffering, dying prematurely, and being possessed and controlled by someone else are, respectively, shielded by the inviolable rights to bodily and psychological integrity, life, and liberty. Presumably, these fundamental rights, whose function according to the interest-based theory of rights, it is to protect basic interests, must be extended to all beings who possess such interests—that is, to all animals capable of intentionality or sentience. A (Cavalieri, 2001; Giroux, 2017).

Not all individual interests are protected by rights. Only those deemed significant enough to impose corresponding duties on others are (Raz, 1988), once they are measured against competing values and interests (Cochrane, 2012). However, when the importance of an individual's interest reaches the necessary threshold to give rise to an actual, concrete right (as opposed to a general or *prima facie* right), the strength of that right is not necessarily proportional to the strength of the interest it serves to protect. The fact that the intensity of a basic interest may vary between individuals does not prevent those individuals from having an equal right (Simmons,

2016). With regard to inviolable rights, judgments about interpersonal comparative harm suffered by right-bearers have no implication for the strength of their respective rights (Regan, 1983; Donaldson & Kymlicka, 2011). Thus, even if the degree of the interests that our fundamental rights protect were higher, on average, in humans than in other beings, we could not infer that the rights of the latter are weaker than those of the former.

Sentient animals of other species, since they have interests, have what it takes to have rights (Feinberg, 1974; Cochrane, 2012) and should be recognized with the corresponding status that enables an individual to have such rights. Legally speaking, they should be removed from the category of things that can be appropriated and granted personhood (Wise, 2003; Francione, 2000). While the specific rights that different legal persons may have can vary, all rights holders should minimally benefit from the most fundamental ones, including the basic right to freedom as non-domination (Giroux, 2016; Wilcox, 2020; Paez, 2023). Because they are assimilated to things that are (or could be) appropriated and because they are denied the basic right to liberty, animals do not find themselves in a situation structurally *similar* to that in which many enslaved human beings have been historically forced. They literally *are* slaves (Chauvet, 2017; Burgat, 2018).

Thus, viewing servitude as contradicting the interests of individuals capable of benefiting from exercising their agency without arbitrary interference, some animal advocates deem it to be unjust, whether it concerns human beings or other animals. However, merely condemning animal exploitation—just like merely criticizing slavery—does not suffice to qualify one as an abolitionist. An abolitionist not only aligns ideologically with the goal of emancipation but also actively works at defining the practical modalities of a post-abolition society and developing a promising strategy for social transformation that can effectively lead to the liberation of subjected individuals.

Unlike the slavery *reformers* of the eighteenth century, abolitionists did not propose correcting the institution of slavery to render it less atrocious and thus easier to tolerate and perpetuate. They shared the belief that because “slavery relegated some persons to the status of things, the law could not provide protection that would force a slave owner to respect any interest of his slave if it was in the owner’s interest to exploit his slave property. Those who tried to make slavery more ‘humane’ could not protect the slave against the decisions of the slave owner of how best to use his property. Incremental steps to freedom could not be made. We could not ‘reform’ our way out of this situation” (Francione, 2000, foreword by Watson, p. x). Their aim was to eradicate it, pure and simple, even if they did not always agree on the means by which to do so. On one side, *progressive* abolitionists planned a progressive and organized abandonment of slavery, while *immediate* abolitionists could not envision an intermediary legal category between slavery and freedom and believed that the institution had to be abolished in one blow (Dorigny, 2018). “If slavery was sinful,” declared William Lloyd Garrison, “the duty of the slaveholder to let his victim go free was instant and immediate, not remote; the duty of his accomplice not otherwise” (Garrison, 1905, p. 92).

This common belief, which distinguished the abolitionists from the reformers, has its counterpart among animal rights advocates who, like Francione, maintain that “there is no way that a ‘hybrid’ system, one that purports to balance the interests of one group whose interests are protected by rights against the interests of another group whose interests are unprotected by rights, can serve to provide any significant protection to the interests of the latter” (Francione, 2000, p. xi). The strategic divergences among abolitionists are also paralleled by those fighting for animal liberation today. Given that the dismantling of activities involving animal exploitation can only be made gradually, certain activists believe it necessary to work toward modifying their situations little by little, in stages. Small improvements could lead to larger ones until institutionalized animal exploitation disappears (Leenaert, 2017). Others believe that proceeding in this way does not fundamentally challenge the principles underlying exploitation. Worse still, what has been pejoratively called “neo-welfarist” strategies that aim to reduce the mistreatment of livestock could instead play into the hands of the agri-food business (Francione, 1996). The activists who favor such strategies would run the risk of providing the industry with the opportunity to pretend to care about the animals they exploit by complying with the moderate demands of activists. What’s more, there is no guarantee that this disadvantage would be offset by a willingness on the industry’s part to do any more to reduce the pain they inflict on their animal property than what they would have done to restore their image with consumers after being publicly targeted by harsher criticisms. Above all, these immediate abolitionists argue, there would be something immoral in the decision to opt for less ambitious demands than what justice requires. As Francione and Charlton explain:

[W]e would all agree that beating one’s slaves less is better than beating one’s slaves more, but the institution of slavery is still morally wrong. Treating one’s slaves more “humanely” does not make the institution of slavery any more morally acceptable. No one would promote the “humane” treatment of slaves as something that would eradicate the injustice of the institution of slavery. (2015, p. 24)

While slavery can be carried out in more or less violent or degrading ways, it is never morally acceptable, and condemning exclusively its most odious forms is certainly insufficient.

That being said, the parallels that have been drawn between the discussions in abolitionist circles of the nineteenth century and those that are driving the animal rights movement today may be weakened by the fact that their respective contexts are very different. For instance, the decision of the immediatist faction within the movement to amplify their stance and adamantly advocate for the immediate and unconditional abolition of slavery was fed by the exasperation of antislavery activists who had desperately witnessed how the end of the slave trade had not led to the end of slavery, even though the population had demanded it (Grenouilleau, 2017). Conversely, the current debates within the animal rights movement are unfolding amidst a general public that, despite supporting stronger legislative protection for the animals we use as commodities, continues to widely endorse animal exploitation.

Furthermore, as is frequently and rightfully emphasized, the manner in which enslaved persons themselves participated in their emancipation is noteworthy. Not only did they escape captivity, disobey orders, and resist physical constraints, which animals often do as well when given the opportunity, but they also challenged their conditions and organized their own liberation. Political scientist Claire Jean Kim points out a distinctive aspect of human slavery in contrast with animal exploitation:

Slaves knew themselves to be human and indeed declared their freedom through the revolutionary language of humanism. And even as slaveholders derided the revolution in Saint Domingue as the rampaging of wild beasts, they grasped, if only through the fog of negro-phobic anxiety, the possibility that their own captives would follow the Haitian example. Indeed, a good portion of the slaveholder's psychic energy was devoted at all times to preventing slaves from gathering, sharing information, aiding each other's escapes, and plotting rebellion. (Kim, 2018, p. 18)

The same reasons that lead those who contest the comparison between human slavery and animal exploitation to emphasize the agency of human victims also prompt animal rights advocates to report how animals often resist their subjugation (Hribal, 2011; Wadiwel, 2015)—hence the use of chains, cages, and violence (or the threat of violence) to control them (Jacoby, 1994)—and to refrain from describing them as “voiceless” beings (Montout, 2019–2020, p. 173).

Notwithstanding the importance of these differences between the two phenomena, it should be acknowledged that they do not pertain to what is central to abolitionism or to what essentially characterizes the notion of slavery. On the one hand, the extent to which the social context is conducive to antislavery claims seems more relevant to the chances of success of the abolitionist movement than to whether the movement should be labeled as abolitionist or not. On the other hand, it is difficult to see why one should refrain from speaking of slavery in the absence of insurrection or even rebellion. Precisely because the organized uprisings or armed revolts that did occur—for example, in antebellum early nineteenth century America—often resulted in retaliation against rebels' families and in the general hardening of slave conditions, ongoing slave resistance predominantly took on more subtle forms, such as marooning, sabotage, the development of familial bonds, or religious cults. Organized rebellion therefore cannot be considered a defining element of slavery. While coordinated revolt may differentiate how human beings have sometimes responded to their enslavement from how animals react to their exploitation, it cannot be viewed as a defining element of slavery that justifies exclusively reserving the term for the former.

A Contested Analogy

Marjorie Spiegel argues that it is not only legitimate but also necessary to acknowledge the similarities between animal exploitation and human slavery. Refusing to do so, she contends, amounts to playing into the oppressors' hands by reinforcing the hierarchies they impose and thus “helps to prop up other forms of oppression.”

According to her, insisting on the differences instead of recognizing the disturbing commonalities implies a preference to resemble the oppressor rather than other victims, and consists of “becoming one with the oppressor” (1996, pp. 24–25). As the title of her book indicates, however, she is mindful of the *dreaded* character of this analogy, which has garnered significant criticism when used insensitively. For instance, in 2005, the National Association for the Advancement of Colored People (NAACP) sought to censor People for the Ethical Treatment of Animals (PETA) due to the offensiveness of the organization’s exhibition titled “Are Animals the New Slaves?” (Harper, 2010; Davis, 2023).

In our eminently speciesist societies, it is not unreasonable to suspect that the backlash in response to the use of this analogy was partly caused by a denial of the seriousness of the harms suffered by animals. In her foreword to Spiegel’s book, Alice Walker—an anti-racist activist and prolific author, who was the first Black woman to be awarded the Pulitzer Prize for her novel *The Color Purple*—admits that the comparison is a “difficult one to face”:

Especially so, if we are the descendants of slaves. Or of slaveowners. Or of both. Especially so if we are also responsible in some way for the present treatment of animals. Especially so if we, for instance, participate in or profit from animal research (what beings who loved life died for our lipstick, lotions, medicines and so on?) or if we own animals or if we eat animals or if we are content to know that animals are shut up ‘safely’ in zoos. In short, if we are complicit in their enslavement and destruction, which is to say if we are at this juncture in history, master. (Spiegel, 1996, foreword by Walker, p. 13)

Nevertheless, the great suspicion with which the analogy has been often received cannot be entirely explained by prejudices unfavorable to animals nor by an excessive sensitivity among racialized people (Ko & Ko, 2017). One of the valid criticisms leveled against animal rights activists who identify as abolitionists is that they appear to assume that the struggles of African Americans are over and have been won (Kim, 2018; Harris, 2009). “Animals can be recognized as the ‘new slaves’ only if the ‘old slaves’ have vacated their position” (Kim, 2018, p. 19). In trying to inspire the fight for animal liberation by invoking the movement that led to the abolition of slave trade and chattel slavery in Great Britain in the 1830s and in the United States in the 1860s, they suggest that these were problems of the past that were successfully resolved, thus ignoring the ongoing and very real impact of the violence of slavery on racialized peoples.

A closely connected worry expressed against the use of the analogy by those who hope to help nonhuman animals is that they often give the impression of instrumentalizing the experience of a continuously vulnerable population to promote another cause—the only one they really care about (Harris, 2009; Kim, 2018; Ko & Ko, 2017). Political scientist Claire Jean Kim, who once defended PETA’s use of the slogan “We are All Animals” (2011), later observed that “[t]he Black struggle is not the subject (or even one of the subjects) of PETA’s exhibit; it is symbol, tool, and prop” (Kim, 2015, p. 285). In her view, the goal of demonstrating the continuity between human beings and other animals, however important, could not justify aggravating “the specific fault line of race by instrumentalizing Black suffering, denying the continuing derogation of Blacks as subhumans, and concealing the

unfinished status of the Black struggle (as well as the reasons why it will always remain unfinished)” (Kim, 2015, p. 286).

The parallels between animal exploitation and human slavery would additionally have the drawback of erasing the particularities of slavery and relativizing the gravity of the injustices endured by Black populations. “Great moral disasters—like the Middle Passage, like North American genocide, like the Holocaust—,” explains the legal scholar Angela P. Harris, “demand of us that we recognize their black-hole quality: they are utterly singular, utterly horrific in very specific ways” (2009, p. 25). By comparing it to something else, there is a risk of reducing the abhorrence of slavery to its physical violence alone, while its symbolic and social dimensions are also at the crux of the phenomenon (Patterson, 1982).

Finally, the comparison between human slaves and nonhuman animals would seem to cruelly contradict the efforts made by Blacks and anti-racists to counter the process of animalizing the victims of racial slavery that enabled and reinforced their subordination. In a context in which rampant racism persists, leading some individuals to still question the full humanity of the Black population or deny the existence of systemic discrimination against them, it would seem highly inappropriate to insist that they show solidarity with animals by accepting to be compared to them (Hart, 2014).

Comparisons made by animal rights advocates between human slavery and animal exploitation are undoubtedly often done in insensitive and sometimes even racist ways. However, this does not mean that the conceptualization of nonhuman animals as slaves is unwarranted. In response to the objection to comparing animal exploitation to human slavery it should be recalled that, while abolitionism was (mainly) developed in the particular context of racial slavery resulting from the transatlantic slave trade, slavery in and of itself has taken many forms throughout history. Indeed, major differences can be identified between the slavery of antiquity and that of the New World colonies. In the colonies, slave status had instead an ontological foundation and was based upon supposedly intrinsic properties of certain people, like the color of their skin as such, or any other trait for which skin color was a proxy. In ancient Rome, by contrast, a slave was merely someone who was either born from an enslaved mother, captured during a war, or condemned for a crime. Institutionalized slavery can take various forms, with some more perverse than others (Watson, 1997). Moreover, the terminology is properly used to refer to a type of domination that has been exerted over highly diverse groups of individuals. Thus, to present the exploitation of animals as one of its numerous avatars and to characterize a social movement aimed at ending it as abolitionist is arguably neither a challenge to the unique and particularly despicable nature of racial slavery nor a minimization of the social, economic, political, and psychological consequences that it still has for many people today (Sanbonmatsu, *forthcoming*). (This is especially true in a context in which the abolition of sexual exploitation or forced labor is also being demanded. Admittedly, some prefer to not label these phenomena as slavery, but these encounter far less objection (Patterson & Zhuo, 2018). As such, identifying several phenomena including animal exploitation as slavery does not

imply that they are all identical or equally objectionable from a moral perspective. The same applies to labeling different movements as abolitionist.

Of course, it remains true that animals, just like victims of racial slavery, are considered as naturally and categorically inferior to human beings and their exploitation is grounded in this essentialization. They are seen as mere resources at our disposal not only because the law treats them as property but also because there is an assumed immensely deep divide, intellectually and morally, separating them from their owners. In terms of their legal status and how they are treated, animals can certainly be placed at the very bottom of the pyramid of legal protections afforded to beings who are regarded as property (Watson, 1997). And yet, it does not necessarily follow that conceptualizing animal exploitation as slavery amounts to equating Black individuals with nonhuman animals. Indeed, asserting that racial slavery was arguably more degrading and morally abhorrent than slavery in ancient Rome demonstrates that designating two phenomena by the same name does not necessarily imply moral equivalence. Even though it may be the case that the subjugation of animals represents an even greater injustice (perhaps due to the number of victims or the systemic nature of the worst conditions of captivity, transport, and slaughter they endure), this would need to be demonstrated. As we will see, this type of claim and the demonstration it cries for should not be attempted.

Whether we consider the criterion of powers attached to legal ownership (League of Nations, 1926), or the broader criterion of hereditary permanent status (legal, civic, and symbolic) of an outsider, it appears that nonhuman animals' condition corresponds to that of slaves, perhaps even more clearly so than many human groups currently experiencing a situation of servitude denounced by human rights organizations as modern forms of slavery. Orlando Patterson and Xiaolin Zhuo argue that among all the situations of servitude in which some human beings find themselves today, only certain extreme cases are "sufficiently slave-like to justify being called modern slavery." Drawing on the Bellagio-Harvard Guidelines on the Legal Parameters of Slavery, modern slavery is defined as "that condition in which one or more individuals or organizations exercise complete control and possession of a person's body, labor, capabilities, and movement through the overt or threatened use of violence or other forms of coercion" (2018, p. 411). It is difficult to deny that the condition in which we hold the vast majority of domesticated animals today meets this definition. Pigs, cows, chickens, and farmed fishes have the legal, political, and social *status* corresponding to that of the enslaved and are exploited and controlled in such an extreme way that their *condition* corresponds to that of enslavement. Regardless of how slavery is defined, it can hardly fail to find application in the case of nonhuman animals that we exploit for various purposes, unless one insists (in an ad hoc manner) on including the condition of belonging to the *Homo sapiens* species within the concept of slavery itself. If sentient animals are capable of agency and if animal rights activists are correct in believing that they have a genuine interest in being free, excluding them from the group of beings for whom enslavement is a problem indeed appears arbitrary. In this regard, refusing to acknowledge that what they endure is nothing less than a form of enslavement seems to stem from a determination to euphemize their plight and reinforce our prevailing tendency to

underestimate the gravity of the suffering and the injustices we routinely inflict upon them.

Interestingly, insisting that other animals *are* our slaves rather than presenting their situations as being simply *analogous to* that of human slaves seems to sit better with what philosopher Syl Ko explains when criticizing the comparisons made between human and animal oppressions in her book *Afro-ism*, which she coauthored with Aph Ko:

We can connect earlier on by setting together race and animality (which almost everyone gets as naturally going together). If we note that both groups are affected by the same oppression, one caused by falling short of reaching real human status, then these struggles are so intimately intertwined that there is no need to have to posit further and more superficial “connections”. (Ko & Ko, 2017, p. 168, note 9)

Ko encourages us to focus on the common roots of the oppression experienced by racialized individuals and by nonhuman animals, namely, the construction of the White man as the standard model of humanity, relegating all others (regardless of their respective bodies/species) to subhuman, less-than-human, or not-quite-human status. She concludes by inviting us to consider the oppression of animals and that of those human beings who also “fall short of real human status” (Ko & Ko, 2017, p. 86) “together and in the same spaces with the aim of taking to task racism, sexism, speciesism, ableism, and so on—or coloniality in general—in tandem” (Ko & Ko, 2017, p. 84). Kim arrives at a similar conclusion:

It is not only black people who should not be treated “like animals.” It is not only animal liberationists who should be concerned with the status of the “animal.” The war against the “human” [produced through the *simultaneous abjection of slaveness/blackness and animality*] is most effectively, and perhaps necessarily, waged on these two fronts at once, from both sites on ontological opposition. (2018, pp. 29–30)

In the same vein, law professor Maneesha Deckha warns against the detrimental effects of reinforcing human exceptionalism, both for nonhuman animals and marginalized human groups:

[A]nimalization through comparisons to animals and otherwise was and remains a staple of racist, sexist, classist and other ideologies against marginalized peoples, particularly black people. Yet, critical theorists have pointed out that peoples who seek escape from the oppressive stigmas associated with animality by refuting solidarity gestures with animals and emphasizing instead their humanity fortify [...] speciesist rationales that not only promote human exceptionalism but also underwrite racism, sexism, etc. (2017, p. 85)

Angela P. Harris further advises people of color to resist the temptation of distancing themselves from those who are even more disadvantaged and of resorting to the *politics of respectability*, which consists of “the effort to make political and social gains for one’s group by shifting the line of abjection just enough to let the most privileged [in this case the racialized human beings] step over to the other side” (Harris, 2009, p. 29), thus leaving nonhuman animals alone on the bad side. Some members of the Black community follow in the footsteps of their ancestors who, from the late nineteenth to the mid-twentieth century, “forged a dynamic and synergetic interracial and interspecies social justice movement dedicated to human and

animal welfare” (Davis, 2023, p. 480). They refuse to let the clumsiness and even the racism that too often characterizes the way some animalists compare animal exploitation to human slavery to prompt them to deny the subordination of nonhuman animals. Instead, they emphasize the importance of pursuing our struggles for social justice in a convergent manner and avoiding victimhood competition (Probus, 2010; McJetters, 2014; Montout, 2019–2020). As vegan and social justice advocate Christopher-Sebastian McJetters reminds the readers of his blog, “[e]stablishing a hierarchy of oppression only serves to help the oppressor. The better narrative—the stronger narrative—is in choosing to seek freedom for everyone. Otherwise, we’re only fighting for the right to oppress someone else” (2014). In his opinion, establishing equality hinges on solidarity, as continued division serves to perpetuate further tyranny.

A more effective and fairer strategy would be to emphasize the subjectivity—the ability to consciously experience the world—and the vulnerability of embodied beings, so as to “simultaneously combat both species hierarchy and intrahuman hierarchy, in a mutually reinforcing way” (Kymlicka, 2017, pp. 302–303). Scientific studies in social psychology have indeed shown that, within an individual, the feeling of superiority toward animals is proportional to the tendency to hierarchize human beings among themselves (Dhont et al., 2014). As other authors have pointed out, “‘dehumanization’ – that is, ‘animalization’ – is seen as a form of degradation because animals are, in the first place, already degraded” (Cavaliere, 2015, p. 27). Combating contempt toward nonhuman animals and their objectification would undermine the foundations of racist ideology. It would therefore be wise and even vital, as much for anti-racists as for anti-speciesists, to adopt an intersectional perspective and to show genuine concern for the fates of all victims of injustice (Deckha, 2017; Ko & Ko, 2017; Kim, 2018).

The rhetoric surrounding slavery is trite (Grenouilleau, 2014; Patterson & Zhuo, 2018; Jung, 2019). Moreover, the objections against the analogy between human slavery and animal exploitation deserve to be taken very seriously. However, the fact remains that animal rights activists who call themselves abolitionists have numerous and excellent reasons to do so. After all, they too desire and work for the liberation of individuals who are denied the possibility of exercising their agency (Chauvet, 2017), whose own ends and interests are dismissed in favor of those imposed by their owner (Burgat, 2018, p. 74). Animals are subjected to the process of othering and inferiorizing that is constitutive of enslavement because they are reduced to being treated as property and thus have their right to have rights taken away. They are victims of the crime that, above all, consists of depriving them of freedom, of causing suffering, and of completely submitting to a being that possesses its own end and interests (Burgat, 2018, p. 74). Employing an abolitionist rhetoric nonetheless requires sensitivity and respect. It is imperative that animal advocates avoid giving the false impression that all members of the *Homo sapiens* species are now on the *safe* side of the pernicious divide separating humans and the Others. In their efforts to raise consciousness and achieve greater justice some, they must imperatively avoid “reinforcing pernicious stereotypes, images, and structures of feeling” (Harris, 2009, p. 32), thus exacerbating the vulnerability of other marginalized groups.

Conclusions

Over the last few years, fewer and fewer animal rights advocates are openly calling themselves abolitionists. This may be partly due to the publication of Canadian philosophers Sue Donaldson and Will Kymlicka's book *Zoopolis* in 2011. In presenting their remarkable political theory about animal rights, the authors explain how their approach is different from one that, if adopted, would ultimately lead to the extinction of domesticated animal species. In doing so, they renounce the abolitionist label and leave this epithet to those who are also extinctionists, as if the abolition targets the animals themselves rather than their exploitation (Côte-Boudreau, 2014; Albersmeier, 2014). This is unfortunate. While they may not qualify it as such, their approach is nonetheless fully abolitionist, as it allows us to imagine a society in which domesticated animals are free from the human yoke and are considered full citizens.

Led by the work of theoreticians like Donaldson and Kymlicka, hopefully, we will be able to avoid reproducing injustices comparable to those that followed the abolition of racial slavery, such as colonization, segregation, mass incarceration, forced labor, etc. If the parallels have any advantage, it is in reminding us that the abolition of an unjust institution may well lead, unfortunately, to new forms of injustices. We cannot be too wary.

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Chapter 6

Is Veganism Socially Just?



Savannah Quach and William O'Donohue

Is Veganism Socially Just?

Veganism is generally presented as an ethical matter. The ethical dimensions of veganism are variously presented, with the most common arguing for the immorality of causing (often severe and prolonged) pain and death to an extremely large number of sentient beings. More recently, arguments about ethical duties to minimize contributions to environmental degradation, particularly the existential threat of global warming, have also been made (see relevant chapters in this volume). Ethical arguments may also be related to duties to oneself (Eisenberg, 1968). Because a vegan diet is healthier than one that includes meat, and as one has a duty to oneself to behave in a way that is consistent with one's health, one may have a duty to adopt veganism that provides a further ethical dimension of veganism. Finally, for some, the rejection of carnist norms held by nearly all societies is itself a political act, particularly when such rejection involves the disavowal of other systems of oppression.

In the past few decades, there has been increasing attention to social justice concerns (see, for example, Vasquez (2012)). The basic idea is that some individuals have been or are currently mistreated unjustly because of their history, behavior, demographics, or societal position. Injustice is unethical as it involves mistreatment—one's rights are violated, one experiences unjustified harm, or one is deprived of some deserved good. This unmerited ill-treatment is unjust and, thus, at the root, immoral. For example, African Americans were deprived of their liberty during enslavement, their rights, such as their right to vote, during the practices associated with Jim Crow, and currently may experience racist treatment such as having racial slurs directed against them or facing discrimination in schooling or at work. It seems

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prudent, if not morally required, to identify and correct these injustices (and perhaps to adjudicate and punish the perpetrators). However, traditionally, social justice concerns have focused only on human well-being and have ignored other sentient beings.

There are precedents to criticizing vegans on social justice grounds, for example, vegans have been accused of being elitist, racist, and sexist (Lee, 2017). Critics of veganism, like sociologist Hye Lee, argue that veganism perpetuates and reproduces multiple systems of oppression because it is often a privilege that only the majoritized can afford (Lee, 2017). In her critique, Lee establishes the concept of B-ganism, short for *bourgeoisie*-ganism, which is, the current mainstream version of veganism. B-ganism fails to acknowledge its connections to other intersections of oppression and is therefore associated with color-blind, heteronormative, White, middle-class privilege (Lee, 2017)—for example, the promotion of veganism without any acknowledgment of possible racial or class-based disparities to veganism.

Similarly, Alloun (2018), in examining veganism in the context of the Israeli-Palestinian conflict, states,

...different approaches to animal activism can obscure or reveal the racial and colonial relations they are bound up with. [This paper] considers how Jewish Israelis frame animal rights in non-intersectional ways, as a simple, single-issue movement that can be abstracted from human politics and power relations, while the Palestinian Animal League in the occupied West Bank weaves animal activism with the decolonial struggle for Palestinian self-determination in an intersectional spirit. (p. 559)

Thus, the argument is that the moral status of veganism cannot be properly seen as a single isolated issue but can only be properly understood in the context of all social justice issues. One immediate concern is that if this is true, and if there is some urgency for a significant segment of the world's population to become vegan to avert climate disaster as well as to stop the ill-treatment of billions of sentient creatures, then moving in this direction becomes much more difficult. Not only is there a problem of changing diet but there is also the connected problem of simultaneously changing colonialism, capitalism, racism, sexism, and, in fact, all forms of what are seen as social injustices. We agree with the Reverend Dr. Martin Luther King Jr.'s claim that "The arc of the moral universe is long, but it bends towards justice." Given the urgency of needed change, we worry that such bending may be way too slow. And if all social justice problems are intimately interconnected, it also becomes a highly complex matter to hasten this process. As the Israeli-Palestinian conflict shows, it is even difficult and perhaps intractable to agree on a definition of what exactly is socially unjust.

Second, these hypothesized interrelations are essentially empirical claims. It is certainly logically possible for an individual to be vegan without being sexist or racist (as one would expect most minoritized women to be). It does suggest some interesting empirical experiments that can provide key evidence about the existence of such interconnections. For example, to what extent does a change from carnism to veganism result in concomitant improvements in other values related to social justice? Or, on a more molar level, perhaps in the domain of a political scientist, does one see an increase in veganism when more just forms of government are

instantiated? Finally, some information inconsistent with this claim of interconnectedness is that many, if not most, important political activists who had an impact on social justice issues were not vegans (e.g., Dr. Martin Luther King, Nelson Mandela, Bishop Desmond Tutu, Cesar Chavez, Susan B. Anthony, Mother Teresa, Harvey Milk, and so on). However, it may be the case that if a more holistic intersectionalist approach were taken, there would be more progress in each of the (possibly highly interrelated) dimensions of social justice.

A canonical social justice concern is racism. Do individuals and societal institutions like the educational, economic, and legal systems treat certain groups differently and unfairly? Social injustices can be embedded in practices from hiring practices to college admissions to what grocery stores stock in specific neighborhoods, and these practices need to be interrogated to identify social injustices that may be partially obscured for some reason. This chapter will explore various possible social justice concerns regarding veganism. Specifically, it will examine whether veganism is vulnerable to charges that it is sexist, racist, classist, ableist, colonialist, heterosexist/cisgenderist/heteronormative or involves cultural appropriation. This analysis allows a more comprehensive analysis of the morality of veganism, mainly because a behavior that is morally praiseworthy in some dimensions may be ethically problematic in others.

Addressing these questions is especially important as veganism and plant-based diets appear to be increasing in popularity among specific demographics. As seen in Fig. 6.1, those in the United States who are more likely to be vegetarian and eat more plant-based food are politically liberal as opposed to moderate or conservative, are of lower class as opposed to middle and upper class, and are women as opposed to men (Jones, 2023). Additionally, it was found that among all adult age groups, races/ethnicities, and education levels, vegetarians were relatively split evenly (Jones, 2023).

Some can mistakenly associate veganism with diet culture or a health fad when it is instead a lifestyle dedicated to avoiding, at a minimum, animal exploitation. There is also the misconception (see, e.g., Souza et al. (2020)) that veganism is responsible for environmental and animal exploitation (e.g., the argument that plant agriculture contributes to the chemical poisoning of ecosystems or deforestation). Therefore, the argument goes that veganism is not, in the end, an effective practice as it falls far short of its ameliorative aspirations. However, given the current food systems and how the world is currently structured (consumerist and speciesist), it is impossible not to be responsible for some environmental or animal harm. However, this criticism is based on a perfectionism fallacy, not a more realistic view emphasizing harm reduction. Veganism, consistent with consequentialist ethics, on average, causes the least amount of harm to sentient creatures and the environment. It not only entails minimizing the animal products consumed, as is convenient for a particular individual, but also abstains from any negative action that harms animals and promotes a positive duty to do what it takes to promote animal welfare. These duties are only sometimes easy or convenient but are required by the most morally sound ends.

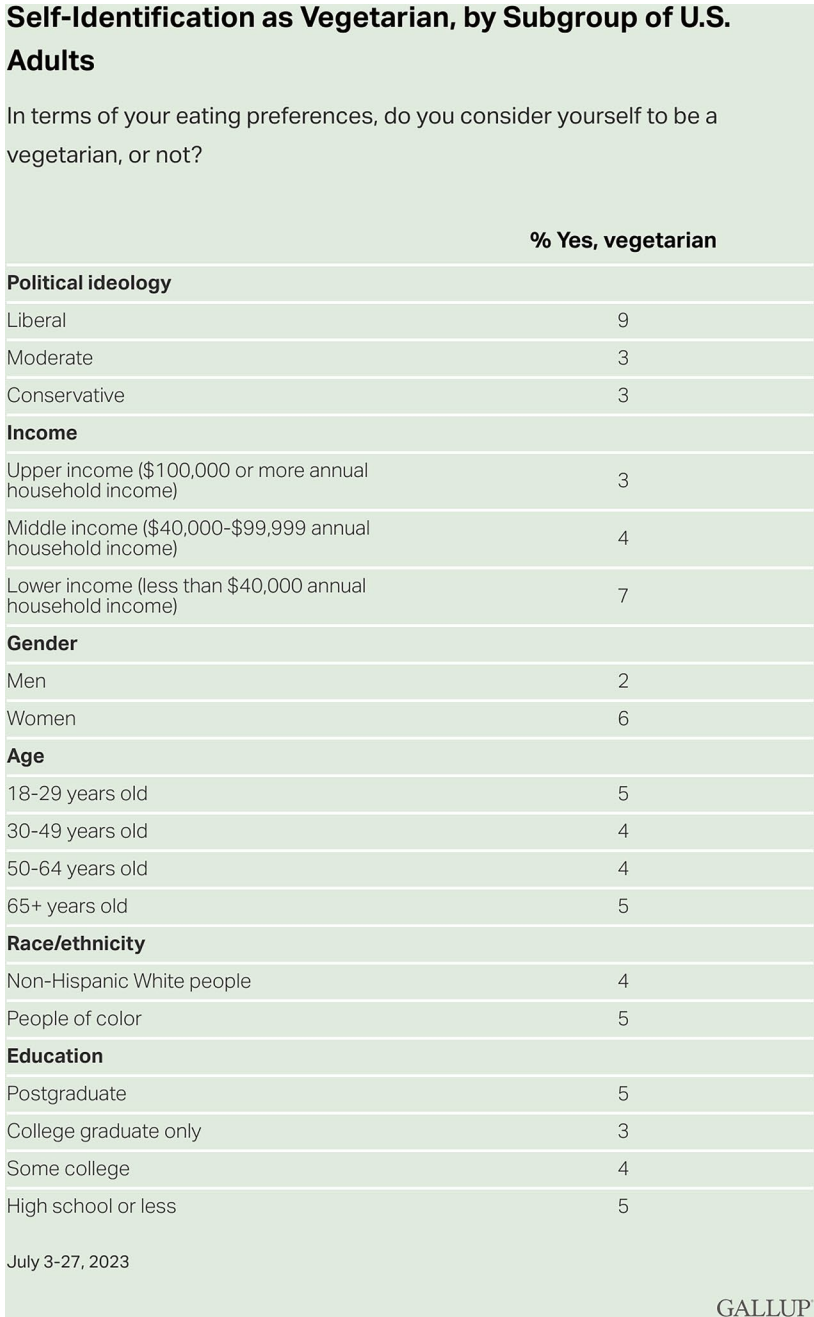


Fig. 6.1 Self-identification as vegetarian by a subgroup of US Adults

It is also imperative to consider veganism a social justice issue instead of a privilege (Greenebaum, 2017). A privilege may be defined as an unearned or unwanted advantage granted based on an individual's membership in certain social groups, such as gender, race, socioeconomic status, and sexuality (Greenebaum, 2017). It must be recognized that individuals can be faced with varying barriers to veganism as a result of institutionalized systems of social and political oppression (e.g., animal agriculture, problematic educational and legal systems, poverty, and food apartheid). Still, it is essential to realize that these issues are not caused by veganism itself. We conclude, after examining each issue individually, that veganism is not inherently sexist, racist, classist, ableist, colonialist, or homophobic/transphobic/heteronormative nor does it involve cultural appropriation. It is not a privilege because many people *can* be vegan but, unfortunately, *choose* not to.

As a final note, these social justice terms have sometimes been poorly or imprecisely defined (Frisby et al., 2023), and to the extent that this is the case, then the task of attempting to determine if some activity is or is not a legitimate case of this class of problem is made difficult or impossible. Thus, we will spend some time first proposing and defending a reasonable but imperfect definition of each social justice category.

Is Veganism Sexist or Misogynist?

Sexism is defined as “individuals’ attitudes, beliefs, and behaviors, and organizational, institutional, and cultural practices that either reflect negative evaluations of individuals based on their gender or support unequal status of women and men” (Swim & Hyers, 2009, p. 407), whereas misogyny, a closely related construct, is derived from the ancient Greek word *mīsoḡuniā*, which means hatred of women. Misogyny has taken shape in multiple forms, such as male privilege, patriarchy, gender discrimination, sexual harassment, belittling of women, violence against women, and sexual objectification (Srivastava et al., 2017, p. 111).

There is nothing directly sexist or misogynist about veganism, mainly because veganism is largely silent on gender. None of its central precepts (e.g., act so sentient beings do not suffer) mentions gender, and no gender attribute is considered positive or negative. Thus, conceptually, because gender is irrelevant to it, there is no sexism or misogyny involved in veganism. Moreover, if sexism or misogyny is taken to involve suffering on the part of women, veganism, with its concerns for minimizing suffering, would also be opposed to these practices and attitudes. Women are also more likely to be vegan, with 9% identifying as vegan compared to 3% of men (Jones, 2023), which also suggests that veganism is not sexist—as why would women more frequently adopt some practices inherently unfair to them?

Carol Adams (2015), in fact, has argued that carnism is associated with sexism in several key ways, and she links species’ oppression to gender oppression. She suggests that patriarchal biases naturalize oppression and are thus associated with entitlement and dominance, which reduces both women and nonhuman animals as

existing for the convenience of men. She notes that female animals are more likely to be abused in the carnist system as cows are misused for milk and chickens for eggs in the same way that women's bodies are commodified in pornography, prostitution, and general marketing. The individual and their interests are strategically hidden—the breasts of an individual woman or an individual chicken are depersonalized. Instead, they are seen merely as objects to be coveted and consumed. She suggests that ameliorating these problems is more likely to occur with a feminist/ecofeminist ethic of care.

Moreover, on deeper reflection, there may be concerns about the actual practice of living a vegan lifestyle. If veganism, when it is practiced, is associated with increased costs, such as being more labor-intensive in either acquiring or preparing vegan meals, and if it is women that disparately bear these costs, then veganism can be considered sexist *in practice* as it places further burdens on women. Note that this increased burden on women is not inherent in veganism. There is nothing intrinsic to the construct that states women must be more responsible for preparing vegan meals. Instead, the problem arises contingently because currently, across most societies, women are more responsible for meal preparation than men; females would experience any increase in the difficulty of food preparation. However, veganism would not present such a problem in any society where meal preparation is equitable.

Miranda (2011), in a survey of unpaid work across the globe, found that “In each of the countries under consideration, women spend more time on unpaid work than men. The gender gap is on average 2 hours and 28 minutes per 24-hour day, but there is significant divergence across countries.” (p. 11). These data were not broken down into types of activities such as shopping, cooking, childcare, and house cleaning. Still, it is reasonable to presume that women would bear activities most associated with veganism, such as cooking and food shopping.

The second way that veganism could be sexist is if it is more financially expensive than carnism and if women are overrepresented among the poor—the so-called “feminization of poverty”—as a result of which, veganism would have an unintentionally increased burden on them. Again, this is not intrinsic to veganism conceptually but would be found in the (contingent) practice of veganism. Moreover, a vegan diet may not always be more expensive because meat is usually more expensive than vegetables, grains, and fruits. There is some evidence that, on average, vegan meals are less expensive than carnivorous meals (Global Grocery Index, Figs. 6.3, 6.4, 6.5 and 6.6). Furthermore, as increasingly more people become vegans, the economies of scale could rise, thus reducing the cost of vegan food items. Finally, some vegan foods, such as Impossible Burgers, may be initially expensive due to the need to recover research and development costs.

The use of female-identified bodies as a tactic of vegan advocacy can be argued as sexist when organizations such as PETA sexualize female bodies to promote their agenda (Winter, 2022). This type of advocacy perpetuates a patriarchal system of oppression, implying that female bodies are to be objectified and used to sell products or ideas. Moreover, these advertisements uphold unrealistic and problematic standards of beauty based on Western ideals. An example of this is seen in Fig. 6.2, an ad from PETA that displays a thin, White woman's nude body with the heading



Fig. 6.2 Want my body? Go vegetarian!

“Want my body? Go vegetarian!”. PETA, at times, has advocated against one social justice issue (carnism) while also enabling other systems of oppression (e.g., sexism). The lack of commitment to dismantling all forms of oppression ultimately fails to dismantle any form of oppression due to its intersecting nature.

The final consideration regarding the possible sexist dimensions of veganism is that vegans might adopt positions that some have taken to be sexist. The most likely candidate for this might be abortion/reproductive rights. Vegans are generally “pro-life” in the broadest sense of this term (vegans generally think it is morally wrong to kill a fertilized chicken egg). Still, if vegans are consistently pro-life and conclude that it then be morally wrong to kill a fertilized human egg, then they might be regarded as sexist. Polls reveal that vegans are more likely to be liberal, with 9% of liberals but only 3% of conservatives. Given that liberals are much more likely to be pro-choice, it would seem that liberals do not see abortion as inconsistent with their position on reducing pain and death in sentient beings. This is a complex matter that has received too little attention.

Is Veganism Racist?

Racism is the belief that different races possess distinct characteristics, abilities, or qualities that render them inferior or superior to one another (Edwards, 2018). There is nothing about veganism that classes any race as better or worse than another race. Veganism has existed among many different cultures of all races. The above poll shows that veganism is adopted approximately equally between Whites (4%) and non-Whites (5%).

What is often confused as racist within veganism is, again, not rooted in veganism. The idea that racially minoritized communities cannot be vegan is clearly false. Veganism may be an adopted corrective to the higher prevalence of health issues like heart disease and diabetes within African American communities (Carnethon et al., 2017). Veganism is, in fact, equally widespread in Black and brown communities as it is in White communities (Stewart, 2023) and has historical precedence as seen, for example, in Rastafarianism in Jamaica (see relevant chapter in this volume); as such, it is viewed as a way to minimize the problematic Babylonian influence of racial practices and hegemony. This is not to discount the fact that there are barriers to veganism primarily experienced by racially minoritized individuals, such as the lack of accessible and affordable vegan produce in places facing food apartheid (de Souza, 2023). However, this is a product of societal and institutional oppression, not veganism itself.

A controversial argument is that some vegan advocacy groups, such as PETA, compare carnism to historical atrocities such as the Holocaust or enslavement in America because the former is also an act of genocide and enslavement (Kim, 2011). Critics of this viewpoint claim that this is a problematic approach that discounts the unique, lived experiences of those actually involved and impacted by those events (Kim, 2011). This approach to veganism, coined “the similarity argument,” in practice, has been labeled racist, antisemitic, and colonialist. The similarity argument claims that animals should be held to the same standards and valued as much as humans (Bryant, 2005). This viewpoint is analogous to color blindness, in which an individual claims to no longer see race but only sees others in terms of

their other characteristics (Braddock III, 2021). Overall, this tactic of universalizing experiences of different social contexts, adopted by some vegans, is neither logical nor pragmatic.

Is Veganism Classist?

Classism is the belief that a person's value is intrinsic to their social and economic status. There is a notion that veganism is too expensive and only for the wealthy (Lee, 2017). Veganism can be less expensive in some ways (e.g., tofu/beans/lentils and other vegan proteins are less expensive than equivalent servings of meat). Still, it can be more expensive in other ways (e.g., the shorter shelf life of many vegetables and fruits, and some prepared/processed vegan foods can be more expensive). Again, it should be highlighted that veganism is adaptable—the practice of veganism does not have to look the same for everyone. There are ways to contribute to harm reduction that concern vegans as much as possible and practicable. For example, veganism does not need to involve expensive raw juices, organic produce, and prepared vegan substitutes like Impossible meat. It can be rice, pasta, lentils, canned/frozen fruits and vegetables, etc. Accommodations such as purchasing shelf-stable foods or whole foods instead of processed foods can be made for an individual's socioeconomic situation. If veganism is to have its overall desired effects, all socioeconomic classes will need to participate. Some studies suggest that plant-based consumers do not spend more but less than any other diet assessed (Bonnie, 2021). This could be a promising feature for promoting plant-based diets, with particular interest for consumers with lower incomes, by ensuring food security.

Additionally, being vegan can imply that an individual has learned how to cook and maintain a balanced diet, which can often entail a higher social status. Although not everyone may have been raised in families that taught these skills, the intellectual revolution has spread information through the Internet, books, community organizations, or healthcare institutions. However, decreased wealth and access to quality education would make this information less readily accessible. Thus, vegans should pay attention to disseminating information in accessible and affordable ways. This issue, again, is contingent and not inherent to veganism.

Food apartheid is a system of segregation that divides those with access to affordable, nutritious food and those who have been denied that access due to systemic injustice (de Souza, 2023). Food apartheid recognizes that issues involving access to nutritious food are often linked to historical and systemic inequities. In many cases, lower class and communities of color face food apartheid the most due to economic and racial disparities. It can occur as fewer grocery stores in specific neighborhoods, limited availability of plant-based foods, or an oversaturation of fast food restaurants with few or no vegan options. A critic of veganism may assert that in promoting veganism, many ignore the contribution of systemic oppression that enables some to participate and disables others (Alkon & Agyeman, 2011). Therefore, it is essential to consider the unique challenges for certain groups

associated with the intersection of veganism and food apartheid and work toward solutions that address food inequity as the issue's root.

However, it is entirely possible to be vegan despite facing food apartheid. Ways to access veganism can include meal prepping to make the most of affordable ingredients that minimize food waste, growing a personal fruit and vegetable garden, or learning how to be cost-effective by substituting more affordable plant-based products for meat (e.g., substituting plant-based proteins like beans or tofu for meat). Again, it is not veganism that perpetuates these unjust practices but simply adopting the practice of veganism that can lead to facing these challenges caused by other problematic societal practices (Figs. 6.3, 6.4, 6.5 and 6.6).

In 2021, a global grocery index researched the affordability of groceries (both vegan and non-vegan) in several countries. The figures show that vegan grocery shopping is often equivalent to, or at times, even more affordable than, non-vegan grocery shopping. Figure 6.3 lists the most and least affordable countries for a vegan grocery shop, in which an individual can make purchases relative to the percentage of their daily salary. Comparing Fig. 6.3 with Fig. 6.5, which lists the most and least

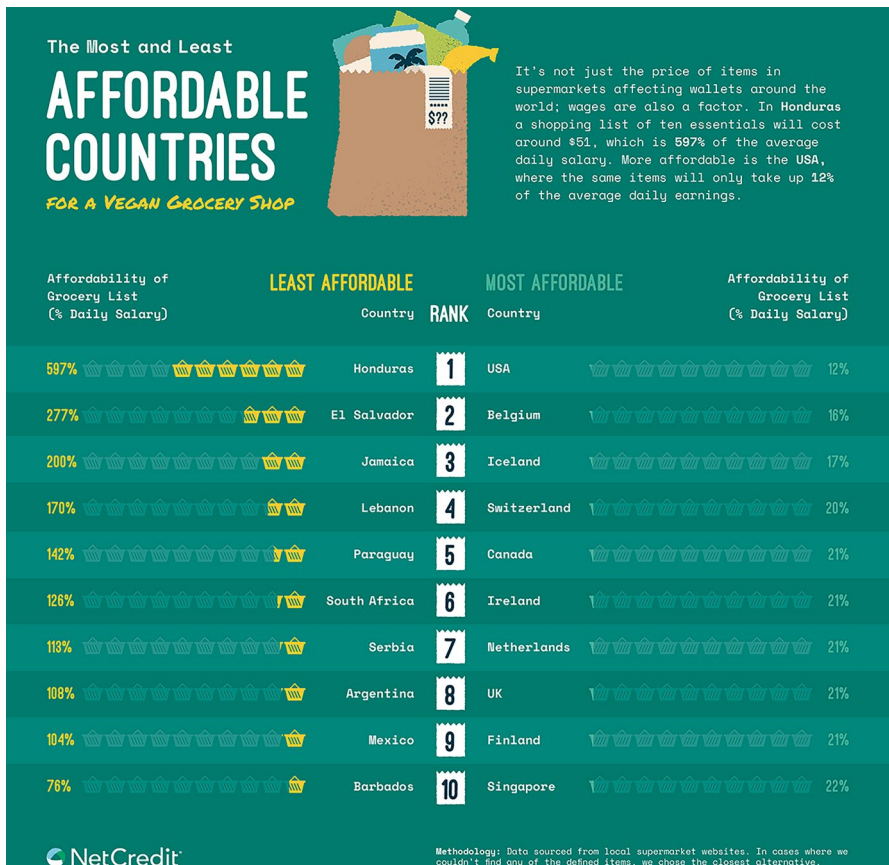


Fig. 6.3 The most and least affordable countries for a vegan grocery shop

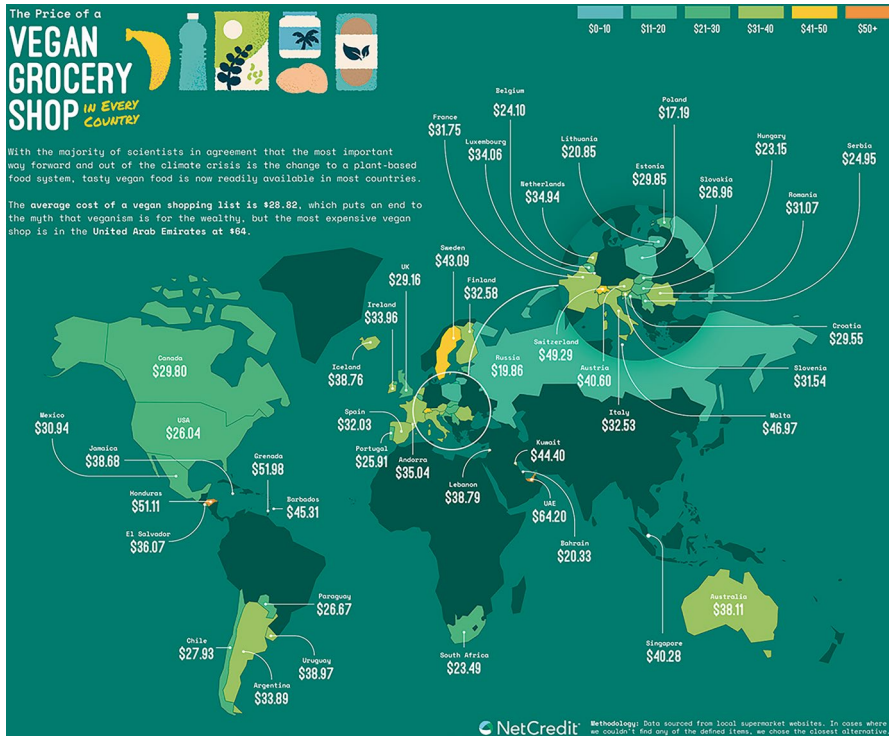


Fig. 6.4 The price of a vegan grocery shop in every country

affordable countries for a non-vegan grocery shop, it is evident that in the listed countries, being vegan ultimately constitutes the lowest percentage of an individual’s daily salary. Figure 6.4 illustrates the grocery prices of a vegan shop across different countries, whereas Fig. 6.6 displays the same prices for a non-vegan shop. Similarly, these figures establish that grocery shopping as a vegan is more affordable.

A recent study in Portugal has found that vegan food shopping is associated with lower food expenditure compared to its omnivorous counterpart (Pais et al., 2022). Another study utilizing the food prices from the International Comparison Program, which included 150 countries, found that vegetarian and vegan diets were more affordable than carnism (Springmann et al., 2021). The results of these studies suggest that being vegan would be more sustainable and healthier and can reduce an individual’s food costs. Finally, if one considers the forgone healthcare expenses associated with a healthier vegan diet, then the vegan diet is seen as even more affordable.

A final point is that the animal welfare standards—legal and regulatory standards that ensure “humane” treatment and prohibit “unnecessary” suffering of animals—have failed, in that, in practice, animals are viewed as property (Francione, 2007). Animals are economic commodities, capital that people value as a fundamental right to property. Animal welfare standards are about how animals can be exploited

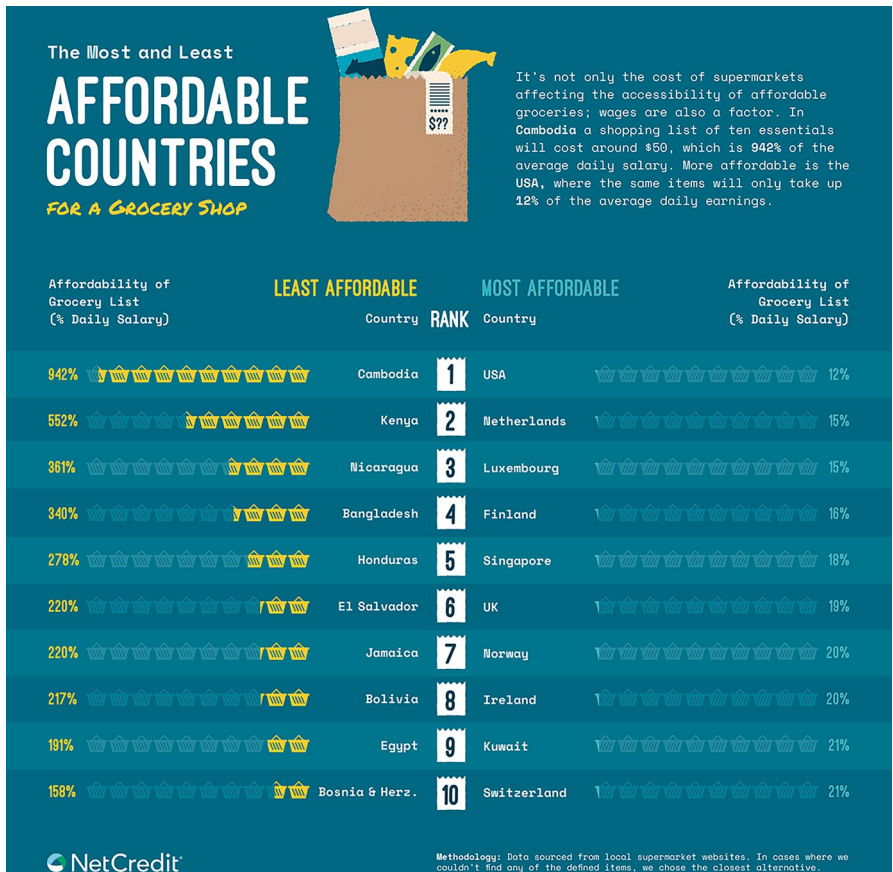
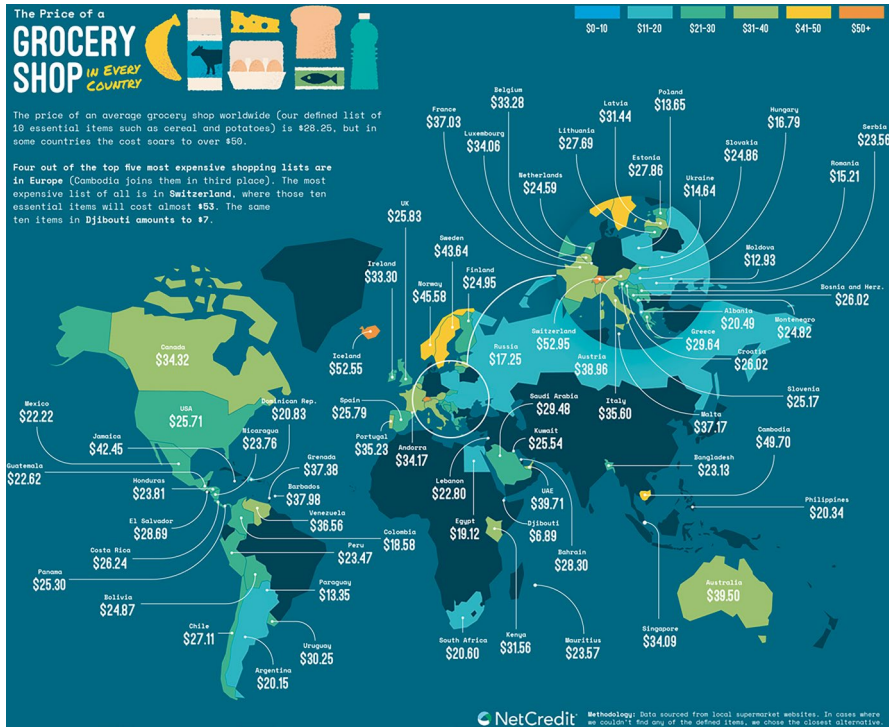


Fig. 6.5 The most and least affordable countries for a non-vegan grocery shop

in the most economically sensible way, not fundamentally about the morality of the situation. It is about making people more comfortable in buying into animal exploitation, not about minimizing animal exploitation. Moreover, sick animals produce sick food, which is not profitable (Singer et al., 2007), so they maintain animal welfare at a bare minimum standard while still harming them at the end of the day. The bottom line is that animal welfare standards in agriculture are oxymoronic. If one cares about the welfare of animals, then one would not choose to exploit or murder them in the first place.



However, veganism, in practice, can be viewed as ableist if it perpetuates the idea of improving one's health, as if disabilities are flaws that need to be fixed. Given the multiple benefits of veganism, health benefits do not have to be the reason one chooses to become vegan, and changes in health status are not a guaranteed outcome as one can be vegan and choose to have a diet consisting of foods low in nutrition and high in cholesterol, trans fats, and refined sugars. Moreover, for some, veganism can lead to negative health outcomes such as iron deficiencies if not mitigated with supplements, vitamins, and a balanced diet. Therefore, ableism is contingent on certain practices of veganism and not on veganism itself.

Is Veganism Colonialist?

Colonialism is a practice of domination involving the subjugation of one people by another, notably the European political domination that began in the early sixteenth century. It is believed to have enduring adverse effects relevant to social justice, such as racism, cyclical poverty, economic inequity, loss of land and wealth, violence, loss of language and culture, and an enormous number of missing and murdered Indigenous people. Again, the core beliefs of veganism are unrelated to colonialism; veganism itself does not promote any practice of territorial expansion or domination. Thus, there have been no resultant losses. There has been no colonial power that has been a vegan-dominated society. However, it is more difficult to tell if colonial activities extinguished vegan Indigenous societies. Therefore, veganism is not colonialist or a product of colonialism.

In principle, veganism may be viewed as ideologically colonialist as it implies that cultural practices and traditions that promote or rely on hunting, fishing, husbandry, and animal sacrifice are inferior. It also implies that those who participate in such activities should be reeducated. It is important to make the distinction that carnists and carnist societies are not inherently inferior in their other dimensions, such as values or traditions, but that some of their practices are unethical as they perpetuate systems of harm, as described throughout this chapter. One could argue that veganism is colonialist, for example, if some Indigenous groups such as the Inuits—even though they live in a geographical area where plant-based agriculture is impossible and traditionally they do not have access to purchase plant-based products—are shamed for engaging in carnism. In an ideal world, everyone can be vegan, but this is not the reality. Although any amount of animal exploitation is unethical, the aim is not to blame those who cannot be vegan but to support, educate, and allocate resources so that veganism is accessible to all. As the moral philosopher Immanuel Kant (1957) has stated, "ought implies can." Thus, the basic principles of veganism are not colonialist but seek to persuade that there are universal norms that are both moral and in the interests of all.

Is Veganism Heteronormative/Heterosexist/Cisgenderist?

Heterosexism is defined as the belief that heterosexuality is the “normal” sexuality and superior to any other sexual orientation (Barnett et al., 2021). Cisgenderism is defined as the belief that being cisgender is the “normal” gender and superior to any other gender identity (Barnett et al., 2021). Veganism intrinsically does not have any association or bias toward different sexual orientations or gender identities. Like ableism, veganism is silent on these issues. Veganism is not a causal factor of heterosexism or cisgenderism; in fact, ethical veganism overtly includes promoting a more just society for all sentient beings (Winter, 2022). This means that vegans who align with this vision actually ought to be allies of the LGBTQ+ community and take a stand against the oppression of minoritized communities.

Vegan advocates such as PETA have been criticized for their use of heteronormative rhetoric. For example, the utilization of women in ads promoting veganism in a way that sexualizes or objectifies them perpetuates a system that may be construed as privileging the heteronormative male. It relies on a patriarchal system in which women are essentially seen as objects of heterosexual male desire. These types of campaigns buy into heteronormative as well as sexist ideologies (Fig. 6.7).



Fig. 6.7 All animals have the same parts

Does Veganism Involve Cultural Appropriation?

Cultural appropriation has been variously defined but centers around the idea that members of a majoritized group adopt cultural elements of a minoritized group in an exploitative, disrespectful, or stereotypical way. Veganism does not appear to involve cultural appropriation, as no one culture has developed or promulgated veganism. Thus, there can be no claim that veganism derives from any one or set of cultures. Vegan practices have been found in multiple cultures and groups, such as Buddhists in Asia, Jainism in India, African Hebrew Israelites, and Rastafarianism in Jamaica (see relevant chapter in this volume). Moreover, veganism is not associated with a cultural transmission but is essentially a set of arguments open to anyone from any culture to adopt. In addition, the environmental harms caused by animal agriculture will affect different cultures in different degrees and ways, and being exposed to and the ability to understand the relevant environmental science may differ across cultures. These key ideas, again, have not been stolen from any culture. Finally, because no significant power is forcing veganism on any less powerful people, veganism is not colonialist.

What may be argued, however, is that some vegans in Western societies have claimed to have culturally appropriated vegan practices by claiming them as their own or failing to acknowledge their origin. An example is *Thug Kitchen*, a plant-based soul food cookbook authored by a wealthy White couple (Martin, 2019). Soul food is founded by those identifying with the African diaspora due to its historical ties to enslavement and forced migration (Martin, 2019). This book was criticized for appropriating Black language and culture and capitalizing on it as a marketing strategy (Martin, 2019). This, in practice, is how some vegans can misappropriate and deracialize foods specific to certain cultures. Nonetheless, these practices are not intrinsic to veganism but instead contingent to it.

The Positive Case that Veganism Is Socially Just

It is insufficient to argue that veganism is related to increased social justice simply by showing that veganism is not associated with the ways that social justice can occur, for example, it is not inherently racist or colonialist. Instead, the positive case should also be investigated, that is, does veganism inherently involve a movement toward a more just society? There are two primary arguments that veganism, in fact, intrinsically does so.

Positive Argument 1: Veganism results in a more just practice as all sentient beings are treated better than in carnist practices.

The central premise motivating veganism is that a more socially just practice is to acknowledge and respect all sentient beings by ensuring that one's lifestyle does not cause sentient beings to suffer from industries such as industrial livestock

production or to have shortened lives due to their slaughter for food, clothing, or recreational hunting. This argument does not depend on making animals members of our society, but it is the argument that society is better off not treating animals as carnists do. Thus, if minimizing such harm to the sentient creates a more just practice, then there is a positive case for veganism to create social justice. As such, veganism allows a more thoroughgoing rejection of other forms of oppression and suffering. Therefore, by its advocacy and practice of eliminating unnecessary harm to sentient beings, veganism directly results in a more just practice through its commitment to this negative utilitarianism.

Second, veganism also creates a more just practice because it eliminates some jobs that can harm workers. Workers involved in the slaughter of animals can experience several serious adverse psychological effects, such as traumatization, depression, guilt, and anxiety (Slade & Alleyne, 2023). They can experience heightened rates of alcoholism and substance abuse to attempt to cope or avoid memories of animal suffering and death (Slade & Alleyne, 2023). Thus, another way that veganism is associated with a more just society is through the reduction and eventual elimination of negative reactions for employees in this sector.

Positive Argument 2: Veganism results in a more sustainable world, and the life-supporting properties of the world are not compromised by animal agriculture, which is in the interests of all life and thus represents a more just practice.

Animal agriculture is the largest producer of ozone-depleting greenhouse gasses, deforestation, biodiversity loss, water shortages and depletion, and animal species and habitat degradation in the oceans (see relevant chapters in this volume). Thus, it is a large and perhaps the largest contributor to climate change. The animal waste from livestock pollutes local waterways with pesticides, herbicides, hormones, antibiotics, phosphate-rich fertilizers, and bacteria. Eisen and Brown (2022) found, for example, that a phaseout of livestock production would, by the end of the century, provide half of the net emission reductions necessary to limit warming to 2 °C.

Thus, a movement such as veganism, which slows the destruction of the planet to sustain life, is a socially just movement. The survival of species is a social problem, and if there is no human life, there is no human societal activity. Alternatively, stated differently, any society that does not adopt veganism but instead continues to harm the environment's ability to sustain life is socially irresponsible and thus unjust.

Conclusions

Veganism is socially just in two significant ways. First, it suffers from no specific social justice problem, such as being racist or sexist. Second, it minimizes the suffering of all sentient beings, which is central to a socially just society, as unnecessary suffering is not socially just. Vegans, though, need to be mindful that the implementation of a vegan lifestyle does not involve any practices that can be socially unjust, such as sexism in which men do not properly share the work involved

in shopping and preparing vegan meals. Thus, veganism is essentially not only a personal act but also a political one. Finally, it is essential for vegans both to combat unsound arguments that it is socially unjust and to put forth the case that social justice inherently requires a vegan lifestyle.

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Chapter 7

Veganism and Capitalism



Robert C. Jones and John Sanbonmatsu

A specter is haunting veganism—the specter of anti-capitalist critique. By and large, mainstream animal advocates and vegans have either ignored the problem of capitalism or have seized upon capitalist innovation as the “solution” to the problem of exploitation and animal suffering (Pacelle, 2016). While PETA and other animal rights groups have long singled out specific corporations for their cruelty to animals, they seem unaware that such practices stem, in most cases, not from deliberate cruelty but from the objective features of our economic system. The destruction of billions of nonhuman animals and the despoiling of the living earth are not accidental features of capitalism, they constitute its fundamental basis. Understanding the nature of the capitalist system—and its relation to speciesism—is thus a *sine qua non* for any informed discussion of vegan politics. No prior system of producing human material life proved as destructive to animal lives and interests.

Speciesism forms the ontological ground of human identity; it is a system of material and symbolic human life organized around the domination, exploitation, and mass killing of other sentient beings (Sanbonmatsu, 2014). As a mode of life, speciesism precedes capitalist development by millennia (Sanbonmatsu, 2017). From its beginning, the human species has exploited and slaughtered animals for a variety of communal purposes, including for food, clothing, and propitiation of the gods. As an ideology and practice, therefore, human domination was already well developed before the advent of capitalist relations in early modern Europe. In *Capital*, Marx observes that the precondition for capitalist relations was the prior existence of a class of propertyless workers who had nothing to sell but their labor

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power (Marx, 1867/1978); we might observe that the new system of commodity production similarly presumed, and was dependent upon, a range of existing social practices that treated the bodies, minds, and habitats of animals as forces of production. However, while capitalism grew out of longstanding relations and patterns of human species dominance, it also transformed them. Prior to capitalist relations, the scope of human exploitation had been curbed by the material limitations of human economic and technical development, on one side, and by religious and folk injunctions—weak as they were—against indiscriminate or “unnecessary” cruelty toward animals, on the other. With the emergence of capitalist relations, however, the last practical and cultural fetters hindering human dominion fell away, opening the path for a more total form of domination. The Scientific Revolution ushered in a Cartesian, hyper-masculinist worldview that stripped away more reverential and organicist conceptions of Nature and reduced nonhuman animals to the status of mere machines (Merchant, 1980). This cultural transformation was in turn partly an artifact of the new system of commodity production, which subordinated all values in society to the quest for profit and treated Nature as the raw material for the accumulation of capital. European colonialism then spread the commodity system to the four corners of the earth. In the Americas, the violent exploitation of African slaves and poor and indigenous laborers, paralleled the exploitation and killing of animals. The latter were slaughtered in the billions to satisfy growing European markets for fish, meat, fur, and whale oil (Nibert, 2013). The rise and consolidation of the cattle industry in the nineteenth century, finally, created vast new centers of concentrated wealth and forged a new consumption pattern based on ever-growing per capita meat consumption.

This historical background aside, the key to understanding the contemporary predicament of animals lies in the nature of commodity production itself (Wadiwel, 2023; White, 2017). As in our own time, animals in previous epochs had the status of private property. As domesticated animals are believed to have been among the earliest forms of private property (Bowles and Choi, 2019), they likely played a key role in the emergence of class hierarchy. (The English word “capital” in fact derives from the Latin *caput*, or “head,” signifying a head of cattle.) However, capitalist commodity production changed the nature of human species dominance. Because capitalist commodities are produced not to satisfy human needs (Mulvany, 2015), but solely to produce surplus value (profit), capitalists have an incentive to produce as many animals as possible, and to do so as cheaply as possible. By the early twentieth century, thus, the flesh, ova, and milk of nonhuman beings had assumed the form of standardized, inexpensive, mass-produced commodities.

Corporate monopolization—a structural feature of capitalist organization—leads to increased concentration of wealth and to continual expansion of the spheres of production and consumption. And because the “circuit” of production cannot be completed without consumption, corporations must implant new desires and needs in the populace, treating people as mindless “consumers” of an ever-growing heap of commodities, most of them unnecessary, wasteful, ecologically destructive, and harmful to sentient life. Today, there are thousands if not millions of distinct products containing animal ingredients; yet, animal goods continue to be produced in

ever-growing numbers and varieties to satisfy and expand this already massive global market.

The concentration of economic and technological power has led not only to the geographical and quantitative expansion of animal industries but to *intensification* of animal exploitation. Because the only value that truly matters under capitalist relations is exchange value—again, production for sale, not for use—animal exploiters must seek ways to reduce their costs and render production more efficient, without regard for the suffering and cruelty inflicted on animals in the process. Raised in close confinement, animals are treated as indifferently as any other mass-produced commodity, their lives and bodies ruthlessly molded to suit the needs of the industrialized system. As Michael Watts observes, “‘what is striking about the chicken is the extent to which the ‘biological body’ has been actually constructed physically to meet the needs of the industrial labor process’” (Davis, 2012, p. 37). Hence this description of chickens by the authors of *Commercial Chicken Meat and Egg Production*, a reference guide for animal science students and commercial poultry and egg producers:

The chicken industry has applied advanced technology in the form of genetics, nutrition, disease control and agricultural engineering to the growing and processing of chickens.... The technology built into buildings and equipment as well as embodied genetically into the chicken itself has steadily lowered the cost of poultry meat for consumers. (Bell and Weaver, 2002, pp. 87 and 805)

To maximize their productivity, chickens are genetically engineered, their bodies made to grow to grotesque proportions and at abnormally fast rates. Like chickens, other species of commercially farmed animals too—cows, pigs, talapia, etc.—are raised in intensive confinement and subjected to totalitarian controls, their diet, rates of growth, sleeping, and behavior closely monitored by the farmer or rancher to ensure a standardized and marketable final product. The Cartesian view of animals as machines is no longer a metaphor but an operationalized fact.

So closely bound up with one another are speciesism and capitalism that it is no longer possible to speak of them as distinct structures. Speciesism is the material substrate of capital; capitalism in turn has amplified and intensified the nature of human species dominance, freeing it of all prior moral, geographical, biological, and even ontological limits. The result is a system whose scale and savagery of violence is without historical precedent. Globally, humans slaughter about 73 billion land animals (Orzechowski, 2022) and at least 1 trillion individual wild fish (Mood and Brooke, 2010) annually. Measured in biomass, 70% of all birds and 96% of all mammals (excluding human beings) are today living in human captivity awaiting slaughter (Bar-On et al., 2018).

The harms to animals under capitalism are by no means confined to animals directly exploited for commercial purposes but extend as well to the broader destruction of animals’ lives and living spaces in nature. Currently, over half of all habitable land is used for agriculture (Ellis et al., 2010) with more than 80 percent of that land used for animal agriculture (Poore and Nemecek, 2018), making animal agriculture the most extensive human artifact on our planet and arguably our species’

most noteworthy cultural expression. Together, animal agriculture and the fisheries industry constitute the most ecologically destructive force on earth. The animal economy is a major contributor, for example, to greenhouse gas emissions: one study at Stanford University has estimated that “phasing out animal agriculture over the next 15 years would have the same effect as a 68 percent reduction of carbon dioxide emissions through the year 2100” (Eisen and Brown, 2022). The combined impacts of animal agriculture and the fisheries are meanwhile the leading forces driving the mass extinction crisis—the worst calamity to befall terrestrial life in 65 million years. At least half the drivers of extinction and biodiversity loss are related to animal exploitation (World Wildlife Fund and London Zoological Society, 2016, 2018). In just the last 40 years, an estimated 60% or more of the free animals of the earth have been wiped out of existence (Grooten and Almond, 2018).

In *Capital*, Marx (1867/1978) argues that capitalism has created a “metabolic rift” between *Homo sapiens* and the means of life—that is, the “material estrangement of human beings...from the natural conditions that formed the basis for their existence” (Foster, 2002). We might add, however, that capitalism has also estranged birds, mammals, insects, crustaceans, reptiles, amphibians, and so on, from their own means of existence, as well. Simply put, the world capitalist system, premised as it is on limitless economic growth and unchecked human consumptive “needs,” has undermined the conditions for life on earth as such.

Unfortunately, the political structures of capitalism have stymied meaningful government action to remedy these and other catastrophic ecological impacts of the system on human and nonhuman animal life. Though the state is frequently depicted by bourgeois economists as a value-neutral institution, the reality is otherwise, with the capitalist state largely serving the interests of the ruling economic elite (Stache and Bernhold, 2021). Around the world, federal governments under lobbying pressure from animal industries subsidize ranchers and dairy farmers, fund and promote agricultural, medical, and other forms of research on animals, “cull” millions of “pest” animals at the behest of cattle ranchers, and so on. In the United States, the vast powers of the state are marshaled by private interests to promote animal exploitation, with state agencies at every level facilitating the production and killing of animals. Federal laws covering the treatment of “farmed” animals in the United States, thus, do virtually nothing to prevent the suffering of animals in agriculture or fisheries.

Though the US Humane Methods of Slaughter Act, for example, mandates that so-called “livestock animals” (e.g., pigs and cattle) be “rendered insensible to pain” prior to slaughter (HMSA, §1902), many species, including chickens, rabbits, and aquatic animals, are not covered by the HSMA’s protections at all. Like the HSMA, the Federal US Animal Welfare Act of 1966 excludes “livestock” from its protections. Though some US states have enacted laws banning confinement systems such as veal crates and the battery caging of hens, no US federal policy exists to protect “livestock” from the kinds of *routine* harms inflicted on animals caught in the industrialized agriculture system. Meanwhile, the federal government subjects critics of the speciesist system to surveillance and intimidation, even branding them as “terrorists.”

Legal protections for animals at the US state level are no better. While all 50 U.S. states now have anti-cruelty laws, the majority of them exempt most existing forms of industry practice. Clauses in state anti-cruelty laws, known as “customary farming exemptions,” make it legally permissible to do almost anything to a “farmed animal.” As Wolfson and Sullivan (2004) note:

State legislatures have endowed the farmed-animal industry with complete authority to define what is, and what is not, cruelty to the animals in their care. There is no legal limit to institutionalized cruel practices to farmed animals who live in states with customary farming exemptions, which constitute a growing majority of states; if a certain percentage of the farming community wants to institute a new method of raising a farmed animal, that is the end of the matter....The customary farming exemptions are not only an example of a powerful industry evading a criminal law that applies to everyone else, they are a unique legal development in that they delegate criminal enforcement power to the industry itself. (p. 215)

The anti-cruelty law in Connecticut, to take one example, states that “any person who maliciously and intentionally maims, mutilates, tortures, wounds or kills an animal shall, (1) for a first offense, be guilty of a class D felony, and (2) for any subsequent offense, be guilty of a class C felony.” However, the same statute goes on to state that “[t]he provisions of this subsection shall not apply...while following generally accepted agricultural practices” (Connecticut General Assembly, Chapter 945, §53–247b).

The lack of any meaningful federal and state protections for commercially exploited animals is not an accident but rather a functional necessity of the capitalist system, as the latter (as we have seen) depends upon the free appropriation of animals and their living spaces for the material reproduction of human society and for the accumulation of capital. Critics have noted that a hidden “sexual contract” and “racial contract” underpin the modern polity, with men and whites exerting social dominance over other groups, notwithstanding the appearance of formal equality in society (Pateman, 1988; Mills, 1997). But the *species contract*, as we might call it, is even more foundational to human civilization. In the terms of this contract, all humans have the right to wield power and violence against members of every other species, a right that does not flow in the other direction. The capitalist state meanwhile upholds and enforces the terms of this contract—hence the hundreds of laws, civil and criminal, serving to protect commercial and nonprofit animal exploitation, whether in agriculture, hunting, or laboratory experimentation, from interference by animal advocates. Hence too the role of the capitalist state in funding and regulating animal exploitation and legitimating and normalizing the system, whether through official reports and press releases of agencies like the USDA and Department of Fish and Wildlife, or through the educational system (the “Food Pyramid,” funding for 4H programs, grants for animal research, etc.).

Finally, the capitalist nature of the liberal state complicates citizen efforts to challenge or abolish the speciesist system. Private monopoly control over mass media and other means of communication makes it difficult for animal advocates to be heard. And since the beliefs, values, and norms of society reflect those of the ruling class—those with the greatest stake in perpetuating the existing system—attempts by animal advocates to shut down (or even merely to disrupt) the

exterminationist system are met with hostility by a public whose ways of seeing and understanding the world have been shaped by capital, and who therefore regard themselves not as moral subjects, citizens, or historical agents, but as self-interested consumers. As a consequence, the “right” of the consumer to their meat is seen as trumping all ethical concerns, rights, or interests.

The Many Senses of “Vegan”

With this background before us, we can now turn to an examination of veganism itself. What, if anything, is new about the vegan movement? And what is its specific relationship to capitalism?

Ethical objections to the killing of animals for food first emerged nearly 3000 years ago, in Jainism and Buddhism in India, and in the vegetarian cults that developed around the philosophy of Pythagoras in ancient Greece. The notion that the human species, as such, might be said to constitute an oppressor class—a seemingly modern concept—can be found in germinal form in earlier epochs, for example, the tenth-century Islamic epistle, *The Case of the Animals vs. Man Before the King of the Jinn* (Goodman and McGregor, 2009). However, the specific notion that nonhuman animals can or should have “rights” as such only emerges in the aftermath of the Enlightenment, in early modern Europe. The idea of “abolitionism”—that is, that human domination of other species as such is the problem—is of even more recent vintage, dating to the late twentieth century.

Today’s vegan and animal advocacy movements and organizations, which date to this latter period, must be placed against the backdrop of the growing pathologies of the food system under late capitalism. By the 1970s, those pathologies—including ecological disaster, threats to human health, and the extreme suffering of animals on industrialized farms—had grown to such proportions that the news media and the public could no longer completely ignore them. The breakdown of the animal agriculture system, in particular, created a structural opening for new oppositional movements to emerge. In this context, veganism is best understood as a collective ethical and political response to the systemic contradictions inherent in capitalist food production.

At first blush, the concept of veganism seems straightforward. “Vegan” describes a person who does not consume or utilize animal products, and “veganism” describes the practice of being a vegan. However, as a matter of empirical fact, the term “veganism” has come to refer to much more than merely an abstention from animal products. Discussion and debate surrounding what “veganism” *does* mean, as well as what it *should* mean, have become more pronounced in the past decade, with both the popular and academic literature identifying the term with a variety of behaviors and beliefs. Academic essays—for example, Cochrane and Cojocar (2023) and Dutkiewicz and Dickstein (2021)—have identified multiple behavioral, operational, and normative definitions of the term. Two such definitions of veganism, in particular, deserve critical scrutiny: (1) that veganism should be construed exclusively as

“conduct-descriptive,” that is, that “veganism” “should refer solely to an abstention from consuming and using animal-derived products” and not, for example, in terms of beliefs or ideology (Dutkiewicz and Dickstein, 2021, p. 3); (2) that veganism should be seen as a kind of tactic—specifically, a type of boycott focused on individual and collective consumer behaviors (Dickstein et al., 2022). Both definitions, however, have drawbacks.

First, the notion that veganism should be exclusively conduct-descriptive reduces the phenomenon to its purely behavioral manifestations, thus neglecting the crucial normative dimensions of vegan practice and, above all, the ethical intentions of vegans themselves. Taken literally, the conduct-descriptive view would thus depict hippopotamuses as vegans. Evidently, then, it is insufficient to describe veganism as a form of conduct alone, particularly since the vast majority of vegans see their veganism as in some sense “political,” that is, as intended to effect change in society at large (Kalte, 2021). A workable definition of veganism must thus take into account its political and liberatory aspects.

The second popular academic definition of veganism, as a type of boycott focused on changing individual and collective consumer behaviors, though better than the first, is also incomplete. Unlike the classical boycotts of earlier movements—the Montgomery bus boycott, say, or the grape boycott of the United Farm Workers—veganism lacks a proper public dimension. In general, veganism is not publicly *perceived* as a boycott, that is, as a form of collective action or movement organized to effect a tangible political aim. Indeed, veganism is not widely seen to be a “movement” at all, but as an individual “lifestyle” choice. Veganism thus lacks a phenomenal form within what Hannah Arendt (1958) termed “the space of appearances”—that is, the public realm of a political community, where citizens meet to debate the shared terms and conditions of society and human life. Vegans are not viewed as participants in a social justice movement; the terms “vegan” and “veganism” are construed by the public, rather, in their least expansive senses—viz., as matters pertaining to a personal dietary choice, rather than as markers of a collective praxis whose goal is to free animals from all forms of human domination. This perception partly explains why vegans are so widely mocked by the public as censorious moral scolds and sentimentalists. (Vegans are consistently rated more negatively than atheists and immigrants and are seen as only slightly more respectable when their veganism is said to be motivated by health concerns rather than ethical or animal rights concerns (Cole and Morgan, 2011; Higgins, 2018; MacInnis and Hodson, 2017; Manjoo, 2019; Reynolds, 2019).)

Compared, then, to “animal rights,” “animal liberation,” or “abolitionism,” or other oppositional terms that implicate the whole spectrum of speciesist practices—that is, not just diet or clothing, but vivisection, zoos, aquaria, hunting, rodeos, destruction of habitat, etc.—“veganism” is much more narrowly construed by the public, its scope limited by its association with eating habits. While it is clear, though, that people identify as vegan for a range of personal reasons (including health or environmental concerns), veganism is nonetheless best seen as an ethical and political movement, one that seeks to address speciesist social structures and systems—that is, as a form of collective activism carried out in solidarity *on behalf*

of animals (Cochrane and Cojocar, 2023; Scholz, 2013). Whether “veganism” is itself the most appropriate label for encompassing anti-speciesist praxis, however, is not a topic we can address in the scope of this paper.

Veganism and the “Free Market”

While the number of people adopting a vegan diet for ethical reasons is on the rise globally (Kim, 2022), the status of veganism as a consumer movement has given it an ambiguous and even contradictory status within capitalist relations of production. Manufacturers of plant-based foods are interested in selling products, not in educating the public about the ethical and political problems with the speciesist system. Vegan products thus are marketed, first, as aesthetically desirable, second, as healthier than animal products, third, as more ecologically sustainable, and fourth (and more distantly) as being virtuous for the consumer to buy (“cruelty-free”). The consequence of this approach is inevitably to reinforce a free-market ideology that interpellates human beings as “consumers” rather than as citizens or moral agents. By conveying the message that consumers should “go vegan” because it is in their interests to do so, manufacturers reinforce the self-interested egoism at the heart of capitalist relations. Such an approach inevitably makes veganism vulnerable to changing consumer tastes and the caprices of the marketplace. A vegan burger marketed on the basis of its supposed nutritional or health advantages over animal products, for example, will have to compete with animal-based foods being marketed in similar terms—“lean pork,” or “organic chicken,” etc. If nutritional studies later reveal the health “savings” of eating processed vegan products to be negligible in comparison to animal foods, however, then consumers may find a reason to continue eating their organic chicken. A similar vulnerability can be seen in the marketing of vegetarian or vegan products based on their supposed environmental benefits. Indeed, there has been a raft of news stories in recent years profiling vegetarians who have gone back to eating meat now that they can buy “sustainable,” “organic,” and “healthy” chicken, beef, and pork (Applestone and Zissu, 2011; Kirby, 2019; Lennon, 2017).

Despite these problems, many liberal vegans and animal welfarists have continued to champion the free market as a panacea to speciesism. Wayne Pacelle, for example, the former CEO of the Humane Society of the United States, argues that capitalism is inexorably improving the lives of animals (Pacelle, 2016). Several leading animal advocacy nonprofits have meanwhile backed efforts to make the meat, egg, and dairy industries more “humane,” suggesting that capitalist animal agriculture can be “reformed” in ways that would resolve many or most sources of animal suffering. The same organizations, and prominent movement leaders, have also touted high-technology cellular meats as the “solution” to the exploitation of animals for food (Shapiro, 2018). A coalition of venture capitalists, Silicon Valley technologists, and animal welfarists has begun developing such cellular meats—actual animal flesh, grown in vats—with proponents like Bruce Friedrich of the

Good Food Institute arguing that the power of capitalist agribusiness can be harnessed in pro-animal ways to shape consumers' perceptions and desires anew—as a way to wean the public off of (or at least away from) meat from living animals (Freston and Friedrich, 2018). Animal agriculture interests like Cargill, Tyson, and other large meat companies have in fact begun investing in companies developing synthesized flesh products.

Many vegans and animal welfarists have thus retained their faith in the free market, believing that by “voting” with their wallets, conscientious consumers can reduce demand for animal products over time. Confronted with the horrors of “animal capital” (Stache, 2020), vegan consumers reason that consuming animal products increases demand, which in turn increases the production of animal products. Therefore, by refusing to contribute to the consumption of animal products—that is, by personally *boycotting* the purchase and consumption of animal products—they believe they are decreasing demand, and therefore decreasing harm to animals. At the center of this kind of reasoning is a *causal* relation. The idea is that my consuming animal products generates demand, which in turn increases the production of animal products, which ultimately increases animal suffering and death. Many if not most vegans seem to subscribe to thinking along these lines, believing that in adopting a vegan diet they are decreasing animal harm by removing themselves from the causal chain of the animal system.

As critics have observed, however, this kind of linear causal story connecting individual consumer choice to changes in market supply gets the facts wrong, as modern industrial capitalist markets (like the chicken market) are too massive to be sensitive to the purchasing signals generated by an individual consumer. Individual consumer choices in themselves cannot be said to make a discernible difference in decreasing the number of animals harmed. This is known as the causal inefficacy objection to ethical veganism, and it underscores the impotence of individual “consumers” in the face of the immensity of the system of animal capital. In fact, conceiving of veganism chiefly in terms of individual choice—that is, as a species of what some anti-capitalist critics have dubbed “lifestylism” (Bookchin, 1995)—is problematic in itself, on several levels.

“Tactical” or boycott veganism—that is, conceiving of veganism solely or primarily as the abstention from nonhuman animal products—promotes the liberal myth of voluntarist consumer power. In reality, despite a significant rise in the number of people identifying as vegan (Grand View Research, 2019; Sentient Media, 2021), the number of animals slaughtered annually has continued to rise (Faunalytics, 2022). Put simply, the increased number of vegans appears to have done little to nothing to decrease meat consumption in recent years. So-called online “vegan calculators” (e.g., The Vegan Calculator, n.d.) claiming to inform users on the number of animals individual vegan consumer choices save seem to be more about confirming vegan consumer virtue than supplying inconvenient truths about the real world. As Jenkins and Stanescu (2014) note:

Boycott veganism conflates conspicuous consumption with ethical action and political change. Simply replacing animal with plant-based products only transfers capital to global corporations through different mechanisms; boycott veganism serves to reinforce capitalist

institutions and neoliberal social structures that promote the commodification of life and disguise market forces as neutral, amoral means of distributing social goods. Furthermore, limiting activism to an economic boycott undercuts the moral force of veganism by reducing it to an individual lifestyle choice...promoting moral progress by “voting” with dollars leaves ethical responses to the exploitation of human and nonhuman animals to the will of the market. (p. 78)

To put the matter in its simplest terms, one cannot buy one’s way out of the commodity fetish nor commodity narcissism (Cluley and Dunne, 2012), no matter how much one pays for organic or pasture-raised meat. In short, we cannot consume our way to animal liberation.

At this point one might object: Aren’t there ameliorative movements that are meaningful in a capitalistic system such as the “ethical consumption” movement involving practices like the “ethical” sourcing of coffee beans, or boycotting goods of child labor like clothing products of the “fast fashion” industry? Don’t these practices signal decreased demand, pressuring producers in competitive markets to transform the ways they do business, thus thwarting producers? The short answer is, no.

First, fair trade only touches the surface of the problem, leaving the overall structural dynamics and class relations built into capitalism as a system fundamentally intact. Fair-trade movements have failed to slow the rate of resource depletion, to alter inequitable terms of trade between the global North and global South, or to improve the social position of exploited workers. A movement to ameliorate the suffering of animals is bound to fail for the same reasons.

Second, so-called ethically sourced products like fair trade coffee often obscure hidden labor exploitation. For example, the Fairtrade Foundation does not mandate that small-holding coffee growers (those consisting of 20 or fewer employees) pay their workers a living wage. Further, many of these smallholders themselves hire low-wage migrant workers during harvest (Luetchford, 2007).

Supply-and-demand thinking, that is, the belief that reducing the demand for animals reduces the number of animals slaughtered, is demonstrably false—or, at least, is not as linear as vegan calculators would lead us to believe. Powerful animal agribusiness “producers” adapt to decreased demand in manifold ways to maintain profits, including: cutting production costs through employee layoffs (Doering, 2023), ignoring labor laws and regulations, and ignoring necessary steps in production (Bakst, 2016; Goldstein and Facundo, 2023); manufacturing demand in developing nations (a tactic perfected by the tobacco industry) by lobbying for looser regulations (Kathrin, 2019a); developing “efficient” import–export strategies (Kathrin, 2019a); increasing labor demands on slaughterhouse workers through worker exploitation (e.g., high workloads and dangerous and extreme line speeds) (Heanue, 2022), the use of refugee (Hernandez and Jordan, 2023) and prison labor (Williams, 2023); government-subsidized price supports, for example, federal governments buying up surplus production and subsidizing prices (USDA Food and Nutrition Service, n.d.).

A further problem with rooting animal advocacy in a consumer-based strategy is “corporate capture,” as the leading meat, dairy, and pharmaceutical interests gain

control over an increasing share of the vegan consumer market. Monopoly capitalism concentrates greater and greater wealth and social power in an ever-shrinking number of corporate hands: more than half of all chicken production is now controlled by JBS, Tyson, Sanderson, and Purdue, more than two-thirds of pork production is controlled by JBS, Tyson, Smithfield, Hormel, and Tyson, and almost three-quarters of beef production is controlled by JBS, Tyson, National Beef, and Cargill (Hendrickson et al., 2020). These powerful companies are now seeking to dominate the so-called alternative protein market, too. Vegan products are owned by multinational animal agriculture conglomerates, which effectively act to *commodity dissent* to the animal system (Frank and Weiland, 1997; Haug, 1986), neutralizing the more radical, disruptive aspects of veganism. For example, the White Wave Company, which produces Silk soy milk products and So Delicious vegan dessert products, was recently purchased by the French multinational dairy corporation Danone. Similarly, Litalife Foods and Field Roast, both producers of vegan meats, were recently acquired by Greenleaf Foods, SPC, a subsidiary of Maple Leaf Foods, Inc., a Canadian multinational packaged meats corporation. Meanwhile, the Otsuka pharmaceutical company, the second biggest pharma in Japan, has purchased the Daiya Vegan Cheese company. By continuing to purchase products from such companies, vegans are increasing the profits of companies that have a vested business interest in maintaining—and even expanding—animal exploitation. Otsuka, for example, conducts experiments on animals: should vegans therefore stop buying Daiya cheeses? Addressing that question, vegan writer Kate Pevreal asks:

In a world where capitalism prevails how are we supposed to help spread veganism in a way that doesn't impact our morals?...If current vegans were to boycott Daiya due to the morals of their now parent company, it would likely destroy a well-known vegan brand that encourages people to try alternatives and replace animal products in their life. (Livekindly, 2019)

Recently, big meat companies like Tyson, Smithfield, Perdue, and Hormel have begun rolling out their own meat alternatives including plant-based burgers, meatballs, and chicken nuggets (Yaffe-Bellany and Arumugam, 2019). However, this has posed an ethical and political dilemma for vegans. If they refuse to support vegan products in their drive to expand their dominance over the meat market, it will lessen demand for plant-based alternatives to flesh. However, if consumers do purchase vegan products, they will be helping the meat industry continue to sell meat from live animals.

The trouble is that agribusiness companies are run not by animal rights advocates but by businesspeople; consequently, there is no reason to suppose that meat companies will abandon their huge capital investments in intensive animal agriculture in order to turn everyone into a vegan. On the contrary, companies like Cargill have made it clear that they are investing in both vegan and cellular meats as part of a diversified protein portfolio while continuing to modernize and even expand their intensive animal agriculture facilities. In a 2020 press release, Cargill CEO Brian Sikes explains:

At Cargill, we recognize that meat is a core part of consumer diets and central to many cultures and traditions. We believe consumers will continue to choose meat as a protein

source, and that is why we are focused on bringing it to their table as sustainably and cost-effectively as we can. Our traditional proteins, as well as new innovations like cultured meats, are both necessary to meet that demand. (Food Navigator USA, 2020)

To underscore this strategy, Cargill continues to invest heavily in its factory farming infrastructure—including “nearly \$600 million in recent investments in conventional protein in North America alone” (Food Navigator USA, 2020). By 2040, according to a report by the consulting firm A.T. Kearney, plant-based and cellular meats are likely to account for over half the market in protein products; however, as the size of the global protein market is also expected to double in the same period, the overall number of animals killed for human consumption worldwide would decrease only slightly, if at all (Gerhardt et al., 2020).

As this discussion suggests, there are clear contradictions involved in privileging vegan consumption as a strategy for promoting animal liberation within a capitalist order. Veganism tends to collapse into voluntarism, with the focus on individual consumer actions inevitably coming at the expense of (1) structural critique of capitalism and of the capitalist state and (2) effective collective action. Alas, there is little evidence that “conscientious consumerism” is an effective form of activism. Behind the illusion of consumer “free choice” lie powerful economic and political interests with the ability not only to shape what consumers want, but to shape who they are—their perceptions, desires, values, needs, and conceptions of the world. The belief that a global system of mass violence like speciesism—the most extensive and deeply rooted system of oppression in existence—can be overcome through changing citizens’ consumption habits alone—by creating “one vegan at a time”—thus seems insupportable.

Even as the evidence for the relationship between industrial animal agriculture and environmental devastation continues to mount (Eisen and Brown, 2022), the view that we can solve climate change through voluntaristic veganism has nonetheless gained popularity. What this view misses is that it is *capitalism*—not “factory farms”—that transforms animals into commodities for profit. It is the profit motive, a structural imperative of capitalist development, that motivates the mass extraction of resources, animal and other. Even if everyone became vegan, we would still be left with capitalist destruction and capitalist exploitation of human and nonhuman life at a global scale. In emphasizing individualistic solutions, veganism also may mask more revolutionary strategies (Kathrin, 2019b).

It is clear that the destruction of terrestrial life is a problem that requires coordinated, *collective*, not merely individualistic, action. Boycotting meat products will not by itself achieve animal liberation. What we need is an explicitly political struggle, one organized around ending the global oppression of animals and waged in solidarity with working persons. The more we focus on lifestylism the more capitalism goes unchallenged. As ecosocialist activist Sebastian Livingston notes:

Within advanced capitalism, consumer culture serves as a counter revolutionary safeguard, a sedative. And as we come to identify with the products of our alienated labor rather than realize our alienation within the process of production we sink deeper into the veins of capital, becoming the reproductive organs of the beast. (Livingston, 2019)

Vegan lifestyle may even help ensure a kind of homeostasis within the capitalist system. We instead need to conceive of veganism not as an ethical practice of consumption within the capitalist system but as a heretical remedy to capitalism.

Is There a Strong Case for Veganism?

In the face of the seeming inefficacy of veganism under the system of animal capital, do we still find strong grounds to advocate for veganism? Vegan critics have responded to causal inefficacy objections in various ways. In general, their responses fall into two broad categories: those that deny causal inefficacy and those that accept it. Of those that deny causal inefficacy, Alastair Norcross (2004) and Shelly Kagan (2011) argue that despite appearances to the contrary, veganism is a rational response to systems of animal capital given the expected utility of various vegan consumer choices. Since collective action has causal impact, then at least *some* individual actions must have causal impact. The efficacy of collective action is not due to some mystical metaphysical occurrence but rather to a combination of imperceptible individual actions, each of which, combined with the tiny impacts of others, results in a significant causal effect overall. In this view, being vegan *makes a material difference* in the world.

As a matter of empirical fact, modern supply chains that connect individual farmers to consumers *are* surprisingly responsive. The checkout procedures of today's large grocery stores can actually track the sale of each product, automatically ordering replacements from parent companies. Current information technology allows firms to track sales in detail, down to the level of the individual transaction, including the rates of orders, in order to optimize shipping and refrigeration times and to minimize waste. (McMullen and Halteman, 2019) Thus, there must exist some threshold point in sales that will trigger a material reduction in production (Kagan, 2011). So, there is reason to believe that vegan choices actually can make a difference to the number of farmed animals produced or slaughtered. Further, no matter what the causal impact of your consumer choices, one's *not* being vegan certainly acts to delay such a threshold event (Norcross, 2004).

A second, related response involves the notion of role modeling, or *signaling*. Vegan activists in the age of social media have a greater probability than in the past of influencing others who, in turn, influence others, and so on, a *social contagion* wherein an action of a particular type increases the probability of another action of that type. On this view, vegan signaling can increase the chances that others become vegan, which increases the odds that the collective action of the aggregate triggers a reduction in production.

A third response involves what Wright (2019) calls the five "strategic logics" central to anticapitalist struggles: smashing, dismantling, taming, resisting, and escaping capitalism. Dickstein et al. (2022) argue that veganism assists particularly with the *erosion* of capitalism. On their view, veganism

distinguishes itself by enacting an alternative sense of who registers in our ethical calculus.... To adopt veganism as praxis does not just attempt to directly reduce the amount of animal products consumed...but presents a commitment to live a life that relates to animals in a new way—and to be open to the new relationships and practices that subsequently emerge. (p. 11)

In this sense, veganism's unique power is found in its "reimagining multi-species relations to ones not rooted in a violent cycle of domination primarily mediated through consumption" (p. 11).

Suppose, however, that none of these reasons motivate an obligation to become a vegan. Suppose, further, that under the system of animal capital, causal inefficacy wins the day and being a vegan makes no direct or even indirect progress toward a reduction in the production of animal products. Why then be vegan?

Harman (2015) argues that actions may be morally wrong not only because they increase harm in the world, but because they involve what she calls *joint causation*. For Harman, a joint cause is an act that is neither necessary nor sufficient for a particular effect. To illustrate, given a 100-person legislative body where a majority vote is required to pass a bill, any one of the 100 voting members is a joint cause of passing a given bill where 51 votes are sufficient. On this deontic view, we don't need to make a causal difference to have good reasons for not participating in collective wrongs. For instance, even if joining a large group of bullies makes no difference to how badly the victim is hurt, it's still wrong to participate in large group bullying. With regard to vegan consumer behavior, even though individual purchases of vegan products have little if any effect on decreasing harm to animals, it could still be morally wrong to fail to participate as a joint cause in such a collective good. Harman identifies two moral reasons for individuals to adopt vegan praxis independent of whether doing so has causal effect on decreasing animal suffering. By consuming animal products, one is participating as a joint cause in practices that harm animals, and also failing to participate in a movement that can do a lot of moral good.

Martin (2015) argues that even if adopting vegan practice makes no causal difference to decreasing animal harm, not doing so makes the consumer *complicit* in harming animals. Central to Martin's view are the notions of role-taking and group function. Individual consumers of animal products are complicit in the suffering and killing of animals not because they contribute directly (or even indirectly) to such harm, but because they willingly choose a *role* and participate as a member of a consumer *group* that functions to signal demand. On this "collectivized liability" account of moral responsibility:

[e]veryone who voluntarily joins [in the bullying] thereby participates in a cooperative project aimed at making the victim suffer, and it is surely right that each individual participant is thereby liable to be blamed for the victim's suffering....[T]his liability stands even if the individual does not actually contribute to the victim's suffering. (p. 210)

Similarly, the nonvegan chooses to participate in a group—a consumer group—that functions to signal demand to agribusiness, making one complicit in the harming of animals. In order not to be complicit, one must—at minimum—abstain from the

consumption of animal products, regardless of whether such abstention is causally inefficacious.

Adams (1990) describes meat in terms of what she calls the *absent referent*, the literal, conscious being who is disappeared in the eating of the corpses of animal others. Adams argues that the absent referent permits us to forget about the animal as an independent entity while enabling us to resist efforts to make the animal present. The processes of commodification and objectification under capitalism turn sentient beings into absent referents; veganism encourages us not to forget the sensitive, material beings who suffer and die to produce “meat” and other animal products. This consciousness is necessary if we are to stand in solidarity *on behalf of* animals against the commodification of their lives and bodies.

According to Gruen (2011), ontologizing animals as food—that is, conceptualizing them as existing in the category of the edible—denies them their individual personalities and interests. Categorizing animals as “edible” renders sentient beings as fungible, disposable, and consumable. When we conceive of animals as commodities, we alter the relationships we have with them as well as how we imagine those relationships. Veganism “seeks to alter the terms that determine which beings are a who and which are a what.” (Dickstein et al., 2022, p. 11) Similarly, Diamond (1978) argues that, as humans, we understand ourselves as not being in the category of the edible—an understanding that, in part, shapes how we construct our relations with each other and the ways of life we share. If we were instead to think of our and other people’s bodies as food, the value of our bodies and ourselves would be diminished.

In a similar vein, animal virtue ethicists argue that those who are truly concerned for the well-being of animals should feel revulsion at the prospect of participating in such activities, and should therefore refuse to be party to them, even if their participation does not cause harm to animals. They argue that, *vis-à-vis* our relations with other species, *compassion* is the relevant virtue speaking to the quality of our moral character. On this view, ethical veganism is the kind of practice a virtuous and compassionate moral being would adopt (Abbate, 2014; Alvaro, 2019; Hursthouse, 2006). In this context, most critics, virtue ethicists or otherwise, acknowledge that there is no “moral purity,” as such, to veganism. To walk in solidarity on behalf of animals against speciesist structural and systemic oppressions does remove one from the larger cycle of violence and killing, since virtually all aspects of consumption in late capitalism involve harming humans and animals. For this reason, veganism can only be, in an important sense, aspirational (Gruen and Jones, 2015).

Relatedly, Sanbonmatsu (2014) sees veganism as part of an existentialist project. For Sanbonmatsu, we humans *choose* speciesism. Bifurcating and collapsing the world of beings into the “human” and the “animal” results in a kind of self-alienation in which we estrange ourselves not only from other sentient beings, but from our own humanity, too. In so doing, he argues, we refuse responsibility for the freedom to refrain from violence toward the other beings. Correspondingly, by choosing not to consume animal products, we choose ourselves as better beings, refusing to endorse the unjust domination inherent in the system of animal capital.

Conclusion

In sum, veganism commits one morally to the idea that conscious, sensitive beings possess intrinsic—not merely instrumental—value, and politically to anti-capitalist critique. To conceive of veganism either as a consumer boycott or as a free-market solution to animal oppression is therefore problematic.

Veganism is best seen, rather, as a tactic within a wider revolutionary movement whose goal is animal liberation in the broadest sense, that is, the freeing of nonhuman animals from human domination, and the freeing of human beings themselves from the oppressive structures that limit their own species capacities. Conceived this way, it is plain that veganism—as anti-speciesism (the better term)—will need to achieve public recognition as a form of collective action and political solidarity, rather than a “lifestyle” choice, if it is to achieve its full potential. That is, veganism must come to be viewed as a full-fledged social justice movement, one organized around the abolition of speciesism as a system under capitalism (Jones, 2015).

It is clear, then, that we need revolutionary change—a transformation not only of the food system but of our mode of economic development, too. Structurally, politically, and economically, we need an alternative to capitalism. This does not mean that we should revert to totalitarian Communism—the USSR and its satellite states, and China under Mao (Shapiro, 2001), produced terrible ecological catastrophes and their treatment of animals was no better than in the capitalist West. The choice, however, is not between totalitarian Communism on one side and laissez-faire capitalism on the other. This is a false dilemma. Ecological Marxists (Benton, 2011), socialists committed to animal liberation (Alliance, 2018; Eisenman, 2016), and scholars elaborating on the critiques of Max Horkheimer and Theodor Adorno of the early Frankfurt School (Maurizi, 2021), have all made a compelling case for a new, democratic conception of socialism, one unafraid to stand in defense of all sentient life and against every form of violence and exploitation. Abandoning human supremacy (Crist, 2017) in favor of a nonspeciesist political and cultural morality would entail a titanic human metamorphosis, a transformational shift in human identity in which we would come to see the earth as a holistic community of *sui generis*, morally valuable beings—a planet bursting with diverse forms of consciousness, sentience, and intelligence. What is at stake is not merely our own material survival, but our spiritual and moral flourishing. In surrendering our dominion, we would discover the joy and comfort to be found in interspecies friendship, connection, and love. We might at last also reconcile ourselves to ourselves—to our own animal natures. We and the other animals have nothing to lose but our chains, and a world to win.

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Chapter 8

If Carnism Is World Ending, Ought Vegans Proselytize?: The Logic and Rhetoric of Veganism



William O'Donohue

This chapter will examine the tropes that may be put forth to persuade oneself and/or others to become a vegan. Veganism is a diet and lifestyle that does not involve using or consuming animal products, such as meat, fish, eggs, milk, leather, and wool. Veganism differs most from carnism, which typically involves the consumption or use of all these; pescatarianism involves eschewing the use of animals except fish and seafood; and vegetarianism avoids meat and fish but permits the use of egg and milk products. In addition, there is usually also a difference between the constructs of a “plant-based diet” and veganism. The former is generally motivated solely by concerns related to personal health (and thus may use animal products like leather). At the same time, the latter is primarily based on concerns about not causing animal suffering and death (although there usually are other critical reasons relating to environmentalism and personal health). There is some variance in the use of these terms though and perhaps it is useful to establish specific meanings early in any discussion. This chapter will next consider whether vegans are morally permitted or even more strongly—morally obligated due to the importance of what veganism achieves to attempt to persuade others of the problems with carnism and adopt a vegan diet.

The Morality of Vegan Proselytizing

The first question that will be examined is the morality of what might be called “vegan proselytizing”—that is, ought vegans engage in significant efforts to convince others to become vegan—even when others have not explicitly invited such efforts? If it is the case that attempting to persuade others of the value of veganism

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is morally prohibited, then there is no need to try to understand how to accomplish this. On the other hand, if the best argument is that such persuasion is morally obligatory, then effective persuasion assumes an evident importance. Even if the decision is that such persuasive efforts are morally permissible—that is, it is moral to either engage or not engage in such persuasion, then effective means of such persuasion still assume importance for those adopting the persuasion option.

There are multiple ways of considering the moral status of some act. A standard method called consequentialism examines all the consequences of each act. Then the act with the highest net positive consequences (all positive consequences of all affected, minus the negative consequences of all affected) becomes morally prescribed. The consequences vegans usually put forth to support veganism and to call into question the moral or pragmatic status of other diets/lifestyles are threefold: (1) arguments relating to the immorality of the consequences related to the cruelty and suffering that animals experience as they are raised for human consumption and then slaughtered—approximately 82 billion animals are slaughtered each year and many billions more are kept in cruel conditions in factory farms (worldanimalfoundation.org; see relevant chapters in this volume); (2) arguments relating to the dire environmental consequences due to raising livestock for consumption, including various environmental catastrophes that are occurring or will occur soon (e.g., global warming, extinction events and the loss of biodiversity, water depletion, soil depletion, and various forms of ocean, land, and air pollution, see relevant chapters in this volume); and (3) the significant personal and societal health benefits of veganism (e.g., lower cancer risks, fewer cardiovascular problems, and so on, which it is essential to note have both personal consequences as well as social ones related to lower societal healthcare costs, that are currently around 18.3% of the gross domestic product of the United States (CMS.gov; see relevant chapters in this volume).

The negative consequences of adopting a vegan diet would be primarily confined to the loss of favored tastes, possibly some inconvenience (at least initially), and (temporary) displacement of workers in the meat industries. Such negative consequences do not outweigh the animal welfare, environmental, and health consequences noted above. Thus, a utilitarian analysis indicates that a vegan diet/lifestyle is the proper moral choice.

However, notice that this personal choice must be scaled if the consequences are to be obtained. One individual becoming vegan would undoubtedly have some incremental positive consequences—this is not to say this is meaningless. However, what might be called “solipsistic veganism” is not sufficient to bring about the desired consequences of veganism. No vegan says, “Although 82 billion animals were slaughtered last year, and although animal farming degraded the environment in many ways, it is sufficient to know that it would have been somewhat worse if I ate meat last year.” Veganism to work—must not be retail but wholesale—and to be preponderant, vegans must persuade others. Otherwise, how are the right numbers to achieve the right effects? It is implausible to believe that nonvegans will engage in this persuasion. It may be the case that this sort of retail persuasion—one by one—is an essential component of the overall persuasion process. However, more

wholesale methods and methods that can be employed sooner rather than later are also needed. Each year in which veganism does not predominate results in tens of billions of deaths and irreversible or difficult reverse environmental damage. Thus, there is a *prima facie* case in this utilitarian analysis that it is also morally obligatory for vegans to attempt to persuade others to become vegans. However, do individuals have some rights that would be violated by vegans in their persuasive efforts, no matter how urgent or important these are? For example, do individuals enjoy a sphere of privacy, and would a vegan illegitimately intrude on this sphere when attempting to engage in these persuasive efforts?

There are situations in which others' privacy preferences and even rights ought to cause others to refrain from improperly intruding, including refraining from attempting to persuade them to do something different than they are already doing, as this persuasion could reasonably be experienced as a type of interference or intrusion. Generally, humans want to be left alone on many matters and find it intrusive, annoying, and perhaps even threatening when others decide that they must hear their point of view (Minson & Monin, 2012). Individuals legitimately may not be interested in the views of others due to a variety of reasons, including an appraisal of the other party's knowledge or interests (they may see them as not particularly knowledgeable about the matter at hand or insufficiently impartial) or they may believe that they have already considered the points that the individual is likely to make and thus would do not want to waste time in some redundant activity. Alternatively, some people may not want to devote their time and energy to another person's agenda. Examples of private personal matters include decisions about religious beliefs (most are annoyed by Jehovah's Witnesses knocking at our doors), consensual sexual activities, and how our leisure time is spent. Thus, generally, as long as someone's choices do not hurt others, others ought to respect this sphere of privacy and not invade it by giving unsolicited persuasion that some other choice is better.

On the other hand, some matters are considered so consequential that it seems reasonable that no such protected privacy exists. Instead, there may be a moral duty for others to intervene. It is easy to find examples of these situations, for example, littering laws or involuntary admissions to hospitalization for those dangerous to themselves. Looking back, it is reasonable to conclude that the moral status of these efforts to persuade is clear. What is morally problematic is that these persuasive efforts should have been done earlier, by more people, and more effectively.

The question becomes, does veganism fall into the first or the second category? Would a vegan's efforts to persuade illegitimately intrude on a protected sphere of privacy, or is there no protected sphere because of carnism consequences for others? Given the potential positive consequences of veganism and the necessity for many others to adopt it for these to be realized, it follows that vegans are morally obligated to attempt to persuade others to desist from carnism and replace it with a vegan diet and lifestyle. Note two other relevant considerations: (1) independent of the benefits for others, veganism also has personal benefits since a plant-based diet is a healthier diet, and (2) there is also an argument from existing animal welfare laws—that is, it is likely that the person would consider animal welfare laws to be

morally sound. If one's neighbor neglects or abuses their pet, one can legitimately intervene by confronting them and persuading them to stop this problematic treatment. If this does not work, one could call the authorities to intervene and perhaps even punish the perpetrator (where such punishment is an inducement to stop the animal abuse). However, the moral logic of this accepted practice would also support the persuasive efforts of the vegan—the vegan is also attempting to stop the abuse of animals, although these animals are not known personally.

More concisely, the general argument supporting vegan proselytizing would be:

1. If one knows of significant preventable harm being done to other sentient beings, one has a moral obligation to attempt to stop or reduce this harm.
2. Animal agriculture and slaughterhouses result in knowable, significant, and preventable harm to other sentient beings (animal welfare, environmental degradation harming all life, and personal health harms).
3. Persuading others to desist from carnism and adopt a vegan diet/lifestyle will *decrease knowable, significant, preventable harm to other sentient beings*.
4. Therefore, moral agents, including vegans, must persuade others to desist from carnism and adopt a vegan diet/lifestyle.

The argument's premises appear true, and the logical structure depends on *modus ponens*, a valid (truth-preserving) inference rule. Thus, this is a sound argument.

Admittedly, this moral obligation to attempt to persuade does have the unwanted effect of increasing both the moral burden on vegans and possibly increasing vegans' reputations as annoying. Note, however, that this argument also depends on morally proper persuasion practices—avoiding persuasive attempts that are harmful or violate the other person's rights, such as coercion, violence, or belittling. The moral obligation to persuade does not permit any moral infraction such as violation of the legitimate rights or interests of others in the persuasion process, including honoring the right to avoid or escape the vegan's persuasive attempts. Thus, these persuasive attempts must be made in a kind, considerate, empathic manner—after all, these benevolent and compassionate attributes are part and parcel of the overall ethic of veganism. Vegans ought to desire to practice beneficence to all sentient beings—including carnists they are attempting to persuade. This is admittedly hard—a lot is on the line—and the vegan realizes that the target of persuasion in their practices is continually causing significant harm. However, important historical precedents for this type of “kind persuasion” resulted in significant social changes—Mahatma Gandhi and the Reverend Martin Luther King practiced non-violent means of social change and embodied the ethic of respect and kindness toward their opponents. Thus, it is also ethically necessary that the vegan's attempts to persuade be done in a benevolent, compassionate way that shows proper respect for other's dignity and autonomy.

The Logic and Rhetoric of Veganism

Now that the argument that vegans are ethically obligated to attempt to persuade others has been made, the question becomes how this persuasive task can be best accomplished. Kant (2012) famously stated that “ought implies can”—that to assert that one must morally engage in an act, the person must be able to execute that act. Two considerations are relevant: (1) Although sound logical arguments (i.e., arguments in which the premises are true, and a valid logical inference rule is used to deduce the conclusion) ought to be persuasive, these often are not. Humans are psychologically constructed, so they can be presented with logically sound arguments but often will not accept the argument’s conclusion—although logically, they should. Humans have a large capacity to embrace problematic modes of thinking and embrace conclusions from these (Tversky & Kahneman, 1974). They can do this in a variety of ways, and Table 8.1 presents a description of some of these:

Although it is possible that true conclusions can result from fallacious reasoning, this is rarely the case—the entire point of a sound argument is that it is truth-preserving, that is, if the premises are true and if the inference rule used to derive the conclusion is valid, then the conclusion must also be true. Fallacious reasoning usually leads to false conclusions, some of which may be egregious and harmful, such as believing the earth is flat, that astrology allows accurate predictions, or that some minority group is inferior to another.

Perhaps a more telling example and the psychological complexity of logical arguments illustrate that although most of us know the famous syllogism about Socrates’ mortality—we can accept it with little problem but struggle when that same sound argument is modified to be about our mortality.

Table 8.1 Definitions of rhetoric

Rhetoric is “the faculty of discovering in any particular case all of the available means of persuasion” (Aristotle in McKeon, 2001, p. 1532).
“Rhetoric is an instrumental use of language. One person engages another in an exchange of symbols to accomplish some goal. It is not communication for communication’s sake. Rhetoric is communication that attempts to coordinate social action. For this reason, rhetorical communication is explicitly pragmatic. Its goal is to influence human choices on specific matters that require immediate attention” (Hauser, 1986, pp. 2–3).
...rhetoric is the process of using language to organize experience and communicate it to others. It is also how people use language to organize and communicate experience. The word denotes both distinctive human activity and the “science” concerned with understanding that activity” (Knoblauch, 1985, p. 29).
“The study of how people use language and other symbols to realize human goals and carry out human activities...ultimately a practical study offering people great control over their symbolic activity” (Bazerman, 1988, p. 6).
Truth and knowledge “can arise only from cooperative critical inquiry,” with cooperative critical inquiry seen as fundamentally implicating reciprocal suasion: rhetoric (Cherwitz & Johnstone, 1990, p. 9).
“Rhetoric is the art of discovering warrantable beliefs and improving those beliefs in shared discourse” (Booth, 1974, p. xiii).

Argument that Is Relatively Easy to Accept

1. All humans are mortal.
2. *Socrates is a human.*
3. Therefore, Socrates is mortal.

Less readily accepted is the same argument with one minor change that does not affect the logical soundness of the argument:

More Challenging Argument to Accept

1. All humans are mortal.
2. *I am a human.*
3. Therefore, I am mortal.

For various psychological reasons relating to our personal interests (e.g., our fear of death and our avoidance of coming to direct terms with this), for many of us, there is a less straightforward acceptance of the same sound logical argument when we substitute "Socrates" with a word that denotes us.

Although interestingly, this personal relevance can cut in the other direction:

A Sound Argument Carnivores Usually Accept

1. Nonhuman, sentient animals can be raised and killed for food.
2. *Cow C and Pig P are nonhuman sentient animals.*
3. Therefore, Cow C and Pig P can be raised and killed for food.

A Similar Sound Argument Many Carnivores Usually Fail to Accept

1. Nonhuman sentient animals can be raised and killed for food.
2. *Dog Fluffy and Cat Snookers are nonhuman sentient animals.*
3. Therefore, Dog Fluffy and Cat Snookers can be raised and killed for food.

When pets are placed on the premises, the argument becomes unpersuasive for many individuals. Vegans point out that the only difference in Premise 2 is a personal connection with a particular pet or species. The same sentiments causing the rejection of the premise involving named pets should apply to the more general premise in the first argument.

A second deviation from rationality that can affect the persuasiveness of logical arguments is that most arguments in our belief systems are technically enthymemes, that is, incomplete arguments due to missing premises that are necessary for the soundness of the argument or when the conclusions are not drawn with a known inference rule, and therefore, at least technically, ought not to be persuasive. For example, the argument:

1. *I find meat to be delicious.*
2. Therefore, it is morally permissible for me to eat meat.

This argument is invalid because the premise (which is true for many individuals) does not logically entail the conclusion. A premise is missing, which, when added, transforms this into a logically valid argument, namely:

3. If I find something delicious, it provides the moral warrant for me to eat it.

However, although this premise makes the deduction logically valid, this premise is false, as counterexamples can readily show. Human baby arms may be delicious, but consuming these would be immoral. Because of this false premise, the argument is not sound.

A significant benefit of such a fuller reconstruction of the argument (thus eliminating its problematic status as an enthymeme) is that it highlights hidden assumptions usually articulated in these unstated premises logically necessary for the conclusion. These missing premises may be intentionally or unintentionally hidden because they are vulnerable to criticism. For vegans, uncovering the missing premises and then undermining this vulnerable but necessary premise can be essential, defeating the carnivore's argument. This could then have the salutary effect of justifiably removing this argument as a rationale for the individual's carnism.

Robert Proctor (2008) has an interesting account of agnotology, which he defines as the cultural production of ignorance. Proctor argues that ignorance can be intentionally produced and protected by "deliberate or inadvertent neglect, secrecy and suppression, document destruction, unquestioned tradition, and myriad forms of inherent (or avoidable) culturopolitical selectivity" (p. vii). Thus, the question becomes, to what extent are missing premises in arguments relevant to veganism due to the cultural production of ignorance—for example, ignorance about the daily suffering of billions of animals in industrial agriculture, ignorance about the horrors of the slaughterhouse, ignorance about the amount of foodborne illness associated with dairy, ignorance about the role of animal agriculture on environmental degradation, ignorance of the numerous health problems associated with a meat-based diet, and so on. It is interesting to note why there is such widespread ignorance about these matters amid the technological "information revolution" of the past several decades. A clear example of the manufacture of such ignorance in some states is the so-called ag-gag laws that make filming illegal in animal agriculture facilities. Thus, an intentional sociopolitical decision may be made to manufacture ignorance about these matters. Knowledge quite intentionally "does not come to be." This ignorance about these matters is strategic because specific interests benefit from this ignorance.

One final consideration regarding how many logical arguments can fail to be persuasive is the complexity of these. Premises used are conclusions of other arguments, which rely on premises that are conclusions of further arguments. For example, arguments about the morality of abortion can turn into arguments about when human life begins, which themselves turn into arguments about the definition of human life, and so on. Arguments about veganism can turn into arguments about whether we know that nonhuman animals feel pain, which can turn into arguments about neurology, etc. The result is little movement from prior beliefs.

Thus, the matter becomes a rhetorical one and not a strictly logical one, where the issue is less the formal logical soundness of the argument or the truth of the entire set of premises but rather the persuasiveness of the tropes, often somewhat independent of the rational status of these, used in the relevant discourse. Therefore, although it is worth trying to present such logical arguments to persuade others, generally, these will not be persuasive. Table 8.2 provides a helpful survey of some of the primary considerations that need to be addressed in these arguments:

There are a multitude of fascinating empirical questions associated with this. What arguments do nonvegans see as the most convincing for veganism? What arguments are nonvegans seeing as most convincing for their carnism? What arguments do vegans see as most persuasive, and does this match what carnivores see? If one were to ask nonvegans what is the likelihood that they can be rationally persuaded to become vegan, what is the mean likelihood given? What arguments persuaded vegans to become vegans—and what considerations persuaded former vegans to return to being carnivores? What are interesting individual differences in these (do these results vary by race, ethnicity, age, gender, and so on)? Finally, does it matter how these arguments are presented (warmly, starkly, in written form, in video documentary form, and so on)? We turn now to a more extended discussion of the rhetorical approach to the persuasive task associated with veganism.

Rhetoric

Alan Gross (1990), in his influential text on the role of rhetoric in science—the most successful epistemic enterprise, argued that even science, commonly seen as the pinnacle of rationality, is essentially a rhetorical enterprise. Gross suggests that scientists' first task is to persuade themselves on a variety of issues, such as the existence of a scientific problem, its most apt description, that it is essential, that it is likely solvable with the tools currently available, that the choices made in research design are reasonable, that the interpretation of the results is sound, that the journal it will be published in is best, and so on. Then, the scientist's second task is to persuade a wide variety of others of the work's quality, correctness, and importance (e.g., journal reviewers, grant reviewers, consumers of the published reports, and so on). Notice there is no necessity here—there are multiple choices at each decision node, and the scientist must make many contingent judgments at each choice point.

Table 8.2 Vegan rhetorical resources

Writings. The written word has long been a significant source of persuasion, and there are many good vegan-related texts. However, the influence of books, chapters, essays, and the like is waning, particularly with younger generations who rely on the internet and much briefer information bites. Still, some continue to be readers, and it is undoubtedly the case that written products are still one of the best platforms where a detailed, sustained case related to veganism can be made. Books that present vegan arguments include:

Adams, C. J. (2015). *The sexual politics of meat A Feminist-Vegetarian critical theory*. Bloomsbury Academic.

Anthis, J.R. (2018). *The end of animal farming: How scientists, entrepreneurs, and activists are building an animal-free food system*. Beacon Press.

Dunayer, J. (2004) *Specieism*. Ryce.

Fox-Smith, L. (2017). *The vegan argument: Why there really is an answer for everything*. Epic Animal Quest.

Greger, M. & Stone, G. (2015). *How not to die*. Flatiron.

Hanganu-Bresch, C. & Kondrlik, K. (2021). (Eds). *Veg(etari)an arguments in culture, history, and practice: The V Word*. (The Palgrave Macmillan Animal Ethics Series). Palgrave Macmillan.

Ishay, D. (2022). *Debunking every argument against veganism: With logic and reason*. Self-published.

Joy, M. (2011). *Why we love dogs, eat pigs, and wear cows: An introduction to carnism*. Red wheel.

Larue, R. (2020). *La pensée végane: 50 regards sur la condition animale*. PUF.

Leese, E. & Charalambides, E. (2022). *Think like a vegan: What everyone can learn from vegan ethics*. Unbound.

Leenaert, T. (2017). *How to create a vegan world: A pragmatic approach*. Lantern.

Malone, B. (2021). *How to argue with vegans*. Independently published.

Peterson, L.K. (2022). *The vegan “beef” guide: All the answers to win every argument about veganism you will ever need*. Self-published.

Regan, T. (2004). *The case for animal rights*. University of California Press.

Robbins, J. (1987) *Diet for a new America*. HJ Kramer.

Singer, P. (2023). *Animal liberation now: The definitive classic renewed*. Harper Perennial.

Winters, E. (2022). *This is vegan propaganda: (And other lies the meat industry tells you)*. Vermillion.

Magazines

Vegnews (vegnews.com)

Courses

<https://veganbootcamp.org/courses>

Plant based nutrition—e-course

<https://ecornell.cornell.edu/certificates/nutrition/plant-based-nutrition/>

The ultimate vegan course

<https://www.udemy.com/course/the-ultimate-veganism-course/>

Vegan advocacy

<https://veganadvocacy.org/onlinecourses/>

<https://nutriciously.com/course/>

<https://www.winchester.ac.uk/study/further-study-options/short-courses/plant-based-nutrition/>

<https://www.befairbevegan.com/how-vegan/vegan-program/>

(continued)

Table 8.2 (continued)

<i>Websites</i>
1. happycow.net
2. peta.org
3. vegnews.com
4. zettle.com
5. elavegan.com
6. veganhealth.org
7. veganRD.com
8. tryveg.com
9. nomeatathlete.com
10. veganstrategist.org
11. theminimalistvegan.com
12. earthlinged.org
<i>Podcasts:</i>
<i>Food for Thought</i>
<i>Main Street Vegan</i>
<i>Our Hen House</i>
<i>The ChickPeeps</i>
<i>Youtube channels:</i>
That Vegan Teacher
Beyond Carnism
Acharya Prashant
Joey Carbstrong
Gary Yourofsky
<i>Films/Documentaries</i>
<i>Slay</i>
The fashion industry is examined and its greenwashing and animal cruelty. SLAY addresses the question: is it acceptable to kill animals for fashion?
<i>Seaspiracy</i>
<i>This film</i> documents the widespread destruction to the oceans caused by the fishing industry, including plastics and fishing gear (especially nets) polluting the waters and harming ocean life, as well as the health and environmental problems of farming fish.
<i>The Game Changers</i>
This documentary examines meat, protein, athleticism, and particularly strength. This is a popular and influential documentary.
<i>The Cove</i>
In Taiji, Japan, fishermen hide a gruesome practice: the capture and slaughter of dolphins.
<i>Cowspiracy</i>
<i>Cowspiracy</i> presents a case for the impact that animal farming is having on the environment. This is a companion film to the well-known <i>Seaspiracy</i> .
<i>What the Health</i>
This documentary investigates shining health organizations and their reluctance to accept data on any health impacts of consuming animal products.
<i>Forks Over Knives</i>

(continued)

Table 8.2 (continued)

This film documents the numerous health benefits that a plant-based diet can have on health, particularly on diseases like diabetes and cancer.
<i>Vegucated</i>
This documentary titled depicts three carnivores who commit to a six-week challenge to go vegan. Initially attracted by weight loss and health improvement, the individuals learn more about the environmental impact of an animal-based diet.
<i>Live and Let Live</i>
This film examines the stories of individuals who have adopted a vegan diet, including a former butcher and factory farmer to a professional a vegan athlete and animal activists.
<i>Blackfish</i>
This documentary examines reveals the complexities of holding animals captive, particularly Orcas at Seaworld. It examines Tilikum who has taken the lives of several individuals while in captivity. This vegan documentary shows the whale’s cruel treatment and depicts the stories of workers who were misled and endangered by the sea-park industry.
<i>Earthlings</i>
This film is narrated by Joaquin Phoenix and depicts the exploitation of animals in five industries: pets, food, clothing, entertainment, and scientific research.
<i>The Milk System</i>
The film interviews farmers, scientists, and industry insiders to examine the costs and consequences of global dairy production on humans and cows.
<i>Dominion</i>
<i>Using drones and hidden cameras, this documentary depicts the animal cruelty that occurs in factory farming.</i>
<i>The End of Meat</i>
This documentary interviews philosophers, scientists, artists, and activists who provide their insight on the role of animals in society and depicts what a post-meat world would mean for the environment.
<i>Eating Animals</i>
This film is narrated by Natalie Portman and is adapted from Jonathan Safran Foer’s best-selling book, <i>Eating Animals</i> . It explores the evolution of animal agriculture into the industrial process it has become today, looking at the environmental, economic, and public health issues related to factory farming.
<i>The Ghosts in Our Machine</i>
This film investigates animal rights abuses as it follows photojournalist and animal rights activist Joanne McArthur as she photographs animals fur farms and at Farm Sanctuary (see Chapter x).
<i>The Witness</i>
This documentary follows Eddie Lama explains who after adopting a kitten that inspired him to rescue abandoned animals in the streets of New York.
<i>Peaceable Kingdom: The Journey Home</i>
This film explores the moral struggles of farmers who come to question the basic assumptions about animals and their rights.
<i>A Cow at My Table</i>
This documentary investigates conflicts between advocates and those in the meat industry. The filmmaker spent five years traveling across Canada, the United States, Australia and New Zealand to interview individuals on both sides.
<i>Meet Your Meat</i>

(continued)

Table 8.2 (continued)

This is a short film made by PETA that examines factory farming.
<i>Glass Walls</i>
This film narrated by Paul McCarthy examines the question would everyone stop eating meat if slaughterhouses had glass walls.
<i>Land of Hope and Glory</i>
This film examines the animal livestock industry in the United Kingdom.
<i>Eating our Way to Extinction</i>
Actress Kate Winslet demonstrates the negative impact that the production of meat, fish, and dairy has on animals, the planet, human health, and indigenous communities living off the land.
<i>Hogwood: A Horror Story</i>
This documentary examines a group of undercover investigators as they enter some of Britain's biggest factory farms and exposes the negligence and inaction by government bodies and corporations.
<i>A Sacred Duty</i>
The film focuses on Jewish religious teachings about caring for the planet, treatment of animals, and the environment, with a focus on Jewish vegetarianism.
<i>Planeat</i>
This film follows three scientists whose work demonstrates the health value of a plant-based diet.
<i>Specieism: The Movie</i>
Critically examines factory farming and the treatment of animals based on the notion that species other than animals have few or no rights and can be treated in a manner in which their welfare is given little or no regard.
<i>Racing extinction</i>
This documentary examines the Anthropocene Extinction, that is, the spread of large numbers of humans has caused the largest mass extinction since the KT event 66 million years ago.
<i>Eating You Alive</i>
This film examines how a plant-based diet can prevent or reverse chronic diseases.
<i>Models/Influencers</i> The exemplars of high-profile individuals/celebrities can serve to influence others. Vegans who are still alive, like Beyonce, Lewis Hamilton, Ricky Gervais, Thich Nhat Hanh, Jane Goodall, Billie Eilish, Ariana Grande, Joaquin Phoenix, Cam Newton, Colin Kaepernick, Greta Thunberg, Kyrie Irving, Venus Williams, Novak Djokovic, Venus Williams, Natalie Portman, Cory Booker, Stevie Wonder, Samuel L. Jackson, and former President Bill Clinton, among others, can serve as an inspiration to others either by demonstrating the benefits they have experienced, or using their platform to provide information, or just though others being inspired or wishing to emulate celebrities. Similarly, famous vegans of the past such as Gandhi, Leo Tolstoy, Pythagoras, Franz Kafka, Leonardo DaVinci, and Saint Francis of Assisi.
Minson, J. A., & Monin, B. (2012). Do-Gooder Derogation: Disparaging Morally Motivated Minorities to Defuse Anticipated Reproach. <i>Social Psychological and Personality Science</i> , 3(2), 200–207.

This twofold rhetorical task nicely depicts the two significant persuasive burdens related to many questions—first, one needs to persuade oneself on a variety of related issues (e.g., animals can or cannot feel pain, such pain is, or is not, a moral issue, that carnism leads to serious environmental problems or not, that veganism minimizes these, or not, that veganism is a healthier, more nutritious diet or not, that is a vegan diet is practical, or not, and so on). Then, perhaps, one can (or must see

below) attempt to persuade a variety of others, such as spouses, relatives, roommates, business co-owners, hospital dieticians, buyers for grocery stores, and so on. (Later, we will examine if the reason to persuade others is intrinsically involved in the reason one is convinced to become a vegan—e.g., if carnism contributes to environmental destruction, my veganism is only a bit helpful, but insufficiently so. If the environment is to be saved, many others must also be persuaded to become vegan.) This twofold rhetorical task is quite a common one in life. For example, one might first consider what political candidate one favors, and after arriving at a judgment, one might want to persuade others to support the same candidate. On more minor matters, one can see how this twofold persuasive task can apply to issues from family vacation choice, meal choice, mate choice, job choice, and so on.

Thus, it is essential to notice that attempts at persuasion are omnipresent, and it is incorrect to think that if a vegan decides to engage in some persuasive enterprise regarding veganism versus carnivorousness, it is the vegan who initiates persuasive efforts or that to engage in persuasion is unusual or problematic. This view is erroneous because it is based on the idea that before the vegan's persuasive efforts, there were no prior persuasive efforts in this domain. This view is belied by every media advertisement for dairy, meat, and fish as these are undoubtedly persuasive endeavors—"Got milk" means to buy more. In addition, there is a decades-long history of governmental reports and laws, subsidies, and regulations (from agricultural subsidies to laws making the filming slaughterhouse activity illegal) that have had a rhetorical impact. Moreover, every relative or friend describing the superiority or normality of an animal-based diet or their problems with veganism are also persuasive endeavors. As a final example, the frequent presentation of the naturalness of meat eating in books, films, and television as an unproblematic activity associated with health and happiness has a rhetorical impact. What is absent is also rhetorical: the animal suffering in the factory farm and its slaughter in an abattoir is rarely depicted in popular media—and if it were, it could persuade the carnivore that something might be wrong.

Rhetoric is the study and practice of persuasion (Gross, 1990) (See Table 8.1 for additional definitions of "rhetoric."). Aristotle (2001), one of the first students of rhetoric, noted the contingent nature of most discourse and highlighted these choices: no matter what is said, something else could have been asserted. Aristotle stated:

Most of the things about which we make decisions and into which we inquire present us with alternative possibilities. For it is about the actions that we deliberate and challenge, and all our actions have a contingent character; hardly any of them are determined by necessity (Aristotle, 2001: 1357).

Peter Singer (2001, p. x), in *Animal Liberation*, consistent with Aristotle, also sees this contingent nature of cultural practice: "A liberation movement demands an expansion of our moral horizons. Practices previously regarded as natural and inevitable come to be seen as the result of an unjustifiable prejudice."

An anecdote that illustrates wise rhetorical choices is the story of a member of a religion who first asks her religious leader for permission to smoke while she prays.

The spiritual leader is shocked by this request and replies—"Of course not. It is wrong to defile the sanctity of prayer with some worldly vice like smoking." However, fortunately for her, she has a second chance as her religious community has two religious leaders. In a more rhetorically sophisticated manner, she asks the second leader, "Given the importance of prayer, is it permissible that while I am smoking, I also pray?" This second leader assents to this more rhetorically apt proposal. Note that the parishioner is asking about the same situation—the conjunction of prayer and smoking—but in the second example, the rhetoric is superior.

Rhetoric analyzes matters such as *persuasive burdens* (roughly, what specific beliefs does the audience need to change and how difficult might this be), *invention* (how can I persuade originally or what new information might be compelling), and *style* (to compel agreement what manner/design/aesthetic ought my persuasive efforts adopt). The term "tropes" has become a catch-all phrase denoting any rhetorical move, but technically, it refers to the use of a word or expression in an unusual way to help a writer achieve an effect. Referring to a meat eater as a "corpse cruncher" might be a canonical example of a trope.

Note that rhetoric is not inconsistent with the best epistemic practices: the reliance on logically sound rational argument and accurate scientific information. A commitment to rhetoric is not inconsistent with a commitment to rationalism but is a deeper embracing of rationalism. Augustine (1952) argued that truth must be armed by rhetoric. Augustine agreed that rhetoric could persuade individuals of what is false. Still, he also argued that rhetoric's best use is to support what is true and suggested that it is not the rhetoric that ought to be blamed but the perversity of those who put it to improper use. Augustine argued that because the aim is persuasion, and what we ought to be persuaded of is that which is true, it is the duty of those who defend truth to employ rhetoric.

These rational considerations often fall into different kinds—*empirical* considerations (e.g., it is a fact that eating meat increases the risk of consuming *E. coli*, or meat consumption is a significant contributor to global warming), *logical* considerations (It is inconsistent for me to believe that killing my pet dog is immoral but killing a cow is permissible), *moral* considerations (it is wrong to murder any sentient creature to eat its flesh), and *aesthetic* ones. For example, Nietzsche (2014) argued that our morality has an aesthetic dimension ("If you kill a cockroach, you are a hero; if you kill a butterfly, you are evil. Morals have aesthetic criteria."). That which is morally wrong is often ugly in some important sense (what happens in a slaughterhouse is ugly; the smell of meat is sickening; the texture of fat is gross) and *emotional* considerations (it is shocking, disturbing, disgusting and depressing to see how animals are treated in factory farms and these emotions can lead to further emotions like guilt, pity, anger); *political* considerations: writ large the practice of factory farming and the slaughter of animals constitutes neither a kind society nor a sustainable one; however some hold power who wish to sustain this; and *financial* considerations (there are enormous profit to be made in the exploitation of animals). Of course, these can come into play conjointly—eating meat can have empirical, logical, moral, aesthetic, and emotional dimensions. The issue is complex—many parts of the web of belief come into play (Quine 1978).

First Matters: Rhetoric and Problematizing

Finally, we will examine the first rhetorical task—persuading that something such as one’s present diet and lifestyle ought to be problematized—ought to be viewed as possibly nonideal and thus open to reconsideration. Therefore, the first rhetorical task is to convince oneself that some aspect of one’s belief system should be problematized—it just might be the case that some superior beliefs or practices might exist in this domain. The problematization process can either be impersonal or personal. For example, one can problematize beliefs with little or no personal relevance, for example, “The Union’s practice during the Civil War of allowing individuals to buy themselves out of the draft was unfair.” Alternatively, one can be concerned with a more personally relevant belief. This can proceed along lines such as this, “To date, I have believed *x* (e.g., that eating meat is my best dietary practice, or that eating meat presents no moral problems), but maybe I need to re-examine this belief because something strikes me now as possibly not right. Perhaps I ought to reconsider/reexamine this belief .” The motivation to problematize might come from a variety of sources—from some somewhat spontaneous arising internal doubt (wondering why I pamper a dog but would eat a lamb), being exposed to a vegan argument due to happenstance, becoming more aware of environmental problems (I just purchased a Tesla), to a bout of food poisoning related to *e coli*, or to some personal concern like wanting to be healthier.

Problematizing is associated with other important considerations, such as Plato’s famous dictum, “An unexamined life is not worth living.” Sometimes, life events prompt such reexaminations—the death of a loved one from cancer, a divorce, or a bout of depression. Problematizing can also be associated with the renowned philosopher of science, Sir Karl Popper’s (2002) notion of fallibilism. Popper argues that all knowledge claims contain errors because not every attempt to investigate these critically has been conducted, often due to pragmatic constraints. For example, consider even the well-established, uncontroversial scientific regularity that all copper conducts electricity. It is important to note that scientists have not yet examined all copper in the universe—and are not constantly reexamining copper previously examined. Some unexamined copper may falsify the regularity, or as the philosopher Nelson Goodman (1983) has argued, a more complex scientific regularity might be revealed in time, like, “All copper conducts electricity until 2050, and then it does not.” Note that all scientific observations of the conductivity of copper are consistent with this new law. This underdetermination of scientific laws explains how scientific revolutions such as the Einstein revolution can overthrow well-supported prior scientific beliefs like those of Newtonian physics.

Because of this underdetermination, any belief is fallible—even well-corroborated scientific laws—and thus could be problematized. The issue then becomes pragmatic—which beliefs matter most if they are false? Which beliefs are most likely to be false? Which beliefs seem to have the weakest support? Which beliefs have I not really examined and held a bit dogmatically? Which beliefs have I perhaps been

afraid to examine for whatever psychological reasons? Thus, the meta-problem becomes: what ought I problematize?

Problematizing is also related to what many think a good education should accomplish. Two works of the late novelist David Foster Wallace (2009) deserve some attention here. In his graduation address called, *This is Water*, Wallace speaks to the issues of problematizing and priorities for this:

“The really significant education in thinking that we’re supposed to get in a place like this [a university] isn’t really about the capacity to think, but rather about the choice of what to think about.... The point here is that I think this is one part of what teaching me how to think is really supposed to mean. To be just a little less arrogant. I want to have just a little critical awareness about myself and my certainties. Because a considerable percentage of the stuff that I tend to be automatically certain of is, it turns out, totally wrong and deluded. I have learned this the hard way, as I predict you graduates will, too.

Here is just one example of the total wrongness of something I tend to be automatically sure of: everything in my own immediate experience supports my deep belief that I am the absolute center of the universe; the realest, most vivid and important person in existence. We rarely think about this sort of natural, basic self-centeredness because it’s so socially repulsive. But it’s pretty much the same for all of us. It is our default setting, hard-wired into our boards at birth. Think about it: there is no experience you have had that you are not the absolute center of. The world as you experience it is there in front of YOU or behind YOU, to the left or right of YOU, on YOUR TV or YOUR monitor. And so on. Other people’s thoughts and feelings have to be communicated to you somehow, but your own are so immediate, urgent, real...

But most days, if you’re aware enough to give yourself a choice, you can choose to look differently at this fat, dead-eyed, over-made-up lady who just screamed at her kid in the checkout line. Maybe she’s not usually like this. Maybe she’s been up three straight nights holding the hand of a husband who is dying of bone cancer. Or maybe this very lady is the low-wage clerk at the motor vehicle department, who just yesterday helped your spouse resolve a horrific, infuriating, red-tape problem through some small act of bureaucratic kindness. Of course, none of this is likely, but it’s also not impossible. It just depends on what you want to consider. If you’re automatically sure that you know what reality is, and you are operating on your default setting, then you, like me, probably won’t consider possibilities that aren’t annoying and miserable. But if you really learn how to pay attention, then you will know there are other options. It will actually be within your power to experience a crowded, hot, slow, consumer-hell type situation as not only meaningful, but sacred, on fire with the same force that made the stars: love, fellowship, the mystical oneness of all things deep down...

And the so-called real world will not discourage you from operating on your default settings, because the so-called real world of men and money and power hums merrily along in a pool of fear and anger and frustration and craving and worship of self. Our own present culture has harnessed these forces in ways that have yielded extraordinary wealth and comfort and personal freedom. The freedom all to be lords of our tiny skull-sized kingdoms, alone at the center of all creation. This kind of freedom has much to recommend it. But of course there are all different kinds of freedom, and the kind that is most precious you will not hear much talk about much in the great outside world of wanting and achieving.... The really important kind of freedom involves attention and awareness and discipline, and being able truly to care about other people and to sacrifice for them over and over in myriad petty, unsexy ways every day.

That is real freedom. That is being educated, and understanding how to think. The alternative is unconsciousness, the default setting, the rat race, the constant gnawing sense of having had, and lost, some infinite thing”.

Many vegans have had similar experiences—the vegan realizes that they “unconsciously” adopted a carnism and becomes persuaded that the default setting of a me-centered universe ought to be rejected in favor of a sentient being-centered universe. For many, there also is a concomitant feeling of being closer “to some infinite thing” and the willingness to (to paraphrase) “care about other sentient beings and to sacrifice for them over and over in myriad petty, unsexy ways every day.”

Finally, let’s consider a second text of Wallace’s (2005) essay *Consider the Lobster*, which is an excellent example of the problematizing of the more specific issues of concern to the vegan. In this essay, he is hired by the magazine *Gourmet* to attend the annual Maine Lobster Festival (MLF). Wallace then “considers,” that is, problematizes his experience:

“So then here is a question that’s all but unavoidable at the World’s Largest Lobster Cooker and may arise in kitchens across the United States: Is it alright to boil a sentient creature alive just for our gustatory pleasure? A related set of concerns: Is the previous question irksomely PC or sentimental? What does “alright” even mean in this context? Is it all just a matter of personal choice?”

He reveals some interesting aspects of his problematizing journey:

Before we go any further, let’s acknowledge that the questions of whether and how different kinds of animals feel pain, and of whether and why it might be justifiable to inflict pain on them in order to eat them, turn out to be extremely complex and difficult. And comparative neuroanatomy is only part of the problem. Since pain is a totally subjective mental experience, we do not have direct access to anyone or anything’s pain but our own; and even just the principles by which we can infer that other people experience pain and have a legitimate interest in not feeling pain involve hardcore philosophy—metaphysics, epistemology, value theory, ethics. The fact that even the most highly evolved nonhuman mammals can’t use language to communicate with us about their subjective mental experience is only the first layer of additional complication in trying to extend our reasoning about pain and morality to animals. And everything gets progressively more abstract and convolved as we move farther and farther out from the higher-type mammals into cattle and swine and dogs and cats and rodents, and then birds and fish, and finally invertebrates like lobster.

The more important point here, though, is that the whole animal cruelty and eating issue is not just complex, it’s also uncomfortable. It is, at any rate, uncomfortable for me, and for just about everyone I know who enjoys a variety of foods and yet does not want to see herself as cruel or unfeeling. As far as I can tell, my own main way of dealing with this conflict has been to avoid thinking about the whole unpleasant thing. I should add that it appears to me unlikely that many readers of *Gourmet* wish to think hard about it, either, or to be queried about the morality of their eating habits in the pages of a culinary monthly. Since, however, the assigned subject of this article is what it was like to attend the 2003 MLF, and thus to spend several days in the midst of a great mass of Americans all eating lobster, and thus to be more or less impelled to think hard about lobster and the experience of buying and eating lobster, it turns out that there is no honest way to avoid certain moral questions. There are several reasons for this. For one thing, it’s not just that lobsters get boiled alive, it’s that you do it yourself- or at least it’s done specifically for you, on-site. As mentioned, the World’s Largest Lobster Cooker, which is highlighted as an attraction in the Festival’s program, is right out there on the MLF’s north grounds for everyone to see. Try to imagine a Nebraska Beef Festival at which part of the festivities is watching trucks pull up and the live cattle get driven down the ramp and slaughtered right there on the World’s Largest Killing Floor or something—there’s no way.

Finally, he states additional complexities:

Morality-wise, let's concede that this cuts both ways. Lobster-eating is at least not abetted by the system of corporate factory farms that produces most beef, pork, and chicken. Because, if nothing else, of the way they're marketed and packaged for sale, we eat these latter meats without having to consider that they were once conscious, sentient creatures to whom horrible things were done. (N.B. "Horrible" here meaning really, really horrible. Write off to PETA or peta.org for their free "Meet Your Meat" video, narrated by Mr. Alec Baldwin, if you want to see just about everything meat-related you don't want to see or think about. [N.B. Not that PETA's any sort of font of unspun truth. Like many partisans in complex moral disputes, the PETA people are fanatics, and a lot of their rhetoric seems simplistic and self-righteous. But this particular video, replete with actual factory-farm and corporate-slaughterhouse footage, is both credible and excruciating.]) ...

Still, after all the abstract intellection, there remain the facts of the frantically clanking lid, the pathetic clinging to the edge of the pot. Standing at the stove, it is hard to deny in any meaningful way that this is a living creature experiencing pain and wishing to avoid/escape the painful experience. To my lay mind, the lobster's behavior in the kettle appears to be the expression of a *preference*; and it may well be that an ability to form preferences is the decisive criterion for real suffering.

One can see that Wallace's problematizing journey is aided by his high intelligence, intellectual honesty, and knowledge of a wide variety of fields, particularly philosophy, which might be looked at as essentially a problematizing discipline. Successfully navigating through such a problematizing journey can take talent, intellectual honesty, fairness, intellectual courage, and hard work, particularly acquainting oneself with (perhaps significantly devalued) "the other side" and considering information that might not make your past or current behavior look all that good.

Such problematizing is often the critical first step for personal and societal progress. For centuries, many accepted practices were not problematized, even though most humans eventually recognized that these are both seriously deficient. It was not a matter of the absence of critical information—the moral stasis was due to the absence of problematizing the beliefs. No new scientific discovery occurred to indicate that slavery was wrong—the problem is that this issue was not problematized for too many, not "considered." Other historical examples of the failure to problematize abound—in child labor, debtors' prisons, lack of women's suffrage, quotas for certain minorities to enter universities, colonization, various genocides, indentured servitude, taxation without representation, polluting industries, pathologizing same-sex attraction, and so on. In retrospect, the issue is figuring out how the practice was not seen as wholly unacceptable sooner.

At times, moral wrongness is immediately evident because the magnitude of this wrongness places the acts in another moral category—namely, evil. The question becomes the slaughter of 82 billion sentient creatures each year for consumption (worldanimalfoundation.org), the consumption of their corpses resulting in a variety of health problems, and the industry that produces them through deforestation, an increase in methane gases harming the ozone layer, and other results that degrade the health of the planet, perhaps in a manner that is ruinous, evil?

Many vegans can recount such a personal journey of problematizing. Many spent their early years as carnivores, probably due to the beliefs of their family of origin. They might have problematized these beliefs in their teens as this is a

developmental period in which part of the task is to individuate from their parents. They might have become vegetarians—being persuaded at least initially that this move eliminated the mistreatment of animals and perhaps was optimally healthy. Then, at some later time, these beliefs regarding vegetarianism were problematized and re-examined. As a result, they became vegans, perhaps more consistently eschewing other products that involved animal suffering, such as leather, cosmetics, and zoos. This rhetorical process can never end; vegans can problematize the issue of whether they should purchase vegan products sold by companies that also sell meat products. However, it can be important for the vegan in discharging their duty to persuade—first, to help others be open to problematizing their nonvegan diet and lifestyle.

Finally, it is important to note that two key strategic considerations are relevant to this persuasion. First, this persuasion needs to be done on a mass scale. The goal is to persuade all humans—each unpersuaded human results in animal suffering, death, and environmental degradation. Thus, persuasive efforts need to have the appropriate scale. One-on-one efforts are fine, group efforts are better, and international efforts are the best. Second, there is some urgency in this task. Each year, delay results in billions of animals suffering, dying, and further severe environmental degradation. Climatologists disagree on the exact date of when the effects are no longer reversible—but the consensus is that this will occur in the next few decades, not the next few centuries. So the question might be, how will the majority of the world’s population be persuaded to become vegans by 2040? There is abundant room to be pessimistic.

Conclusions

Veganism is not a minor personal preference like a hairstyle or music preference. Veganism is based on an appraisal of several serious consequences—consequences for the lived experience of sentient beings in factory farming and slaughterhouses, consequences relevant to whether the planet can continue to sustain life, and many personal health consequences. A utilitarian ethical analysis entails that veganism is morally obligatory. Because these dire consequences can only be avoided if veganism is scaled, attempting to persuade others to become vegan is also morally obligatory. It is in everyone’s best interest that everyone becomes a vegan. Thus, a critical matter becomes how to meet this moral burden effectively. This chapter suggests that while rational arguments may be useful at times, a fuller rhetorical approach is needed where multiple media and tropes are used, starting with becoming convinced that it is reasonable to problematize one’s diet and lifestyle. This is a necessary first step toward a longer, more complex journey to save trillions of lives of sentient beings, including possibly our own, but almost certainly those of future generations.

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Part II
Veganism Plus

Chapter 9

New Omnivorism



Andy Lamey

New omnivorism is a dietary ethic that has arisen in response to animal protection (a better term for what is often referred to as animal rights, given that not all proponents of radically improving the treatment of animals employ the notion of rights, e.g., Singer, 1990). Where proponents of animal protection have traditionally invoked animal rights, anti-speciesism, and related concepts to condemn eating animal products, new omnivores invoke these same concepts to *justify* eating animals.

New omnivist views differ across a range of dimensions, including the particular animal products they defend consuming. Common to all is that they are defenses of omnivorism that appeal to premises that have traditionally been distinctive of animal protection theory. This feature distinguishes them from other defenses of omnivorism, which typically challenge protectionism at a philosophical level.

The Rise of New Omnivorism

Beginning in the 1970s, Peter Singer, Tom Regan, and other philosophers argued for major upward re-evaluations of the moral status of animals. Although they disagreed among themselves as to which ethical theory was correct, they converged on the view that eating animals was morally unacceptable. Singer devoted a chapter of *Animal Liberation* to “Becoming a Vegetarian,” while Regan in *The Case for Animal Rights* included a section titled “Why Vegetarianism is Obligatory.” Eventually, both philosophers endorsed veganism (Singer, 2020; Regan 2004).

In the 1980s and 1990s, protectionist arguments were subject to sustained criticism by philosophers such as R. G. Frey (1980, 1983), Peter Carruthers (1992), and

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P. T. Leahy (1991). While these first-wave critics mounted their challenges in the name of different philosophical theories, such as utilitarianism (Frey), contractualism (Carruthers), and Wittgensteinianism (Leahy), they shared the view that the philosophy of animal protection was misguided. They generally argued that the common sense of society regarding animals at the time of writing was by and large defensible when it was not already *too* sensitive to the moral claims of animals. Carruthers, for example, saw his project as taking place in the wake of a “recent explosion of interest in animal rights,” a philosophical development he regarded as pernicious (Carruthers, 1992, p. xi). “Just as Nero fiddled while Rome burned, many in the West agonise over the fate of seal pups and cormorants while human beings elsewhere starve or are enslaved” (p. xi).

Animal protection’s early critics in short typically rejected both its conceptual claims and its action-guiding recommendations. It was common for their works to criticize core protectionist notions, such as the idea that animals can have welfare interests or that species membership is morally irrelevant (anti-speciesism). Similarly, where protectionists challenged factory farming, hunting, and other practices, these practices were, with occasional exceptions, defended by their first-wave critics. Despite the disagreement between the two camps, they shared the view that the case for animal protection and not eating animal products rise and fall together.

Around the turn of the century, first-wave critiques of animal protection began to give way to a different response. This response, which has come to be called *new omnivorism*, sought not to challenge protectionism at the level of first principles but to separate such principles from the conclusion that eating animals is impermissible. Steven Davis (2003) offers a paradigmatic example of such a view.¹ What makes Davis’s argument noteworthy is that it takes as its point of departure Regan’s own argument for animal rights. Davis’s twist is to argue that a diet that contains free-range beef is more consistent with Regan’s theory than the purely plant-based diet Regan has long advocated. Davis arrives at this conclusion by pointing out that mice and other field animals are killed during crop cultivation. He posits that more animals are actually killed in the production of a plant-based diet than in the production of a diet that combines plants and free-range beef. In Davis’s hands, such empirical claims are combined with a canonical theory of animal protection to entail a dietary ethic that, contrary to what protection theorists have long argued, ranks a meatless diet second-best to one containing meat.

Davis’s argument marks the beginning of the new omnivorist era. The difference between this era and the preceding one that was dominated by first-wave critics is not that critiques of animal protection as theory disappeared or that there were no

¹Davis says that the aspect of Regan’s theory that his argument draws on is the Least Harm Principle (LHP). The LHP, however, is a consequentialist principle that Regan mentions only to reject (301-3). Regan is committed to reducing the number of instances in which rights are overridden, but it arises out of his commitment to the Minimize Overriding Principle, which is not consequentialist (305-7). The minimize overriding principle states that when we must choose between overriding the rights of the few vs overriding the rights of the many, all else being equal we should override the rights of the few. I am grateful to Angus Taylor for drawing this issue with Davis’s construal of Regan to my attention.

immanent critics of animal protection before Davis. It is rather that responses such as Davis's, which seeks to divorce animal protection premises from veganism or even vegetarianism, began to achieve a new prominence in the animal ethics debate.

This shift is evident in how Davis's appeal to field-animal mortalities has subsequently inspired many other authors to present protectionist arguments for consuming a wide range of animal products beyond free-range beef. Such proposals include free-range meat made from sheep, goats, and kangaroos, roadkill, insects, or any animal product that one has not paid for, such as a ham sandwich someone left in your refrigerator or a cheeseburger that a restaurant has thrown out (so-called freegan meat) (Schedler 2005; Archer 2011; Bruckner 2016; Fischer 2016; Milburn 2024; Milburn and Fischer 2021). These arguments for omnivorism draw on many different moral principles. A philosophical feature they share however is that in order to refute them, a critic cannot simply rehearse Regan's argument for animal rights, as Regan's central philosophical claims are easily accommodated (explicitly so in the case of Davis, while more than one subsequent proponent of his argument from field mortalities does so implicitly).²

Although Davis has been an especially influential voice for new omnivorism, other versions of new omnivorism cite Singer's (1990) theory of animal liberation. In particular, many critics draw attention to Singer's utilitarianism, which posits that all else equal, a world is better to the degree that it contains more utility. Singer for many years endorsed preference utilitarianism, which equates utility with the satisfaction of preferences, but recently has endorsed hedonistic utilitarianism, which equates utility with happiness (Singer, 2016). Either way, a world with more animals leading pleasant lives is morally better than one without. It has become common for critics (e.g. Hare, 1999; Schedler, 2005) to invoke this aspect of utilitarianism, found in both its preference and hedonistic versions, to argue that consuming animals who are raised humanely is not wrong, as doing so increases overall utility. When Singer's argument is construed this way it does not entail vegetarianism, let alone veganism. Although it rules out factory farming, which renders animals miserable, the consumption of animals who have lived decent lives and are slaughtered painlessly would be morally acceptable.

The argument is a version of the so-called Logic of the Larder, which gives moral weight to the existence of animals leading pleasant lives. Although there exist non-utilitarian versions of the Larder argument (e.g., McMahan, 2017), it is frequently grounded in some form of utilitarianism. Authors who reconstruct Singer in light of the Logic of the Larder often point to Temple Grandin's system of humane slaughter as the real-world result of putting Singer's philosophy into practice (Francione, 2008: 55; Callicott, 2016: 48). Grandin is famous for designing slaughterhouses that minimize the animals' stress and pain (Lamey, 2019b). Where Singer himself has defended Grandin's system as a non-ideal compromise and an achievable improvement on traditional slaughter (Singer, 2000: 172–6), these critics argue that a system

²One possible vegan response to Davis might be to consume only plants that are not harvested industrially, for example, plants one grows in one's backyard, thereby avoiding field deaths. Few of us, however, avoid buying commercially harvested food entirely, and this solution is unlike to scale up to a society-wide response.

of humane slaughter such as Grandin's is in fact the ideal outcome of Singer's theory, as it does not involve the painful methods involved in traditional slaughter (Grandin, 2010).

In addition to the field-animal-mortality argument and the Logic of the Larder, new omnivorism finds a third source of support in the work of so-called "plant neurobiologists" (Brenner et al., 2007; Gagliano et al., 2014). This controversial group of botanists holds that the signaling and related capabilities of plants are more sophisticated than has traditionally been recognized. Philosophers sympathetic to plant neurobiology have gone so far as to argue that plants are actually sentient (Hall, 2011; Marder, 2013). Michael Marder, for example, argues that plants can explore and pursue resources in changing environments, assess environmental dangers or stressors, and update the information they possess about their surroundings. Such abilities, he suggests make it "possible to infer plant sentience" (2012, p. 1368). In this way, Marder and other proponents of plant sentience employ a concept crucial to protection theory, which has long been concerned with elucidating the moral standing of sentient beings. The fact that animals are sentient and plants are not is a bedrock feature of the protectionist case for granting moral standing to animals and withholding it from plants. The plant neurobiology view however "casts doubts upon the utility of the traditional rigid division made between plants and animals" (Pelizzon & Gagliano, 2015, p. 5). The empirical claims of plant neurobiology are now cited as grounds not to draw dietary or other distinctions between animals and plants (Hall, 2011). Plant-based diets will rather be drained of any moral superiority over omnivorous ones, again in a manner that does not dispute the protectionist case for the moral standing of animals.

A final challenge to the view that animal protection entails not eating meat is represented by *in vitro* or, as it is increasingly called, cultured meat. Such meat is created by taking a cell from an animal and growing it in a laboratory into edible flesh (Jacobs, 2015). Cultured meat is thus identical to the traditional kind, but for the fact that it is not carved out of the carcass of an animal. Current production methods involve the use of fetal bovine serum, a growth hormone taken from the fetuses of cows that are pregnant at slaughter. In this way, *in vitro* meat continues to involve harm to animals. Scientists involved in the creation of cultured meat, however, are already working to develop plant-based alternatives (Carrington, 2020). Given the realistic possibility of such a development, the long-term future of *in vitro* meat raises the possibility of a new form of meat that involves no harm to animals. As such it represents yet another form of meat-eating that is arguably consistent with arguments for animal protection. Insofar as cultured meat holds out the possibility of meat that does not involve harming animals, it does not seem at odds with animal protection.

The preceding four examples do not exhaust every possible challenge to the link between animal protection philosophy and veganism. They rather illustrate what is distinctive of new omnivorism in general, each form of which seeks to defend meat eating in a manner that does not involve challenging core premises of protection theory. The first three challenges noted above, respectively, grant that we should minimize rights violations as they concern animals, maximize animal utility, and

respect the moral significance of sentience. Any of these three commitments in turn might be invoked to classify the consumption of cultured meat as morally akin to eating plants (a classification that does not require endorsing the controversial empirical claims of plant neurobiology (Alpi et al., 2007)). In addition, most arguments for animal protection, whether rooted in rights theory, utilitarianism, or other normative frameworks, have long endorsed anti-speciesism, which is the view that species membership as such is not morally significant. Given the centrality of anti-speciesism to animal protection, it bears noting none of the four of the challenges noted above presuppose speciesism. In this way, they again are consistent with one of the central philosophical claims of animal protection theory. And again, they raise the possibility that rejecting speciesism does not entail rejecting meat-eating, any more than embracing animal rights does.

Some forms of new omnivorism, such as Davis's early formulation, defend eating one particular type of meat. Others, such as those that invoke the Logic of the Larder, justify eating any animal product that derives from an animal that was well cared for while it lived. Arguments for new omnivorism also diverge in whether they characterize consuming a given animal product as merely permissible or actually obligatory on protectionist grounds. Arguments that appear to field-animal mortalities, for example, often suggest that we are obliged to eat one or more animal products, as doing so reduces the overall number of harms to animals when collateral deaths due to crop cultivation are taken into account. Defenses of eating cultured meat, on the other hand, can be characterized as either permissible or obligatory, depending on whether they also invoke field-animal mortalities (to date most defenses have characterized such consumption as merely permissible). The Logic of the Larder can be formulated so as to render meat-eating either permissible or obligatory, depending on the underlying theory of population ethics the argument draws on, which is a notoriously complex domain of moral theory (see below). Arguments from plant neurobiology are similarly compatible with permissible or obligatory renderings, which hinge on theoretical details beyond the appeal to plant neurobiology as such.

A final way that new omnivist arguments differ among themselves concerns the two broad purposes to which they have generally been put. Sometimes new omnivist proposals are earnestly put forward as new dietary ethics. In other instances, critics are not articulating their own dietary code but merely seeking to show that an argument for veganism does not go through. Davis (2003), for example, believed that a mostly plant-based diet that also included some free-range beef was the most ethical (as he once told me in an interview). Bruckner by contrast, in a discussion of the ethics of eating roadkill, writes, 'my thesis is not that we are obligated to collect and consume roadkill. My thesis is that the usual arguments for vegetarianism imply that we are obligated to collect and consume roadkill' (Bruckner, 2016, p. 43). Davis agreed with the animal protection framework his account drew on while Bruckner does not. Philosophically speaking, however, this difference is immaterial, as both arguments dispute veganism's status as the dietary outcome of animal protection. New omnivorism is perhaps best understood as a classification of arguments, rather than advocates, as they raise questions intellectually honest vegans cannot help but take seriously.

The term new omnivorism originates in Lamey (2019a), which is generally critical of new omnivist proposals. Although Fischer (2019) does not employ the label, it is otherwise a book-length defence of new omnivorism. In their recent anthology *New Omnivorism and Strict Veganism: Critical Perspectives*, Abbate and Bobier (2024) bring together arguments for and against different versions of new omnivorism. New omnivorism is also employed as a category by Milburn and Bobier (2022), who emphasize its novelty as an approach to food and animal ethics. One reason for the increasing popularity of the term may be that its usage does not suggest endorsement or rejection of any of the diets in question. For this reason, it is now used by both proponents of traditional veganism such as Abbate, and defenders of meat eating, such as Abbate's co-editor of the 2024 volume, Bobier. In this way, new omnivorism differs from "carnism" and other recent labels for philosophies of food that presuppose controversial ethical claims regarding diet (Joy, 2020).

The rise of new omnivorism as a dietary categorization has been accompanied by a debate over how widely it should be defined. Milburn and Bobier (2022) argued for a narrow understanding of the term, one that would not include all four of the challenges to traditional veganism outlined above. On their account, dietary proposals only count as new omnivist when they are animated by a commitment to minimizing harm to animals in food production. One their view, Davis's (2003) proposal, and the many others that draw on field-animal fatalities count as new omnivorism. The Logic of the Larder, on the other hand, does not. Although Lamey (2019a) characterized the Larder argument as new omnivist, Milburn and Bobier (2022) noted that his discussion of the argument engages with a version put forward by Leslie Stephen (1896) in the nineteenth century, which in Milburn and Bobier's (2022) summary, contended that "(future, hypothetical) pigs hav[e] an interest in the continued consumption of bacon, for without it, they would not come into being" (p. 3). On their account, the fact that the central claim of the Larder argument had already been made in the nineteenth century disqualifies it from being classified as a new form of omnivorism.

Similarly, Milburn and Bobier reject plant neurobiology as posing a challenge to traditional veganism on the grounds that it "does not obviously relate to food. For example, Michael Marder's work on 'plant neurobiology' (see Marder, 2013) could be deployed as a challenge to animal ethicists, but Marder is not obviously concerned with the ethics of eating" (p. 3). When it comes to cultivated meat, finally, Milburn and Bobier allow that a new omnivore case consuming it "over plant-based protein sources is not hard to envision—but will depend upon empirical information currently lacking." (p. 7). Of the four challenges canvassed above then, only the first is accepted as unambiguously new omnivist according to Milburn and Bobier, although the fourth may eventually qualify as well, depending on further empirical inquiry.

Milburn and Bobier do not indicate what empirical questions may prevent cultured meat from posing a challenge to veganism's traditional status as a purely plant-based diet. This makes their agnosticism regarding the status of such meat difficult to evaluate. Their grounds for disputing that plant neurobiology poses a challenge to traditional veganism concern the intentions of one researcher, Marder.

Other commentators, however, take plant neurobiology to “hit hard at the foundations of veganism” (Aloi, 2011; p. 93). This is unsurprising, given that veganism’s traditional justification for consuming plants is that, unlike farmed animals, they are not sentient. The case for characterizing plant neurobiology as posing a new omnivist challenge to traditional veganism, therefore, is supported by the existence of views such as Aloi’s (2011) and Hall’s (2011) (a view that, in my experience, defenders of meat eating often express in conversation). Even if it were not already predictable that plant neurobiology would be invoked by veganism’s critics this way, vegans themselves would still face the question of what to say in response to a school of thought that seems to deny animals a higher moral standing than plants.

Milburn and Bobier are correct that Lamey’s original outline of new omnivorism does cite Stephen’s (1896) nineteenth century account. Given this, we might wonder about the appropriateness of classifying the logic of the larder as a form of “new” omnivorism. Even if the central idea is not new, however, it bears noting that there has been a marked increase in the frequency with which the argument has appeared since Stephen (1896) wrote. Particularly since Parfit’s (1984) influential discussion of population ethics, arguments to the effect that humane animal agriculture has the potential to increase the number of happy animals in existence have been widely made (Hare, 1999: 240; Scruton, 2000: 100; 60; Schedler, 2005: 502–3; Callicott, 2016: 59; cf. Matheny & Chan, 2005; Višak, 2013: 129–33).³ Stephen’s passing reference to the Logic of the Larder was not philosophically influential, and by the time the modern debate over animal protection began in the 1970s, Stephen’s (1896) remark, as well as Henry Salt’s critical response (1914), had long been forgotten.⁴ Interest in it now is largely due to the contemporary debate over animal protection. Thus, even if Stephen did entirely anticipate modern formulations of the Larder argument, the term “new omnivorism” would still have value as a historical label, denoting the current period of much greater contemporary interest in the Logic of the Larder and other defenses of meat eating on ostensibly pro-animal grounds.

Stephen’s formulation, however, arguably does not anticipate the strongest versions of the Logic of the Larder. The relevant passage from Stephen states:

Many of the lower species became subordinate parts of the social organism—that is to say, of the new equilibrium which has been established. There is so far a reciprocal advantage. The sheep that is preserved with a view for mutton gets the advantage, though he is not kept with a view to his own advantage. Of all the arguments for Vegetarianism, none is so weak as the argument from humanity. The pig has a stronger interest than any one in the demand for bacon. If all the world were Jewish, there would be no pigs at all. He has to pay for his privileges by an early death; but he makes a good bargain of it (p. 236).

Stephen here refers to the “advantage” or “privilege” that animals enjoy by being raised for food. Advantage and privilege are comparative concepts: they denote a positive feature that obtains in one state of affairs but not another. The advantage for

³To my knowledge, the first writer to mention the logic of the larder during the modern debate over the ethical status of animals was Robert Nozick, albeit in the context of defending a traditional conception of animal rights and vegetarianism rather than new omnivorism (1974, p. 38).

⁴Salt (1914) coined the term “The Logic of the Larder.”

the animal appears to be that they exist. It has often been argued in the contemporary debate over the Logic of the Larder that animals (or humans) cannot benefit from coming into existence: for had they not existed, there would be no individual who is denied the advantage in question (Parfit, 1984). The most sophisticated contemporary versions of the Larder argument avoid this problem, by positing that happy or satisfied animals existing is a better state of affairs, but not necessarily better for the animals themselves. It is rather better in the impersonal sense that there is more of something of value, that is, utility. If so, then Stephen is perhaps best categorized as a proto-new omnivorist, whose work foreshadows, without entirely anticipating, the most sophisticated versions of the argument made today.

Evaluating New Omnivorism

New omnivore arguments have given rise to lively debate in the animal ethics literature. Rather than attempt to resolve that debate, it will suffice here to outline the points of controversy that the challenges mentioned above have given rise to.

Davis's (2003) influential argument has attracted criticism of three distinct kinds. The first is empirical. Davis offered a model of how many animals are killed in different forms of agriculture that suggested that twice as many field animals are killed per hectare of crop production than are killed per hectare of free-range pasture. His calculations, however, assume that the two different agricultural practices produce an equal amount of food per hectare. This is disputed by Matheny (2003), who argued that crop production requires one-tenth the hectares as grass-fed cattle do to produce the same amount of protein. Lamey (2007) also argued that Davis misreads the empirical studies that support his estimate of the number of animals killed by plant cultivation. In one study, Davis includes mice who are eaten by owls after harvest removes their crop cover, while in the other Davis inadvertently doubles the number of rats killed in sugarcane cultivation by assuming a one-year rather than two-year growing season. The upshot of both empirical critiques is that plant cultivation kills fewer animals than free-range beef farming.

A separate criticism of Davis's approach raises an ethical objection. It is that Davis draws no distinction between deliberate and accidental killing. While this approach is endorsed by some forms of consequentialism, Davis's argument assumes Regan's non-consequentialist, rights-based framework. In addition, Lamey (2019a) argued that a version of the doctrine of double effect (DDE) extends to animals. According to the most cogent version of the DDE, harmful direct agency, such as deliberately killing a cow in a slaughterhouse, is worse than harmful indirect agency, such as accidentally killing a mouse during harvest. If so, then even if crop cultivation killed the same number of animals as free-range beef production, or even slightly more, it would still not be as wrong as deliberate slaughter. This is a problem for Davis's approach, insofar as it assumes that the only factor that matters is the overall number of animals killed.

A third and final critique of Davis straddles the line between empirical and philosophical concerns. It draws attention to the complexity of estimating agriculture's

effects on the life and death of field animals (Fischer & Lamey, 2018). More than one difficult philosophical question needs to be answered in order to generate such an estimate. Consider again the owls who eat mice after their crop cover is removed. Should an estimate of the effect of harvest on animals include the positive outcome for owls and other predators, who are now better able to feed themselves? Answering this question requires getting clear on what the relevant effects of harvest are. Similarly, there is some evidence that the introduction of agriculture in a given region increases the wild animal population. As an examination of the introduction of cereal harvest in central Argentina noted, “some rodent species benefitted from the changes because of increased food availability and decreased predator abundance” (Cavia et al., 2005, p. 95). Should calculations of field-animal mortality weigh such deaths against the increased number of wild animal lives they sustain? These are but two of the questions that need to be answered in order to generate an accurate estimate of the outcome of common agricultural practices. Yet, to date, estimates of field-animal mortalities have not taken heed of them and have instead tended to assume that the only relevant consideration is how many animals are killed by wheat threshers and other farm machinery.

These three critiques of Davis (2003) pose a problem for many, but not all, forms of new omnivorism inspired by his work. Bruckner’s (2016) argument that the case for vegetarianism entails an obligation to eat roadkill, for example, is affected little, if at all, as it does not presume that Davis’s calculations are correct. Bruckner’s more cautious premise rather is that the number of animals killed in crop cultivation is higher than zero. Given that road-killed animals are already dead, consuming their corpses when they are intact and edible will necessarily cause fewer animal deaths overall. Yet while Bruckner’s ingenious analysis escapes many of the problems faced by Davis, it has come in for criticisms of its own. Abbate (2019), for example, argued that Bruckner’s analysis presupposes a variety of unsupported claims, including that everyone has access to roadkill, that roadkill would go to waste if human beings do not eat it, and that it is impossible to cultivate plant foods without harming animals.⁵

The Logic of the Larder, as noted above, raises complex issues in population ethics. Its commitment to maximizing animal utility has counterintuitive implications. In the case of members of our own species, we do not normally think that potential parents have an obligation to conceive as many happy offspring as they can. The Logic of the Larder seems to call this piece of everyday morality into question. It also seems to result in the so-called repugnant conclusion. This is the conclusion that, as Parfit put it, “for any possible population of at least ten billion people, all with a very high quality of life, there must be some much larger imaginable population whose existence, if other things are equal, would be better even though its members have lives that are barely worth living” (1984, p. 388). The thought that a world with huge numbers of people living barely acceptable lives would be better than one with a smaller number of happier people is difficult to accept.

⁵See also Lamey (2017) for an argument that Bruckner’s proposal gives people an incentive to drive over other travel options, in the hope of coming across some edible roadkill, and so is likely to increase the number of animals hit by cars.

To say that the Logic of the Larder has counter-intuitive implications, however, is not to refute it. The question is whether there is a different theory regarding the ethics of bringing new beings into existence with fewer such implications. Some writers, for example, have attempted to avoid the Larder argument's counterintuitive implications by arguing that when we are evaluating scenarios in which new beings, human or animal, could be created, we need only grant weight to the individuals who already exist.⁶ So a couple deliberating over whether to conceive a child, for example, need to give weight only to their own interests, not those of the child they might conceive. As Singer (1993) noted, however, this approach entails that it would be perfectly fine for the parents to deliberately conceive a child whom they know in advance would live a life of agony for two years before dying. This also is hard to accept.

In response to these difficulties, one view recently expressed in the animal ethics literature is that a condition of an action being morally good is that failing to make it would be bad for someone (Lamey, 2019a). On this approach, failing to refrain from conceiving a miserable child or animal would be bad for that child or animal, so deliberately not producing such a being meets the condition. Failing to conceive a happy child or animal, by contrast, does not meet the condition, as instances of non-conception do not result in the existence of anyone who experiences anything bad. This view, although it has its own counterintuitive implications, may at least allow us to deny that we have an obligation to maximize the number of happy humans or animals in existence, while still recognizing an obligation not to create miserable animals or human beings. But whatever view of the ethics of procreation we wind up affirming, it is likely to be at odds with some aspect of common sense. As Clark Wolf (2004) noted, "There is no normative theory of population choice that does not have seriously counterintuitive implications" (p. 61).

Arguments for new omnivorism rooted in plant neurobiology have faced both scientific and philosophical criticism. In 2007, mainstream plant scientists at 33 different research institutions released a public letter characterizing plant neurobiology as being based on "superficial analogies and questionable extrapolations" (Alpi et al., 2007, p. 136). One such extrapolation concerns the claim that plant signaling is as complex as the communication enabled by animal neural systems. According to mainstream botanists and neuroscientists, even if the most revisionary accounts of plant signaling prove correct, the communication systems of animals will still be exponentially faster and more sophisticated. In a similar vein, philosophical defenders of plant neurobiology commonly characterize plants as sentient, but define sentience so as not to include all of its central features. In *Plants as Persons*, for example, "the idea of plant intelligence has little to do with consciousness" (Hall, 2011, p. 145). But if plants are not conscious they are not sentient in the sense animal protection theory has long been concerned with, and there is no challenge to veganism after all.

⁶Singer (1993) provides an influential discussion of the prior existence view without endorsing it.

An argument that has been made against eating cultured meat is that doing so furthers the ideology of animal edibility. To be edible is to occupy a political rather than natural category: It is socially approved for such a being to be killed and eaten without risk of social or criminal sanction. Rebekah Sinclair (2016) makes a version of this objection to eating plant-based meats that would also rule out eating cultured meat. According to Sinclair (2016) and other critics, the best response to the harm done to food animals is to reject outright the notion that they can be eaten. Not only do plant-based meats fail to do this, she argues, but they “perpetuate a framework of intelligibility” (p. 239) according to which animals are edible. Even more so than plant-based meats, cultured meat mimics traditional meat, and so by the same logic depends on a preexisting framework that sanctions eating animal bodies.

Call this criticism of cultured meat the edibility objection. In response, defenders of cultivated meat have questioned the notion of intelligibility it rests on (Lamey, 2019a). Sinclair (2016) argued that because *in vitro* meat is intelligible by reference to traditionally derived meat, it must perpetuate the ideology of traditional omnivorism. This, however, may overlook how a concept can be intelligible by reference to a traditional meaning that it nonetheless escapes. For example, there is a long history of terms that were once insults being embraced as positive labels. Quaker. Tory. Suffragette. Queer. The first time these terms were used in a positive way, they were rendered intelligible by their history as insults. But this avenue of intelligibility did nothing to change the fact that their new usage had a different meaning. This is possible, arguably, because being intelligible by reference to a familiar meaning is not the same as being *defined* by that meaning. In the case of *in vitro* meat, the meaning that is called into question is the concept of meat itself. It evokes the notion of meat as animal flesh, defenders argue, precisely in order to overcome it.

New omnivist challenges to traditional veganism now occupy a place of prominence in the ethical literature on animals and food that would have been hard to imagine when the philosophical debate over animal protection began in the 1970s. The rise of new omnivorism has coincided with a noticeable decline in the number of philosophers willing to defend factory farming. Indeed, many new omnivist proposals would require their own radical reforms to animal agriculture as it currently exists. Davis’s (2003) influential proposal, for example, would entail no longer consuming any meat other than free-range beef. Defenders of traditional veganism are obliged to resist this and many other dietary conclusions that new omnivore make. Yet new omnivorism to date, although it contests animal protection theory’s traditional dietary recommendations, cedes the philosophical terrain to animal protection. In this way, its rise to prominence marks an important shift in the animal debate, one that protectionist vegans are likely to regard as an improvement on the debate when it was first joined by more ambitious critics, who sought to challenge protection theory outright. Indeed, if sweeping arguments against animal protection are increasingly giving way to critiques that employ protection theory’s own premises, this may well be a sign that such premises are difficult, perhaps even impossible, to refute.⁷

⁷Several paragraphs in this article are adapted from Lamey (2019a).

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Chapter 10

Pragmatism



Tobias Leenaert

Veganism, Pragmatism, Idealism, Meat Reduction

Imagine you believe—and since you are reading this, there is a good chance you do—that animals are not there for humans to be used in any way: you don't want them to be used for food, clothing, or any other purpose. That is your ideal. Imagine further, that you're an animal advocate, helping to bring this dream become a reality. You are part of the animal rights or vegan movement, which wants to stop the suffering, killing, and exploitation that is involved in animal agriculture.

Now, among the options you have, consider these two: (1) Since you are vegan, and vegan is what you'd like people to become, you ask them to go vegan. Or (2) because you believe that more people might follow up on a smaller ask, and you believe in incremental change, you ask people to *reduce* their meat consumption. You ask them, for instance, to participate in a campaign called Meatless Monday, leaving out meat one day a week.

Idealism Versus Pragmatism

The first option—asking people to go vegan—I call an example of an *idealistic* approach, while the second represents a more *pragmatic* approach.

The idealistic approach is about asking for, and communicating about, what one *ideally* wants to achieve, and is often working within the constraints of a set of rules or principles. In this case, the idealistic activist might want to stick to a “go vegan” ask because they believe that asking for anything less is—independent of how effective it might be—in their eyes *not right*. This activist might for instance think that

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asking people to go veg on one day a week is equal to granting people permission to eat meat on the other six days, and that is not, again in the activist's eyes, an ethical thing to do. The pragmatist, on the other hand, is not bound by such ideas of what should or should not be asked but mainly focuses on what they think actually *works*. Philosophically, as the reader may have noticed, pragmatism is associated with consequentialism, while idealism is more tightly associated with deontology, that is, a reference to duties.

It's important to note that the idealistic versus pragmatic distinction is not binary but is rather a spectrum. One can be more or less idealistic or pragmatic. No one is purely pragmatic or idealistic, just as no one only focuses on rules while neglecting results, and no one only looks at results and wants to achieve these at all costs, whatever the rules, values, or virtues they cross. The people in the animal rights or vegan movement have more or less the same objective: they want the abolition of the use of animals for human ends. Even though there are different focuses and the ideal outcome may be a bit different (e.g. some people would envisage a world without companion animals as well as without farmed animals), the end game is very similar.

Where there are much bigger differences among the people in this movement, however, is *the way* they want to achieve their objective. People have different ideas about the tactics, actions, interventions, and styles of communication that will, can or should get us there. The distinction between an idealistic and pragmatic approach goes a long way to clarify not just the different tactics, interventions, and strategies different activists apply, but it also explains part of the animosity that one can often find within the vegan or animal rights movement.

The Need for Pragmatism

While it is tempting, once one has identified the wrongs that people inflict on animals, to want to be entirely free from them and to not be responsible for them or condone them in any way (idealism), I would like to demonstrate in this article why a healthy dose of pragmatism is not just helpful but also necessary in the phase the animal protection movement finds itself in today.

In my book *How to Create a Vegan World* (Leenaert, 2017), I present four ways to apply pragmatism, or, in short, to be pragmatic. We can be pragmatic:

1. In our ask
2. In the motivations for change that we use
3. By focusing on institutional change
4. In the definition of veganism

I elaborate further on each of these below.

1. A Pragmatic Ask

I started this article with an example of a pragmatic and an idealistic ask. Asking people to go vegan can be seen as an idealistic ask (it is what at least vegans would

ideally want from others), while asking people to participate in Meatless Monday is on the pragmatic side of the spectrum. Other examples of pragmatic asks are suggesting people to go vegan in January (the “Veganuary” campaign) or for another limited period, asking them to go vegan before 6 pm (which is an idea by the American author Mark Bittman (2013)), or asking people to first of all stop eating chickens (an idea proposed by the group One Step for Animals (onestepforanimals.org)). As you can easily see, for a vegan, none of these asks meet the vegan ideal, but they are used because the activists in question believe that they might work better than the more ideal but more difficult “go vegan” ask.

As mentioned before, activists with different approaches or tactics (like more idealistic versus more pragmatic ones) often have the same objective. A vegan asking people to reduce does this not because their end goal is reduction, but because they believe that this can help lead to the abolition of animal use. There are different reasons why this could be so. First of all, change often works in steps, and if people have a good experience going vegan one day a week, they might more easily add more days. Secondly, all the people reducing their consumption are also helping to reduce animal suffering. Most importantly, however, a large group of reducers may tip the system faster than a small and slow number of vegans. As there are many more reducers than vegans, the reducers are, at this moment, the main ones driving demand and supply. It is for the reducers, and not in the first place for the vegans, that companies produce vegan products and it is for them that restaurants put vegan dishes on the menu, or that there are vegan restaurants in the first place. Ask any company or restaurant (including vegan ones) which people constitute the biggest part of their customers, and they’ll all say it’s the reducers or flexitarians, while the vegans will represent at most a quarter of their clientele. This will change as the number of vegans increases, but for now, the reducers are very instrumental in driving the change. Surveys will turn up quite varying numbers of vegans and flexitarians according to definitions and methodologies used, but as an example, according to a 2020 Euromonitor report, 42% of global consumers identify as flexitarians, while 6% identified as vegan (actually a suspiciously high number) (Mascaraque, 2020).

2. *Pragmatic Motivations*

While the ask is the change that we request people to make, the motivations are the *arguments* that we use to change them. Typically, vegans will use ethical arguments about animals to get people to change. Ideally, people, in their eyes, should stop their consumption of animals *not* because it is healthy for them, but *for the sake of the animals*. This is another important aspect of idealism: the idealist has a desire or need for other people to do not just the right thing, but *the right thing for the right reasons*. Pragmatically, however, the reasons may not matter all that much, as long as results are obtained. Pragmatism would say that whether people go vegan (or reduce their consumption of animal products) for health, environmental, taste, or animal rights reasons, it doesn’t matter. They don’t care, because the animals don’t care.

But of course, it's easy to see that it would be *good* that people cared about animals. Some research (e.g. Asher et al. 2014) shows that ethical motivations have more sticking power, and also, if people are vegan for health reasons, they might still be using non-food animal products. It is indeed true that *ideally*, people care about animals.

The good news is that often attitude change *follows* rather than *precedes* behavior change (see Leenaert for examples). This is not how most activists think about change. They usually try to give people information (in the form of leaflets, websites, videos...) that should help change people's attitude about animals (or whatever topic) after which the hope is that they will also change their behaviour (e.g. go vegan). But unfortunately, there is something called the attitude-behavior *gap* and we all can see in ourselves places where we *believe* the right thing but don't *do* the right thing. Fortunately, change can also work the other way round: once a person is already doing something differently, they become much more open to adopt new attitudes or beliefs. Imagine someone reducing their meat intake for health reasons. If they now see that they can still eat good food, they might become more open to hearing about animal rights arguments, which they previously were often so defended against. Indeed, research shows that many people who start being vegan for health reasons ultimately also will care about animals and even become activists (e.g. Hoffman, 2013).

Here's an example to illustrate these first two points (ask and motivation). In the USA, about 16% of all liquid milk sold is plant based (Spins, 2022). It is obviously not the vegans who are responsible for this significant consumption. Rather, the demand comes from many more people who, for whatever reason, to whatever degree, consume plant-based milk. But the effect is that through this reducer driven demand, it is easier for vegans today to be vegan.

3. *Focus on Institutional Change*

This brings us to the third point of being pragmatic: the focus on institutional change.

Many activists focus on personal change, trying to convince individuals one by one to change their attitudes towards animals, as well as their consumption habits. That can certainly be helpful, but in addition to this, it is necessary to work also—and perhaps mainly—for institutional change, as this may make individual change easier.

Basically, this is about creating alternatives. The more alternatives available (and the better quality, the cheaper and the more ubiquitous they are) the lower the required personal effort will be. Today we are still in a situation where to avoid animal products is swimming against the stream. It means going out of your way. While vegans may say it doesn't require much effort, that does not seem to be true for many people, at least in the beginning.

Consequently, we have to make personal change easier. This is where business, technology and also government come in. It is also, controversially to some, where *big* business and *big* meat come in. In the last five years or so, big multinational companies, including meat companies, have jumped on the vegan wagon. It's not

hard to understand why some activists get angry when a company like Tyson, one of the biggest producers of chickens in the world, wants a piece of the vegan pie: they have massively profited for many decades from exploiting animals, and now that it is finally profitable, they're interested in animal-free products? Infuriating!

And yet, one could say that *it must be so*. If we want a worldwide shift, these big companies need to be on board. They have so much more money for advertising vegan products and bringing them into the mainstream. They have more money for R&D, to make these products better still. And they have the contracts and connections with retailers to spread them anywhere. Last but not least, as soon as big meat or big dairy companies are also profiting from the sales of vegan products, they stop having a reason to try to sabotage the growth of vegan consumption. In Europe, for instance, it is by law forbidden to label plant-based milk as milk on the packaging. This law was passed thanks to the lobbying resources of big dairy companies. One could wonder if Danone, now that is very much into selling plant-based dairy, would still support such a law today.

Cultivated (or cell-based) meat deserves special attention here. This hi-tech product might be on the market (presumably initially at high prices) in a couple of years and could be a game-changer. Some vegans, however, do not consider this a vegan product, because technically, it remains essentially an animal product. However, once we can create cultivated meat without an animal-based growth medium, and we just need some cells that are harmlessly harvested from a cow (or which, given GMO technology, could eternally be replicated), it seems hard to point out where the animal exploitation or suffering is.

Apart from the companies creating alternatives, governments can help facilitate the evolution towards a plant-based world with the instruments they have available: installing laws that stipulate a mandatory vegan offer in government cafeterias, levying a tax on environmentally damaging products, reforming the subsidy system, etc.

4. *Defining Veganism Pragmatically*

One final aspect of pragmatism is about how veganism is defined, and how it is lived and applied. Idealistically, one would avoid non-vegan products or ingredients always and everywhere. Pragmatically, one could look at the impact one has doing so.

Vegans are known for scanning packages to identify non-vegan ingredients and to be very picky about their food. This is, of course, not without reason: animal products involve animal exploitation and—almost always—suffering. Hence the attempt to avoid even the tiniest animal ingredients.

This desire to be one hundred percent consistent in avoiding animal products, however, may sometimes conflict with what the pragmatist cares most about: true impact for animals. One could imagine, for instance, the following setting: you're attending a business lunch and have requested a vegan meal beforehand. When you take a first bite, you taste something buttery, and suspect the dish may not be entirely vegan. There is a pragmatic case to be made for just eating that dish. Making a scene might give the other diners the impression that being vegan is something very

difficult that gets you into socially awkward situations. Moreover, the food will probably be thrown away if you don't eat it.

Veganism is as difficult as vegans want to make it. They can make the membership price of joining the vegan club so high that no one can join. Or they can choose to be, just here and there, a tiny bit more relaxed about the rules. The point here is not to say that veganism should be this or that but to appreciate that different people may have slightly different ways of being vegan and that we can consider both the very strict and the somewhat more flexible as part of the same team.

Adaptability

In the end, pragmatism is about adapting one's approach to the situation in question with an eye on results. Thus, this adaptability encompasses all possible approaches, selecting the one that will be most efficient.

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Singer, P. (2015). *The most good you can do: How effective altruism is changing ideas about living ethically*.

Animalcharityevaluators.org: Effective Altruism–inspired research and recommendations on the most effective animal advocacy organizations.

Faunalytics.org: the world’s biggest collection of research on advocacy for animals

Chapter 11

An Oath for Business and Animals



Clair Linzey

Introduction

In the wake of the 2008 financial crisis, business schools undertook a period of self-reflection having trained many of the business leaders working in the financial sector at the time. One response to the crisis was offered by Rakesh Khurana and Nitin Nohria (2008) in their piece “It’s Time to Make Management a True Profession.” Khurana and Nohria argued that “If management were to be seen as a true profession, our expectations of the moral conduct of managers and their expectations of themselves would rise” (2008). One key component of making management a profession was their suggestion of a Hippocratic-style oath for business. Other professions that undertake advanced degrees and provide a public service have adopted oaths, such as those for veterinarians and doctors. The idea was that those gaining MBAs should think of themselves as providing a public service, for which they should also uphold an oath. This oath would then help to distinguish business professionals as responsible and upstanding from others.

The suggestion of an oath for business gained popularity when a group of MBA students at Harvard suggested their class take it, leading to an uptake of the oath across business schools (Anderson & Escher, 2010). The idea then spread beyond the MBA community to the wider business community: It is now known as the Oath Project (2011). “Using a ‘Hippocratic oath for business’ as a foundation for transformational change, the Oath Project aims to provide the tools necessary to integrate the concepts of professional conduct and social responsibility into the culture, core values, and day-to-day operations of both academic institutions and corporations” (Oath Project, 2011, P. X). The public perception of bankers and MBAs has taken a big knock in the wake of the financial crisis. The oath is understood as an

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important step toward regaining public confidence in business and management leaders after the financial crash adversely impacted so many lives. It may seem like an odd idea to try and make management a profession and to include within it an oath. However, when business schools were first conceived, they were originally intended to become a profession akin to being a doctor or a lawyer. While an innovative and bold idea, the Oath Project has yet to include any sustained reflection on what business leaders' responsibilities ought to be toward non-humans. This chapter explores what an oath for animal business might look like and its accompanying implications.

Since the goal of the project is to consider “the true responsibilities and reach of management” (Oath Project, 2011, p. x), it is necessary to consider their responsibilities and reach as regards animals and the environment, especially in businesses that deal directly with non-human lives, such as animal agriculture. Over the last 50 years, there has been a paradigm shift in the philosophical understanding of how we consider our relationship to other beings. This shift has been described as a move away from the idea of animals as tools, machines, or means for our ends, toward the idea that animals as beings with their own value, dignity, and rights (Linzey, 2000, p. 40). In addition, the environmental crisis has led to sustained philosophical discussions on our relationship with the environment and our impact on issues such as climate change and global warming. With the increase of green consumerism and ethical businesses, the time is right to re-envision the Hippocratic Oath for Managers in a way that takes into account our responsibilities to the non-human world.

Khurana and Nohria argue that codes “create and sustain a feeling of community and mutual obligation” (2008). The hope here is that by widening the sphere of concern of the oath, to go beyond human communities, a greater sense of obligation to the non-human world will be engendered in our commercial relationships.

The MBA Oath

The oath for business has undergone various stages. An initial Hippocratic Oath was suggested by Khurana and Nohria in their *Harvard Business Review* article (2008). When taken up by a group of MBA students, it was subsequently modified into the MBA Oath (2010). Now the people behind it hope to reach the wider business community and it is known as The Oath Project (2011). There have been various incarnations of the oath precisely because it hoped to spark debate as well as reform in a turbulent moment for the credibility of business.

Anderson and Escher recall how the final MBA Oath built upon Khurana and Nohria's original oath to incorporate the reflections of a wider MBA audience (2008, p. 11). The Oath Project has adopted a more concise version, and so Anderson and Escher's version remains the fullest expression. It is as follows:

Preamble

As a manager, my purpose is to serve the greater good by bringing together people and resources to create value that no single individual can build alone. Therefore, I will seek a course that enhances the value my enterprise can create for society over the long term. I recognize my decisions can have far-reaching consequences that affect the well-being of individuals inside and outside my enterprise, today and in the future. As I reconcile the interests of different constituencies, I will face difficult choices.

Therefore, I promise:

I will act with utmost integrity and pursue my work in an ethical manner. My personal behavior will be an example of integrity, consistent with the values I publically espouse.

I will safeguard the interests of my shareholders, coworkers, customers, and the society in which we operate. I will endeavor to protect the interests of those who may not have power but whose well-being is contingent upon my decisions.

I will manage my enterprise in good faith, guarding against decisions and behavior that advance my own narrow ambitions but harm the enterprise and the people it serves. The pursuit of self-interest is the vital engine of a capitalist economy, but an unbridled greed can cause great harm. I will oppose corruption, unfair discrimination, and exploitation.

I will understand and uphold, both in letter and in spirit, the laws and contracts governing my own conduct and that of my enterprise. If I find laws that are unjust, antiquated, or unhelpful I will not brazenly break, ignore, or avoid them; I will seek civil and acceptable means of reforming them.

I will take responsibility for my actions, and I will represent the performance and risks of my enterprise accurately and honestly. My aim will not be to distort the truth but to transparently explain it and help people understand how decisions that affect them are made.

I will develop both myself and other managers under my supervision so that the profession continues to grow and contribute to the well-being of society. I will consult colleagues and others who can help inform my judgement and will continually invest in staying abreast of the evolving knowledge in the field, always remaining open to innovation. I will mentor and look after the education of the next generation of leaders.

I will strive to create sustainable economic, social, and environmental prosperity worldwide. Sustainable prosperity is created when the enterprise produces an output in the long run that is greater than the opportunity cost of all the inputs it consumes.

I will be accountable to my peers and they will be accountable to me for living by this oath. I recognize that my stature and privileges as a professional stem from the respect and trust that the profession as a whole enjoys, and I accept my responsibility for embodying, protecting, and developing the standards of the management profession, so as to enhance that trust and respect.

This oath I make freely, and upon my honor (Anderson & Escher, 2010, pp. xv–xvi, original emphasis).

Although arguably the momentum for the oath project has decreased in the subsequent years, it remains a powerful idea that business leaders owe something to the wider society in which they operate. The language of the oath, as previously mentioned, has been much deliberated and is carefully selected to reflect the greater responsibilities of business leaders to the wider societies in which they participate. However, the oath sadly does not consider the impact that businesses have on non-human lives or the responsibilities a manager might have toward them. In short, it may be considered anthropocentric and animal-blind.

Animal-Blind Business

The MBA Oath as it stands makes little attempt to consider the impact of business on the environment and none on the impact of sentient animals. In particular, the use of seven keywords in the oath needs consideration: ethical, society, individuals, transparency, power, exploitation, and consumption.

The oath proclaims that “I will act with utmost integrity and pursue my work in an ethical manner.” This is an important statement, but what “ethics” amounts to in this context is unclear, since there are a myriad of different ethical systems. Now, while it is not necessary for the oath to support a particular ethical theory, it is important for our purposes that the conception of ethics here should include the moral consideration of non-human animals. The original oath does not include the moral consideration of nonhumans, but the animal-friendly oath below places concern for animals at the forefront.

The word “society” appears three times in the oath, stressing the importance of the business leader’s relationship to the wider society. “As a manager, my purpose is to *serve the greater good* by bringing together people and resources to create value that no single individual can build alone. Therefore I will seek a course that enhances the value my enterprise can create for *society* over the long-term” (my emphasis). The oath taker undertakes to “serve the greater good” and to seek “value” “for society.” The notions of “good” and “value” are philosophically difficult notions to define. However, we can be fairly certain that the society discussed in the oath is human society. Or if it is meant to include non-human society within it, this is not explicit. We can, therefore, assume that the greater good considered is for humans alone, and sadly the oath is anthropocentric. In our revised oath, this is a world that will need clarifying to include the non-human world.

Similarly, the oath proclaims, “I recognize my decisions can have far-reaching consequences that affect the well-being of individuals inside and outside my enterprise, today and in the future.” However, we can again assume that the “well-being” of individuals is of human individuals rather than non-humans. If non-human animals were included within this vision of the oath, it would truly be an important recognition. Moreover, the concept of well-being is an idea that needs to be accompanied by the concept of sentience in the proposed revised oath. Sentience, the capacity for pain and suffering including a wide range of emotions and feelings, is a key consideration in the well-being of all individuals. A recognition of the sentience of non-human animals will strengthen the behavior undertaken in upholding the oath.

Transparency about how non-human animals are used, kept, transported, and killed can allow for greater ethical consumer choice as seen in labeling such as “cage free” or “free-range.” The concept of transparency appears in the oath in the line: “My aim will not be to distort the truth but to transparently explain it and help people understand how decisions that affect them are made.” Given that so much of what happens to animals in business is unseen and unknown, transparency is a crucial idea in the oath. The above oath focuses on transparency as it is important in

restoring and retaining consumer trust. But for our purposes, transparency should also include labeling that indicates the wide array of ways in which nonhuman animals and their body parts may be used in a business. For example, to take the case of pigs alone, there are nearly 200 different products that contain materials derived from pig bones, hide, bristles, and other parts with uses from bullets to artificial hearts, aside from the usual meat products (Meindertma, 2007).

If the statement, “I will endeavor to protect the interests of those who may not have power but whose well-being is contingent upon my decisions” was intended to include non-humans, this would indeed be an impactful statement. Non-humans clearly fit the criteria of “those who may not have power but whose well-being is contingent.” A discussion of the power relations between humans and nonhumans is beyond the scope of this chapter, but a recognition that those power dynamics exist is crucial to this undertaking. Moreover, an oath that included a promise to protect the interests of non-humans would indeed be a significant step forward.

The word “exploitation” appears just once in the oath: “I will oppose corruption, unfair discrimination, and exploitation.” Again, the exploitation imagined here appears to be solely concerned with human beings. However, if the oath were to consider the exploitation of animals, this could have a wide-reaching impact on the myriad of ways in which we use, abuse, and exploit nonhuman animals for human gain. As such, the proposed oath below will disavow the exploitation of animals for business and undertake to not engage in exploitation or harm of nonhuman animals.

Consumption is an important concept in business. The oath proclaims “I will strive to create sustainable economic, social, and environmental prosperity worldwide. Sustainable prosperity is created when the enterprise produces an output in the long run that is greater than the opportunity cost of all the inputs it consumes.” Although environmental prosperity is included, non-humans remain an “input” consumed under this system. A full recognition of non-humans should include an undertaking not to consider them as mere resources for human consumption.

Why an Oath Including Animals?

On the face of it, it might be argued that considering animals within an oath for business leaders is rather odd because businesses are primarily concerned with profit for humans, very specific humans: shareholders. However, this is to ignore three important considerations. The first of which is that, as evident from the need for an oath for business in the first place, businesses have the capacity to have a huge impact on the world, both positively and negatively, for humans and non-humans alike. In the same way that the financial crisis impacted upon the credibility of business leaders, so too have the scandals involving non-human animals had an effect on consumer trust. To name just one example, the horsemeat scandal damaged the trustworthiness of food producers, and to date not a single company has been held accountable for the contamination of consumer’s food (Lawrence, 2013). An oath that only takes

into account the concerns of humans is neglecting the billions of animals used in different industries each year.

Second, as noted earlier we are living through a paradigm shift in concern for animals. Although this shift began as a philosophical discussion, we are now seeing concern for non-human animals trickle down into social, legal, and even business practices. This is most evident in the rise of ethical consumers. Even those who continue to use animal products have greater concern about the lives of non-humans. This can be seen, for example, on the impact of documentaries such as *Blackfish* on the number of visitors to SeaWorld attractions (Javanaud et al., 2018). Consumers want to feel that they are purchasing products and services that do not harm non-human animals. In terms of food, the consumption of meat in both the U.S. and the U.K. has been declining as more people adopt flexitarian, vegetarian, or vegan diets (Gervis, 2018; Smithers, 2018). In short, consumers are increasingly concerned about the impact of their purchases on non-human animals and the environment, so businesses need to be as well. After all, businesses rely on consumers, and so meeting the needs of consumers is pivotal.

Third, there are business opportunities that are open to embracing animal-friendly business and an oath to match. The move toward plant-based living is full of opportunities for those willing to embrace an alternative business model. To take just one example, the rise of plant-based alternatives to leather, including alternatives such as cactus, mango, and mushroom, has led to multimillion-pound evaluations of these companies, driven by increased consumer interest (Fraser, 2022). For business owners already adopting an animal-friendly approach, the oath may further their business in three main ways. First, signing up for the oath would be a clear indicator of ethical behavior to consumers. In the same way that cruelty-free or vegan labeling is a consumer indicator. Second, it helps build consumer trust in your brand, and consumers return to brands they trust. Third, and most importantly from our perspective, oaths are a public promise and as such while no guarantee, they make ethical behavior more likely. Those who take the oath will hopefully uphold the principles of the oath and encourage others to do the same.

An Animal-Friendly Oath

This animal-friendly oath is a proposal for discussion. Oaths are an obvious embodiment of values and ethics. The question of which values to include within it is part of what is up for discussion. Whether the oath may only be taken by those whose businesses are free of direct exploitation of animals or not, will depend on whether it is aimed at reforming current practices or aspiring to a world free of animal exploitation. This is not a debate that can be resolved by the author here, rather the following is an initial attempt to begin much-needed discussion:

Preamble

As a manager, my purpose is to serve the greater good by bringing together people and resources to create value that no single individual can build alone. Therefore, I will seek a

course that enhances the value my enterprise can create for society and the planet over the long term. I recognize my decisions can have far-reaching consequences that affect the well-being of individual humans and non-humans as well as the environment inside and outside my enterprise, today and in the future. I recognize other sentient beings as constituents to consider, not as resources. As I reconcile the interests of different constituencies, I will face difficult choices.

Therefore, I promise:

I will act with utmost integrity and pursue my work in an ethical manner. My personal behavior will be an example of integrity, consistent with the values I publically espouse. I recognize the ethical considerations of my work involve the consideration of the sentience and well-being of humans and nonhumans alike.

I will safeguard the interests of my shareholders, coworkers, customers, the society, non-human lives, and the environment in which we operate. I will endeavor to protect the interests and well-being of those who do not have power but whose well-being is contingent upon my decisions. Especially, those who cannot represent or articulate their needs and concerns.

I will manage my enterprise in good faith, guarding against decisions and behavior that advance my own narrow ambitions but harm the enterprise, society, and the wider world it serves. The pursuit of self-interest is the vital engine of a capitalist economy, but unbridled greed can cause great harm. I will oppose corruption, unfair discrimination, and exploitation of all sentient beings, human and non-human. I recognize that many business practices are built upon the exploitation of non-humans, I will not contribute to that exploitation or harm.

I will understand and uphold, both in letter and in spirit, the laws and contracts governing my own conduct and that of my enterprise. If I find laws that are unjust, antiquated, or unhelpful I will not brazenly break, ignore, or avoid them; I will seek civil and acceptable means of reforming them.

I will take responsibility for my actions, and I will represent the performance and risks of my enterprise accurately and honestly. My aim will not be to distort the truth but to transparently explain it and help people understand how decisions that affect them are made. I will clearly label my products to indicate any use of animals, animal-based ingredients, and animal testing conducted to give consumers accurate information. This labeling will also include the conditions of the lives and deaths of these nonhumans.

I will develop both myself and other managers under my supervision so that the profession continues to grow and contribute to the well-being of society and the world. I will consult colleagues and others who can help inform my judgment and will continually invest in staying abreast of the evolving knowledge in the field, always remaining open to innovation. I will mentor and look after the education of the next generation of leaders.

I will strive to create sustainable economic, social, and environmental prosperity worldwide for humans and non-humans alike. Sustainable prosperity is created when the enterprise produces an output in the long run that is greater than the opportunity cost of all the inputs it consumes. In so doing, I will consider the wider impact of my enterprise on the world and all those who live within it. I will not advance my enterprise at the expense of the lives and well-being of others. I recognize that nonhuman animals are not tools, machines, or commodities, here for our use and consumption. They are other sentient beings with whom we share our world.

I will be accountable to my peers and they will be accountable to me for living by this oath. I recognize that my stature and privileges as a professional stem from the respect and trust that the profession as a whole enjoys, and I accept my responsibility for embodying, protecting, and developing the standards of the management profession, so as to enhance that trust and respect.

This oath I make freely, and upon my honor.

Setting aside the issue of whether capitalism is the most appropriate system of commerce, the oath is an attempt to work within the bounds of the system we have. But at least it aspires to elevate the behavior of business managers and to bring into their ethical considerations the impact of their business practices on the lives of non-human animals. We need to move beyond moral anthropocentrism, and a business oath that includes animals would at least be a starting point.

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Chapter 12

Economics of Circumfauna: A Fashion Case Study



Joshua Katcher and Tracey Katof

The move toward not just substituting but *bypassing* and *outperforming* typical animal inputs such as silk and leather has been gaining momentum globally. The motives for doing so are varied and vast, from protecting animals and ecosystems to capturing market share of sustainable megatrends, anticipating regulations, and balancing portfolios. Finding a term that encapsulates this migration away from an animal-based economy while leaving room for nuance is crucial for economic development and stakeholders who are seeking alternatives to animal inputs. In this chapter, we introduce the term *circumfauna*, which stretches across the totality of activities and actions intending to make the use of animals superfluous.

We use the fashion industry as a compelling case study to demonstrate the accelerating trend of circumfauna. There is a popular tendency to look down upon fashion as mere frivolity. The late Karl Lagerfeld once quipped, "...don't get carried away, it's only dresses" (Tschorn, 2013, para. 8). What Lagerfeld inaptly expressed is that fashion, while a serious business, should not be taken too seriously because it's only an applied-aesthetic and, therefore, inconsequential. Until very recently, this perspective was also common in academia. Only a handful of critical works on fashion existed prior to the mid-twentieth century. The French poet Charles-Pierre Baudelaire (1821–1867), German philosopher Georg Simmel (1858–1918), and economist and sociologist Thorstein Veblen (1857–1929) each contributed significantly to our current understanding of the role that clothing plays in modern life. Fashion still exists on the periphery of the academy, brushed off by many institutions as at best, rudimentary and decorative and at worst, a false art represented by a meaningless parade of clothing in perpetual aesthetic flux.

Akin to fashion not being taken very seriously, impacts of faunal fashion (that is, fashion derived from animals) have also gone almost entirely unaddressed within serious fashion discourse and journalism until recently, relegating concerns for

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cruelty to the realms of naïve sentimentality, boring do-goodery, fringe activism, and unfashionable extremism.

The fashion industry is truly a global force reshaping the environment, dominating, and all too often, destroying the lives of workers, manufacturing human identity en masse, exterminating animal species, and transforming nonhuman animals into props, industrial production units, and luxury objects that act as various symbols of anthropocentric power. Along with the financial demands for acquiring a fluctuating and perpetually renewed aesthetic self, the fashion industrial complex takes a toll on the psyches of those designated as “consumer” receptacles and also on the lives of field and factory workers, wild nature, and both wild and farmed animals. These impacts are mostly hidden from citizens, out of sight in geographically dispersed extraction and production sites, and beneath layers of sleek, heavily funded marketing, advertising, and public relations (Katcher, 2019).

We begin this chapter by defining and explaining the term circumfauna. Succinctly, circumfauna is the macro phenomenon of bypassing animal inputs in local and global value chains. A value chain consists of all actions and processes within the life cycle of a good or service in which value is added, changed, or taken, from conception through production, consumption or utilization, and finally waste disposal (Katof, 2023c, p. 560). In the second section, we engage with the historical circumfaunal movement and its response to the industrial commodification of animals as fashion. In the third section, we present historical evidence in order to engage in a political economic analysis of the industry’s cross-border exploitation and expropriation. In the fourth section, we apply the theoretical framework of *Real Economics* and *Real Competition* from leading heterodox economist Anwar Shaikh (2016). We describe the regulating market mechanisms and social and historical determinants that have given rise to the circumfauna phenomenon.

Our work provides a sharp distinction between the more neutral term “circumfauna” and other seemingly similar terms, in particular the term “vegan.” While circumfaunal activity can align with the moral philosophy of veganism and the social movement for animal rights, participating in this megatrend does not require ethical reasoning or even an interest in protecting animals. The category of circumfauna avoids the pitfall of the mainstream perception that veganism is an all-or-nothing purity test.

Circumfauna

In recent years, there has been a shift and renewed inquiry in societal thinking about humans’ relationship with animals and nature. This “Animal Turn,” which is evidenced by numerous publications, has spawned a new research paradigm in Animal Studies (Ritvo, 2007; Burton & Mawani, 2020). The concept of animal rights and its relevance to considering animals as commodities have gained traction among nonprofits, and in global investigations, scholarship, literature, and policy. The deliberation of animals as inputs is highlighted by large-scale circumfauna activity,

as circumventing animals extends across sectors and borders (Mouat et al., 2019). The sheer scale at which moves to sidestep animals in the productive sector is disrupting established commerce and trade continues to be felt globally. In 2019, The IPO of Beyond Meat, the first publicly traded vegan company, soared to 163% (Zhang, 2017, theatlantic.com). This is one of the highest initial public offerings in the past decade. Since then, companies with a mission to bypass animals have made headlines entering the stock market. The US Vegan Climate ETF (Ticker: VEGN) is the first large-cap ETF keeping animals out of supply chains (Huňorová, 2020). Bloomberg News (2019) reports, “The phenomenon has spawned a burgeoning industry in alternatives to animal-derived products that’s already worth billions of dollars” (Mulvany & Shanker, 2019, para. 1). In 2021, the plant-based food market was valued at \$41.78 Billion and is projected to hit \$162 Billion in the next decade (Bloomberg, 2021). While circumfauna innovation in the food sector has dominated the conversation, there have been remarkable shifts in various industries, including the focus of this chapter—circumfaunal fashion.

By 2022, most top luxury fashion brands have committed to fur-free policies (Fur Free Retailer, 2021). Simultaneously, a global wave of legislation banning the sales of new fur, outlawing fur farming, or heavily regulating the fur industry to make it impossible to do business has increased significantly (Linzey & Linzey, 2022). Cities in Massachusetts, Michigan, and Florida, states like California, and entire countries like Israel have passed such laws (Fur Free Alliance, 2022). This is having an impact, according to the fashion analytics and data site, Edited:

“Over the past two years, real fur stocked on designers’ own sites has declined. The data for 2021 revealed a 23% drop YoY, down 29% since 2019 of items containing fox, rabbit, mink and other furs.” During the same period, there was an 82% YoY lift in items described as “faux-fur”. (Marci, 2022, para. 5)

A handful of global companies like Burberry and Chanel have gone further to eliminate so-called exotic skins like snake, croc, and lizard (Baskin, 2021; Deeley, 2022). Simultaneously, many of these businesses are investing significant capital into material startups or the in-house development of circumfaunal materials (Siu et al., 2022). In fact, a 2022 report revealed that over \$2.3B had been invested in the space with projections pointing to continued growth (Roshitsh, 2022).

In June of 2022, the Danish luxury fashion label Ganni launched a wallet made from Mylo (Bolt Threads’ circumfaunal leather made using mycelium, which is the root structure of mushrooms). By 2024, Ganni had piloted and featured at events like Copenhagen Fashion Week, many more products featuring circumfauna from innovators like Ohoskin, Polybion, Biofluff, Oleatex, Modern Synthesis, and others (GANNI, 2023). A Vogue Business interview from November of 2022 featured Ganni founder Nicolaj Reffstrup stating that these materials are designed to exceed traditional products. “Phasing out virgin animal leather by 2023 is a no-brainer if we want to reach our 50 per cent absolute carbon reduction target by 2027 [...] brands need to place bets and take risks” (Cernansky, 2022, para. 9). What’s more, Copenhagen Fashion Week announced in April 2024 that it would ban the use of exotic animal skins and feathers in collections starting the same year (Bramely, 2024).

Ganni is only one of the latest major brands to be testing, investing in, and launching circumfaunal materials. Balenciaga launched a €9000 coat made with a mycelium material called Ephea from the company Squim (Ettinger, 2022), Hermès released a luxury handbag made using MycoWorks' mycelium leather called Reishi. Nike and Hugo Boss each launched footwear using Piñatex—a leather-like pineapple leaf fiber, and Karl Lagerfeld launched bags made with both Desserto, the first partially biobased cactus leather as well as Mirum® bags, a plastic-free and biodegradable material made using agricultural waste and Ralph Lauren replaced leather patches in the 2020 Team USA Closing Ceremony uniforms with Mirum®. Material Innovation Initiative released a 2023 annual report that outlines 141 companies, many of which are fashion brands like Gucci, Tory Burch, Stella McCartney, Louis Vuitton, Hermès, Ganni, Bestseller, Reformation, Zara, Levi's, Calvin Klein, and Coach, incorporating what they call next-gen materials. MII differentiates their use of “next-gen” from other industries' use of the term as having a focus on biomimicry of animal materials, with investments in these innovations up 10% in 2023 despite a significant downturn of 42% in global VC funding during the same period (Material Innovation Initiative, 2023).¹

Vogue reported that amidst bans of fur and exotic skins, in 2019 products that swap these materials for nonanimal materials increased by 258% across the United States and the United Kingdom (Biondi, 2019, para. 1). The global wholesale market size for next-gen materials is expected to reach over \$2 billion by 2026 (Siu et al., 2022) and the Bio-Based Leather Market alone will reach over \$1 billion by 2030 (Polaris Market Research, 2022). It is expected that this exceptional growth will support investments in R&D and implementation for circumfaunal technology and material (Jönsson, 2020, pp. 921–936).

Circumfauna, a term that encapsulates this large-scale move away from animal inputs, is defined in the Ecological Economics Dictionary (Katof, 2023a, p. 62):

Circumfauna is the category of ecological innovation focused on bypassing animal inputs. The term can also be used to refer to the products and outputs that result from this approach (e.g. circumfaunal foods, circumfaunal materials). The term is most commonly associated with the textiles industry (innovations in materials for clothing like cultured leather made from cells or grown from mycelium), the food industry (alternatives to industrial animal agriculture like cultured, fermented and other alternative proteins), as well as the biomedical industry (innovations in research, education, and testing).

Due to the steady increase in global populations, incomes and urbanization, the finite base of resources for livestock production is shrinking in stark contrast to the growing demand for products that are traditionally produced using animals (FAO.org, 2006). The term circumfauna was coined by sustainable innovation expert Joshua Katcher in his 2019 book *Fashion Animals*. Katcher calls for an “industrial revolution” as we must “replace

¹MII defines “next-gen materials” as animal-free, direct replacements for conventional animal-based leather, silk, down, fur, wool, and exotic skins. These replacements use a variety of biomimicry approaches to replicate the aesthetics and performance of their animal-based counterparts. We note that “next-gen” can be confusing due to its use in other contexts such as technology, automotive, healthcare, forest conservation, energy and even gaming. MII's use of next-gen falls under the broader concept of circumfauna; an economic phenomenon at work both inside of and beyond the fashion context, with no technological preferences, only the intention to bypass animal inputs.

animals in the supply chains with something more efficient, sustainable and ethical”. (Katcher, 2019, p. 248)

This circumfauna trend encompasses both the materiality and varying reasons for bypassing animals, from sustainability and animal protection to increasing profits. Circumfauna innovation throughout the global economy is engaging capital, people, and knowledge creation. Social scientists have begun to document the promises, technologies, regulations, and investments through which the meanings and materialities of circumfaunal products and raw materials are being constructed and ultimately materializing a new market.

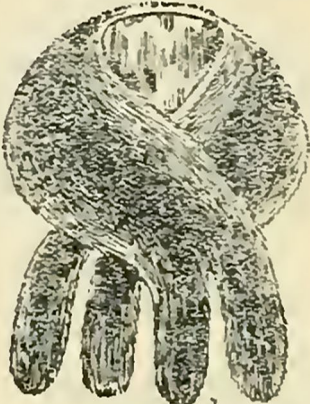
The fashion industry is an excellent case study for examining circumfauna for several reasons. Firstly, it is a complex and influential industry, worth \$2.5 trillion globally, with little sign of slowing down, impacting climate and biodiversity (Amed et al., 2021). Secondly, the fashion industry has a long history of using animal inputs with negative consequences, including animal and species extinctions, the environmental damage caused by leather production, the inhumane treatment of animals in the wool, cashmere, and fur trades (Katcher, 2019), and the endless pursuit of low-wage workers and low-cost resources. Third, the innovations and interventions to bypass animal inputs are increasingly palpable and urgent.

Circumfaunal Fashion

The terminology historically used to describe the intentional move away from faunal fashion is outlined in the book *Fashion Animals* (2019). Even at the turn of the twentieth century, ads describing “humanitarian” and “hygienic” fashion products boasted claims like “built entirely of vegetable substance, and contain no animal matter whatever” and “Fur substitutes for humanitarians,” celebrating these innovations as advancements in “applied humanitarianism.” Many consider the pursuit of a circumfaunal wardrobe to be contemporary; a product of the 1990s anti-fur movement injected into mainstream culture by major animal rights organizations. But the pursuit of clothing and fashion that is free of animal-derived materials is nothing new, nor is the attempt to provide it a descriptive label (Figs. 12.1, 12.2, 12.3, 12.4 and 12.5).

Discussions of replacing leather, wool, ivory, feathers, and fur are documented from the Victorian Era (1837–1901). Vegetarians of the late-nineteenth and early twentieth centuries actively sought solutions to circumvent the use of animal products in their wardrobes. London was a vibrant epicenter of this discussion. In his pamphlet *Cruelties in Dress*, Jessey Wade of London’s Animal Friend Society stated that “human invention will as surely come to the rescue with substitutes for wool and leather from the vegetable world as it is now replacing hand-labour by machinery” (Wade, 1912; p. 6). Fourteen years prior, Punch Magazine ran a comic entitled “All Growing, All A-Blowing” that satirizes three vegetarians from the Vegetarian Federal Union wearing vegetables from head to foot. The caption reads

FUR SUBSTITUTES
FOR HUMANITARIANS.



In Broadtail, Musquash, Mole, Persian
Lamb and Caracul.

Indistinguishable from real fur. Made in
Ties, Stoles, Muffs, Coats, &c.

Prices from 10/6.

Full particulars on application to the Principal.

Fig. 12.1 Source: (Herald of the Golden Age, 1913a, as cited in Katcher, J. 2019)

Miss Nicholson spoke of the facility with which vegetarians might, if they pressed their demands upon their tradesmen, obtain vegetarian boots and vegetarian gloves. (Report in Daily Paper of Meeting of the Vegetarian Federal Union.)

OUR LUNATIC CONTRIBUTOR THINKS THIS IS AN EXCELLENT IDEA. BUT WHY NOT HAVE VEGETARIAN COATS, AND HATS, TOO—IN FACT, VEGETARIAN CLOTHING FROM HEAD TO FOOT?

Was the question ludicrous? Perhaps in the context of the time period it was. But what the cartoon depicted was more than just a silly notion to a flourishing movement that began challenging the cruelties inflicted upon animals in human tradition, commerce, and convenience. James Gregory's (2020) book *Of Victorians and Vegetarians: The Vegetarian Movement in the Nineteenth Century* uncovers several

LEATHER FOR HUMANITARIANS.

Pegamoid

(BRAND)

IMITATION LEATHER,

is made entirely of

Vegetable Matter.

It is suitable for all purposes where leather is now used, and is the best substitute for animals' skins

For further particulars apply to the Sole Manufacturers :

NEW PEGAMOID LTD.,

144, Queen Victoria St.,
LONDON, E.C.

Fig. 12.2 Source: (Herald of the Golden Age, 1910d, as cited in Katcher, J. 2019)

**FROM THE ANIMAL TO THE IDEAL.
ANOTHER FETTER SNAPPED.**

**“PITMAN”
NEW GLOVES**

Has all the appearance and effect of real **Reindeer**, but woven throughout.
Warmer and more durable than kid.
Soft as velvet and as pliable as **Suède**, giving freedom to the fingers.
Will last two pairs of ordinary gloves, and can be washed. Will stretch, but will not split.

IN ALL SIZES. LADIES' OR GENTLEMEN'S.
Ordinary Quality: White, Black, Slate or Sable.
Per pair, **2/3**, post free.
Superior Quality: Slate, Sable, Beaver or Light Grey. Per pair, **2/9**, post free.

**PITMAN HEALTH FOOD STORES,
167, Corporation Street, BIRMINGHAM.**
*The largest Vendors of Health Foods
in the British Isles.*

NEW LIST.—84 pages, illustrated, post free, two stamps (with copy of “Aids to a Simpler Diet.”)

Fig. 12.3 Source: (Herald of the Golden Age, 1905, as cited in Katcher, J. 2019)

instances where textile and material innovations were sought, such as gutta-percha, a natural rubber used to replace common animal-derived materials like leather. Vegetarian journals of the same period contained articles discussing the use of asbestos leather, “Pannuscorium” and “Pegamoid” to replace animal skin uppers on shoes, and other materials such as “waterproof canvas belting” (The Herald of the

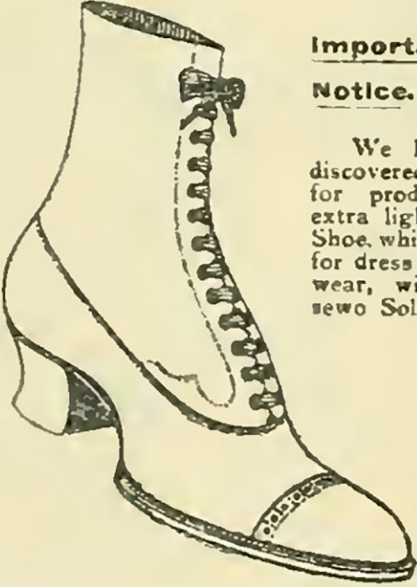
“ HUMANA ” FOOTWEAR.

These Boots, which have been produced specially to supply Humanitarians with Hygienic Footwear, are built entirely of vegetable substance, and contain **no Animal Matter whatever.** —

“ HUMANA ”
BOOTS
are
Humanitarian,
Comfortable
and
Economical.

□ □

PRICE LIST
sent Post Free
on application



Important
Notice. — —

We have now discovered a process for producing an extra light, flexible Shoe, which is ideal for dress and house wear, with Hand-sewn Soles.

The above illustration represents a popular number from our large and varied stock, but our **New Illustrated Price List** gives complete information about this new advance in applied Humanitarianism.

□ **A. E. AYLIFFE & SON,** □
171, High Street, **KENSINGTON, W.**

Fig. 12.4 Source: (Herald of the Golden Age, 1913b, as cited in Katcher, J. 2019)

NOVELTIES IN FUR SUBSTITUTES FOR HUMANITARIANS



**Caracul^l
Cloth Stole
and Muff**
(as sketch),
Lined Satin,
2 yards long.

45/6
The Set.



Seal Cloth Tie
(as sketch),
Lined Satin, also
can be had in
Imitation Persian
Lamb and Mole
Satin.

10/6



**Persian Lamb
Cloth Stole**
(as sketch), 
Finished with
Tassels, and
Muff to match.

63/-
The Set.
Also in Seal Cloth.

SENT
ON
APPROVAL.



**Seal Musquash
Cloth Scarf**
(as sketch),
Lined Satin, with Muff
to match.

49/6 The Set.
Can be had in Imitation
Persian Lamb the same
price.



**Mole
Cloth Scarf**
(as sketch), 
Lined Satin, Muff
to match.

52/6
The Set



Coat (as sketch).
In best quality Caracul Cloth, lined with
Soft Silk, perfectly cut and tailored.

7½ Gns.
This Garment cannot be sent on approval

Debenham & Freebody

Wigmore Street and Welbeck Street,
LONDON, W.

NOTE.—Samples of above can be seen at the Offices of The Humane
Dress League, 153 and 155, Brompton Road.

Fig. 12.5 Source: (Herald of the Golden Age, 1910c, as cited in Katcher, J. 2019)

Golden Age, 1899, p. 96) to replace leather soles. A columnist in 1899 wrote in the vegetarian Christian journal “*The Herald of The Golden Age* (1896—1918) about the ethics of using kid leather for gloves”

...there is no need for any person to wear such barbarous hand-gear on the score of either comfort, cost, or elegance. For the use of furs, skins, and murdered millinery, there is in

these days of substitutionary and supplemental manufacture no necessity and therefore no adequate justification. (The Herald of the Golden Age, 1899, p. 96)

For more than a decade, *The Herald of The Golden Age* contained many advertisements for businesses making and selling “humanitarian” and “hygienic” fashion including faux furs, gloves, and both men’s and women’s footwear. New Pegamoid Ltd. was a brand in London making “leather for humanitarians... made entirely of vegetable matter” (The Herald of the Golden Age, 1910d). A.E. Ayliffe & Son advertised Humana Footwear that “contain[ed] no animal matter whatever” which appeared in 1913 (The Herald of the Golden Age, 1913b, p. 174). Also by 1913, Messrs. Debenham & Freebody’s of London was manufacturing and advertising in a full-page, illustrated ad, synthetic seal, moleskin, squirrel, and caracul furs as well as bristle substitutes for egret and osprey feather plumes (The Herald of the Golden Age, 1910c, p. 93; 1910, p. 9). Salon of Health Cookery and Humanitarian Bureau advertised the sales of “Fur Substitutes for Humanitarians,” including broadtail, musquash, mole, Persian lamb, and caracul (The Herald of the Golden Age, 1910a, p. 144). A 1910 advertisement for an organization “The Humane Dress League” stated that “Imitation reindeer and suede gloves are now made in considerable variety, which so nearly resemble natural skin gloves as to be indistinguishable. Imitation leathers of all colours and textures are also available for covering furniture and books and even for making boots and shoes” (The Herald of the Golden Age, 1910, p. 3).

The mobilization of conservationists, activists, and organizations to reform the fashion industry during the mid-1800s and early 1900s had real results and set a course for generations to come. From legislation regarding endangered birds used for their feathers and plumes to public awareness through satire and fashion writing, and through circumfaunal material and product innovation, the trajectory of this movement continues today.

Industry Fears

The leather industry’s efforts to undermine circumfaunal leather have been documented as early as 1915. An editorial in the *Shoe and Leather Reporter* entitled “Artificial Leather a Misnomer and a Fallacy” railed against attempts at replacing leather with innovations of that era like oilcloth and gutta percha (materials that combined oils, waxes, rubbers, and plant fibers). Leather industry leader James B. Reilly, who penned the article said, “leather manufacturers purpose to stand by no longer and withstand the defamation cast upon the reputation and character of genuine leather by would-be producers of so-called artificial leather.” He continued, “leather is the skin of an animal... Nothing else is leather, and nothing else can honestly be called leather” (Reilly, 1915, p. 18).

In 2022, the term “Vegan Leather” was banned in Portugal (European Livestock Voice, 2022). A 2020 law in Italy did the same (UK Leather Federation, 2020).

Decades earlier, Brazil passed the 1965 *Law 4888*, making “use [of] the word leather, even modified with prefixes or suffixes” illegal when applied to materials that did not come from the skin of an animal. Therefore, terms like “couro sintético” (artificial leather) “couro vegano” (vegan leather), if used commercially, are punishable by fines and up to a year in prison (Centro das Indústrias de Curtumes do Brasil, n.d.). Other countries have attempted similar bans. In 2018, the French leather industry’s Conseil National du Cuir (CNC) argued that a 2010 legislative decree (decree 2010–29), stating that the term “leather” can only be used for materials derived from animals’ skins and treated to prevent rotting, was being violated (Guinebault, 2018). The CNC’s aim was to ban terms like “vegan leather” (Conseil National du Cuir, 2018). Similarly, in 2019, The German Leather Federation (VDL) sent a “cease-and-desist” to NUUWAI, a small fashion startup using apple leather; a partially biobased material used for shoes, bags, and accessories made from the waste of apple processing (Ben-Moshe, 2020). VDL lost the resulting lawsuit, and NUUWAI was permitted to continue using the term “apple leather” (Lineapelle S.r.l., 2019). According to the research organization SATRA Technology, other European countries like Austria, Belgium, Lithuania, and Spain have similar protections around leather terminology and usage, and The Confederation of National Associations of Tanners and Dressers of the European Community (COTANCE) has called for an EU-wide law (SATRA, 2020, p. 2).

Leather industry efforts to curtail and control the perception of circumfaunal fashion materials reveal ongoing fears around destabilizing terms like “apple leather” or “cactus leather” (Hakansson et al., 2022, p. 36–41). One of the industry’s most successful efforts has been to exploit a growing concern for plastic pollution and shift the conversation from what happens to animals, workers, and the environment in leather value chains to one that positions animal skins as the sustainable alternative to plastic imitations. (Hakansson et al., 2022, p. 9)

Industry associations like Leather Naturally and trade groups like Leather UK, the Leather and Hide Council of America (L&HCA), and the Leather Working Group have spent millions on greenwashing claims. Leather Naturally has gone as far as leading a lobbying effort at the 2021 United Nations Climate Change Conference (COP26), compiling 31 signatories on a “Leather Manifesto” proclaiming that animal-skin leather is a means of directly mitigating climate impact as a waste-diverting, renewable, sustainable, natural, and biodegradable product (Hakansson et al., 2022, pp. 36–41).

Leather industry fears center around profit losses as a result of regulations and a public with increasing demands for circumfaunal fashion. Since leather can account for up to 26% of major slaughterhouses’ earnings around the world, a drop in leather sales has far-reaching effects (Hakansson et al., 2022, p. 4). In the four-part report series *Under Their Skin*, Collective Fashion Justice outlines

Year-on-year from 2020, searches for ‘leather’ have decreased by 3.5%, while searches for ‘vegan leather’ have increased by 69%, with ‘eco vegan leather’ searches – likely looking for alternatives made from materials other than conventional synthetics – also on the increase. (Hakansson et al., 2023, p. 13)

Whether through legislative, marketing, or lobbying efforts, the global leather industry's aim to protect its multibillion dollar value can take many forms. Both circumfaunal innovation and environmental regulation have chipped away at that value, forcing the price of hides to drop in recent years (Hakansson et al., 2023, p. 7). Simultaneously, a wave of circumfaunal startups using plants, microbes, fungus, recycled materials, and even cultivated animal cells (most of which are reducing or eliminating plastics and therefore evading one of the leather industry's most effective tactics) is building momentum. (Hakansson et al., 2022, pp. 21–23). There are parallel dynamics happening in the fur, wool, and exotic skins markets. Simultaneously, global policies for mandatory disclosures of Scope 3 emissions (all indirect emissions in a company's value chain) as well as EPR (extended producer responsibility) laws are putting pressure on companies to eliminate the largest sources of their emissions.

Historical Commodification of Faunal Fashion

Even before fashion rose to a level of industrialized production and became a central feature of capitalism (Sullivan, 2015, p. 28), before what we know today as *luxury fashion* (i.e., Louis Vuitton, Burberry, Hermes) (Calefato, 2014) and *fast fashion* (i.e., H&M, Zara, Forever 21, SHEIN) (Bick et al., 2018), pursuits of animals' bodies for their use in clothing and accessories by dominant cultures have had far-reaching social, economic, and political features and outcomes. Faunal fashion (fashion made from animals' bodies) has reshaped global economies and the natural world itself, carved trade routes and propelled colonialism, driven extinctions and devised specialized brutalities to animals, exploited historically marginalized peoples, drawn socioeconomic boundaries, and defined personal identities.

Take the beaver-felt hat, for example. By 1600, the Eurasian beaver was hunted to functional extinction for this popular felted fur hat, deemed a status symbol and social necessity at the time (Smith, 2020). The social prestige of this fashion trend led to mass colonial fur trade pursuits in North America and laid the foundation of Canada's national economy with the establishment of the Hudson Bay Company by the British Government in 1670. A seemingly insatiable demand for beaver pelts coupled with the exploitation of Indigenous hunters and trappers were central to the seventeenth-century Beaver Wars (translated from Tsianì kayonkwere in the mohawk language, Kanien'kéha), also referred to as the French and Iroquois Wars. Beaver populations were pushed to near-extinction in many North American areas, transforming the natural environment and dispossessing Indigenous nations caught in predatory cycles of colonial debt (Klekowski, 2000).

Without the beavers to maintain dams, the barricades broke and decayed – and as a result literally millions of water catchments dried up. Ponds became meadows; meadows became forests or agricultural land. This reversed the important work that beavers had done... greatly reducing the ecological richness and biodiversity on a continental scale. What was once a lacework of bogs, ponds, small openings in the forests, meadows and trees, had

become something more uniform, no longer providing habitats for the many plants and animals it had once supported. (Mckenzie, 2017, paras. 11–12)

The wholesale decimation of American bison played out similarly, with much credit to the infamous Buffalo Robe (Durkin, 2000). The extinctions or near-extinctions of the Carolina parakeet, passenger pigeon, Arabian ostrich, great auk, Falkland Islands wolf, Tasmanian tiger, California grizzly, sea mink, koala, chiru, toolache wallaby, vicuña, quagga, and chinchilla are but one dimension of the global faunal fashion economy. When experiments with fox farming began in the early 1900s on Prince Edward Island (Katcher, 2019, p. 196), the purpose was to profit from growing demands for furs against a backdrop of dwindling, overly hunted populations of fur-bearing animals. With the advent of fur factory farming, industrial cattle ranching, intensive wool farming (Feldstein et al., 2021), and other large-scale forms of breeding, exploiting and killing animals and processing their body parts for garments and accessories, came an increased scale of resource, climate, and biodiversity impacts and increasingly globalized markets in faunal fashion. The move from primarily hunting to farming animals for fashion may have prevented certain species, like the chinchilla, from going extinct and addressed distinct trapping cruelties, but this move resulted in its own set of sweeping environmental impacts and ethical controversies.

A top driver of forest clearing is for leather industry-linked cattle grazing and cattle feed (Mammadova et al., 2020), aquatic ecosystems can become hypoxic dead zones from fur factory farm runoff (Jones et al., 2022), wool scouring (a process that cleans and softens greasy wool), pollutes the Australian environment with endocrine disrupting alkylphenol ethoxylates (Sun & Baird, 1998), and luxury leather manufacturing in Paraguay is linked to environmental racism involving stolen lands and limited access to Indigenous land and water (Correia, 2022). While the aesthetic appearance of grazeland, pasture, and ranching may sometimes seem natural, make no mistake that these are often violent interventions with wild spaces, native biomes, and Indigenous land (Poore, 2017).

Economics of Circumfauna

The arguments for rethinking faunal production have captured a broad audience. This has led both activists and nonprofits as well as for-profit businesses to place the responsibility for change onto the hearts and wallets of individuals. This tactic assumes that we live in an economy where the average individual, making choices for themselves and their family, is the key actor in changing the economy. The mainstream theory of perfect competition is the picture that most people paint in their minds: Consumers and firms meet as equals in the sphere of the market. Companies respond directly to growing and waning demand, bringing the intersection of supply and demand to a perfect equilibrium. Firms are price-takers, rather than

price-setters, and every exchange is the result of informed, rational, and self-interested decisions by firms and consumers alike.

Economist Anwar Shaikh in his 2016 book, *Capitalism: Competition, Conflict, Crisis*, presents his theory of real competition, arguing that perfect competition exists in economic models, not the real world. It is unrelenting competition in the endless pursuit of profit that directs economic activity. Shaikh empirically demonstrates how “the emergent outcomes of real competition, which is antagonistic by nature and turbulent in operation, is as different from so-called perfect competition as war is from ballet” (Shaikh, 2016, p. 259). In perfect competition, the market is a dance where participants in the economy are fully rehearsed for the choreography of buying and selling, and all have equal access and awareness of the market stage and the movements of others. Consumer demand is the pulse that drives the dance’s narrative and Adam Smith’s invisible hand² is, of course, the ethereal choreographer. It does not take an economist to see this is not the true nature of the global market. In real competition, lead firms not only can, but do directly influence market outcomes, consumers and companies certainly do not have equal power or equal knowledge, and competition amongst firms is brutal and cut-throat, necessitated by capitalism’s inherent drive for greater and greater profits. As economist Hadas Thier states, “Competition is the beating heart of capitalism,” (Their, 2020, p. 103).

Capitalist competition on a global level has led to the rise of multinational enterprises (MNE), also referred to as transnational corporations (TNC). MNEs are corporations primarily from wealthy countries that through various offshoring tactics control supply and labor processes of production across borders. MNEs organize and structure geographically dispersed networks of production referred to as global production networks (GPNs) (Werner, 2022, p. 234). These networks of production are an aggregation of supply chains,³ also known as global supply chains (GSC), global commodity chains (GCCs), global value chains (GVCs), and labor-value commodity chains (LVCC).⁴ These terms are used to grapple with flows of capital, captured value, and resources through time and space.⁵ In other words, the international production system can be thought of as a series of “chains” and “links” forming complex structures of production processes, extending from resource extraction to the stores that sell final products. These value chains are formed and strengthened through such political tools as trade policy, indebtedness, and coercion and have

²One of the most famous economic references is from Adam Smith, the “father” of mainstream economics, who offers the imagery of an invisible hand to signify the all-knowing force that creates a perfect market-place.

³“Supply chains are mechanisms to coordinate and combine capital’s diverse commodification strategies not simply ‘in’ space but through the production of uneven development” (Werner, 2022, p. 241; Smith, 2008 [1984], p. 134).

⁴Labor-value commodity chains as a framework incorporates “an examination of the extraction of surplus from the Global South within a Marxist perspective” (Suwandi et al., 2019, p. 32).

⁵“Production network analysis speaks to the patterned and contingent geographies of global capitalism” (Werner, 2022, p. 241).

greatly accelerated inequalities between core countries (the Global North) and periphery countries (the Global South).

A faunal fashion value chain for merino wool would include everything from clearing native Australian land for grazing to a knitted wool-blend sweater hanging on a rack in Iceland. In this system, lead firms no longer manufacture the products they sell. Instead, the largest fashion retailers, such as brand-name merchandisers and giant superstores, offshore and disaggregate production processes to strategic suppliers, producers, and low-wage workers, predominantly in the global periphery (Gereffi, 1994, pp. 95–122). Buyers⁶ dictate global and regional flows of capital and production processes. This economic power positions MNEs and the countries they are headquartered in to extract and capture value through low-wage and oppressive labor and the exploitation of animals, land, ecosystems, and other “natural resources” (Yeung & Coe, 2015, pp. 35–37, p. 191). The uneven development outcomes, or the “underdevelopment” of periphery countries, are indicative of *capital’s* insatiable conquest (Rodney et al., 2018).

Not a single cent of H&M’s, Apple’s or General Motors’ profits can [in the usual value-added accounting] be traced back to the super-exploited Bangladeshi, Chinese and Mexican workers who toil for these TNCs’ [transnational corporations’] independent suppliers, and it is this “arm’s length” relationship which increasingly prevails in the global value chains that connect TNCs and citizens in imperialist countries to the low-wage workers who produce more and more of their intermediate inputs and consumption goods. (Foster et al., 2011)

It is the same impact of arm’s length contracting and other offshore tactics by companies in core countries that enables faunal fashion to be produced with little recourse, often in contradiction to the company’s own labor, animal welfare, sustainability, or ESG (environmental, social, governance) policies (Hakansson et al., 2022). Figure 12.6 below shows an average geographically dispersed commodity chain for bovine leather, focusing on some of the major processes, while Fig. 12.2 from Stand.earth, an interactive leather supply chain visualizer that demonstrates the complexity and lack of transparency throughout the networks of commodity chains and value transfers, shows the Amazonian location of cattle ranching conglomerates (Stand.earth Research Group, 2019, stand.earth) (Figs. 12.6 and 12.7).

“Thirty percent of the companies behind these brands (Fig. 12.2) have explicit policies about deforestation, this means that some or all of them are likely breaching their own policies against sourcing leather from deforestation. The other two-thirds of the companies have no relevant policies in place at all” (Stand.earth Research Group, 2019, stand.earth).

At Stand.earth, we zoomed in on just parent company Richmont’s leather production network, pictured in Fig. 12.3. The grazeland that was once the Amazon Rainforest is at the top of the diagram and on the bottom right is one of Richmont’s subsidiaries, luxury brand Mont Blanc, which sells finished leather goods to consumers. Mont Blanc likely sources skins tanned at sites (Fig. 12.8) in Brazil,

⁶Fashion buyers choose the products that are sold in stores.

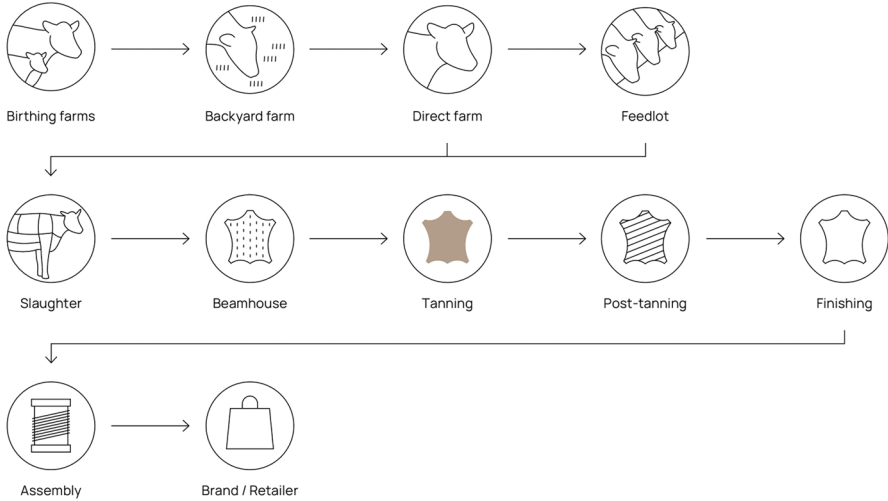


Fig. 12.6 An example of a typical, geographically dispersed commodity chain for bovine leather, focusing on some of the major processes. Source: Collective Fashion Justice (Hakansson et al., 2022)

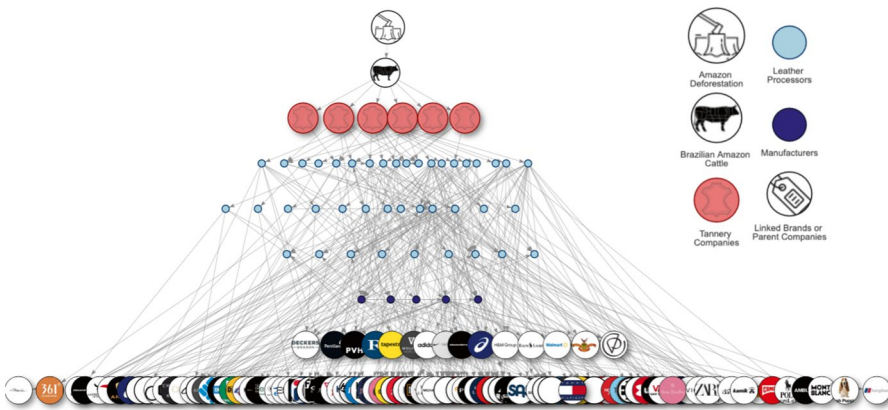


Fig. 12.7 This interactive leather supply chain visualizer demonstrates the complexity and lack of transparency throughout the commodity chains and value transfers of Amazonian cattle ranching conglomerates. Source: Stand.earth

Paraguay, Vietnam, China, Indonesia, and India even though their website, LeBlanc.com, only mentions their leather goods are completed in Florence, Italy.

Collective Fashion Justice’s report series on the leather industries’ impacts drives the point home:

Brazil is the third most significant producer of bovine skins, with the latest industry statistics citing 40.7 million bovine skins being produced in a single year[...]The complexity of global leather supply chains makes it difficult to trace environmental, human and non-human animal abuse and exploitation. Not only does the changing location between cattle

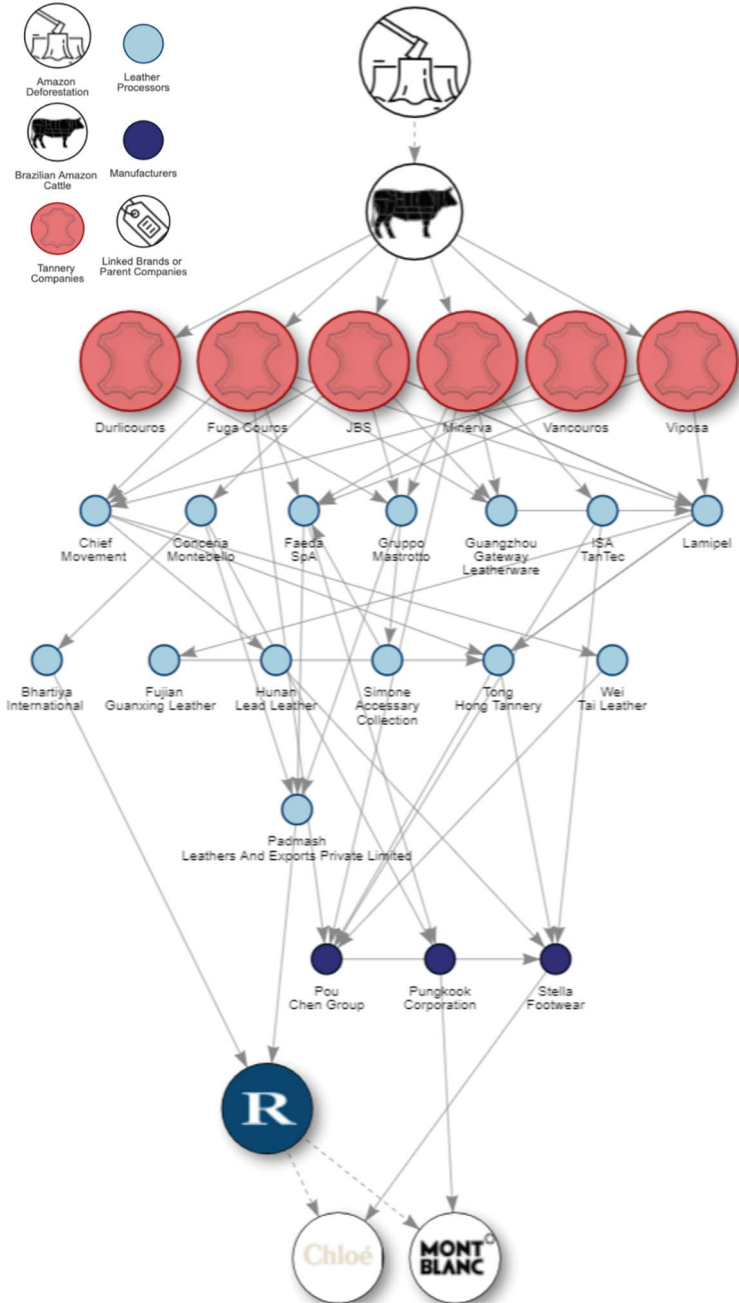


Fig. 12.8 This view demonstrates a specific parent company-view of the interactive tool. In this case, Richemont. Source: Stand.earth

farms, slaughterhouses and tanneries make this leather tracing challenging, but so too does the reality of multiple farms and ranches being involved in leather supply chains, due to the use of ‘birthing farms’, ‘backgrounder farms’, ‘direct farms’ and feedlots. (Hakansson et al., 2022)

This leather example represents but one major global, faunal fashion production network. Similar cases can be studied regarding Australian merino wool or Southeast Asian python skins.

The underlying organizing method of the contemporary world system, as demonstrated above, is governed by processes of extraction, production, and consumption. Environmental historian Jason W. Moore (2015, p. 14) describes the core of our global capitalist system as being a “radically expansive, and relentlessly innovative quest to turn the work/energy of the biosphere into capital (value-in motion).” Through the global capitalist order, people have been transformed into “human capital” (Baum & Lake, 2003, pp. 333–347), animals into disassembled body parts, and ecosystems into extraction and production sites. The entirety of the “natural world” is then *our* resource and through predatory economic relations, we fulfill “humanism’s most cherished assumptions, processes of property making and property taking” (Sze, 2020, p. 500).

Drivers of the Circumfauna Phenomenon

In the last few decades, profits in core countries have continued to soar. Logic would lead one to conclude that productivity must also be flourishing. In his 2013 book *Profiting Without Producing, How Finance Exploits Us All*, economist Costas Lapavitsas demonstrates that productivity and investment have been stagnant, while the rise in profits is largely due to the increased involvement in financial markets by nonfinancial enterprises, banks, and households. (Lapavitsas, 2014, pp. 178–83, 213–14, 219–23). Geopolitical and geo-economic tensions, growing nationalism and extremism, and increased effects of climate change and loss of biodiversity are among the forces making the productive sphere riskier and more uncertain. In the face of this reality, the search for a competitive edge, for growth in productivity, and for greater profits is unrelenting.

Circumfauna is one approach that has come to the forefront of efforts to increase productivity. While the incentives for the industrial overhaul of bypassing animals are numerous and complex, we explore three overarching and influential macro factors feeding this phenomenon. They are: (1) escalating global changes, including the COVID-19 pandemic, climate change, and land-use competition;⁷ (2) regional and global policy arenas; and (3) the competition for technological advancements in sustainability megatrends.

⁷We also believe that preserving and promoting biodiversity will become a main driving force in this context (Oxford Analytica, 2023).

Global Risks Facing Faunal Fashion

Supply chain disruptions from global changes, including the COVID-19 pandemic and the climate crisis, have greatly impacted the industrialization and intensification of farmed-animal production. For example, the factory farming of mink by the fur industry has presented several instances of zoonotic spillover of COVID-19 in Denmark and the Netherlands (Tounta et al., 2022), Spain, Sweden, Lithuania, Greece, Italy, and the United States (Rabalski et al., 2022). In an article from the New York Times, Danish Prime Minister Mette Frederiksen apologized to mink farmers after ordering the killing of all 17 million mink, saying “I know you lost your life’s work.” The slaughter was estimated to cost \$785 million in addition to the loss of 90% of annual mink pelts (Deutsche Welle, 2020; Bubola et al., 2022).

Due to the complex risks of industrial animal production, animals in globalized commodity chains must be processed in a series of locations, often geographically dictated through environmental racism. Sites must be far enough out of sight to obscure worker and animal exploitation as well as environmental damage. Maintaining a minimum distance between sites also reduces the spread of diseases that are rampant in industrial animal agriculture, such as foot and mouth disease, tuberculosis, avian influenza, and such was the case for the mink farms. These “geographies of dissociation” are the manifestation of efforts to create symbolic and material distance between consumers and the origins of commodities (Ibert et al., 2019, pp. 43–63). Conversely, links in the production chain must be close enough to maximize transport costs between sites and reduce the risks of spoiling processed animals and being impacted by environmental factors. This spatial tension must be balanced with transporting final products closer to distribution channels (Smith et al., 2010). These considerations are further impacted by national and international agencies, such as the World Health Organization, UN Environment Programme, and the Center for Disease Control, which have acknowledged the zoonotic origins of the majority of known and emerging infectious diseases. Increased and more stringent regulations and societal expectations for animal producers will become increasingly expensive (Suwandi et al., 2019, pp. 1–19; UNEP, 2020).

Climate change is also a concern for maintaining global supply chains (Grzybowska, 2021). Increasing disruptions in weather patterns are increasing risks to longer, more dispersed production networks. Countries in the global periphery are particularly vulnerable. Environmental destruction and carbon footprints of TNCs are offshored, leading to increased structural inequality as profits flow to the global center. This flow is demonstrated through Mont Blanc’s supply chain in Fig. 12.3 (Jorgenson, 2006; Rice, 2007; Foster & Holleman, 2014; Martinez-Alier, 2002; Crosby, 2004; Foster & Clark, 2004; Roberts & Parks, 2006; Chen, 2022). In effect, the global periphery continues to be disproportionately and negatively impacted by both the climate crisis and strategies to mitigate the crises, including the popular GND (Scoville-Simonds et al., 2020; Chen, 2021). Preparedness for climate change is far less possible in lower-income countries, where animal supply chains are most vulnerable, as the climate crisis only heightens existing structural

inequality. “Developing countries will be particularly badly hit, for three reasons: their geography; their stronger dependence on agriculture; and because with their fewer resources comes greater vulnerability” (Stern & Stern, 2007).

Fashion is one of the industries that experts consider to be most challenging to separate from low-wage labor and other forms of exploitation through offshoring. Many other industries are considering regionalism and reshoring to improve cash flows, move closer to demand, create more agile and flexible supply chains, prepare for stricter trade and environmental policy, and lessen timing risks (McKinsey, 2021). The integration of circumfauna and the contested “biorevolution” could provide more choices for fashion and textile supply chains. The growing and unpredictable impacts of large-scale threats on GPNs will continue to weigh on firms, as models for shorter and local production trends are on the rise.

Whether production is focused offshore or onshore, arable land is essential to the faunal fashion industry. Over 70% of agricultural land is correlated with the profits of animal products (Ritchie, 2017, para. 1). However, land degradation from decades of industrial use, the majority of which are related to animal commodity chains, and the related impacts of climate change are reducing the availability and profitability of arable land (Weis, 2013). The significant investment required to reverse land degradation may be beyond the financial mandate of firms. Further, it is estimated that the majority of growth in farmed animal production, which directly relies on grazing land and crop production, has already happened and the future of this industry will likely bring diminishing returns (FAO, 2006). In other words, the cost of increasing production on land becomes greater as land becomes less productive and therefore less profitable. This is weighing heavily on the industries’ investors. Further, competition for land-use is climbing between animal agriculture, food crop, aquaculture, forestry, and energy sectors. The latter is a lead contender for arable land as “green energy” extraction continues expanding to replace dwindling fossil fuel resources (Smith et al., 2010, pp. 2941–2957). In this context, faunal materials like wool and leather with their vast land-use requirements are ripe for circumfaunal overhaul.

Twenty-First Century Policy Arena

The terms *externalities* and *unintended consequences* have been used to theoretically capture effects of economic activity and artificially separate them from the economic realm, thus allowing firms to deny culpability when unintended consequences are perverse (Katof, 2023b, p. 550). The perilous outcomes of faunal fashion have been absent from accounts of mainstream economics because the lives of animals, the condition of ecosystems, and the human health implications of the fashion industry are seen as external to economic activity. As externalities and unintended consequences that predominantly left firms in the fashion industry unscathed have escalated, the twenty-first policy arena will have significant long-term implications for the ability to sustain profits in industrialized animal-centric production.

In response to the threat of negative externalities, the landscape of policies in human rights, environmental preservation, and animal protection is gaining momentum. In the past two decades, compliance with regulatory standards such as emissions auditing has been increasingly challenging for the animal industrial complex as societal welfare is brought to the forefront of economic decisions. Industries will resist these policies to protect their profits. For example, “[i]n 2022, the French Leather Council, along with the European Confederation of the Footwear Industry, lobbied to escape EU deforestation policy” (Hakansson et al., 2022, p. 34). Lobbying by the private sector in the fashion industry is becoming increasingly expensive in order to resist changing their destructive production processes.

There is a litany of proposed regulations concerning international treaties on tariffs, emission targets, addressing water rights and agricultural subsidies, correcting distorted prices that do not reflect true scarcities (land, water, energy, nutrients), and addressing trade liberalization policies intended to further disadvantage weaker economies (i.e., reducing restrictions on tariffs and quotas)(UNEP, 2001). “Given that at least two-thirds of a brand’s environmental footprint can be attributed to its choice in raw materials, more and more brands are taking an active role in promoting R&D for adaptation of next-gen materials as a necessary step toward attaining their sustainability targets” (Material Innovation, 2021, p. 3).

When considering nonhuman animals solely in traditional conservation and mainstream economic contexts, they are seen as mere numbers in a population or economic units that can dwindle and vanish, resulting in large-scale problems ranging from defaunation to loss of valuable industrial feedstocks, as well as the complete halting of supply chains that rely on animal inputs. Animals that resist their treatment in the production process are seen as obstacles to growing profits. It is only in recent years that the paradigm of “traditional conservation” is being challenged by compassionate conservation and multispecies justice (Santiago-Ávila & Lynn, 2020), which attempt to resolve traditional conservation’s dismissal of individual animal claims, like the cruelty inherent in being hunted, trapped and captured or confined, bred, farmed, and killed for their body parts. This shift has led to meaningful milestones for animal protection that have been reached in recent years, like city, state, and national fur bans (as discussed in section “[Historical Commodification of Faunal Fashion](#)”) and pose serious risks to companies with faunal commodity chains.⁸

⁸The following are only a few of the strides that have been made for animals in the courtroom: New Zealand (2015), the United Kingdom (2021), and Spain (2021) recognized animals as sentient beings. In 2019, The Swiss government was first to vote on banning factory farming (a milestone and threat to animal agriculture even though it did not pass). In 2021, animals were recognized as legal persons for the first time in US court. Several countries have made moves to decrease or eliminate animal testing, include the US EPA in 2019; and The Nonhuman Rights Project (NhRP) secured the world’s first habeas corpus hearings on behalf of nonhuman animals in chimpanzee and elephant rights cases.

Technology and Sustainability Megatrends

In efforts to beat out competition, firms seek to lead megatrends, drive innovation in production, and introduce new products. Scalable material technologies that supersede high-risk activities with narrow profit margins (like trapping or rearing animals for their body parts) present significant prospects. The global phenomenon of circumfaunal innovation has created new markets in a number of industries. The global precision fermentation market (a form of synthetic biology in which microbes are engineered to produce proteins and other functional ingredients) includes circumfaunal collagen, silk protein (Collet, 2021, pp. 207–226), mycelial and other innovations aimed at bypassing animal skins, hairs, and protein fibers (Tubb & Seba, 2021; Solca, 2022). It has become a key technology for creating complex organic compounds without incorporating animals in the fashion, pharmaceutical, cosmetic, food and beverage, and pet food industries. Forbes reported that, “rather than resist the inevitable, smart animal agriculture businesses are getting in on the plant-based revolution by buying or investing in plant-based brands” (Fox, 2018, [forbes.com](https://www.forbes.com)).

One might think it is only in the realm of science fiction that biologists, engineers, and designers collaborate in fabricating, growing, and brewing fibers, skins, hairs, and other circumfaunal materials that once required the rearing, trapping or confining, and exploitation or slaughtering of living beings. We are on the brink of what is being referred to as “the fourth industrial revolution” (Hassoun et al., 2022, pp. 1–31). From cellular agriculture, biofabrication, and biosynthetics to developments in harnessing materials like algae and mycelium and the increased accessibility of production via 3D and bioprinting, everything we know about materials and fashion production is changing. “By tweaking the collagen network, the company Modern Meadow can make leather whose size is unlimited by the physical size of cattle, or more tear resistant, or impossibly thin. It could even tinker with the molecular structure of collagen—optimizing it for one property or another” (Zhang, 2017, para. 14).

The revolutionary thing about growing products like leather without cows and brewing keratin-based wool and other hair-like fibers without sheep is that these processes cut out that first, hugely impactful step of having to dedicate fragile and dwindling resources like land, water and fuel, for example to process one billion sheep for wool, 7.7 million tons of skins and hides, or 87 million mink pelts. Several industries have recognized the competitive advantage of completely eliminating these first, most risky, harmful and costly steps. As a method of innovation, circumfauna commodity chains have become prime ammunition in the “war of competition” (Shaikh, 2016, pp. 259–265).

Addressing Big Veganism

Circumfauna is an objective and encompassing term that enables public and private agents, such as politicians and economists, to engage with the phenomenon and for global industries to transition to alternatives to animal inputs without attaching a moral philosophy. The complex social, political, and economic forces and motivations of macro moves to bypass animals go well beyond veganism alone. Many of the businesses involved in circumfauna developments are not explicitly vegan, nor decision-makers regarding the use of animals, nor the majority of the consumers of these products. The distortion and misuse of the word vegan in describing this phenomenon have been contested. “Critics caution that this mainstreaming risks diluting the radical ethics of veganism” (Sexton et al., 2022, p. 606). New terms have been created to identify the misuse, and the implications of this misuse, of the term veganism. “Big Veganism” is a term associated with large-scale industry and agriculture taking part in the mass creation of products bypassing animals. There is also concern that the financial and market share benefits of “Big Veganism” are being concentrated with those already holding corporate power (Sexton et al., 2022, 605–613). Other terms that have been created to address the twenty-first century eruption of products without animals are “mainstream veganism,” making veganism more palatable and approachable for the general public, and “white veganism” which seeks to mold animal rights thinking into a suitable framework exulting personal choice, individualism, market integration, and rationality.

Animal rights and veganism have been foundational to the rise of producing without animals. However, the term circumfauna and the term vegan refer to different concepts. Circumfauna refers to the development and use of products and outputs that replace or remove animal inputs. It does not carry, and particularly does not emphasize the moral and ethical considerations of veganism or the belief in the inherent value of animals. Nor does it promise a production process that intentionally avoids exploitation. Importantly, circumfauna is a descriptive term that describes what is happening. Naming an empirically validated macro phenomenon is a different act than applying value judgements to a megatrend or engaging in arguments concerning prescriptive possibilities. Applying the term vegan to this phenomenon immediately confuses the descriptive with the prescriptive, which is especially harmful for social agents and activists who support very specific forms of circumfauna application.

As we established, the term vegan, which has been the predominant term used to describe this trend, does not exist separately from its social justice core. Theorist Aph Ko (2019) positions veganism within the scope of a multidimensional and inclusive social justice framework that acknowledges the wide scope of possibilities for justice.

Attempts to marry veganism with commodities is a part of the broader issue known as “ethical consumerism,” in which a new layer of commodity fetishism⁹ is

⁹Karl Marx’s ‘commodity fetishism’ represents the alienation of social relations within a capitalist society. Value is perceived to be from objects and commodities themselves rather than from the labor that created them.

added, “convincing society that the harms of capitalism can be rehabilitated with the commodity form itself” (Gunderson, 2013, p. 110). Using terms like *animal advocacy*, *activism*, *plant-based*, *cruelty-free*, *sustainable*, *ethical*, or *vegan* to describe sweeping shifts toward solutions to the reliance upon animal inputs like leather, wool, silk, hair, and horn, among others is often misplaced when these terms cannot also be applied to the full political and economic scope of global production processes. Likewise, terms such as *alternative*, *fake*, *faux*, *imitation*, and *substitute*, that are used to describe end-use products, are harmful to the perception and ongoing advancement of innovations that may be superior in performance, customizability, sustainability, and ethics. Both sets of terms may have a chilling effect and offer only a fragmented and confusing grasp of a larger phenomenon. Furthermore, the opportunistic application of terms like *vegan* for incidentally animal-free fashion products, such as PU leather jackets, can sow seeds of suspicion among a public increasingly aware of greenwashing and demanding transparency. As described above in the industry fears section, industry trade groups representing leather, fur, and wool interests have honed in on this opportunity to market themselves as natural and biodegradable, positioning their products as the solution to misleading vegan fashion. The prevalence of contemporary fashion journalism that echoes this suspicion with titles like ‘*Vegan Leather’ or Plastic?* and *How Fashion Giants Recast Plastic as Good for the Planet* are plentiful (Kent, 2022; Tabuchi, 2022).

Conclusion

The adoption of the term “circumfauna” holds significant implications for the understanding and development of an emergent macroeconomic phenomenon. This term identifies and encapsulates the totality of shifts away from animal inputs while decoupling it from the ethical, political, and social implications often associated with veganism. The term also encompasses nuances beyond the limits of terms like “plant-based”, “next-gen”, or “cruelty-free.” It provides a critical framework for acknowledging and describing a multifaceted trend.

The term will become increasingly useful as development agencies, scholars, legislators, firms, and others seek alternatives to animal inputs, whether to reduce risks and increase profits or to catalyze decarbonization, protect biodiversity, and foster similar goals. However, as circumfauna gains momentum, its potential positive impacts cannot be realized if unaccompanied by a continuum of political and economic efforts to rewild pasture and grazeland, strengthen antitrust laws, expand social ownership of intellectual property, and prioritize bioregionalism. Nor will it have the transformative qualities needed to meet any aspirational societal changes. The imperative here is that pursuing systemic change requires us to understand why and how our global socioeconomic system motivates power dynamics, uneven development, and profit-seeking at any cost, particularly those showing little concern for animal protection, environmental ethics, or human rights.

Circumfauna extends the opportunity for reconsidering the socio-natural impacts of the fashion industry and other global industries. It encompasses the complexity of social, economic, political, and cultural catalysts for reconsidering animals as raw materials and commodities. There are endlessly changing and evolving motivations for bypassing animals, and the reality and future of this field are complicated, uncertain, and malleable, spawning new productive forces and knowledge creation, much of which we cannot yet imagine.

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Part III
Ethics and Speciesism

Chapter 13

Ableism and Speciesism: Tensions and Convergence Between Animal Rights and Disability Rights



Frédéric Côté-Boudreau

It may seem straightforward: Challenging speciesism and challenging ableism should go hand in hand as we are responsible neither for the abilities we inherit nor for the species we belong to. It would be unfair to disregard the basic interests of a sentient being because of traits she cannot control. It also seems arbitrary to take the characteristics of one privileged group as the gold standard to judge the value of other groups. Hence, some thinkers believe that, at its core, speciesism should be understood as a form of ableism¹: nonhuman animals are excluded from full moral consideration on the grounds that they lack the capacities to reason, to speak, or to exercise moral agency. The animal rights movement and the disability rights movement seem to be faced with a common ideological enemy: the view that sophisticated abilities are a necessary condition to gain full moral and political status and be treated as an equal on these dimensions. Yet, the historical relationship between these two causes is fraught with tensions,² and in academia, the two fields have largely developed independently from one another, with little overlap. In recent years, however, scholars and activists have sought to build bridges between these movements which stand to gain from one another.³ This chapter aims to give an

¹ See Giroux (2021).

² See, for instance, Johnson (2003) and Drake (2010). For an analysis of this tension, see Taylor (2017, 123–148).

³ See, for instance, Salomon (2010), Taylor (2011, 2014, 2017), Donaldson and Kymlicka (2011, 2016), Delon (2012), Gruen and Probyn-Rapsey (2018), Côté-Boudreau (2019), Jenkins et al. (2020).

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account of the tensions between these two struggles before examining proposals for reconciling their aspirations and theories.

The Argument from Marginal Cases and Its Criticisms

No argument is more common in the animal rights discourse than the so-called argument from marginal cases.⁴ It goes along these lines: if rationality, language, self-consciousness, moral agency, autonomy, or moral reciprocity are what ultimately justifies the superiority of humans over other animals, then we must acknowledge that some humans fail to meet these standards. Indeed, these cognitive properties are not present in all humans at all times of their lives: babies and infants, some elderly persons with senility, and some persons with “severe” intellectual disabilities possess these to a lesser degree (at least, less than many animal species), or for some if at all. These cases would be on the “margins” of the typical human. Therefore, if these properties are what justifies human supremacy, the use of these properties has the unintended consequence of excluding some humans.

This argument is used to demonstrate the arbitrariness and discriminatory nature of relying on these cognitively complex abilities to justify human supremacy and the attendant risk of marginalization it entails for many humans. It also highlights that if the only feature distinguishing these “marginal cases” from other animals is species membership, then the current treatment of animals amounts to a form of discrimination named *speciesism*, which seems hard to justify. How would a mere biological category serve as a basis for discrimination⁵? It would, therefore, be speciesist to exploit animals when we rightly refuse to exploit and devalue children, persons with cognitive disabilities, and others who share similar abilities.

This argument has given rise to various objections. The most common, axiomatic to many ethical traditions, is to stress that the sole fact of being human confers intrinsic moral worth. This answer, however, simply begs the question: the goal is precisely to find out *what* justifies granting a higher or an exclusive moral status to human beings. Beyond chauvinism, why should the property “member of *Homo sapiens*” be so special compared to other group memberships? If it is simply a matter of picking the (taxonomic) group *rational* humans belong to and extending the same moral status to the remaining of the group, it is just as arbitrary to choose the species *Homo sapiens* over other biological groups such as the order of primates, the class Mammalia, or the phylum Chordata—even living beings in general. What makes one type of group more relevant, from a moral standpoint, than the others, apart from our custom in building a moral identity upon it? Of course, one could

⁴For an overview of the argument, see Pluhar (1995, 63–123) and Dombrowski (1997). See also Wasserman et al. (2017) for an overview of the broader discussions on cognitive disability and moral status.

⁵See, for instance, Jaquet (2022) on why mere biological properties are morally irrelevant.

object that *Homo sapiens* tend to be rational, to have moral agency, and so on,⁶ while other primates, mammals, or vertebrates do not. But it is difficult to argue that all *Homo sapiens* should benefit from full moral consideration on the grounds that *some* or even *most* of its members pass the defined threshold of rationality. When applied to other contexts, this kind of reasoning seems absurd as it assigns to a whole group qualities that are possessed only by some of its members. Just because the majority of applicants passed a college admission test does not entail that those who failed it can enroll. Just because some people have worked for 40 years does not mean that teenagers *qua* teenagers are entitled to claim a pension. The converse is also logically valid: since *Homo sapiens* are members of the *Animalia* group and rationality is not an essential property of “Animalia,” nor is it widely shared among its members, no human would possess intrinsic value. In short, for a characteristic to have any moral relevance, it must concern all the *individuals* it claims to apply to.

According to Luc Ferry (2000), the answer to these problems is quite simple. Among the so-called marginal cases, some *have had* these abilities and others *will have* them. As for people with “severe” intellectual disabilities, they *should have had* them.⁷ However, it is problematic to establish rights on potentiality or counterfactual possibilities: many citizens can theoretically become president (or could have become the president, in other circumstances), but their potential does not grant them presidential powers.⁸ The same reasoning would also have surprising implications in the case of moral responsibility. But importantly, it is disconcerting not to base something as critical and fundamental as moral status on characteristics that individuals actually and unambiguously possess. “Marginal cases” can be related to rational humans in various ways: but what exactly are they entitled to *as they are*?

There are many challenges for extending rights to cases that do not always meet the desired standards. But there is a more fundamental issue: The selected criteria must be shown to be relevant in the first place. Sexism and racism, for instance, are condemned as they are predicated on arbitrary, irrelevant, and therefore irrationally discriminatory properties. Gender and ethnicity do not matter when it comes to political rights, labor rights, or basic moral rights. In the case of basic rights, it is not clear how rationality makes one more entitled to a right not to suffer, not to be killed or exploited, or to have their interests counted in decision-making that affects them. For instance, when rational agents are harmed through physical punishment or confinement, they can experience forms of pain and distress that have little to do with their faculty to reason. Of course, rationality can both enhance and decrease suffering (because awareness and anticipation can create more distress, while understanding what is happening can appease it), but pain exists prior to the use of reason. In

⁶Regarding the norm of the group or being of the same “kind,” see, for instance, Cohen (1986) and Kagan (2016). However, see Pluhar (1995, 107–120), Nobis (2004), and McMahan (2016) for critical analyses of such arguments.

⁷See also Markie (2004).

⁸See Benn (1973). Note that the potentiality argument is indeed contested in the debates regarding the right to abortion.

sum, the argument from marginal cases serves to highlight that the criterion of rationality is simply irrelevant when it comes to our fundamental interests, interests that we share with many other nonhuman beings.

Disability scholars have been critical of the argument from marginal cases for different reasons. Licia Carlson (2009, 555) sees it as a “conceptual exploitation” of disability where “the ‘intellectually disabled’ are performing a kind of philosophical labor in the service of enhancing our concern for nonhuman animals, without any benefit in return.”⁹ When reading the classical texts in animal ethics, it is indeed difficult not to get the impression that disability is mostly understood as an abstract argument, a “disembodied thought experiment” (Carlson, 2010, 11), and not as a reality that socially vulnerable people experience daily and that is worthy of our concern. This is not to say that granting rights to animals is wrong; however, it may suggest that the issue of speciesism should be debated without having to resort to the argument of marginal cases, at least not in its current form. While persons with intellectual disabilities continue to be neglected and marginalized in our societies, and while their moral, social, and political statuses remain fragile, it seems unfortunate and careless to continue referring to them without mentioning the injustices they suffer and without paying attention to the claims (for political rights, rights to autonomy and equal opportunity, and much more) of disability scholars and activists.¹⁰

Apart from harm by omission, there is harm by association. In a world in which animal bodies are commodified, the argument from marginal cases risks perpetuating the inferiorization of persons with intellectual disabilities: comparing them to animals can fuel the dehumanization they are already subjected to.¹¹ This is notably due to the biconditional element of the argument, which implies that what applies to one group should also apply to the other group. This led some philosophers, in particular Raymond Frey (1983), to ask the disturbing question: if there is no morally relevant difference between some humans with cognitive disabilities and some nonhuman animals, why not conduct medical experiments on the former given the fact that we do it on the latter¹²? (These may be painful and often lethal, but science could benefit from these more representative biological models, they could dare to

⁹See also Carlson (2010, 135–161).

¹⁰Of course, this disavowal of disability and of the political claims by disability scholars is not just true for the field animal ethics but more broadly in ethical and political philosophy. See Arneil and Hirschmann (2016), Arneil (2009), and Nussbaum (2009).

¹¹Carlson (2003, 2009, 2010) cites, for example, that “the institutional history of intellectual disability points to numerous instances where the treatment of persons with intellectual disabilities was justified on the basis of their animal-like nature. Wolf Wolfensberger examines the ‘subhuman’, animal-like status that persons with mental retardation have historically been accorded and explains the belief that the ‘retarded’ were insensitive to heat and cold justified their being denied heat in their cells in the winter (Wolfensberger, 1972, 14–15).” (Carlson, 2009, 560). See also Crary (2018).

¹²“On the other hand, we may take the fact that we cannot justify animal experiments without justifying human experiments as a good reason to allow human experiments. [...] Accordingly, we are left with human experiments. I think this is how I would choose, not with great glee and rejoic-

add.) The argument from marginal cases is a double-edged sword: when raised against those who greatly praise the higher qualities of rational humans, it risks undermining the position of persons with intellectual disabilities without really advancing the case for animals. In sum, the argument misses the target if it is not explicitly combined with a theory that rejects moral hierarchy outright—which cannot be achieved without taking seriously the pervasive ableism of our societies, starting with the fact that persons with disabilities are still not considered and treated as equals.

The problem is not simply that animal rights scholars have mostly remained silent on the issue of ableism: some have reinforced it. Disability scholars widely target Peter Singer (1993) and Jeff McMahan (1996, 2002), both influential philosophers who, while examining the issue of killing (abortion, infanticide, euthanasia, etc.), defend the interests of other animals by simultaneously questioning the status of “severely retarded human beings.”¹³ This can be seen in the distinction between “persons,” which are self-aware and able to project themselves in the future, and “nonpersons” or “merely conscious beings,” which mostly live in the present and, more broadly, fail the threshold for personhood. Nonpersons, it is argued, would value their lives less than persons do, if at all. They still have interests and matter morally but not to the same extent as fully rational persons. From this perspective, it is only a short step to argue that the lives of nonpersons are less worthy of protection and that humans with some types of disabilities are not entitled to the same rights and benefits as nondisabled ones, whether because of their lower self-awareness or (and this may include physical disabilities) their lesser ability to enjoy their lives and their more limited contribution to society. Similar arguments can lead to problematic eugenic positions in bioethics and to suggest that it may be right to devote more public resources to the care of able-bodied individuals and those who

ing, and with great reluctance; but if this is the price we must pay to hold the appeal to benefit and to enjoy the benefits which that appeal licenses, then we must, I think, pay it.

I am well aware that most people, including most medical people, will find my choice repugnant in the extreme, and it is easy to see how I can appear a monster in their eyes. But I am where I am, not because I begin a monster and end up choosing the monstrous, but because I cannot in good faith think of anything at all compelling that cedes human life of any quality greater value than animal life of any quality.” (Frey, 1983, 97) See also Frey (1987, 2005).

¹³“Hence it seems that our traditional beliefs about the special sanctity of the lives of severely retarded human beings will have to yield. How much they must yield depends on how drastically we are willing to revise traditional beliefs about the permissibility of killing animals with psychological capacities comparable to those of cognitively impaired human beings. [...] Killing animals, and allowing them to die, are morally far more serious matters than we have supposed. But allowing severely retarded human beings to die, and perhaps even killing them, are correspondingly less serious matters than we have believed.” (McMahan, 2002, 230) Similarly, “Hence we should reject the doctrine that places the lives of members of our species above the lives of members of other species. Some members of other species are persons: some members of our species are not. No objective assessment can support the view that it is always worse to kill members of our species who are not persons than members of other species who are. [...] So it seems that killing, say, a chimpanzee is worse than the killing of a human being who, because of a congenital intellectual disability, is not and never can be a person.” (Singer, 1993, 117–118)

are fully self-aware.¹⁴ We can see here how theories that seek a balance between animal rights and higher political and moral status for rational and autonomous humans can have worrisome, albeit sometimes intended, implications for persons with various disabilities.

It is hardly surprising that such ideas, whether they represent the majority view in the field of animal ethics, have outraged disability rights activists and scholars and fueled their distrust of animal rights discourses in general. In order to reconcile these two camps, some have proposed different approaches committed to more egalitarian and inclusive conceptions of justice. Their aim is to show that the oppression of animals, on the one hand, and the injustices that affect persons with disabilities, on the other hand, have much in common and would even be mutually reinforcing. Indeed, these issues cannot be reduced to formal logic related to moral properties of individuals: we also need to unravel a vast common social phenomenon regarding how individuals are valued or disempowered in the first place.

Toward Reconciliation

The first step toward a theoretical and political reconciliation is a better understanding of each other's views and claims. It is likely that many animal rights scholars and activists have a poor knowledge of the situation of persons with disabilities and are, to some degree, prejudiced against them.¹⁵ However, one only needs to read some critical literature on disability or to attend activities from grassroots organizations to understand how far persons with disabilities are from enjoying the rights they are entitled to. Along higher rates of unemployment, poverty, and physical and sexual violence (including inside institutions that are supposed to care for them), a lack of inclusion and opportunities makes it difficult for them to fully participate in society, to have their claims heard, and even to exercise autonomous choices.¹⁶ Even in societies that pride themselves on valuing and enforcing human rights, persons with disabilities are neglected, belittled, and marginalized. Ensuring that they enjoy a quality of life comparable to others is not on the political agenda and rarely makes the news.

¹⁴See, for instance, Singer (2009) for an example of this claim. For replies, see the work of the disability rights organization Not Dead Yet (n.d.). See also Johnson (2003) regarding her conversations with Peter Singer's views on disability.

¹⁵For instance, disability scholar Licia Carlson (2010, 11) writes, regarding Peter Singer in particular, that "[...] we find that intellectual disability is assumed to be a self-evident category of individuals about whom philosophical analogies can be made. Though the history of abused to non-human animals is explicitly chronicled, there is no mention of the historical and political context in which intellectual disability emerged as a classification, or the history of abuses and oppression of people labeled as such."

¹⁶See World Health Organization & World Bank (2011). For global data on violence lived by persons with disabilities, see Hughes et al. (2012).

The expression “marginal cases” itself (which was first coined in 1977 by Jan Narveson in a paper arguing against animal rights) is most unfortunate as it seems to imply that these “marginal” individuals have the almost intrinsic property of being on the margins of society and not be fully human—they are an afterthought to the philosophical definition of humanity. To discuss the issue of speciesism without relying on this problematic vocabulary, Oscar Horta (2014) proposes to talk instead about “the argument from the species overlap,” which indeed avoids the negative connotation. But importantly, the issue should not revolve around how to “integrate” these marginalized individuals, as if their moral exclusion was not related to the way human supremacy is defended and what counts as a human in the first place. Rather, the task should be about laying the foundations for a moral theory that puts every individual *at the center* and none at the margin.

By contrast, moral theories based on vulnerability, subjectivity, or sentience, endorsed by a growing part of the animal rights movement, provide the tools to defend unambiguously both the rights of animals and the rights of persons with disabilities, without marginalizing any group and without unilaterally instrumentalizing one to further the case of the other. Disability scholars can understand that these conceptions of animal rights pose no threat to disability rights—quite the contrary. As we have seen, establishing a hierarchy between persons and nonpersons may address some apprehensions from those who want to preserve human superiority while still recognizing some rights to animals, but this had the consequence of alienating the disability rights movement. Importantly, this is but one trend within animal rights theories.

Many disability scholars must also plead guilty to the charge: it is not uncommon to find, for instance, a justification of the intrinsic moral worth of persons with cognitive disabilities that, in some ways, pits them against animals, whether by insisting on their membership in the human species or on their humanity, or by stressing that, despite what the argument from marginal cases claims, they do possess uniquely human qualities.¹⁷ To be sure, many disability theorists are simply agnostic when it comes to animal rights and are not indifferent to harms done to individuals from other species.¹⁸ Rather, they are concerned about the ways intellectual disability gets entangled in the animal rights debate while not being treated as a serious issue of its own. They argue that many layers of moral complexity are lost when we assess the moral status of an individual solely by comparing cognitive abilities and other intrinsic properties. For instance, persons with cognitive disabilities and young children, whatever their IQ, can form deep and significant relationships with others and

¹⁷ See Donaldson and Kymlicka (2016, 174 note 9) for examples of disability scholars who use the case of animals to bolster disability rights.

¹⁸ For instance: “However, in keeping the notion of being human at play in our discussion of intellectual disability, it is neither arbitrary nor must it imply *preferential* treatment of human beings over animals” (Carlson, 2010, 154). And Kittay (2017, 26): “While raising the moral status of animals is an important moral challenge of our age, viewing moral status as tied solely to intrinsic properties fails to give us an understanding of why the claim to humanity as the *particular* moral importance it has for *us humans*.”

be part of our shared humanity. They can bring a sense of purpose and fill the lives of others in many, non-fungible ways. These layers of our moral lives are missing in the analysis provided by the argument from marginal cases.¹⁹ Pointing out that pigs are smarter than 4-year-old children—a claim that is repeatedly found in leaflets of animal welfare organizations and in animal ethics—can indeed be seen as reductive and insensitive, and as missing on so many things that make a human life rich and meaningful. This is a legitimate point, but it should not sideline the big picture regarding intrinsic value or basic rights. There are good reasons to draw attention to the special relationships with children and persons with cognitive disabilities and to their (unappreciated) humanity but doing so by insisting on their differences with animals can lead to minimizing the value of the latter and trivializing speciesism. Moreover, while animal scholars can show a lack of understanding of and concern for disability, it is also possible to underestimate the richness and complexity of animal lives and the depth of the bonds they can develop, both with each other and with humans. Once we leave behind the reasoning by comparison, we can better appreciate how there are various ways of being in the world, and that takes nothing away from others.

The Social Model of Disability and Its Contribution to Animal Rights

Ethical approaches based on vulnerability, subjectivity, or sentience make it possible to defend animal rights while standing in solidarity with those who struggle because of ableism. It is becoming increasingly clear that disability theorists can benefit from such approaches to basic rights, without sacrificing their views on the importance of special relationships. In the same way, disability theories offer groundbreaking conceptual tools that can greatly benefit animal rights. An important one is their challenge of the depiction of disability in “less” terms and within a binary framework with static terms, including the moral agent/patient distinction common within animal rights theories.²⁰ It is obviously possible to grant rights to individuals who cannot reciprocate morally; otherwise, notions such as children’s rights or duties toward future generations would make little sense. Disability scholars often criticize the distinction between moral agents and moral patients on the grounds that it paints the latter as being essentially passive. Given this framework, it is unsurprising that justice for these groups, and in particular for persons with disabilities, is seen as secondary, almost an act of charity toward individuals who will never give in return. Furthermore, this stance suggests that, when hard times come, this is where spending will be cut and, in lifeboat scenarios, they will be the first to

¹⁹ For examples of these arguments, see Diamond (1991), Carlson (2010, 148–157), Kittay (2005a, b, 2017).

²⁰ See Regan (2004, 151–156) regarding the notion of moral patients.

be thrown out. Persons with disabilities are still conceived as “less”: less rational, less able to communicate, and less able to contribute to society. But what if this lack of abilities is more a feature of social structures and attitudes than a feature of certain individuals themselves?

To better understand this, let’s turn to the ways in which disability is conceptualized and defined by critical disability scholars. Disability is commonly understood as a medical condition: an objectively abnormal fact intrinsic to an individual—a deficit, a dysfunction, a deficiency—and always undesirable, in need to be corrected. Indeed, most people think of it as a personal tragedy, an object of pity, a lack of luck, and a burden (that last two being reflected etymologically in the medieval game, “hand-in-cap,” and later applied to horse racing to the extra weight put on some horses in order to even the race). This remains true even when disability is presented in a good light, in what is now known as the “supercrip” stereotype: in our culture, persons with disabilities are almost only featured in feel-good stories in which they overcome their disadvantage and exceed expectations. In other words, disability is a minus, something people struggle with, and the story is about them achieving something *despite* of it, which is intended to be touching and extraordinary.

The social model of disability introduces another way to understand the notion. According to its strong version, disability is not a physical or cognitive characteristic intrinsic to an individual but rather a contingent feature based on specific social configurations. Societies *create* disability by enabling certain bodies and setting certain cognitive standards that advantage some individuals over others.²¹ Being in a wheelchair, to use a common example, is not strictly a *disability* when the person’s environment is adapted to her abilities and allows her to function as well as any able-bodied person. In other words, it is not a damaged spinal cord or impaired legs that *causes* disability but the choice of building stairs rather than elevators and ramps. Those who appear not to have disabilities are simply individuals who enjoy privileges granted by their society, such as a type of urban planning and architecture that allows them to move around unhindered. The same individuals, placed in a different environment, could suddenly become disabled if they can no longer function “normally.” Some people are blind or sight-limited and cannot read printed books except for those in Braille. But this inability results from the choice of printing books with ink: if everything was to be published in Braille, a whole other range of people could be considered *disabled*. In the same vein, humans cannot see in the dark and so have invested their inventiveness over centuries to find ways to make up

²¹ More moderate versions of the social model of disability hold that disabilities arise from dynamic relationships (or interactions) between a particular individual and her physical and social environment—in other words, there are bodies and minds with various impairments, but societies’ configurations still greatly impact how one’s body and mind can function and flourish in the world.

This mirrors the sex/gender distinction: there are biological bodies and minds, and some of them fall under biostatistical norms while others have *impairments*; and there are disabilities, which result from social conditions. Importantly, this social dimension of disability is overlooked by the medical model.

for it. Yet, the need for lights inside a building at night is not conceived as a disability because it is not *expected* of humans to see in the dark.

The social model of disability sheds a new light on the injustices faced by persons with disabilities and on the type of ideological assumptions oppressing animals: the problem is less about the individual lacking certain abilities but rather about the schemes of distribution of resources and attention granted by the society. Some people have their functioning facilitated by social structures and values, while others are cast aside as being more dependent, that is, needing “extra work” to function, and therefore less valuable. But it is only within an ableist framework that being dependent on others is a sign of weakness and inferiority—dependency is rather a feature of any living being, at any time of its life. It is, therefore, wrong to make dependency a distinctive feature of certain subgroups: everyone is constantly dependent on others for their own functioning, and especially for their most basic needs such as obtaining food, shelter, clothing, transport, or heating. Most of the things we use every day have been designed, manufactured, and delivered to us thanks to others’ skills and efforts, but this is seldom conceived as a form of dependency. Left to ourselves, we are capable of very little. Even cognitive abilities are not strictly a natural property of an individual, for without the years-long input of numerous people in our education and the continuous challenges and insights offered by our peers, our intelligence could not have developed. Portraying humans as rational beings is not strictly true of anyone taken individually—or rather, rationality is less a natural, automatic trait than a socially dependent one. Following insights from feminist theories and ethics of care, the social model of disability emphasizes that we all live in a state of *interdependency*. Although it does vary in degrees over time and between individuals, everyone depends on others on some levels, and no one is truly and fully independent.

This leads to a crucial point: persons with disabilities are not “marginal cases” but the quintessential representatives of the human condition, and more broadly of the condition of any sentient being. Vulnerability and interdependency are at the core of all human experience, much more than any cognitively demanding ability. As long as we maintain that there is a sophisticated standard that individuals must meet in order to be equal or to gain full moral status, some individuals (humans or animals) will be marginalized and have their rights disregarded. As is well analyzed by the groundbreaking work of Sunaura Taylor (2011, 2014, 2017), this explains how ableism and speciesism greatly overlap and how these two struggles can benefit from working together. To use another example of ableist norms imposed on animals: when an animal does not fit the standard set for her species, she often risks being killed or discarded. A draft horse who breaks her leg, for example, becomes “useless” and her life no longer has value for the people exploiting her. But the real problem is not the injury or the resulting impairment but valuing individuals strictly as laborers or beasts of burden.

The idea that disabilities are linked to and shaped by particular physical and social environments invites us to go beyond the individualistic framework often assumed by ableist and speciesist theories, and to look at social structures for promoting equality and the functioning of everyone. It is not so much that some are

moral agents and active citizens while others are moral patients and passive citizens: everyone has ways of expressing their views and should be entitled to make choices about their lives.

The United Nations General Assembly adopted in 2007 the Convention on the Rights of Persons with Disabilities, which explicitly demands “respect for [...] individual autonomy including the freedom to make one’s own choices” (United Nations, 2007, Article 3a) for *all* humans, regardless of their cognitive abilities.²² This has significant philosophical implications. If the rights to freedom and autonomy are not predicated on rational capacities, there is little reason to deny them to animals who share a similar interest in making choices that are important to them. The issue is less about possessing the right set of abilities, and more about finding the appropriate social supports for individuals with different abilities and interests to enable everyone to flourish.²³ Rather than assuming that some people are not capable of autonomy, a truly inclusive society would devise various ways of listening to the personal preferences and needs of those who express themselves differently. This involves creating inclusive designs not only of public spaces (such as ramps and elevators) but also mechanisms and supports to enable individuals to exercise and develop their own agency (in some cases, caregivers would play a role in enabling this agency through developing trusting relationships that support, rather than substitute, decision-making abilities). Again, everyone needs external support for exercising their autonomy and making their own choices, and we may need to create specific ways to reach those left out under the prevalent linguistic paradigms. By taking the diversity of abilities and needs seriously, it becomes possible for anyone to have the means and opportunities to lead their lives as they wish, all else being equal.

Regarding citizenship in particular, lessons from disability theories have been applied to animals by Sue Donaldson and Will Kymlicka (2011, 2016) who have significantly contributed to bridging the gaps between the two fields. While theoretical discussions in political philosophy traditionally focus on an idealized conception of the citizen—an abstract agent capable of cooperating with others within the parameters of social contracts negotiated through reason and linguistic means—Donaldson and Kymlicka draw instead on our embodied abilities as social beings to be sensitive and receptive to the needs of other community members. Under this model, citizenship is not reducible to rational deliberation but relies more fundamentally on the development of mutual trust and cooperation. This cooperation is not formalized by a social contract or the payment of taxes but materializes through

²² See also the General Comment on Article 12, by the Committee on the Rights of Persons with Disabilities (2014, 11): “it is imperative that persons with disabilities have opportunities to develop and express their will and preferences [...]. This means that persons with disabilities must have the opportunity to live independently in the community and to make choices and to have control over their everyday lives, on an equal basis with others.”

²³ See, for instance, Francis and Silvers (2007), Silvers and Francis (2009), Donaldson and Kymlicka (2011, 2016), Davy (2015). For a broad exploration of autonomy for nonhuman animals and persons with cognitive disabilities, see Côté-Boudreau (2019).

the various contributions, sometimes small and discrete, each member of a group can make to the daily life of others, whether it is intentional or not. Working dogs, for instance, can easily qualify as doing a socially recognized form of labor—they accomplish tasks some humans are paid to do. But beyond this paradigm, persons with disabilities as well as domesticated animals also contribute to society in many ways, including through essential activities often overlooked as genuine contributions, such as developing friendship, playing, going for a walk, relaxing, and providing emotional support and companionship. They also negotiate the terms of the cooperation, by expressing discomfort, indifference, resistance, or outright refusal, or by showing a greater interest in alternatives that suit them better (and despite this, animals remain too often depicted as lacking a *voice*, a trope still repeated within the animal rights movement). There are indeed many ways to be part of a community, and a truly inclusive society takes everyone's preferences and needs into account—regardless of one's abilities or species.²⁴

This understanding of a multispecies citizenship contrasts with the conclusions of some abolitionist approaches to animal rights theories that call for the gradual extinction of domesticated species—because of their extreme vulnerability and their dependency on humans. They claim that we should, of course, take care of existing dogs and cats but also prevent them from reproducing because they can never belong to the human world. But this view, as Donaldson and Kymlicka note,²⁵ rests on an ableist assumption that portrays dependency and neoteny as undesirable traits to be eradicated. Critical disability theories indeed stress that dependency is not in itself a problem. The issue lies in the social conditions: whether they make one more vulnerable to exploitation and inferiorization or if they are accommodated by mechanisms that ensure autonomy and opportunities for all. Whether one is part of the world depends on how that world is conceived in the first place.

Conclusion

This chapter was not meant to suggest that ableism and speciesism are identical forms of oppression in every respect but rather to explore some of the ways they overlap. Both are ideologies that exalt a universal morality based on an idealized conception of the human being; both are prejudiced against dependency and fail to appreciate the role that our societies play in the development of each individual and in the fostering of their agency; and both fail to acknowledge the various ways in which these “dependent” groups in fact contribute to the richness and good functioning of our societies. The animal rights movement and the disability rights movement have much to gain by combining their efforts to dismantle these widespread assumptions. They both argue that being a rational agent able to articulate and

²⁴Of course, gaining citizenship rights is not conditional on contribution to the community.

²⁵See also Taylor (2014).

debate about moral and political principles is not a requirement to be considered a right-bearing and equal member of society. In a truly democratic and inclusive society, everyone should be supported and enabled to develop their agency, their individual preferences, and their own ways of participating in the social life of their community and of leading a flourishing life.

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Chapter 14

Aliens, Antispeciesism, and Vegan Advocacy



Estiva Reus

The splendor and mystery of the starry sky never ceases to move us. Even as children, we wonder whether there are other distant stars out there, stretching to infinity, that we'd see twinkling in place if we could travel the immensity of the universe. The feats of space exploration fascinate us. Astronomy, when explained in an accessible way, is a source of wonder for everyone. On our own, or through the influence of those around us, we ask ourselves who might be living in the rest of the cosmos. These potentially inhabited worlds, which in truth remain unknown to us, are nevertheless familiar thanks to the abundance of fictional works that transport us there. We love aliens so much!

Some vegans try to leverage the popularity of these hypothetical beings to encourage us to treat the Earth's animals more fairly. Such is the logic behind what I will call Vegan Cosmic Advocacy (VCA), because it takes a trip to the inhabitants of the cosmos to address the animal condition on our planet. In this article, I discuss the different forms that VCA takes in order to initiate a reflection on the approach taken by its authors and the relationship between two types of discourses: arguments and narratives. In the previous sentence, "arguments" is a shorthand for "arguments and descriptions." Descriptions are statements of facts presented as accurately as possible. I will reserve the term "arguments" for discussions based solely on knowledge and reason. These may include hypothetico-deductive statements that draw conclusions from hypotheses or principles, as well as from established facts. Narratives, on the other hand, are accounts that, whether intentionally (as in works of fiction) or unintentionally, do not meet the criteria for arguments (or descriptions). These narratives are nonetheless loaded with meaning for those that

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produce or receive them and can influence their interpretation of the world and of their own place in it.

Eating E.T.

Until now, VCA has primarily been used to question the use of animal flesh for dietary purposes. Its favorite scenario, presented in various forms (articles, videos, street performances), invites the public to imagine that aliens, more intelligent than human beings, invade the Earth and find human flesh to their liking. Sometimes the roles are reversed, as in the artistic performance entitled *Eating E.T. – Mock Alien BBQ*, first held in Lund, Sweden in May 2014. In it, a life-size replica of E.T. from Steven Spielberg’s 1982 film composed of gluten and other plant ingredients spins impaled on a spit over a fire. It is then cut up and distributed among participants of a picnic. The scene was conceptualized to encourage conversations around our eating practices and our relationships with other species. The (supposed) impact of the performance is described in the following terms by one of its organizers:

The very possibility of contact with extraterrestrial life is a scenario that mentally plunges us into a post-anthropocentric condition, or at least places *Homo sapiens* in a cosmic context, just as Darwin placed us in a terrestrial context. *Eating E.T.* manifests and makes intensely concrete a spectacular scenario which urges us to reconsider our relationship to other species, terran as well as extraterrestrial. (Sandelin, 2014, p. 51)¹

These few lines are characteristic of a mentality found amongst all architects of VCA. They share the common trait of being deeply influenced by the theses of contemporary animal ethics, as formulated from the 1970s onwards.² VCA activists are first and foremost antispeciesists. For them, the word “speciesism” refers to unfair discrimination against animals as manifested in the way they are (mis)treated. It also, and above all, refers to an ideology that calls for the exclusive concern for humans or at least an undue preference for them.

The link that is often made between contempt for animals and the belief that man is at the top of the ladder of beings sometimes leads us to think that extraterrestrials superior to us could cause a salutary narcissistic wound. Wouldn’t they finally deliver the fatal blow to human pride after other events that are thought to have

¹ The participants’ reactions to the E.T. tasting recounted by the author are limited and fall far below the impact that the organizers hoped for: a comment about the fake meat, a reference to the scenario in reverse (anthropophagous aliens), and a few remarks about the momentary discomfort felt during the performance—a discomfort that dissipates as soon as they realize that nobody is actually roasted on a spit.

² Many scholars have published in this field. Among them, Peter Singer, Tom Regan and Gary Francione are those best known to activists. More recently, the ideas put forward by Sue Donaldson and Will Kymlicka, which have more to do with political philosophy than pure animal ethics, have aroused great interest in the animal liberation movement. However, the thinking of these two authors on interspecies relationships was not used to enrich the VCA scenarios, which is probably unfortunate.

seriously undermined anthropocentrism? Among these, we often mention the Copernican revolution, which ejected man from the center of the universe, or—as in the above passage—Darwinism, which revealed the kinship between all animals (including humans). Once this point of view is adopted, it is only natural to hope that the idea of extraterrestrials would help to weaken the poor reasons that allow animals to be neglected and mistreated in good conscience.

In VCA, however, alien scenarios are first and foremost designed to serve as an entryway into a discussion of animal rights.³ In the eyes of its proponents, this discussion falls entirely under the realm of argumentation (or description). As we will see, however, there may well be elements of narratives in it.

Dethroning Humanity

If humans believed that extraterrestrials equal or superior to them existed, would they be more considerate of their “inferior brothers”? There’s no need to delude ourselves. In fact, this belief is very much alive and well in our population,⁴ without having the slightest effect on consumer habits. Moreover, there’s nothing superficial or passing about this conviction. Pluralism⁵ has had its defenders since antiquity. Since the eighteenth century, a large number of thinkers have argued in its favor.⁶ During the Enlightenment era, many authors supported both pluralism and the idea of a great chain of beings.⁷ They readily assumed that the “missing links” on Earth were found elsewhere in the universe and that the ladder of beings extended to other stars. It seemed obvious to them that man was too imperfect to reside at the apex of creation. Consequently, they were convinced that a host of more brilliant species lay elsewhere in the universe. The proponents of this thesis, such as William Petty, John Locke, Alexander Pope or Immanuel Kant, felt no humiliation at not being at the pinnacle of living beings, and the thought that they occupied a modest place in the *scala naturæ* did not stop them from garnishing their tables with animal corpses.

An examination of the ideas of the past also leads us to qualify the overly linear vision we have of their evolution. We believe that the conviction in human

³In this respect, the performance *Eating E.T.* is not representative of the rest of VCA, since its creators remain in the background after setting up the visual and edible device.

⁴A survey was carried out among 26,492 people living in 24 countries. About 47% of respondents said they believed in the existence of intelligent extraterrestrial civilizations, while only 26% did not and 28% had no opinion (Papadogonas, 2018).

⁵“Pluralism” has long been used to refer to the theory that other inhabited stars exist in the universe.

⁶For information on the history of ideas about extraterrestrial life, see in particular the books by Crowe (1999) and Dick (1996).

⁷This theory, whose foundations date back to antiquity, postulates that the universe obeys the principles of plenitude (the existence of all possible forms of being), gradation (that beings can be classified hierarchically), and continuity (that changes from one type of being to the next occur through variations so minute that they are imperceptible). Lovejoy (1936/2009) dedicated his most famous work to the history of this idea.

exceptionalism, once unanimous, has been shaken by major scientific advances. However, the importance of their impact on the conception of man's place in nature is sometimes poorly assessed. It is certain, for example, that Darwinism advantageously supplanted the old concept of the chain of beings, which had no empirical basis and which was moreover illogical.⁸ It is less certain that it was necessary to wait for Darwin for thinkers to dare contest the idea that an "unbridgeable gulf" separates humans from other animals. Indeed, the theory of the chain of beings includes the principle of continuity (*Natura non facit saltum*). Pre-Darwinian authors have asserted on this basis that animals, and apes in particular, are extremely close to humans. Some, like Jenyns (1782/1822, p. 17), have pointed out that the differences between individual humans can far exceed the differences between some humans and some animals. Others, such as Bonnet (1769, p. 28), have challenged the scientific nature of the concept of species on the grounds that distinctions within a continuum can only be arbitrary.

An even clearer case of a distorted vision of the history of ideas concerns heliocentrism. It has become commonplace to say that Copernicus dethroned mankind from the place of prominence that vanity had led it to assume for itself. It's true that the dominant cosmology of the Middle Ages, inherited from Aristotle and Ptolemy, was geocentric, but it's hard to attribute this to vanity. Indeed, among medieval thinkers, the central position was often described as the lowest: it was the appropriate place for the coarsest, least perfect star in the cosmos (Lovejoy, 1936/2009, pp 101–107; Danielson, 2001). Moreover, it was common at the time to place hell at the center of the Earth. The idea that heliocentrism weakened anthropocentrism is based on confusion between two meanings of the word "center": literally (geocentrism), the term designates a point in a geometric figure; figuratively (anthropocentrism), it is used to mark the importance, the primacy, of something.

Thus, when we recount the blows dealt in the past to the foundations of human arrogance, and portray the eventual discovery of superior aliens as a beneficial slap in the face, the trajectory we draw does not have the accuracy we lend to it. It is not a scrupulous description of proven facts followed by an exercise in foresight. It is, at least in part, a simple narrative, an appealing tale, regardless of its degree of veracity, because it describes the stages of a march toward progress.

But this is at most a peripheral element, rarely made explicit, of the VCA. Let us turn to the aliens it seeks to use to encourage the public to shed its speciesist prejudices and practices. They are, in fact, very particular types of aliens, and as far as I know, advocates have done little to analyze their specific features. Let us try to determine what characterizes them by examining some of the works in which they appear.

⁸The principles of plenitude and of gradation cannot be met simultaneously. A hierarchy of beings (gradation) can only be established if every being on the $n + 1$ rung possesses all of the properties and abilities of beings on lower rungs, in equal or greater quantities. In such a case, however, the universe would lack certain types of beings, those that surpass others according to certain criteria while simultaneously being inferior to them according to others, such that the principle of plenitude could not be verified.

Humanity Beyond *Homo sapiens*

It is not without reason that antispeciesists consider the boundaries of species to play a crucial role in our practices and thinking. We live both in an age of unprecedented levels of animal exploitation, and in a time when humanism, human rights, and the notion of human dignity command a great deal of respect, at least in theory. These doctrines and principles value and protect the members of humanity, who happen to coincide exactly with the members of the *Homo sapiens* species. So how could we not believe that the problem lies in species chauvinism? With this in mind, antispeciesist ethicists have set out to demonstrate, with success, that neither unqualified nor qualified speciesism⁹ is defensible in terms of justice or equity. Yet we may be losing something when we too systematically equate “humanity” or the “we” to which we feel bound with a species.

One aspect of Camille Flammarion (1842–1925)’s thinking illustrates this point perfectly. This French astronomer and author, who was very popular in his day, owes his fame above all to the fact that he was an ardent defender of pluralism. His writings are a blend of popular science, imaginative hypotheses, and confidently stated philosophical-religious considerations. In one of his best sellers, Flammarion (1865) argues that there are better worlds in the universe than Earth. Indeed, the physical conditions of our planet make life difficult, so much so that most of its inhabitants’ sole occupation is to struggle painfully for their subsistence. Moreover, for them, “the law of life is the *law of death*. Of all the animals that populate the Earth, there’s not a single one that does not live at the expense of other living beings, animal or plant” (Flammarion, 1865, p. 272). The need to devour one another has established the law of the strongest. According to the author, the avarice of nature is also at the root of the vices that plague human societies. If everyone had been able to live in abundance, theft, murder, greed, and war may not have arisen. However, Flammarion considers it entirely plausible that this sad condition may not be universal. It could be that there exist planets in the cosmos with “nourishing atmospheres,” so that bodily needs are satisfied simply by being immersed in them.

Although most of the aforementioned considerations apply to all living beings, the author is only interested in humanity. But for him—and this is the remarkable aspect—there exists a *collective humanity* spread across a multitude of stars that offer more or less favorable natural conditions. Flammarion doesn’t mean to imply that there are beings that resemble us elsewhere in the universe. On the contrary, he insists that the bodies of the inhabitants of other planets are very different from those of earthlings and impossible to describe. Nor does he maintain that humans from other stars have minds similar to ours. To be sure, he does believe that they can access universal truths (because they emanate from God) concerning science or

⁹In the case of unqualified speciesism, belonging to the human species is considered to be a morally relevant criterion in itself. In the case of qualified speciesism, it is the possession of certain qualities that is considered to be morally relevant, qualities that are assumed to be specific to the members of the human species.

morals. But they do so to profoundly different degrees, because humans from different stars are divided according to a hierarchy of the mind, and those that inhabit the Earth are at the lowest rungs.

Thus, we have an author who suggests the existence of a multiplanetary and multispecies humanity from which the majority of living beings—terrestrial and extraterrestrial—are nonetheless excluded. Nothing joins these humans together apart from a narrative, which for Flammarion takes the form of a theory of metempsychosis borrowed from Jean Reynaud.¹⁰ It is true that this religious belief, as well as the term “collective humanity,” are specific to Flammarion. Nonetheless, Flammarion is fully representative of a tendency that is widely present in writings and other works that deal with extraterrestrials. Our favorite aliens are not the same species as us, yet they have a special bond with us. I will refer to these types of extraterrestrials as “exohumans” or “exo-us.”¹¹

Who Are the Exo-Us?

Some examples of famous extraterrestrials are enough to convince us that we intuitively recognize exo-us, even before we try to pinpoint what characterizes them. In the “*Barsoom*” series of novels by Burroughs (2013), the diverse varieties of Martian humanoids are easy to distinguish from the fauna and flora of the red planet. *Star Trek*’s many species of extraterrestrials are exo-us, with rare exceptions (the Tribbles are not). The Trisolarians of the novel *The Three-Body Problem* (Liu, 2014), like the “shrimp” of the film *District 9* (Blomkamp, 2009), and the strange creatures of the film *Arrival* (Villeneuve, 2016) are exo-us. The same is true of all the aliens that some humans claim to have encountered. Consider, for example, those described by the many Americans who, after the media coverage of Betty and Barney Hill’s seminal 1961 experiment, were convinced that they too had been abducted by extraterrestrials.

Exo-us are also a distinct category of extraterrestrials among the thinkers of pluralism outside the realms of fiction and ufology. In *On the Nature of Things* (book II), Lucretius (99–55 AEC) referred to other “breeds of men” present in the infinite universe. Huygens (1698), in his *Cosmotheoros*, argued that other planets are also home to creatures “endued with reason” (p. 37). Since the establishment of the SETI (Search for Extraterrestrial Intelligence) programs in the 1960s, there has been talk of “intelligent extraterrestrials” (IETs) and “extraterrestrial civilizations.” Within

¹⁰According to this view, we move from planet to planet in successive reincarnations, in an upward movement toward mentally and spiritually superior forms of humanity.

¹¹The term “exo-us” is often preferable because it is more general. It encompasses extraterrestrials whose behaviors are not identical to that of human beings. On the other hand, it suggests that these extraterrestrials have a special relationship with “us,” an unspecified ensemble that includes “me,” without assuming that this “me” is aware of what humans are in all their diversity, or that this “me” actually sees humanity as its primary category of belonging.

SETI circles, it is believed that some IETs may be more advanced than humans. The superiority of these hypothetical beings would reside in the techniques they master, but they are also credited with moral, social, and political superiority. If civilizations of IETs older than our own have managed to survive, this in itself is thought to be a good omen: an indication that humanity too has a chance of surviving its “adolescent crisis” at a time when its technical power (which can lead to self-destruction) is exceeding its wisdom. Some also hope that humanity will one day be admitted to a “galactic club” of extraterrestrial civilizations and be able to benefit from their ethical and scientific advances.

Exo-us cannot be defined by their physical nature. They may be biological beings born of natural selection, cyborgs, or even machines with strong artificial intelligence that have replaced the biological beings who first created them. Even the “cloud” in Fred Hoyle’s novel (1957) is an exo-us, and yet it is a gaseous celestial body almost the size of Jupiter. Exo-us are not necessarily distinguished by their technical superiority. The Na’vi in *Avatar* (Cameron, 2009), who possess only primitive tools, are pure exohumans, in this case an idealized version of indigenous peoples.

Even though we can recognize them, we are unable to define exo-us by their nature because what characterizes them is a privileged relationship with “us” (an extended self¹²), which can take various forms. Many are retouched copies of ourselves. Those involved in war scenarios are no exception. As Gomel (2014) writes of the most popular fictions,

the war-of-the-worlds scenarios far outnumber the amicable depictions of cosmic solidarity. But they are ruled by the same logic, or rather, by the logic of the Same. Aliens want to invade, colonize, or subjugate humans for exactly the same reasons humans have invaded, colonized, and subjugated each other throughout history. (p. 10)

Nevertheless, the aliens that excite our imagination are not necessarily our twins and can remain highly mysterious. The bond they share with us may stem from the fact that they are the key to our origins or to our evolution (as seen in the theories of ancient astronauts, or in Kubrick’s 1968 film *2001: A Space Odyssey*¹³). They can foreshadow our future, or become the mentors that raise us to incredible levels of knowledge and longevity that they themselves have already reached (like the aliens of older and more advanced civilizations than ours that some SETI researchers speculate about). Exo-us, be they quasi-human beings or quasi-gods, friends or foes, are beings in whose eyes we exist, and who give substance to our own existence. At the very least, they add spice to it by drawing us into adventures in which

¹²In all kinds of works and writings (fiction, research, ufology) relating to extraterrestrials, the “we” in question is often explicitly referred to as “humanity,” an indication that it is perceived as the noblest and broadest category with which to identify at the level of our planet. It’s not hard to notice, however, that the most salient concerns, social backgrounds, and countries in these works are those familiar to their authors, and that a handful of certain kinds of humans (and their extraterrestrial counterparts) are over-represented: scientists, politicians, the military.

¹³Arthur C. Clarke, who co-wrote the film’s screenplay with Stanley Kubrick, published the eponymous novel in 1968 as well.

we can imagine ourselves participating. At best, they enrich us, give us meaning, write us into a cosmic story, an epic, a myth.¹⁴

It is through a *narrative* that these hypothetical beings become desirable and close to us—a narrative that glorifies us by connecting us to a grandiose story. It is tempting to transpose this analysis onto intra-human affairs. What if “humanity” were not a species (a collection of individuals grouped according to common traits¹⁵) but a strange entity that only took shape when a certain narrative was imposed onto it? When we attribute a series of achievements or wrongdoings to “humankind” (the invention of the wheel, quantum physics, genocides), we are not describing what each human has done or could have done. Most humans would have been incapable of producing the theories, techniques, and works of art on which humanity prides itself. Most don’t have the capacity to become one of those empire-builders or bloodthirsty autocrats who spread despair. Because this narrative is not a rigorous description of shared traits between *Homo sapiens*, even if it does depend in part on traits that are widespread among them, we could just as easily attribute the exploits of humanity (“We walked on the moon”) to vertebrates or eukaryotes. However, this story only affects members of a narrative species. The magic happens as soon as they feel part of it, and come to feel pride (or shame) for achievements of “humanity” that have nothing to do with them.¹⁶ As we’ve seen, this story can be expanded to include extraterrestrials. It is not inherently speciesist. However, it’s not irrelevant that the exo-us, from whom VCA borrows its alien characters, extend rather than disrupt the narrative of humanity.

(Exo)Humans on the Menu

Science-fiction novels sometimes include scenes similar to those of VCA. Let’s take a look at two examples that show how the human heroes of these stories feel in these situations.

¹⁴To fulfill this function properly, they need to be intelligent. But this criterion is neither precise nor sufficient. The eponymous alien in Scott’s 1979 film reveals its intelligence in order to achieve its objectives aboard an unfamiliar ship. Yet it’s probably not an exo-us, because the crewmembers are nothing more to it than incubators for its larvae. In works of fiction, there’s one sure sign that indicates whether an alien is an exo-us (a criterion that is sufficient but not necessary): the ease with which we converse with it. The remarkable thing is not just that the exo-us possess a language (or are telepathic), but that they formulate intelligible thoughts within our own mental framework and understand our thoughts and intentions, whether they use them for or against us.

¹⁵We can think of the criteria of systematics, but also of categories that fall under common knowledge: like many other animals, we know how to recognize a member of our own species when we come across one.

¹⁶The same could be said for many other collective entities—such as “women” or “the nation”—who have been the subjects of narratives that foster a sense of belonging. For each of these entities, we could point out (as antispeciesists do with the *Homo sapiens* species) that no nontrivial characteristic can be found that is both shared by every member of the group and absent in all individuals outside of the group.

In his 1898 novel *The War of the Worlds*, H.G. Wells recounts the attempted colonization of Earth by Martians more advanced and intelligent than humans. Their physiology is such that they feed by injecting the blood of their prey directly into their veins. The narrator is horrified when he sees a Martian kill a man for this purpose, yet he has this thought: “The bare idea of this is no doubt horribly repulsive to us, but at the same time I think that we should remember how repulsive our carnivorous habits would seem to an intelligent rabbit” (Wells, 1898/2004, book 2, chap. 2). To him, the analogy is self-evident. But although he no doubt knows that the rabbit doesn’t need to be very intelligent to be terrified when its life is taken away, he eats meat at several points in the story without the slightest emotion or reflection.

The characters from Mary Doria Russel’s 1996 novel *The Sparrow* have similar reactions. In it, humans explore the planet Rakhat, home to two distinct species of exohumans, the Runa and the Jana’ata. The humans are initially welcomed warmly and housed in Kashan, a Runa village where the inhabitants lead simple lives. They are vegan and subsist off of gathering. One day, when the villagers are away, the humans realize that they are craving meat. So, one of them shoots a young *piyanot*, a local herbivore grazing peacefully with its herd. For the explorers, the barbecue that they organize afterwards is an exquisite moment of relaxation, indulgence, and good humor. Later, only one member of the expedition, Emilio Sandoz, returns to Earth alive. He ends up revealing a horrible truth about life in Rakhat that he only discovered belatedly: the Jana’ata, who have an urban and technically advanced civilization, subject the Runa to a kind of breeding. They control the Runa’s reproduction and, through artificial selection, create varieties suitable for various urban functions. Moreover, being carnivores, the Jana’ata slaughter Runa to consume their flesh. When Sandoz recounts an episode in which a Jana’ata troop kills Kashan children, who are then eaten, his distress is immense. He is well aware of the resemblance to the human slaughter of animals. When he talks about other Runa children killed at birth, he explains that it’s like “a sort of veal, one might say.” And on the subject of the rural Runa, who are free to live according to their own customs, he adds: “It is, when you think about it, quite a humane system, compared to the way we breed meat animals” (Russell, 1996, p. 472). At no point does he invoke reasons that would make Jana’ata dietary practices more culpable than those of humans. Nevertheless, he views the slaughter of the Runa “calves” as a tragedy, whereas the slaughter of the *piyanot* “calf” was the prelude to a feast.

It is plausible that the reactions of these fictional characters are representative of the way most consumers of animal products feel. They would hate to eat the “real” E.T. (a childhood friend!). The fact that he is not part of their species does not make it any less repugnant. They certainly would not want to be eaten by a superior alien but solely in the same way that they would not want to be eaten by a cannibal or a crocodile: for the simple reason that they value life. They themselves draw parallels between the slaughter of animals to satisfy their eating habits and situations in which humans, or exohumans, are eaten. Nevertheless, that doesn’t change the fact that they remain emotionally indifferent to the former. The encounter or evocation of exohumans in no way impacts this indifference. As a result, there’s very little to

expect from the *Eating E.T.* performance, which simply puts participants in the position of tasting a fake exo-us.

Let us now turn to VCA in its dominant form. It differs from the exohuman barbecue in one important respect: the verbal component of the message is essential, while the aliens (the anthropophagic exo-us) serve merely as a loss leader.¹⁷ The scenario can take the form of a dialogue in which a human tries to persuade an alien that it would be a crime to devour him, while the alien explains that he has every right to feast on human flesh.

To believe in the effectiveness of VCA, it is necessary to assume that people's actions are governed by reasons they believe to be good, even if their judgment is sometimes clouded by prejudice or errors of reasoning: it must be assumed that the direction of causality runs from ideas to practices rather than the other way round. Consciously or unconsciously, VCA is designed to appeal to fundamentally rational and moral beings. Its raw materials are the arguments that people put forward when they feel obliged to justify their consumption of animal products. The aim is to highlight the weakness of these arguments, in the hopes that it will lead to a change in behavior. Activists are very well equipped to achieve their goal, as long as they maintain a critical stance by showing that defenders of animal consumption are biased. To do this, they draw on the abundant resources made available to them by animal ethics theorists, as well as on data attesting to the viability of a vegan diet. It is possible that their approach is effective with people who accept that their eating habits are being questioned, and who are prepared to change them if they are shown that they were wrong to believe these eating habits were innocent. However, in some cases, the alien stories forged by antispeciesists are used to cast doubt on the soundness of the positions they defend.

Human Privilege or Animal Equality?

In an article titled "The Vegans Have Landed," Southan (2013) criticizes VCA using its most popular scenario: the invasion of Earth by aliens more powerful and intelligent than humans. (The concept, of course, is to place humans in the dominated position that animals occupy in relation to them.) Southan points out that even if these aliens were vegan, their arrival would severely worsen our living conditions. They would monopolize agricultural land to grow their own crops and destroy human settlements to build their own cities. But how does this weaken VCA? It is important to highlight that this in no way affects the validity of veganism: the human condition would be even worse if these aliens were anthropophagous. What Southan criticizes militants for is passing off their alien stories as pleas for the abolition of

¹⁷ See, for example, Firestone (2016); PETA (2017); Monsieur Phi (June 20, 2022a; Sept. 25, 2022b).

human privilege. The objection is probably valid. I will make the point in my own way, and not on Southan's terms.

Antispeciesists are eager to present veganism as a conclusion *deduced* from the principle of equal consideration of the similar interests (or rights) of sentient beings, whatever species to which they may belong.¹⁸ This is their distinctive feature compared to other, less philosophical ways of defending animals. They use the “smarter” aliens of VCA to teach the lesson that sentience, not intelligence, is what defines moral patients. (In other contexts, it is the “marginal cases”—humans with lower cognitive abilities than many animals—that they use to demonstrate this point.) For them, the move toward animal equality is a continuation of the progress that has led to a decrease in intra-human inequalities and discrimination, and of all the social advances that have enabled a very large number of humans to achieve a better quality of life. They readily point out that much remains to be done to combat injustice and misery within our own species.

The approach is sound as long as we remain within the realm of ethics, and convincing when we highlight the psychological drivers common to various ways of devaluing outside groups. Things get more complicated when we introduce an overlooked point: competition between sentient beings for access to scarce resources. Indeed, the devouring of some by others that Flammarton evokes is not the only manifestation of their conflicting relationships. When we ask ourselves what has enabled humans, who have become more and more numerous over time, to considerably increase their comfort and longevity, it is difficult not to suspect that this progress has been achieved by monopolizing resources of which other inhabitants of the planet have been deprived. Human beings have improved their condition at the expense of other animals, just as Southan's aliens prosper to the detriment of humans. Consequently, it seems illusory to hope that animal equality can be achieved by transposing the model that has worked so well for humans onto all sentient beings.

A constant feature of anti-speciesist activism from the 1970s to the present day (which can be found in VCA) is the juxtaposition of a very general principle of justice or equal consideration with *one* leading application: veganism, or the demand for the abolition of animal exploitation.¹⁹ Achieving this goal would undoubtedly constitute a major change for animals. However, the transition to veganism is not enough to measure the scope of the principle from which it derives. This is because it is a special case in which the establishment of fairer relations does not require a

¹⁸The idea that this constitutes a deduction is both true and false. It's true that the most noteworthy works in contemporary animal ethics base the recommendation of a plant-based diet on general moral principles. Nevertheless, it's likely that these writings wouldn't exist if their authors hadn't paid particular attention to vegetarianism before they'd even made a case for anything. Singer has often reported that for him, the catalyst was a conversation with a vegetarian student he met in 1970. Tom Regan came across the question of vegetarianism while reading Gandhi; he and his wife began questioning their eating habits, and it was the immense grief they felt at the death of their dog Gleco in 1972 that made them take the plunge and become vegetarians.

¹⁹The Montreal Declaration on Animal Exploitation (2022), signed by more than 500 philosophers, offers a recent example of this juxtaposition.

redistribution of the means of existence between the most fortunate and the most disadvantaged: not only would humans lose little, but they would most likely benefit as well. This begs the question: what are the other implications of the principle of animal equality? To this, anti-speciesists respond that they are in favor of programs that improve the welfare of domestic, wild, or liminal animals. However, the overwhelming majority of them propose nothing to improve the fate of animals that would impose substantial sacrifices on humans. It is difficult to find indisputable evidence of impartiality in the consideration of the interests of all individuals, regardless of their species affiliation.²⁰ Most anti-speciesist activists behave more like humanists—a type of humanist sincerely interested in achieving important advances for animals, provided, however, that they do not compromise the length and quality of human lives, or stand in the way of their future growth. If this really is their understanding of “widening the circle of consideration,” then it leaves the precedence of the center essentially intact, and the condition for being a part of the center is to be a *Homo sapiens*.

It is thus difficult to assess the status of the principle of equal consideration. Is it the basis for a line of reasoning from which conclusions less respectful of human privilege could be drawn in the future? Or is it rather an ingredient in an inspiring narrative that resembles an argument? For now, the only certainty is that it lends heart and confidence to antispeciesist activists,²¹ inscribing their efforts in the epic of a march toward the establishment of true justice.

Conclusion

In VCA, the use of aliens remains extremely superficial. They are merely a hook designed to capture the public’s attention in order to deliver the teachings of animal ethics and to persuade them of the merits of veganism. The degree of success of this approach depends on the willingness of the message’s recipients to engage in moral deliberations about what is owed to others, in a context where others are absent. Indeed, the other is only brought to mind through the invitation we receive to put ourselves in their place, in the most basic sense of “swapping positions with them.” The technique is identical to one used by animal activists, which transports us to a world where animals are the exploiters. Take, for example, this drawing by the artist

²⁰It is questionable whether the recurrent discussions about “who to save, the human or the dog?” in canonical examples of a burning house or an overcrowded raft act as significant counterexamples, whatever the answer may be. The evocation of these exceptional situations does not constitute a reflection on the overall allocation of resources.

²¹For a time, I was one of these activists, having happily discovered the writings of animal liberation theorists. Today, I’m still very grateful to these ethicists for pointing out the flaws in the arguments that claim to demonstrate that it is right and good to exploit animals or to be indifferent to their fate. Their contribution in this area proves invaluable when one encounters a pedant defending this kind of position. As for the rest, my confidence in the idea that it is possible and necessary to hold indisputable ethical principles from which to rigorously deduce the behavior to follow has waned considerably.

Barbara Daniels,²² in which a pig dressed in clothing and glasses licks his lips before a dish containing a grilled, naked man with an apple stuffed in his mouth. The man in the dish is you, but the eater is you as well, disguised as a pig, just as you are both the anthropophagous alien and the human that it prepares to devour. You are alone in the world, busy contemplating reflections of yourself in more or less advantageous situations.

If there is any sincerity in our desire not to be “alone in the universe,” then other forms of VCA need to be invented, ones that are more mindful of the origin of the word “alien.” It derives from the Latin terms *alius* and *alienus*, which refer to someone who is other, different, or foreign. The other is not our double, our foil, our future, or our savior. Their mind is not a replica of ours, enlarged by something we do not possess or deprived of elements we do. Sometimes, by observing them or interacting with them, we can understand part of what they perceive, want, and feel, but an irreducible part of them will always remain mysterious, and that too is what draws us to them.

Like the old one, the new VCA would be based on our desire to learn about other inhabitants of the universe, while paying more attention to the fact that these inhabitants are probably aliens in the etymological sense of the word. It would take inspiration from astrobiology, which draws on the history, diversity, and strangeness of life forms on Earth to try to imagine how life might have emerged and evolved elsewhere. Like Kershenbaum (2020) has done, the new VCA could formulate hypotheses about the basic senses with which extraterrestrial animals are endowed, and the ways in which they move, socialize, communicate, or demonstrate different forms of intelligence to confront the problems they face. This alternative way of taking a trip into the world of extraterrestrials would help us pay attention to the genuine aliens who cohabitate this planet with us, and—who knows—perhaps awaken our desire to spare, protect, and cherish them.

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²²Viewable on the Instagram page @barbaradanielsart.

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Chapter 15

Zoopolis: Imagining a Just Multi-species World



Kristin Voigt

For many of its advocates, veganism is not just about abstaining from the consumption of animal products, but is rather tied to, and derived from, broader political commitments that seek to eliminate animal oppression and exploitation (Cochrane & Cojocar, 2023). But what might our world look like, once injustice towards animals is eliminated? What shape could or would relationships between different animals, human and non-human, take in such a world? What kinds of social structures and political institutions would be appropriate for creating and maintaining just relationships between different animals, human and non-human? A growing literature in political philosophy has sought to offer answers to these questions, building on a growing interest in understanding the positive requirements of interspecies justice. The term ‘zoopolis’ has come to capture the idea of a multi-species community in which the moral status of non-human animals is recognised and protected. This chapter explores some recent contributions to the development of this idea, focusing in particular on the work by Sue Donaldson and Will Kymlicka and critical responses to it.

Given how ingrained animal oppression and exploitation are in our world and how far we are from achieving interspecies justice, it might seem superfluous or even a waste of time to think about these questions. However, precisely *because* the transformation required is so radical, it is hard to imagine what our world would look like if we moved closer to interspecies justice; and this in turn can make it harder to perceive such a world as possible and thus undermine our ability to move

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closer to it (Cooke, 2017). At the same time, we must, of course, acknowledge the uncertainties that surround any attempt to specify what our world would look like if we respected the requirements of interspecies justice. Importantly, this is, at least in part, a feature rather than a bug. Some of the recent literature emphasises that a world that meets requirements of interspecies justice would be co-created with non-human animals: non-human animals would not only make decisions about their own lives, for example when it comes to the relationships they want to have or avoid (especially with human beings), but they would also shape and influence political decisions and, more broadly, what our political communities look like. More radically, the language, concepts and practices we would rely on in the political sphere would change as we move beyond anthropocentrism, in ways that we cannot fully predict or anticipate (see Meijer, 2019, chapter 9). The proposals discussed in the remainder of this chapter must, therefore, be considered with this caveat in mind.

The term ‘zoopolis’ was originally coined by geographer Jennifer Wolch. Wolch criticises current practices of urbanisation and development for their anthropocentric assumptions and their disregard for non-human life. These practices not only fail to respect the moral status of non-human animals but also affect our thinking and our attitudes, and prevent us from understanding the perspectives of non-human animals. For Wolch, our alienation from non-human animals is caused by broader economic and social structures. These structures cannot be changed by the mere recognition of non-human animals’ moral status but require broader action that addresses not only oppression based on species membership but also other forms of oppression, such as those based on race, class or gender.¹

Against this background, Wolch’s goal is to develop a ‘transspecies urban theory’ (1996, p. 23), which takes non-human beings and their moral standing seriously and recognises them as subjects. Wolch proposes the idea of a zoopolis as an alternative approach to urban life and development. Zoopolis, on this account, refers to the ‘reintegration of people with animals and nature’, which ‘can provide urban dwellers with the local, situated everyday knowledge of animal life required to grasp animal standpoints or ways of being in the world, interact with them accordingly in particular contexts, and motivate political action necessary to protect their autonomy as subjects and their life spaces’ (Wolch, 1996, p. 29). The goal, then, is to ‘renaturalise’ our cities and for non-human animals to become part of our understanding of urban life.

While coined by Wolch, the term ‘zoopolis’ is now arguably associated most closely with the work of Sue Donaldson and Will Kymlicka (2011), who offer a somewhat broader perspective than Wolch. Their monograph of the same title develops an account of a just, interspecies community. Theirs is one of a number of books that approach our relationship with non-human animals through the lens of political

¹ While the animal rights movement has often relied on problematic comparisons to other social justice movements (for discussion, see, for example, Kim, 2018; Harris, 2009), there has, more recently, been a more explicit engagement with questions of intersectionality and nuanced analysis of possible connections and discontinuities between different kinds of oppression; see, for example, Deckha (2009), Kymlicka (2018), Giroux (2021).

philosophy, forming part of what has become known as the ‘political turn’ (Garner & O’Sullivan, 2016) in animals ethics (others contributions to this debate include Garner, 2014; Cochrane, 2018; and Meijer, 2019).

While Donaldson and Kymlicka share certain assumptions with Wolch, their aim is to offer a more systematic account of what our relationships with different kinds of non-human animals might look like in a just, multi-species world. They start from the assumption that non-human animals are beings with a subjective good who, therefore, have certain basic moral rights, such as the right not to be enslaved. Central to Donaldson and Kymlicka’s theory is that, in addition to these universal rights, non-human animals also have relational rights, that is, rights that arise in the context of specific, morally relevant relationships, such as the family or—particularly relevant for Donaldson and Kymlicka—the political community. A comparison with the human context helps clarify the distinction between universal rights and the relational rights that members of the same political community owe each other: we typically think of human rights, such as the right to movement and the right not to be tortured, as universal rights that are tied to human beings’ moral status. In addition, we often assume that individuals have citizenship rights by virtue of their membership in a particular political community, such as a right to shape the collective decisions of that community or to share in its resources. Those who are not members of that political community, such as temporary visitors, do not have such citizenship rights (though they may have such rights in their own communities).²

Donaldson and Kymlicka use this basic idea to specify which rights non-human animals have. Crucial to their approach is that different non-human animals stand in very different relationships to existing political communities. Because the rights of individual animals and our rights and obligations towards them depend on the relation in which we stand to them, the differences between these different relations is reflected in the varieties of relational rights these animals have vis-à-vis humans. Donaldson and Kymlicka offer a categorisation of non-human animals in three distinct groups, each of which stands in very different relations to human beings: domesticated animals, wild animals, and what they call ‘liminal animals’, who live in or in close proximity to human settlements but have not been domesticated. Importantly, it is not the species of which an individual animal is a member that determines which category they belong to but instead, the relation in which the animal stands to human communities; a rabbit, for example, could fall into any of these three groups, depending on whether they lived with humans, in a city but not part of a human community, or in the wild, outside of human settlement. An individual animal may also move between different groups over the course of their lives, for example when a dog moves from living with a human family (domesticated) to living with a group of dogs (liminal or wild).

²The assumptions that Donaldson and Kymlicka rely on in this part of their account, in particular those about the relative strength of the claims of co-citizens compared to those of members of other political communities, are controversial among political philosophers; I return to this issue below.

Donaldson and Kymlicka use this framework to overcome what they regard as a crucial impasse in our thinking about animal rights. The animal rights movement has focused on delineating non-human animals' *negative* rights, that is their rights not to be interfered with: their right not to be killed, used, exploited, etc. But there has been relatively less attention on what just interactions between humans and non-human animals might look like. For Donaldson and Kymlicka, an account of animals' *positive* rights and entitlements is crucial for offering a vision of what a just interspecies society might look like.

The idea of a 'zoopolis' is perhaps most clearly articulated in relation to Donaldson and Kymlicka's vision for domesticated animals, such as the animals who share our homes but also those animals who are currently exploited as part of the meat or dairy industries, or as part of scientific or entertainment industries. Like other animal rights theorists, Donaldson and Kymlicka regard the exploitation of animals as a gross violation of their basic rights. However, Donaldson and Kymlicka position themselves against extinctionist views, according to which domesticated animals, because of their dependence on humans, could never live dignified lives. Extinctionists argue that in a world that meets the requirements of interspecies justice, currently existing domesticated animals would be cared for and live out their lives but would be prevented from procreating so that over time, domesticated species become extinct (e.g. Francione & Charlton, 2015). In response, Donaldson and Kymlicka agree that domestication has wronged animals but reject the idea that it has made it impossible for domesticated animals to relate to human beings on just terms—in fact, they argue, bringing about the extinction of these animals, which would require large-scale interventions in their reproduction, would only compound the original injustice of domestication. What is more, they argue, domesticated animals already are part of our families and communities; the question is how to make these already existing relations just. Donaldson and Kymlicka propose that such relations can be just if we treat those animals who are members of our communities as co-citizens and grant them the membership rights that come with this status.

This, of course, requires that we move beyond our current understanding of citizenship, which ties citizenship to cognitive capacities and therefore excludes not only non-human animals but also many humans, such as children and those with cognitive disabilities.³ Domesticated animals, Donaldson and Kymlicka argue, have the capacity for what they call dependent agency: they can express their preferences through those humans with whom they live in close proximity. While communication across species boundaries is not straightforward, those of us who live with animals typically become sensitive to how they express preferences and desires. Importantly, the possibility for agency extends also to the political realm. The presence of domesticated animals in the public sphere can shape political processes and

³One of the themes that underpins Donaldson and Kymlicka's approach is that the ways in which important political concepts (such as democracy, citizenship or sovereignty) are typically interpreted supports, or leads to, the exclusion not only of non-human animals but also the exclusion of many human beings; we must offer inclusive interpretations of these concepts if we are to be just to those beings who do not meet problematic standards of rationality or independence.

collective deliberation, which, Donaldson and Kymlicka argue, gives domesticated animals a kind of political agency (but see Pepper, 2021, for concerns about this view). The main component of citizenship, Donaldson and Kymlicka argue, is that one's interests should count in determining the public good. Once we regard the animals who are part of our communities as co-citizens, we must grant them the specific rights that come with this status. This includes a right to be protected from harm, a right to health care and rights to political representation so that their preferences can shape collective decision-making. But citizenship also implies certain obligations for domesticated animals. In particular, animals must be socialised to be members of an interspecies community and to abide by certain requirements, such as not to be aggressive toward others.

Because, as mentioned earlier, a just interspecies world would be co-created by non-human animals, its precise contours cannot be determined in advance. However, Donaldson and Kymlicka (2015) have argued in more recent work that sanctuaries for domesticated animals rescued from the meat and dairy industries can offer important insights into what just, interspecies communities might look like. These spaces, they argue, can be used to create 'intentional communities' (Donaldson and Kymlicka, 2015, p. 63), in which residents of the sanctuary are given the opportunity to live self-determined lives. This requires that sanctuary residents be able to explore different ways of living and to make choices based on their own needs and preferences, for example when it comes to their level of interaction with other animals, including those of other species.⁴

While their approach to domesticated animals focuses on the recognition of these animals as members of already existing interspecies communities, Donaldson and Kymlicka propose a very different model for the second group of animals whose relational rights they investigate: animals in the wild. These animals, they argue, form their own communities; they can navigate the risks of living in the wild; indeed, their flourishing requires that they be able to maintain their modes of social organisation. (This, Donaldson and Kymlicka argue, is despite the suffering that predation causes in the wild; I return to this question below.) While a limited range of interventions may be consistent with sovereignty (e.g. providing vaccination for wild animals to protect them from certain diseases), humans' main obligation here is to respect the sovereignty of these communities. This requires that we restrict human activities that affect wild animals, such as extending human settlements into wild animals' territory or contributing to pollution. When we cannot avoid interaction with wild animals, we must ensure a fair distribution of the risks and benefits of such interaction: for example, if we must build roads through wild animal territory, we must reduce the risk for wild animals by building bridges that allow them to safely cross those roads.

⁴Elsewhere, Donaldson and Kymlicka (2022) emphasise the importance of creating spaces in which animals' rights are protected and in which they are viewed and treated as agents and full members of an interspecies community, as a way of 'prefiguring', and thereby helping to create, a more just world.

The third group of animals Donaldson and Kymlicka consider is that of liminal animals. Neither wild nor domesticated, these animals live in or near human communities and depend on human settlements for their survival, but they are not domesticated and therefore cannot be full members of these communities. Familiar examples include raccoons, rats and pigeons. For these animals, Donaldson and Kymlicka envisage a set of rights and responsibilities that is less extensive than that of citizenship; they refer to this as denizenship, linking it to the rights that, in the human case, are typically granted to non-citizen residents. Donaldson and Kymlicka argue that we do not have an obligation to allow these animals to enter our territory (for example, we can erect barriers or create disincentives to discourage or prevent entry), but once they have entered, they acquire a right to secure residence in that territory and must not be removed. Their interests must be taken into account in our collective decisions but by the same token, we may also impose certain restrictions on them, as part of what Donaldson and Kymlicka (2015, p. 233) call ‘reciprocally weakened forms of affiliation’.

While Donaldson and Kymlicka’s proposals have had an enormous influence on political philosophy and have helped bring concern for non-human animals into the political philosophy ‘mainstream’, their proposal has, of course, not been without critics. Consider first their commitment to the idea that our relationships with domesticated animals can indeed be just, despite the characteristics that domestication has created in those animals, particularly their dependence on human beings. On this point, Donaldson and Kymlicka part ways with animal rights advocates who argue that, no matter how well we treat them, the features that domestication creates in animals, particularly their dependence on us, mean that their relationships with us can never be just (e.g. Francione & Charlton, 2015). Donaldson and Kymlicka object to this approach for both substantive and strategic reasons. Substantively, they view this emphasis on independence as essential for living good lives and for establishing just relationships as misguided: the disability movement has taught us to be wary of thinking that lives that are dependent are *ipso facto* worse lives or that relationships of one-sided dependence could never be just. Rather, Donaldson and Kymlicka argue, these relationships can facilitate dependent agency. Strategically, they emphasise that this approach has alienated many who might otherwise be drawn to the animal rights movement because our relationships with domesticated animal companions can be crucial for coming to see non-human animals as subjects, as agents with their own interests and desires.

Both the substantive and strategic considerations that drive Donaldson and Kymlicka’s arguments here have been challenged. Consider the substantive question first. While Donaldson and Kymlicka’s response focuses on the issue of dependence, that may not be the only upshot of domestication that should concern us. For example, domestication has also created a special—and permanent—vulnerability in domesticated animals, which leaves them at significantly increased risk of harm, even if their guardians are well-meaning (Albersmeier, 2014). The strategic concern, too, raises difficult questions. It seems plausible that we are most amenable to the idea that non-human animals have their own interests and desires in the context of relationships with our animal companions—and, indeed, when I have taught

Donaldson and Kymlicka's work, students often express how it has changed their perspective on their animal companions, heightening their sensitivity to these animals' preferences and expressions of agency. But this heightened sensitivity could also lead to a greater appreciation of these animals' vulnerability, their reliance on a well-intentioned and well-motivated guardian as well as our own shortcomings when it comes to correctly interpreting these expressions.

Another line of critique focuses on Donaldson and Kymlicka's view that animals in the wild should be treated as sovereign communities, with human intervention being justified only under very specific circumstances and to a very limited extent. Considering the horrendous suffering that characterises the lives of animals in the wild (which we would never consider acceptable in a human community), does it really make sense to treat them as sovereign communities and rule out most interventions that would reduce that suffering (Horta, 2013)? While Donaldson and Kymlicka (2011, 2013) acknowledge that predation and other aspects of animals' lives in the wild cause significant harm and suffering, they insist that the interests of wild animal communities as a whole (such as their interest in maintaining their shared habitats) are best protected by granting sovereignty to those communities. Many critics find this response unsatisfactory. A growing body of literature considers the problem of wild animal suffering and investigates how we ought to respond to it (e.g. Faria, 2023; Johannsen, 2021). Importantly, even if we take the position that the suffering of animals in the wild is morally problematic and that this gives us a reason to attempt to reduce that suffering, this does not entail that we should, in fact, attempt to intervene in the wild: in the absence of interventions that can reliably reduce wild animal suffering without creating more harm than they prevent, the best course of action may still be to abstain from interfering (perhaps while at the same time working towards developing interventions that *would* meet that condition). While such a position may not, all things considered, recommend more intervention in the wild than Donaldson and Kymlicka, it does rely on very different judgements about predation and other causes of wild animal suffering (on this, see also Cormier & Rossi, 2018).

While these lines of critique focus on our relationship with specific groups of animals (e.g. domesticated animals, animals in the wild), others have expressed a broader concern about the relational approach at the heart of Donaldson and Kymlicka's framework. This approach assigns very different rights and responsibilities to specific groups of animals, depending on their relationships to humans. For example, while animal co-citizens have the right to be protected from predators and are to be integrated into our healthcare systems, liminal animals and animals in the wild have no such rights. Can such significant differences be justified if we accept (as Donaldson and Kymlicka do) that all these animals have the same moral standing (Cochrane, 2013)? Cochrane (2018) develops a model of 'sentientist cosmopolitan democracy', guided by the idea of equal consideration of the interests of all sentient beings. In this model, all sentient beings, including domesticated animals and animals in the wild, are members of the communities whose decisions affect them, and their interests feed into the community's deliberation and decision-making through representatives selected for this purpose.

These critical responses notwithstanding, the vision of a zoopolis, as envisaged by Wolch and, in particular, Donaldson and Kymlicka, has been highly influential, not only within academic debates but also beyond. For example, it has shaped the inquiry into non-anthropocentric urban development that would allow for human and non-human beings to share urban spaces (Kleszcz, 2018) and artistic depictions of ‘animal utopia’ (Kiewert, 2018). The notion of a ‘zoopolis’ can enrich our thinking about animal rights by challenging us to develop a positive vision of an interspecies community in which human and non-human animals live together on terms that meet the requirements of justice.

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Chapter 16

Animal Ethics and the Problem of Predation



Andrée-Anne Cormier and Mauro Rossi

Introduction

Many of us have an aesthetic reverence for the untamed realms of wildlife, viewing them as almost sacred, deserving preservation and protection from human encroachment.¹ Yet, our image of wild animals flourishing freely in nature is often romanticized and obscures a stark reality. Life in the wild is far from idyllic for most animals. In fact, the scale and scope of suffering are immense: an impressive number of wild animals endure the harsh tribulations of famine, disease, natural disasters, injuries, and lethal predation. This raises an important ethical problem. If suffering is bad and if we have a general moral duty to reduce suffering in the world, then it seems that we also have a moral duty to intervene in the wild to assist wild animals. In fact, given the magnitude and scale of animal suffering, it seems that this moral duty might just as well trump all other considerations against intervention. However, this conclusion is highly counterintuitive. In fact, it is *so* counterintuitive that some philosophers have pointed out that if animal ethics leads us to the conclusion that we ought to intervene in nature to assist wild animals, this constitutes a *reductio ad absurdum* of animal ethics. In other words, it implies that the foundations of animal ethics are unsound. This chapter examines the issue of our

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duties of assistance toward wild animals. For the sake of simplicity, we focus specifically on the problem of animal predation, although similar issues arise with respect to other sources of wild animal suffering. Furthermore, while predation is a phenomenon that also affects domesticated and liminal² animals, in this chapter we consider this problem only in relation to wild animals.³

The problem of predation for animal ethics can be summarized through the following argument, which we call the ‘argument from predation’ against animal ethics. (A heads up for the reader: we start by stating the argument; we will explain its main premises in more detail below.)

1. We have a *pro tanto* moral duty to assist wild animals that are victims of predation.
2. If no other *pro tanto* moral duty is stronger than the *pro tanto* moral duty to assist those animals, then we have a moral *obligation* to assist them.
3. No other *pro tanto* moral duty is stronger than the *pro tanto* moral duty to assist wild animals that are victims of predation.
4. Therefore, we have a moral obligation to assist wild animals that are victims of predation.
5. It is absurd to think that we have a moral obligation to assist wild animals that are victims of predation.
6. Therefore, at least one of the premises (1)–(3) of the argument is false.
7. Premises (1)–(3) follow from the basic principles of contemporary animal ethics.
8. If the basic principles of a theory generate absurd implications, the theory must be rejected.
9. Therefore, contemporary animal ethics must be rejected.

Let us clarify some important notions in this argument. By “*pro tanto* moral duty” we mean a moral reason that counts in favor (or against) an action. Thus, there being a “*pro tanto* moral duty” to perform an action means that there is *a* moral reason to perform that action, though perhaps this is only *one* reason amongst other, possibly conflicting, moral reasons. The balance of our *pro tanto* moral duties, that is, the balance of *all* the moral reasons that are relevant in a given context, determines how one should act *all-things-considered* from a moral point of view. The latter is what we mean by “moral obligation”. A moral obligation is therefore a *proper* moral duty. It follows from these definitions that we have a moral obligation to perform an action if the *pro tanto* moral duty that requires us to perform that action is not outweighed by some other stronger *pro tanto* moral duty or if that duty is the only *pro tanto* moral duty that applies in the circumstances. (In what follows, we will omit the qualifications “moral” and “*pro tanto*” for the sake of simplicity. We will use the

²Liminal animals are animals that live amongst humans, rather than in the wilderness, without being domesticated or under direct human care. Examples of liminal animals are squirrels, racoons, rats, pigeons, foxes, skunks, coyotes, etc. See Donaldson and Kymlicka (2011, chapter 7).

³The problem is further complicated by the fact that some wild animals are both predators and prey. In this chapter, we only examine the duties of assistance that we owe these animals *qua* prey.

word “duty” to refer to “*pro tanto* moral duty” and “obligation” to refer to an “*all-things-considered* moral duty,” as per the distinctions we just presented).

What does the duty to assist wild animals that are victims of predation involve? Broadly speaking, we can distinguish between two forms of assistance: one involving large-scale interventions, the other involving small-scale interventions. Interventions of the first type include, for example, interventions to separate prey from predators (Nussbaum, 2006), interventions to genetically modify some species of prey (i.e., *r*-strategists, see below for more details) so as to change their reproductive behavior (Johannsen, 2017, 2021), interventions to genetically modify predators to turn them into herbivores (McMahan, 2015; Pearce, 2009), and interventions to destroy wildlife habitat (Tomasik, 2017). All these interventions are intended to eliminate or drastically reduce predation. Interventions of the second type include, for example, interventions aimed at treating injured animals or preventing particular acts of predation in an occasional and localized manner. While it is important to consider which version of the duty of assistance is more plausible, we will leave this question aside in what follows for reasons of space.

Let us return to the argument from predation. The conclusion in (9) is devastating for contemporary animal ethics. This explains why a growing number of philosophers take the argument from predation very seriously and try to carefully assess its merits and weaknesses. Before examining the main theses that have been advanced in this debate, let us explain what makes the main premises of the argument from predation intuitively plausible.

Understanding the Argument from Predation

Let us focus on premises (1)–(3), which constitute the core of the argument from predation, and on premise (7), which is key for reaching the conclusion in (9) that contemporary animal ethics should be rejected. The first thing to notice is that, once we adopt the definitions of *pro tanto* duty and moral obligation given above, premise (2) is tautologically true. By contrast, premises (1) and (3) are substantive premises. Why should we accept these premises? Let us consider premise (1). All major contemporary ethical theories, such as consequentialism, deontological approaches, and virtue ethics, recognize that we have not only *negative* duties, such as the duty *not* to intentionally cause harm and suffering, but also *positive* duties, such as duties of assistance and benevolence. Ethicists adhering to different ethical theories also agree that these duties extend to all human beings, regardless of their race, gender, culture, or religion. But if we reject speciesism, it seems that we must *also* recognize the existence of duties of assistance toward non-human animals, including wild animals that are victims of predation.

In fact, premise (1) seems to follow almost directly from the basic tenets of the main theories in contemporary animal ethics, as premise (7) asserts. The fundamental principle of consequentialism is that we morally ought to produce the best possible consequences in the world. It follows from this that we should pay special

attention to phenomena such as predation, which are major sources of suffering. That is, we have a consequentialist moral reason to care about the victims of predation. Consider, now, deontological approaches which enjoin us to respect all individuals who have moral standing. Amongst other things, respecting an individual involves promoting and protecting their well-being. If we reject speciesism, we should also protect the well-being of wild animals that are victims of predation. Finally, virtue ethics recommends acting in conformity to the virtues that are called for in a given situation. Although there is some debate in the literature about which character traits count as virtues, it is generally agreed that compassion and kindness are virtuous responses to situations that involve the suffering of other individuals. Because predation involves suffering, there thus seem to be reasons of compassion and kindness to assist the victims of predation.

Let us now consider premise (3). The starting point for defending this premise is the observation that animal suffering in nature is profound and widespread (see Dawkins, 1995; Horta, 2010; Tomasik, 2015). Most animal species, for example, many lizards, amphibians, fish, and some small mammals, are *r*-strategists (MacArthur & Wilson, 1967; Pianka, 1970). These species are characterized by very high reproductive rates, minimal or no parental investment, and very short life spans. Indeed, most of these animals die before reaching adulthood, due to disease, injury, starvation, or predation (Horta, 2010, 2015; Johannsen, 2017, 2021). Unlike *r*-strategists, *K*-strategists, such as large mammals, are characterized by low reproductive rates, considerable parental investment, and relatively long life spans (MacArthur & Wilson, 1967; Pianka, 1970). *K*-strategists, however, are not exempt from the evils of predation. To give just one example, some estimate that “predators kill between 51% and 82% of the estimated 73,000–86,000 [Thomson] gazelles recruited into the Serengeti population each year” (Caro, 1994, cited in Kingdon, 2013, p. 367). It is therefore legitimate to conclude that animal suffering is systematic and widespread. But if it is true that the suffering caused by predation (and by the threat of predation) is so intense and affects so many animals, as the scientific evidence suggests, then it seems that we have a *very strong (pro tanto)* duty to assist these animals. In fact, the amount of suffering caused by predation is so significant that, *at first sight*, it seems that no countervailing duties can be stronger than the duty of assistance in question. Importantly, this claim seems pretty robust. It is independent from the specific ethical theory that one adopts. That is, no matter whether one is a consequentialist, a deontologist, or a virtue ethicist, the sheer amount of suffering involved in wild animal predation seems to overshadow any other factors discouraging intervention.

From premises (1)–(3), we get to the intermediate conclusion stated in (4) that we have a moral obligation to assist wild animals that are victims of predation. (4) logically follows from premises (1)–(3). This means that, if these premises are true, then (4) is also true. Yet, as stated in (5), the idea that we have a moral obligation to assist wild animals that are victims of predation has seemed absurd to most people, including many philosophers working in animal ethics. But if (4) logically follows from premises (1)–(3), then (4) can only be false if one of the premises (1)–(3) is false. The problem, as we have seen, is that premise (2) is tautologically true and

premises (1) and (3) seem to follow from the basic principles of contemporary animal ethics. Now, it is hardly questionable that if a theory leads us to absurd conclusions, then the theory must be rejected. If so, the argument from predation directly leads us to the conclusion that contemporary animal ethics should be rejected.

In light of this, three strategies have emerged to counter the argument from predation and avoid its devastating outcome: the first is to reject premise (1); the second is to reject premise (3); the third is to reject premise (5). In what follows, we will briefly present each of these strategies.

Strategy 1: Rejecting Premise (1)

The first argument against premise (1) is the “argument from moral agency.” It is primarily defended by Tom Regan (1983). His starting point is the thesis that we have duties of assistance toward an individual only when that individual’s rights are violated. According to Regan, however, an individual’s rights can only be violated by *moral agents*, that is, by individuals capable of moral reasoning and action. Regan holds that no animal is a moral agent in this sense. Animals, including predators, are only *moral patients*, that is, subjects with moral status but without the capacity to reason and act morally. This has immediate implications for the problem of predation. To the extent that predators are not moral agents, they cannot violate the rights, such as the right to life, of their prey. But if no rights are violated by predators, then we have no duty to assist their victims—contrary to premise (1) of the argument from predation.

Regan’s argument faces a powerful objection. The starting point of his argument is a general thesis about duties of assistance: We have such duties only when moral agents violate the rights of moral patients or other moral agents. The problem is that this implies that we have *no* duty of assistance toward humans attacked by non-human animals (e.g., a child attacked by a dog) or toward individuals who are victims of natural disasters (e.g., victims of a hurricane) (Jamieson, 1990). This implication is very difficult to accept and significantly weakens Regan’s argument.

Claire Palmer (2010) offers a second argument against premise (1). We can call it the “argument from causal responsibility.” Palmer argues that we have duties of assistance toward other individuals only when we have a special *relationship* with those individuals, namely, when we are causally responsible for the circumstances in which those individuals find themselves. According to Palmer, however, our relationship with wild animals that are victims of predation does not give rise to duties of assistance. We are not causally responsible for the existence of predation or for the suffering it produces. Therefore, we have no duty to assist wild animals that are victims of predation.

Palmer’s argument faces an objection similar to the one raised against Regan: it significantly weakens our duties of assistance toward human beings. Indeed, Palmer’s argument seems to imply that we have no duty to assist children suffering from starvation due to unforeseen natural circumstances for which we are not

causally responsible. Palmer responds to this objection by arguing that, despite the absence of causal responsibility on our part, we nonetheless have duties of assistance toward these children in virtue of the fact that we belong to the same human community. However, it is difficult to reconcile this response with one of the fundamental premises of animal ethics: the idea that the species to which an individual belongs (and thus the mere fact of belonging to the human or animal community) should play no role in determining our moral duties when the individuals in question have similar interests (in this case, the interest in not suffering).

The third argument against premise (1) is the “argument from flourishing.” We will consider this argument in the version proposed by Jennifer Everett (2001). According to Everett, we have a general duty to treat all moral subjects in a way that respects their nature—the nature of a moral subject being determined both by the characteristics that that subject possesses as a particular individual and by the general characteristics of the members of the species to which that subject belongs. On this basis, Everett argues that we have duties of assistance toward an individual only when assistance is necessary to ensure the flourishing of that individual in accordance with their nature. Everett holds, however, that interventions in nature to prevent or limit predation are incompatible with the flourishing of wild animals according to their natures. The conclusion is that we have no duty of assistance toward wild animals that are victims of predation.

Everett’s argument avoids the counterintuitive implications of the arguments from moral agency and from causal responsibility. Everett recognizes, for example, that we have a duty to assist human victims of disasters on the grounds that assistance is necessary for their flourishing. The problem is that the claim that prey do not require assistance in order to flourish is difficult to defend. After all, without qualifications, this claim seems to imply that, insofar as their flourishing is concerned, it is better for a prey to be eaten alive by a predator (or to suffer the intense stress and pain that the risk and the acts of predation engender) than to live free from predation (see also Donaldson & Kymlicka, 2011).

The final argument against premise (1) that we consider here is the “ecocentrist argument” (Callicott, 1980). At the root of this argument is the idea that ecosystems are the only entities with intrinsic value. Our most fundamental duty is therefore to “preserve the integrity, stability, and beauty of ecosystems” (Callicott, 1980, p. 39). Predation is a powerful instrument for achieving this goal, insofar as it helps maintain the balance of animal populations and to ensure the health of ecosystems. In the eyes of ecocentrists, this implies that, instead of a duty to assist prey, we actually have a duty to promote, or at least not prevent, predation.

The ecocentrist argument is subject to an important objection: It implies that it would be morally acceptable, and even obligatory, to sacrifice human beings if it contributed to the health of ecosystems. Many find this conclusion deeply troubling. Ecocentrists seem to have only two responses available. The first is to bite the bullet and conclude that in some cases we do have an obligation to kill humans for the sake of ecosystems. The second is to admit that humans have a special moral status, which justifies not only treating them differently from animals and plants but also giving them precedence over ecosystems. These possible responses raise a thorny

dilemma for ecocentrists: the first option exposes them to the charge of “ecofascism,” the second to the charge of “speciesism.”

Strategy 2: Rejecting Premise (3)

In light of the previous objections, many have adopted a different strategy to counter the argument from predation, one that involves rejecting premise (3) rather than premise (1). As we have seen, premise (3) states that there is no stronger *pro tanto* duty than the *pro tanto* duty to assist wild animals that are victims of predation. In order to reject this premise, one needs to show, on the one hand, that we have other duties that conflict with the duty to assist wild animals that are victims of predation and, on the other hand, that these duties are stronger than the duty of assistance. In what follows, we will examine two types of arguments of this kind.

The recent animal ethics literature mentions the following as duties that are likely to outweigh the duty to assist wild animals that are victims of predation: (a) the duty not to cause greater suffering (Singer, 1975; Simmons, 2009; McMahan, 2010), (b) the duty not to violate the autonomy of wild animals (Donaldson & Kymlicka, 2011; Cormier & Rossi, 2018), and (c) the duty to respect the environment (Simmons, 2009; Delon & Purves, 2018). It is indeed clear that, if human interventions cause more suffering than predation (e.g., by promoting the overpopulation of certain animal species and consequently the death of their members from lack of food), or turn wilderness into a giant zoo, or irreparably destroy the environment, then we have very powerful reasons *not* to intervene, given that the costs of such interventions would greatly outweigh the benefits of eliminating the suffering caused by predation.

What reasons do we have for thinking that the costs of human interventions would actually exceed their benefits and, therefore, that the duties to avoid these costs are stronger than the duty to assist wild animals that are victims of predation? One important reason is the extremely limited knowledge and resources currently available to humans to plan and carry out effective interventions in the wild. Consider, for example, large-scale interventions: we have no idea how to intervene in the wild to eliminate animal predation without causing catastrophic side effects. This idea is at the heart of the “fallibility argument” (Singer, 1975; Sapontzis, 1987; Simmons, 2009; Ladwig, 2015). This argument holds that because of the high probability that human interventions will fail and generate one or more of the adverse consequences mentioned above, the duties to avoid these outcomes are much stronger than the duty to assist wild animals that are victims of predation. The latter duty exists, but it is counter-balanced by duties that are weightier in a context like ours today. It follows that we have no obligation to assist wild animals that are victims of predation.

Two aspects of the fallibility argument are worth noting. First, the argument does not imply that *all* human interventions related to animal predation are morally wrong. Small-scale interventions, such as rescuing injured prey, may be

permissible, or even mandatory, in some circumstances. In fact, this argument does not exclude that even some larger-scale interventions may be morally acceptable, provided they are implemented in an extremely careful and well-calculated manner (Cowen, 2003; McMahan, 2015; Sözmen, 2013; Horta, 2013, 2015; Tomasik, 2015; Johannsen, 2017, 2021). This leads us to a second observation. If based solely on the fallibility argument, the conclusion that we have no obligation to assist wild animals that are victims of predation is a purely contingent conclusion. It is only because of our current state of knowledge or limited resources that it is not acceptable to intervene in nature. But our knowledge and resources could develop and increase. If this were to happen (imagine, for example, a future in which science progresses in such a way that we one day have the knowledge to alter the genetic profile of predators so as to reduce predation, without causing catastrophic effects on ecosystems and without generating other serious costs or moral risks), then the fallibility argument would cease to be relevant. If we take the possibility of scientific progress in this area seriously, it does not seem impossible to think that in the future we may indeed acquire an obligation to assist wild animals that are victims of predation. That said, according to Delon and Purves (2018), it should be kept in mind that given the extreme complexity of ecosystemic interactions, we have no reason to believe that we are likely to acquire the required knowledge in the near future.

Several authors are not persuaded that a contingent argument against interventions in nature aimed at assisting victims of predation is satisfactory. For this reason, some have attempted to go beyond the fallibility argument and to lay down a *principled* objection against human interventions in nature. The argument that has recently generated the richest debate within animal ethics is the “argument from sovereignty” proposed by Sue Donaldson and Will Kymlicka (2011). The starting point of this argument is the idea that wild animals possess an interest in self-determination over a given territory. They possess this interest, according to Donaldson and Kymlicka, in virtue of the fact that they have the competence to manage their lives and communities independently of human intervention in ways that ensure the individual and collective flourishing of their members. In the case of both animal and human communities, sovereignty rights are the best tools to protect the interest in self-determination over a given territory. When wild animals are concerned, these rights entail a corresponding duty on the part of humans to respect the sovereignty of wild animals. This duty limits the range of human interventions in nature that can be considered legitimate to very specific and well-defined situations. Outside of these situations, the duty to respect sovereignty rights is *necessarily* stronger than the duty to assist wild animals. This implies that, even if we were able to eliminate animal predation without causing catastrophic side effects, it would still be morally unacceptable for us to do so, given the precedence of animal sovereignty rights over our duties of assistance.

Donaldson and Kymlicka’s argument raises three kinds of objections (see Donaldson & Kymlicka, 2013, 2015 for responses). The first is that “political” categories, such as the category of sovereignty, do not legitimately apply to animals (Cochrane, 2013; Ladwig, 2015). The second is that wild animals lack the

competence to have an interest in self-determination over a given territory. In fact, the massive suffering caused by predation provides sufficient evidence that wild animal communities lack the capacity to ensure the individual and collective flourishing of their members (Horta, 2013; Cormier & Rossi, 2018). Finally, the third objection is that, even if one concedes that wild animals possess an interest in self-determination over a given territory, sovereignty is not necessarily the best tool to protect that interest (Cormier & Rossi, 2018). This implies that Donaldson and Kymlicka's argument ultimately offers only a contingent justification against human interventions in the wild, as does the fallibility argument.

Strategy 3: Rejecting Premise (5)

The final strategy for countering the argument from predation is to reject premise (5). The idea here is to show that there is nothing absurd about the claim that we might have an obligation to assist wild animals that are victims of predation. In other words, this strategy requires showing that the conclusion in (4) is not absurd. Steve Sapontzis (1984) distinguishes five types of absurdity and argues that (4) is not absurd in any of these senses. First, it is not logically absurd because it does not contradict any principle of logic or reasoning. Second, it is not factually absurd, because it does not contradict any empirical observation or factual thesis. The claim in (4) is indeed a *normative* claim. Third, it is not theoretically absurd, insofar as it does not contradict any normative theory that we have indisputable reasons to accept. In fact, as we have seen, the conclusion in (4) seems to follow from the basic principles of animal ethics, which are commonly taken to be a plausible extension of the basic principles of ethics in general. Fourth, it is not contextually absurd, since it does not contradict any of the premises of the argument from predation. The final possibility is that (4) is practically absurd, in the sense that it prescribes that we perform acts that we cannot perform. In order to assess this possibility, we need to clarify the kind of impossibility that makes an act practically absurd. As we have seen, our knowledge and resources are clearly inadequate at present to intervene in the wild effectively. But this is insufficient to make the requirement "absurd" from a practical standpoint. In fact, Sapontzis argues that the conclusion in (4) would not be absurd from a practical standpoint even if the goal of eliminating predation were altogether unattainable. In fact, the goal of eliminating predation could function as a moral ideal and (4) as a prescription to do everything in our power to get as close as possible to that ideal.

If these considerations are correct, then Sapontzis' argument shows that we must reject premise (5) of the argument from predation. If we accept premises (1)–(3) of the argument, it follows that we have a genuine obligation to assist wild animals that are victims of predation. This conclusion is intuitively troubling, at least if we interpret it as a prescription for massive interventions in nature. As a number of philosophers have pointed out, however, our intuitions may simply be unreliable. After all, whether we are fully aware of it or not, we are *already* intervening massively in

nature (Cowen, 2003; McMahan, 2010). Despite this, most animal ethicists continue to seek to avoid the conclusion that we have such an obligation, by adopting either of the first two strategies discussed above. For our part, we believe that a revised version of the fallibility argument offers the most compelling reason for countering the argument from predation. It involves recognizing that the obligation not to intervene in nature to assist victims of predation is contingent but real and robust. In any case, the debate on the problem of predation for animal ethics remains alive and seems destined to significantly develop in the years ahead.⁴

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⁴For recent developments, see Johannsen (2021) and Faria (2022).

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Chapter 17

Speciesism



François Jaquet

Half a century ago, in the vicinity of Oxford, a psychologist by the name of Richard Ryder circulated a leaflet condemning animal experimentation. He was of course not the first one to do so—the controversy surrounding animal experimentation dates back to the nineteenth century. What was special about this leaflet, however, is that it contained a word that, at the time, one could not find anywhere else. The neologism “speciesism” had just been coined by Ryder. By then, only a minority knew of its existence. It took the notion of speciesism a few more years to find a much wider audience, with the publication in 1975 of Peter Singer’s *Animal Liberation*.

In this groundbreaking work, the famous Australian philosopher defines speciesism as “a prejudice or attitude of bias in favor of the interests of members of one’s own species and against those of members of other species” (2002, p. 6). While this definition is not ideal, it has the merit of showing that speciesism is to species what racism and sexism are to race and sex, respectively. One is racist if one privileges white people, sexist if one privileges men; similarly, one is speciesist if one privileges humans.

This chapter examines three questions raised by the notion of speciesism. First, I will answer the question “What is speciesism?” This will essentially be in order to avoid the most common confusions. I will then answer the question “Does speciesism exist?” Some authors have argued that it does not; we will see if their arguments are convincing. Finally, I will answer the question “Is speciesism justified?” This is the issue that has given rise to the most interesting debates.

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What Is Speciesism?

Speciesism owes its name to an analogy with racism and sexism: it is to species what racism is to race and sexism to sex. While this analogy allows philosophers to make some interesting points, it also gives rise to misunderstandings that often pollute discussions of our duties to animals. I will begin by clarifying certain aspects of the notion of speciesism that too often lead to confusion.

First, the word “racism” is sometimes used to refer to the belief in the existence of races, although a more appropriate term would be “racialism” (Appiah, 1992, p. 13). A subject is a racist, according to this understanding, if and only if he or she believes that races exist within the human species. One might then suggest, by analogy, that speciesism amounts to belief in the existence of species, that a subject is a speciesist if and only if he or she believes that species exist within the animal kingdom. Yet anti-speciesists need not deny the existence of species. They may admit that, for example, humans and goldfishes pertain to distinct biological groups. All they need to do is deny that the existence of species justifies preferential treatment for humans, in the same way that feminists deny that the existence of sexes justifies preferential treatment for men. Speciesism is therefore not a belief in the existence of species.

Second, racism is sometimes defined as the belief in a hierarchy of races. One is a racist in this sense if one believes that Asians are more intelligent than Arabs, for example. One might then think, by analogy, that speciesism is the belief in a hierarchy of species, the belief that humans are more intelligent than goldfishes, for example. Again, the problem is that anti-speciesists acknowledge that there are inequalities between species—whether in terms of intelligence or in other areas. They admit that humans are on average smarter than goldfishes. Still, they deny that these inequalities justify favoring humans, just as anti-ableists deny that inequalities in IQ justify favoring the smartest. Speciesism is therefore not a belief in a hierarchy of species.

Third, the word “sexism” is sometimes used to refer to the idea that women should not have the same rights as men. In contrast, the demand for equal rights for men and women is labeled “feminism.” By analogy, then, one might think of anti-speciesism as the demand for equal rights for humans and other animals. Anti-speciesists would demand, for example, that freedom of conscience be extended to goldfishes. Again, the truth is they are not asking for any such thing.

It is worth noting at this point that, strictly speaking, feminists do not demand equal rights for men and women. To be more precise, they ask for men and women to have the same rights when they have the same interests. Men and women have in common an interest in participating in politics so that it is difficult to see why women should not have the right to vote when men do. However, women do not have a right to prostate cancer screening because they have no need for such an examination. Same interests, same rights; different interests, different rights.

Anti-speciesists similarly do not claim equal rights for humans and other animals. They only demand that humans and other animals have the same rights when

they have the same interests. Goldfishes have no interest in practicing the faith of their choice, so there is no need to allow them to choose their religion. On the other hand, they have, like us, an interest in not suffering. So it is difficult to see why they should not have, like us, the right not to suffer unnecessarily. Speciesism is therefore not the idea that humans and other animals should have different rights.

Simply put, speciesism consists of discrimination on the basis of species. One is a speciesist if one prioritizes the interests (e.g., for a certain amount of well-being) of some individuals over the similar interests (e.g., for an equal amount of well-being) of other individuals on the basis of the species to which those individuals belong.

On this account, it is speciesist not only to favor humans over other animals but also to favor some animals over humans or some animals over other animals, for example, dogs over pigs. Some philosophers, however, appear to deny that. This is the case of Singer when he defines speciesism as “the idea that it is justifiable to give preference to beings simply on the grounds that they are members of the species *Homo sapiens*” (Singer, 2003, p. 24). Similarly, for Tom Regan, speciesism is about “giving greater weight to the interests of human beings” (Regan, 2003, p. 47). In these quotes, Singer and Regan reduce speciesism to its particular variant that consists of favoring humans. They overlook forms of speciesism that are not anthropocentric.

Anthropocentrism is perhaps the most widespread variant of speciesism—the privileges enjoyed by humans are out of proportion to those of cats and dogs. But this observation does not preclude maintaining the distinction, as the analogy with racism attests (Horta, 2010). White racism is perhaps the most common variant of racism, at least in Western societies. It is nevertheless racist not only to favor whites over non-whites but also to favor blacks over whites or Asians. Similarly, even if speciesism were almost always anthropocentric, it would still be speciesist not only to favor humans over other animals but also to favor cats over humans or dogs over pigs.

In sum, speciesism is not the belief that species exist, that they are unequal, or that humans have rights that other animals lack. Speciesism is simply discrimination on the basis of membership in a species or set of species—whichever species or set of species.

Does Speciesism Exist?

In light of this definition, to ask whether speciesism exists is to ask whether, as a matter of fact, some people discriminate on the basis of species membership. Speciesism thus exists if and only if, as a matter of fact, we prioritize or dismiss the interests of individuals depending on the species to which they belong.

Animal husbandry is a rather telling case of a practice that can be suspected of being speciesist. We exploit and kill all kinds of animals because we like the taste of meat, whereas we would refuse to do so if they were human beings. In doing so, we

apparently discriminate on the basis of species. It appears, accordingly, that we are speciesists. However, some philosophers reject this diagnosis.

Shelly Kagan (2016), for instance, concedes that we exploit and kill animals and would refuse to similarly exploit and kill human beings only to immediately add that we would also refuse to exploit and kill intelligent aliens. Who would want to kill E.T. or Superman to turn them into sausage meat? Human beings are not the only life forms we are willing to favor. So we do not discriminate on the basis of being human. In other words, we are not speciesists.

This argument is clearly based on a confusion between speciesism and anthropocentrism. Our attitudes to intelligent aliens might well show that we are not anthropocentrists. If Kagan is right about them, one must admit that we do not discriminate on the basis of membership in the human species. These attitudes do not, however, show that we are not speciesists. Someone who favors both whites and Asians may not qualify as a white-centered racist, but she is a racist all the same. Likewise, someone who favors both humans and intelligent aliens may not qualify as a human-centered speciesist; she is a speciesist nonetheless.

To the idea that we are speciesists, others object that we agree to exploit and kill animals to consume their flesh not because they belong to the wrong species but because they lack certain mental abilities. Animals are not rational, self-aware, or capable of reciprocity—or at least not to the same degree as humans. In philosophical terminology, they are not “persons.” According to this objection, we discriminate not on the basis of species membership but on the basis of the boundary that separates persons from non-persons. We are consequently not speciesists but “personists.”

Things become more complicated, however, as soon as we notice that some humans—newborns, the severely senile, and the mentally disabled—are not rational, self-aware, or capable of reciprocity. These humans are not persons in the philosophical sense of the term which is relevant here. Our attitudes to these individuals suggest that there is some truth in the present objection. Perhaps we are personists, for it must be admitted that we sometimes have less regard for them than we do for paradigmatic adult humans—not everyone likes babies, and sometimes the inhabitants of a neighborhood object to the building of a specialized institution for fear of being confronted with cognitively handicapped people (Giroux, 2020, pp. 48–49).

For all that, it would be hasty to conclude that we are not speciesist. It is a trite observation that we refuse to exploit and kill infants or the mentally handicapped to consume their flesh. In comparison with animals, we privilege not only humans who are persons but also humans who are not persons. Species thus plays a causal role; it contributes to explain our behaviors.

There is, however, a refined variant of this second objection: we do not discriminate on the basis of species membership but on the basis of the boundary that opposes modal persons to those who are not modal persons (Kagan, 2016). What is a modal person? An entity that is or could have been a person. According to this objection, then, we favor paradigmatic humans because they are persons, and we favor nonparadigmatic humans because they could have been persons. As for

animals, we neglect their interests because they are not and could not have been persons. We are not speciesists but “modal personists.”

The claim that we are modal personists rather than speciesists is an empirical hypothesis. Accordingly, it should be assessed in the light of the predictions that we can draw from it. Unfortunately, this hypothesis makes crazy predictions for thought experiments involving humans who are not modal persons, as well as thought experiments involving nonhumans who are modal persons. Let’s examine an instance of each kind.

Because of a mental disability, Jim and Pam are not rational, self-aware, and capable of reciprocity. But Jim’s and Pam’s disability have different origins. While Jim’s disability is due to a problem he faced in the embryonic stage, Pam’s is genetic. In other words, although neither Jim nor Pam is a person and they are in the same state, Jim could have been a person, whereas Pam couldn’t. He is a modal person; she is not. If we were modal personists, we would give Jim’s interests the same consideration we give to the interests of persons. This prediction sounds more or less fine. By contrast, however, we would disregard Pam’s interests in the same way as we currently do those of animals. This prediction is highly implausible. Seeing as Jim and Pam would have the same mental abilities, it is much more likely that we would treat them equally well.

Let us now imagine that advances in genetic engineering will allow us, within the next twenty years or so, to turn pigs into people, to modify them so that they become rational, self-aware, and capable of reciprocity. Let’s also imagine that, because the procedure is very expensive and deemed unnecessary, it is never implemented—after it has been developed on pigs, it is now used exclusively on mentally disabled humans. The result is that all pigs are modal persons, even though no one pig is a person. What would we do in such a situation? If we were modal personists, we would treat pigs with the same respect we currently have for our fellow humans. But this prediction is extremely implausible. Considering that pigs would retain their current mental abilities, it is much more likely that we would continue to exploit them to consume their flesh (DeGrazia, 2016; McMahan, 2016).

All this confirms that the consideration we give to the interests of individuals depends largely on the species to which they belong. So it seems that we are speciesists, which brings us to the moral question: is speciesism justified?

Is Speciesism Justified?

According to a widespread idea, racism is wrong by definition, in the same way that a kitten is a baby cat by definition. By analogy, one would then think that speciesism is also wrong by definition so that the question “Is speciesism justified?” would make no more sense than the question “Are some kittens not cats?” Speciesism would be trivially unjustified just as all kittens are trivially cats.

This idea faces two challenges. First, it is unclear that racism is wrong by definition. While it must be admitted that the term “racism” has a negative

connotation as a general rule, this is actually due to its pragmatics rather than its semantics. Some purely descriptive words can be used to criticize someone because, in most contexts, everyone knows that they refer to bad people. The words “robber” and “liar” are two telling examples; “racist” is another one. In most contexts, everyone knows that racism is wrong, just as they know that robbing and lying are wrong. Second, animal ethicists, who are a priori competent users of the term “speciesism,” use it in a morally neutral sense—indeed, advocates of speciesism do not mind calling themselves speciesists. All this suggests that speciesism is not wrong by definition (Jaquet, 2019).

The analogy with intra-human discrimination is interesting for a different reason. If speciesism is structurally so similar to racism and sexism, perhaps it is wrong for the same reason that makes these forms of discrimination wrong. This is precisely the view of anti-speciesists. The argument is straightforward: racism and sexism are wrong because they instantiate a certain property, but speciesism also instantiates that property, so speciesism is wrong, too. But then, what is the property in question?

The idea that similar cases should be treated similarly is self-evident. It is permissible to treat one individual better than another only if there is a relevant difference between the two, that is, a difference that could justify this unequal treatment. Call this the “equal treatment principle.” Because there is no difference between white people, black people, and Asians that justifies giving preference to one race over the others, racism violates this principle. Likewise, because there is no difference between women and men that justifies favoring one or the other, sexism violates this principle.

The anti-speciesist argument can thus be specified as follows: racism and sexism are wrong because they violate the equal treatment principle, but speciesism also violates this principle, so speciesism is wrong, too. The key question then is whether speciesism actually violates the equal treatment principle or whether, on the contrary, there is a morally relevant difference between human beings and other animals, a difference that would justify giving preference to the former.

Here is one reason to think that speciesism violates the equal treatment principle: the only characteristic that distinguishes all humans from all other animals is their species; species is a purely biological characteristic; and purely biological characteristics are morally irrelevant (Rachels, 1990; McMahan, 2005; Jaquet, 2022). Let us consider these three propositions in turn.

The idea that humans differ from other animals only in virtue of the species to which they belong may surprise at first. Are there no other uniquely human features? Are humans not rational, self-aware, capable of reciprocity, endowed with language, and able to make and use tools? As we have already seen, this may be true of most humans, but there are quite a few exceptions; many humans do not possess these abilities. Conversely, some animals apparently do. For example, killer whales can recognize themselves in a mirror (Delfour & Martens, 2001), chimpanzees have proto-moral attitudes (De Waal et al., 2006), and beavers use branches to build dams. It would therefore appear that there is no other difference between all humans and all other animals than membership in the species *Homo sapiens*.

In what sense is species membership a purely biological property? Some properties tell us something about the psychology of individuals. To be a person, for example, implies meeting certain psychological conditions, possessing certain mental capacities. One is a person only if one is rational and self-aware. The same is true of sentience. By definition, an entity is sentient if and only if it is capable of feeling pleasant or unpleasant things, i.e., of experiencing certain positive or negative psychological states.

Other properties are only biological, in the sense that they entail nothing about the psychology of their bearers. This is the case, for example, of sex and skin color. The fact that I am male and the fact that my skin is white entails nothing about my mental capacities, my interests and, more generally, my psychological make-up. Species membership must be placed in this second category. The fact that I am a *Homo sapiens* entails nothing about my psychological abilities or interests—I could belong to the same species and yet have the mental skills of a chimp or a goldfish. Along with the color of my skin and my sex, my species is a purely biological property.

In and of itself, the claim that purely biological properties are not morally relevant is not particularly intuitive. It does, however, accommodate many common intuitions. The fact that I have white skin, for example, does not justify giving more or less importance to my suffering than to that of a black person. The fact that I have an X chromosome and a Y chromosome does not justify giving more or less weight to my well-being than to that of a woman. We could multiply the examples: height, morphology, eye color, hair color, etc.—without exception, purely biological differences seem devoid of moral significance. This applies a fortiori to species membership.

In a nutshell, then: There is no morally relevant difference between all humans on the one hand and all animals on the other. This means that, morally speaking, humans and nonhumans are alike. Yet, speciesists treat them unequally. Hence, just like racism and sexism, speciesism violates the equal treatment principle. Just like racism and sexism, speciesism is therefore wrong¹.

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Chapter 18

‘Beasts of Burden’: An Ethical Vegan Perspective on ‘BioDiesel’



Kay Peggs

In his book *Walden* (first published in 1854), Henry Thoreau declared that nonhuman animals are ‘all beasts of burden, in a sense, made to carry some portion of our thoughts’ (2004 [1854], p. 216). Thoreau’s experience of ‘living simply’ in his ‘natural surroundings’ led him to conclude that humans are part of nature and that nonhuman animals are equivalent to humans (Liu, 2017, p. 45). This thinking is contrary to the ideological supremacy of anthropocentrism in most societies (Washington et al., 2017), which burdens nonhuman animals with being considered inferior creatures to humans who are treated often as commodities. By bringing together the perspectives of ecocentrism and ethical veganism, this chapter offers a critique of anthropocentric thinking and actions, in this case, human strategies on how to address anthropogenic climate heating by means of the increased commodification of nonhuman animals.

The anthropocentric assumptions and behaviours of humans are imposing unmitigated disaster on the Earth. We are hurtling towards climate catastrophe. But humans are not—and will not be—the only losers, we will be taking countless individual nonhuman animals and their species with us, that is, if we have not killed them off already. Along with them, extant plants and soils will continue to be affected—and perhaps devastated—by climate changes (Pugnaire et al., 2019). These dire conditions are leading some governments to introduce targets designed to alleviate the climate changes we are living with now and to avert the catastrophe that we are instigating for the future. ‘Clean technologies’ are central to these governmental strategies (Cordero et al., 2020). For example, the governments of the United Kingdom (UK) (HM Government, 2021), the United States of America (US) (United States Department of State, 2021) and France (Quintet, 2019) have pledged

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to reduce their nation's greenhouse gas emissions to net zero by 2050.¹ One way of doing this is to reduce human dependence on fossil fuels. Unfortunately, humans have plans for nonhuman animals in this regard. Humans have commodified colossal numbers of nonhuman animals in seemingly limitless ways, such as for forced labour, food, clothing and entertainment (Peggs, 2012). What is being considered in more detail now is how to develop more effective ways of using the bodies of nonhuman animals for fuel. Not fossil fuels that are derived from the remains of living organisms such as nonhuman animals who lived millions of years ago (Gerali, 2021) but the bodies of the nonhuman animals who are killed at present, daily.

This chapter offers a critical consideration of such anthropocentric thinking through the perspectives of ecocentrism and ethical veganism. Ecocentric values stand in opposition to anthropocentrism and centre on 'the rights of nature' (Taylor et al., 2020). The perspective prioritises the moral value of whole ecosystems. Ethical veganism makes an explicit commitment to not harming nonhuman animals. It contests the commodity status of nonhuman animals and seeks to eliminate not escalate the human (ab)use of them (Peggs, 2020). This chapter argues that both ecocentrism and ethical veganism are essential to a non-speciesist address of the human devastation of the planet. An ethical vegan perspective would encourage us to consider nonhuman animals and seek to address climate change through means that alleviate the human exploitation of nonhuman animals. To provide context, the next section offers a brief overview of the role of fuel in climate change and the use of biofuels, especially biodiesel.

Fuelling Ecological and Climate Crises: Fossilised Animals and Plants

Extreme weather, ocean acidification, ecosystems disruptions, species extinctions, food shortages and water scarcity are some of the emergent consequences of anthropogenic climate change (Weilhammer et al., 2021). Edward W Maibach and Connie Roser-Renouf (2011) have condensed the magnitude of the climate crisis into just ten words: 'It's real. It's us. It's bad. Experts agree. There's hope' (cited in Smyer, 2022, p. 2). Undoubtedly, *it's real*. A recent *Intergovernmental Panel on Climate Change* (IPCC, 2021) report, which 'assesses the physical science basis of climate change', observes that the Earth is warmer now than it has been for 125,000 years. Human activity (especially the use of fossil fuels) is causing this heating (Smyer, 2022). Burning fuels such as coal, petroleum oil and natural gas releases carbon dioxide (CO₂) and other greenhouse gases (GHGs), which trap heat in the Earth's atmosphere, leading to global heating. Unfortunately, much of the energy used by humans is produced by burning fossil fuels. So, undoubtedly, *it's us* who are causing climate heating. What we are doing *is bad*. Extreme weather events

¹Net zero plans have excluded Africa (Mutiso, 2022)

'such as heat waves, cold waves, storms, heavy precipitation causing wildfires, floods and droughts' (Weinhammer et al., 2021) are becoming more frequent. The dangerous heat of 2022 (with temperatures breaking records in many parts of the world), low river levels, and extraordinarily high rainfall were calamitous and lethal for many and point to a 'disastrous future' (Gramling, 2022). We can expect recurrent and fierce heatwaves, droughts, storms and melting ice sheets, which will lead to floods and land loss. The health and wellbeing of humans (Buse et al., 2022) and nonhuman animals (Lacetera, 2019) are affected severely. In Europe alone, the extreme heat of summer 2022 is reported to have killed over 61,000 humans (Ballester et al., 2023). The number of nonhuman animals who died has not been estimated. *Experts agree* (Ripple et al., 2021). There is overwhelming scientific agreement between environmental and climate experts about the causes and effects of climate change (Cook et al., 2016; Mcdermott, 2021). Experts agree that these effects may cause permanent changes to the Earth's system (Engström & Gars, 2016, p. 542). However, *there's hope*. Even though we cannot solve the climate crisis, human action at the global, national, local and individual levels could lessen the future effects (Smyer, 2022). This hope 'is an indispensable asset in tackling the climate crisis' (Frumkin et al., 2022, p. 1). Fostering energy efficiency, implementing sustainable transportation and promoting sustainable land use practices are achievable goals that are central to stopping climate change from worsening (Weijnen et al., 2021). Converting from fossil fuels to renewable energy sources, such as solar, wind, hydro and geothermal power, is vital for reducing CO₂ emissions and for restraining global heating (Weijnen et al., 2021). But this achievable action is forestalled by the enormous financial incentives that are offered to the fossil fuels industry.

The question of the place of fossil fuel consumption in causing climate heating 'is an existential threat to fossil fuel companies' (Megura and Gunderson, 2022). Thomas Nail observes that 'Fossil fuel capitalism is understood by some to be the highest form of human social organisation because it allows for the largest possible consumption of energy' (2021, p. 251). The profits made from 'capitalist-driven fossil fuel extraction', (Nail, 2021 p. 245) are vast. A *Resources for the Future* (RFF) working paper suggests that between 2015 and 2020, fossil fuels generated approximately US \$138 billion each year for the USA alone (Resources for the Future, 2022). In addition, in 2020 fossil fuel subsidies from the public sector were 6.8 percent of global Gross Domestic Product (GDP) (Resources for the Future, 2022). In 2021 countries across the globe 'actively paid about US\$577 billion... to artificially lower the price of polluting fuels such as oil, gas, and coal' (Damania et al., 2023, p. xvii). The energy crisis from 2021 onwards has led subsidies to soar (OECD, 2022). The withdrawal of subsidies would be beneficial to the Earth and would enable governments to make financial savings but fossil fuel use continues (Skovgaard & Asselt, 2018, p. 4). The 'Green Paradox' (Sinn, 2008) draws attention to a possible acceleration—not deceleration—of the human mining of fossil fuels. Paradoxically, environmental policies that announce the phasing out of fossil fuels within a time frame can lead the owners of fossil fuel companies to accelerate fossil fuel extraction and hence speed up global heating. Thus, the announcing of time

frames may cause thresholds in the climate system to be passed that otherwise would not have been passed (Winter, 2014). Nevertheless, the extraction and use of fossil fuels cannot continue in perpetuity. First, humans and countless other species might not survive their continued use because of their catastrophic effect on the planet. Second, the quantity of fossil fuels within the Earth's crust is finite in any case. Fossil fuels are formed from decomposing plants and nonhuman animals who died millions of years ago (Engström & Gars, 2016, p. 542). They are a limited resource. For example, it is estimated that there are '47 years of oil left (at current consumption levels)' (Worldometer, 2023, p. x).

Work on alternative sources of energy is ongoing and is making their use more achievable and practical (Khan & Khan, 2012). Fuel capitalism means that a major driver is revenues² and it is expected that significant profits will be able to be made from biofuels in the future (Siegel et al., 2008). Wind turbines and solar energy are familiar sources of alternatives to fossil fuels, but they are variable and intermittent so cannot respond to the increasing demand (Zebra et al., 2021). Thus, biofuels as additional sources of energy transition are gaining increasing attention (Kiehbadroulinezhad et al., 2023).

'Dead Animals Don't Grow on Trees': Biofuels, Plants and Animals

While there are concerns about the harmful environmental and social impacts that are linked inseparably to the use of fossil fuels, there is also an increasing demand for energy (Habib et al., 2020). As we have seen, the search for alternative sources of energy focuses on two key issues—the depletion of fossil fuel deposits and concerns about climate heating (Wasiak, 2021). Hope for the future (Frumkin et al., 2022), opportunities for profit (Siegel et al., 2008) and environmental concerns (Barclay, 2010; Smyer, 2022) have led to the increasing development of greener energy resources such as biofuels. Although there is not enough space to include a detailed discussion about biofuels, a summary is useful for context.

The most used biofuel is bioethanol, which is produced mostly from starch-based food crops such as sugar beet and wheat (Bai et al., 2019). The USA and Brazil are the foremost bioethanol-producing countries (Obiora, 2022). Although bioethanol is a prominent biofuel alternative to fossil fuels there are concerns that its use could lead to human food insecurity both because the crops used are food crops and because substantial amounts of land are needed for bioethanol production, land that is currently used to produce human food (Azadi et al., 2012). Cellulosic biofuels, which are generated from plant-based substances that are not human food crops (such as agricultural waste, wood chips and switchgrass) have the potential to address the first of these concerns because their production does not

²There is no room here to discuss biofuels and global capitalism. For discussion, see (Baer, 2021)

compete with the production of human food (Gupta & Demirbas, 2010). An alternative to bioethanol and cellulosic biofuels is biogas, which is composed mainly of the methane that is produced from decomposing organic materials such as human and nonhuman animals' sewage and food waste (Chaemchuen et al., 2013). Biogas is promoted as an alternative fuel because it can help address three issues, 'waste management, energy security and climate change mitigation' (Kapoor et al., 2019, p. 11657). A specific form of biofuel—biojet fuel—is designed for aviation. It is derived from plant oils, algae or waste fats and oils and is claimed to be extremely promising for mitigating the effects of aviation travel on the climate (Lokesh et al., 2015). The final biofuel is biodiesel, which is the focus of the rest of this chapter. It is made by hydrogenating fats and oils from, for example, soya beans using hydrogen and catalysts under high pressure and at hot temperature (Barclay, 2010). The result is a pure, synthetic hydrocarbon that is chemically identical to the most common type of diesel—petroleum-based diesel (Barclay, 2010). The European Union (EU) is the world's biggest biodiesel producer, and it represents nearly 75% of the total transport biofuels market (Toldrá-Reig et al., 2020, p. 2). Its positive properties are numerous. It is widely praised for its self-sustainability, renewability, low polluting effects, non-volatility and enhanced combustion rate, making it a good alternative to fossil fuels (Srinivasan et al., 2018). Because it has properties like petroleum diesel, it can be used as a direct substitute for it, so it is suitable for use in standard diesel engines (Bhatia, 2014; Ciolkosz, 2020). As well, biodiesel biodegrades up to four times faster than petroleum diesel (Bhatia, 2014) and can be used as a sustainable form of waste management (Ragasari & Sabumon, 2023, p. 14).

There are disadvantages. Although biodiesel is promoted as being financially less costly to produce because it uses 'waste-products' (Barclay, 2010) the production of 'environmentally and economically viable biodiesel' is a major challenge (Toldrá-Reig et al., 2020, p. 2). At present, one of the major drawbacks is the financial cost of the installation of biorefineries, (estimated at requiring an investment of between US \$1,730,000 and US \$8,420,000 (Sheykin 2024)), consequently, more profitable production methods are being sought (Kanan et al., 2022). Another problem is the primary source of biodiesel—soyabean oil—is responsible significantly for deforestation (da Silva et al., 2021). Instead of soya, biodiesel can be produced from vegetable oils such as rapeseed oil and recycled cooking oils, which do not have these disadvantages (Habib et al., 2020). Another replacement source, Muhammad Habib and co-authors declare, is 'animal fat' which, they suggest 'is a promising option because of its low cost and easy availability' (Habib et al., 2020, p. x). Indeed, they go further. They argue that it is the 'best option' because it 'minimizes environmental impact and SC [supply chain] cost while maximizing social wellbeing'. (Habib et al., 2020). Similarly, Fidel Toldrá-Reig et al. (2020, p. 1) suggest that 'up to 70% of the total cost of biodiesel majorly depends on the cost of the raw materials used, which can be reduced using animal fat waste because they are cheaper than vegetable oil waste'. Furthermore, they argue, '[b]iodiesel from animal fat achieves nearly 80% fossil CO₂ reduction in comparison to 30% for soya' (Toldrá-Reig et al., 2020, p. 2). The most used nonhuman animal body fats are 'chicken fat, fish oil, goat tallow, duck tallow, beef tallow, and pig fat' (Akhil &

Alagumalai, 2019). Biodiesel made from these body fats is said to be ‘renewable, nontoxic, eco-friendly and sustainable’ (Shahir et al., 2015, p. 686). This overlooks the environmental impacts of raising and feeding the nonhuman animals and relies on the deaths of millions of nonhuman animals whose bodies are required for its production. So, responding to Habib et al. (2020) (above), its use does not promote the social well-being of nonhuman animals whose deaths are central to its production.

Humans have a long history of commodifying nonhuman animal bodies, and the expropriation of their body fats is centuries old. The appropriation of dairy products from nonhuman animals—such as milk and milk derivatives like cheese and butter—involves the suffering but not necessarily the killing of nonhuman animals, although many are killed. The extraction of body fats for products such as cooking fats, soaps and candles is often based on the killing of nonhuman animals. These deaths are rightly called theriocides, because ‘theriocide’, suggest Beirne et al. (2018, p. 5) is the accurate term for the legal and illegal actions ‘that kill animals’. Biodiesel made from the fats and oils from the bodies of nonhuman animals requires an enormous number of theriocides. A return flight from Paris to New York would require the theriocides of 17,600 pigs—the fat from 8800 dead bodies each way (Transport and Environment 2023, p. 2). There are hundreds of transatlantic flights between the US and Europe daily (Seabrook, 2023). This ‘solution’ to fossil fuels could rely on the deaths of billions of nonhuman animals.

A purported justification for the use of nonhuman animal fats in biodiesel is that the body fats used are ‘waste products’ from the ‘meat industry’ (Toldrá-Reig et al., 2020), thus the nonhuman animals are not killed for the purpose of biodiesel as such. For example, *Tyson Foods*, one of the largest ‘meat-producing’ companies on Earth (Barclay, 2010), has the vision of ‘[I]ncreasing our domestic use of renewable energy—both purchased and self-generated—to 50% by 2030’ (2021, p. 25), by producing biodiesel from ‘waste’ from its business (Barclay, 2010). The *Tyson Foods, 2021 Sustainability Report* emphasises that ‘in our animal processing operations, we avoid waste from byproducts by instead producing products such as animal feed, biofuels and fertilizer’ (Tyson Foods, 2021, p. 28). In the same report, the company described the ‘waste’ as including the remains of 47 million chickens, 155,000 cows and 469,000 hogs each week (Tyson Foods, 2021, p. 3). *Tyson Foods* is not the only producer of biodiesel. The demand is vast and growing. The use of ‘animals fats’ in biodiesel has increased ‘fortyfold since 2006’ and demand is ‘projected to triple by 2030 compared to 2021’ (Transport and Environment, 2023, p. 2). Forty-six percent of the nonhuman animal body fats ‘produced’ in Europe is used as biodiesel (Transport and Environment, 2023, p. 2). But a recent report reveals misgivings because experts fear that using ‘animal fat’ based biodiesel could be ‘worse for the environment’ (Seabrook, 2023). In an interview, a representative of *Transport and the Environment*,³ said ‘...dead animals don’t grow on trees, so if aviation suddenly wants to use a lot of animal fats in its fuels, it can’t be used by other sectors.’ (Seabrook, 2023, p. x). The problem for this environmental campaign is that there

³Transport and Environment is the largest clean transport campaign in Europe.

are competing uses for the body fats of the nonhuman animal victims of theriocide, and biodiesel demand 'is putting pressure on supplies of all categories, leading to displacement effects when industries replace animal fats with other materials, usually cheap available oils (Transport and Environment, 2023, p. 2). No consideration or address is given to the suffering and theriocides of the billions of nonhuman animals who are the victims. Rather the nonhuman animals are burdened by speciesist thinking that assesses how humans can most effectively commodify their bodies for human use, in this case to address anthropogenic climate change.

'Sheer Bloody Self-Interest': Speciesism and Climate Heating

Species classifications are based on presumed essential attributes that are claimed to be natural and immutable (de Vel-Palumbo et al., 2019). Indeed, because they are assumed to be a fundamental component of the 'natural system', they are considered to be the primary signifiers of difference (Pavlinov, 2013; Peggs, 2009). However, we share most of our genes with other animals (Fuller, 2006). For example, humans are 98.8% genetically like chimpanzees, 90% genetically like cats and 80% genetically like cows (Ang, 2021). As well, humans share genes with plants. We share 60% of our genes with bananas (Ang, 2021). Thus, species are not absolute and pure in nature (Montoya, 2022). Of course, species classifications go further than differences, they are hierarchical. Brian Schwartz and Brent D. Mischler note that our behaviour shows that we humans 'view ourselves as undeniably superior to other living things' (2022, p. 4). Indeed, we often see 'human' as being so different from all other species of animal that the word 'animal' is applied 'to the whole animal kingdom with the exception of human' (Derrida, 2008, p. 41). Even taking the lowest known number of nonhuman animal species that are described by humans so far, i.e., 1.3 million (and it is estimated that there could be 50 million species of nonhuman animals on the planet) (Hilton-Taylor et al., 2009, p. 6) the dualism 'human'-'animal' seems absurd. Jacques Derrida is right, surely, in his assertion that '[t]here is no animal in the general singular, separated from man (sic) by a single indivisible limit' (2008, p. 47). Nevertheless, the dualism human-animal remains the basis of the human anthropocentric view of the world, even though its basis in Cartesian assumptions about the lack of conscious minds in nonhuman animals is refuted by studies of nonhuman animal behaviour (e.g. see Bekoff, 2002; Midgley, 2002[1979]). Discourses about climate change often confirm rather than challenge these notions because the tradition of considering a species to be a unit of a natural hierarchical system 'is continued by the modern concept of biodiversity' (Pavlinov, 2013, p. 14). In this regard, Robert D. Montoya points out that biodiversity classifications require humans to 'value an entity's importance (by way of its position) within a system of other entities' (2022, p. 5). Bees, for instance, are viewed as being the most essential insects for food security, biodiversity and sustainability (e.g. Patel et al., 2020). The hierarchical system leads humans to 'act as though other animals are simply "inanimate" resources to be used as we like' (Boss

& Boss, 1994, p. 120). This is evident to Arnold Arluke and Clinton Sanders (1996, p. 169), who describe ‘sociozoologic systems’ that influence how humans view nonhuman animals in terms of their social, cultural and moral value to humans. For example, companion animals are valued more highly than those who are eaten by humans for food, and thus are positioned on a higher level in the ‘sociozoologic system’ (Arluke & Sanders, 1996). Our relationship with companion animals ‘is the closest and most humanized of human-animal relation’ (Franklin, 1999, p. 84). Nonhuman animals who are eaten are valuable to humans in an instrumental and functional way (Arluke & Sanders 1996, p. 170). The environmental campaign group *Transport and Environment* presumes this ranking in its concerns about the use of nonhuman animal body fats for biodiesel. The group argues that if ‘animal fats’ are repurposed towards biodiesel away from being put in ‘pet food’ ‘cats all over Europe may end up finding their dinner a little less appetising’ (2023, p. 32). Facetious perhaps, but there is no concern for the nonhuman animal bodies that are used for human food and for ‘pet’ food. Our ways of thinking about and treating nonhuman animals are infused with speciesism.

Speciesism signals the ideology of the primacy of one species, usually human, over all others. Coined by Richard Ryder (1983[1975]), the term speciesism points to the notion that the human species intrinsically is superior to all other species. Speciesism promotes the interests of humans over the greater interests of members of all other species (Ryder, 1983[1975]), which results in the oppression, harm, exploitation and killing of other species of animals (Singer, 2019). On this basis, we give ourselves rights or privileges that we deny to other species of animals. As with, for example, sexism and racism, speciesism is an ideology that works as ‘a set of socially shared beliefs that legitimates an existing or desired social order’ (Nibert, 2002, p. 8). It has social structural and economic causes, is institutionally based, supports oppressive social arrangements (Nibert, 2002, p. 10) and ‘legitimates and inspires prejudice and discrimination’ (Nibert, 2002, p. 17). While speciesism relates to groups, speciesism is suffered by the ‘individual members’ of species (Horta, 2010, p. 250). For example, each one of the billions of individual nonhuman animals who are incarcerated in the ‘animal industrial complex’ (Noske, 1989), which converts them into commodities for human consumption, ‘suffer every waking minute they are alive. Physically, they are sick, plagued by chronic, debilitating diseases. Psychologically they are ill...’ (Regan, 2004, p. 89). Tom Regan laments that ‘death, arguably, offers these forlorn animals a better bargain than the lives they have known’ (2004, p. 92). The amount of killing is staggering. There are three billion theriocides committed each day for food alone (Hussain, 2022). It is the fat from the bodies of these forlorn nonhuman animals that comprise a source for biodiesel. This promotion of the self-interests of humans over the greater interests of these nonhuman animals is clear. The human use of nonhuman animals has changed where they live, has manipulated how they live, has affected their well-being, has desecrated their bodies, has denied them their intrinsic value through commodification, and now what is left of their bodies after they have been killed is being utilised for fuel to alleviate human-induced climate change. Ryder is surely correct in his

observation that 'I have never yet heard any rational argument in support of speciesism; except, of course, sheer bloody self-interest' (2020, para 11).

Humans Have Changed the World for Nonhuman Animals: The Anthropocene, Anthropocentrism and Climate Change

An address of climate heating often focuses on sustainability. Sustainability is described as 'a matter of what resources—natural resources, quality of the environment and capital—we bequeath to coming generations' (Kuhlman & Farrington, 2010, p. 3443). Such matters are evident in the discussions about the use of biofuels and biodiesel (above). Karen Blincoe (2022, p. 2) argues that sustainability is 'the ultimate model for a balanced world'. Balanced in what way? The focus seems to be on concern for human generations, seen in the *Open Working Group* (United Nations Department of Economic and Social Affairs, 2014, para 4) argument that 'People are at the centre of sustainable development'. Eileen Crist warns that a 'sustainable' society could involve a 'totalitarian conversion of the natural world into a domain of resources to serve a human supremacist way of life, and the consequent destruction of all the intrinsic wealth of its natural places, beings and elements (2012, p. 149). Speciesism drives the purported 'balance' in the direction of an imbalance that favours humans. Certainly, the impacts of climate change are not shared equally among even humans (O'Hara, 2022, p. x). It is the less economically developed countries, often in the global South, and the poor across the world that are affected most (O'Hara, 2022, p. x). Thus, Helen Kopnina concludes, among humans 'conventional sustainability discourse offers no alternative to the present state of poverty and inequality' (2016b, p. 116). But Kopnina stresses, 'consideration needs to be extended beyond human interests' (2016b, p. 119). This is in a context in which conventional economic analyses have given scant attention to the effects of climate change on nonhuman life (Hsiung & Sunstein, 2007) except in how the effects might have repercussions for humans. However, Wayne H. Hsiung and Cass R. Sunstein argue that there is no justification for the lack of consideration given to nonhuman animals because 'animal life matters both for its own sake and because human beings care about it' (2007, p. 1698). Yes, most importantly, nonhuman animals matter intrinsically and to address the anthropogenic consequences of climate change for nonhuman animals, humans need to care about and respect nonhuman animal lives (and all other life forms and the planet). The effects of climate change on nonhuman animals are enormous.

Paul Crutzen and Eugene Stoermer originated the term 'Anthropocene' to describe a new geological epoch in which the effects of human activities on the Earth are so extreme that they have led to clear geological change (Dawson, 2016). The United Nations reports that '75% [of the] terrestrial environment [has been] "severely altered" to date by human actions (marine environments 66%)' (United Nations, 2019, Key Statistics and Facts). Anthropogenic extinctions, pollutions and

climate heating are just some of the environmental consequences of human activities. Free-living nonhuman animals are so oppressed by the changes made by humans that ‘the biomass of all people on earth is ten times greater than that of all wild (sic) land mammals combined, while the biomass of domestic animals—farm animals and companion animals—is as much as 35 times greater than that of all wild (sic) land mammals combined’ (Keulartz & Bovenkerk, 2021, p. 11). In addition to the anthropogenic climate costs of fossil fuel extraction and use, the burning of biomass in agribusiness is also a contributor to climate change (O’Hara, 2022, p. 28). Consequently, although the Anthropocene is caused by humans, humans have drawn nonhuman animals in ‘not only as victims of our treatment, but also as actors in their own right’ (Keulartz & Bovenkerk, 2021: 3). Intensive farming systems—which cause utter misery to the nonhuman animals incarcerated in them—‘are a significant source of greenhouse gas emissions’ (Nagothu, 2023, p. x). Those forlorn and suffering nonhuman animals are ‘unwittingly complicit in causing the Anthropocene’ (Keulartz & Bovenkerk, 2021, p. 1). Human actions have meant that ‘[t]he world has changed for animals in the Anthropocene’ (Keulartz and Bovenkerk, 2021, p. 1) and the changes are not in the interests of nonhuman animals. This is evidenced by the suffering and theriocides of individual nonhuman animals and by the extinctions of whole species (Hsiung & Sunstein, 2007: 1704).

Extinction is ‘a critical yardstick’ of damages to species because it expresses ‘irreversible loss’ (Hannah, 2012, p. 6). Humans are annihilating species to such an extent ‘that is on a par with the comet that wiped out the dinosaurs’ (Dawson, 2016, p. 19). Since the sixteenth century at least 680 species of invertebrates alone have been driven to extinction by human actions (United Nations, 2019, Key Statistics and Facts). At present, more than one million species of nonhuman animals and plants are threatened with extinction (United Nations, 2019, para 9) including at least 40 percent of amphibian species and at least 33 percent of marine mammals (United Nations, 2019, Key Statistics and Facts). The *Natural History Museum* (UK) lists ten species ‘we have saved from extinction’ (including peregrine falcons, sea otters and Fisher’s estuarine moths) (Begum, n.d.). Of course, it is likely that human activities drove these species to near-extinction in the first place.

Extinctions (especially the extinctions of species such as orangutan) receive much more attention than the suffering and deaths of individual animals. Indeed, it seems that nonhuman animal lives are valued only when they are advantageous to humans (Hsiung & Sunstein, 2007). Their misery, suffering and theriocides (e.g., billions of nonhuman animals are incarcerated and killed in the animal-industrial-complex) take place under the guise of normality (e.g., see Abbate, 2021; Peggs, 2023) and ‘...many human practices treat animals as worth little or nothing, or as solely of instrumental value’ (Hsiung & Sunstein, 2007, p. 1705). Added to this ‘normalised’ nonhuman animal suffering and death is the suffering and death caused by anthropogenic damages such as climate heating. Climate heating is generating an unimaginable amount of nonhuman animal suffering and is causing enormous numbers of nonhuman animals to die (Hsiung & Sunstein, 2007, p. 1739). For example, heat is a major stressor to nonhuman animals (Hsiung & Sunstein, 2007). Heat waves cause birds and mammals to suffer and die in greater numbers, and

those who do not die can suffer long-term damage to their health (Eastwood & Peters, 2022). Heat stress in birds can disrupt their reproductive health, can make them age more quickly and can lead to their dying young (Eastwood & Peters, 2022, para 2). Extreme weather events such as droughts and floods 'can have adverse behavioral and physiological consequences on species ranging from elephants to turtles' (Hsiung & Sunstein, 2007, p. 1702). As well, global heating is leading to increasing incidences of forest fires (Clarke et al., 2022), which harm nonhuman animals who often cannot flee. Australia's 'Black Summer' bushfires in 2019–20 are estimated to have killed or displaced three billion nonhuman animals (Slezak, 2020). Nonhuman animals who live in the Earth's Arctic regions are especially at risk from climate heating because warming temperatures affect nonhuman animals such as polar bears, penguins, seals and walruses (O'Hara, 2022).

Disregarding the enormous costs to nonhuman animals of climate heating 'is no longer excusable' (Hsiung & Sunstein, 2007, p. 1699). Hsiung and Sunstein argue that 'for too long, the debate over climate change policy has been conducted without paying significant attention to nonhuman life. In our view, animals have intrinsic value, and that value should be included in any judgment about appropriate regulation' (2007, p. 1739). However, policies designed to address climate heating are most often anthropocentric and, as such, leave unquestioned the 'idea that human interests, human goods and/or human values are the focal point of any moral evaluation of environmental policy and the idea that these human interests, goods and values are the basis of any justification of an environmental ethic' (Katz, 1999, p. 377–378). Thus, the focus of environmental policies, such as those designed to reduce the use of fossil fuels, is on humans rather than nonhuman animals and ecosystems (Kopnina, 2019:1). The victimisation and theriocides of nonhuman animals for producing biodiesel is just one example. I argue that a more just response to anthropogenic climate change requires a fundamental shift towards ecocentric and ethical vegan values.

Paying Attention to Nonhuman Animals: Ecocentrism and Ethical Veganism

Following a *Nuffield Council on Bioethics* 18-month long enquiry on 'the ethical, social and policy issues raised by both current and future biofuels' Joyce Tait (the enquiry chair) advises that the Council proposes an 'overarching ethical standard for biofuels, enforced by a certification scheme for all biofuels produced in and imported into Europe and ideally worldwide' (2011, p. 217). The ethical principles outlined by the Council cover 'protecting human rights, environmental sustainability, climate change mitigation, just reward, and equitable distribution of costs and benefits' (2011, p. 217). Tait continues, 'We recommend that policy makers and other stakeholders use these ethical principles as a benchmark when evaluating biofuels technology and policy development' (2011: 272). There is no doubt that these

principles are of vital importance, but other vital principles are not mentioned e.g. those concerned specifically with nonhuman animals. Throughout the paper, Tait (2011) makes no mention of nonhuman animals. Perhaps this is because nonhuman animals were not thought about, or they were not considered important enough to mention, or they were grouped in with other matters and thus were not mentioned explicitly, or they were seen as being part of the 'solution' for addressing the problems with biofuels. Regrettably, this is not surprising because 'Anthropocentrism is the prevalent ideology in most societies around the world, and also permeates academia and domestic and international governance' (Washington et al., 2017, p. 37). However, it is not acceptable. This final section is framed by the view that the main problem is anthropocentrism. I agree with Purser et al. 'Anthropocentrism must be recognised and eradicated before fundamental changes can take place in people's attitudes and actions toward the nonhuman world' (1995, p. 1–54). Thinking, innovations and policies that are designed to reduce the use of fossil fuels by using the fats from the bodies of nonhuman animals focus on human well-being rather than on the well-being of nonhuman animals as well, who are an essential part of the nonhuman world. A more just response requires a fundamental shift to giving attention to nonhuman animals which, I argue, requires a decentralising of the human, a shift towards ecocentrism and a stated commitment to ethical vegan values.

Fundamental to ecocentrism is the belief that the environment ought to be valued for its own sake and apart from any instrumental value it might have for humans (Berry, 1999; Jebari & Sandberg, 2022). Ecocentrism generally supports the discontinuation of the invented categorical distinction between human and nonhuman (Kopnina, 2016a). Thus, ecocentrism rejects anthropocentrism and the idea that all value is related only to human interests (Jebari & Sandberg, 2022). It recognises that 'humans coexist with all life within the sphere of intrinsic value' (Piccolo, 2017, p. 11). Humans comprise only a minority of the Earth's community; the vast majority is non-human. The 'continued exploitation of [the nonhuman] community is logically unsustainable and morally irreconcilable' (Kopnina et al., 2018a, p. 145). Because ecocentrism values the whole community of organisms and the 'non-living environment' as a system (Jebari & Sandberg, 2022) it is 'the broadest of world views' (Washington et al., 2017). The focus is on securing positive consequences for living organisms and for the non-living environment of human actions (Kopnina et al., 2018a). Of course, ecocentrism is concerned about human rights with the condition that 'we must recognise that human rights must be limited by the 'rights' of other members of the community' (Cullinan, 2011, p. 105). The emphasis is on the view that rights for some depend on rights for all because 'the rights of the members of the Community are indivisible' (Cullinan, 2011, p. 97). This requires changes to human lifestyles and the 'economic-centric view that dominates environmental management' (Hernández & Muñoz, 2022, p. 175), as seen in the development of profitable biofuels. By positioning nature centrally, 'ecocentrism invites a rethinking of the current understanding of human needs... and the role that markets and businesses may play in the pursuit of sustainability ambitions' (Hernández & Muñoz, 2022, p. 175). The current thinking about replacing fossil fuels with biodiesel that is made from nonhuman animal body fats does not challenge

human–nonhuman animal consumption patterns. Given that nonhuman animals are often overlooked when there are discussions about anthropogenic climate change (especially nonhuman animals who are used by humans for food and for other forms of consumption), an ecocentric approach alone might serve to occlude rather than make visible these nonhuman others in human minds. For this reason, I argue here for an additional named commitment to ethical veganism.

Humans continue to commodify enormous numbers of nonhuman animals. Humans wear, hunt, own, imprison, kill, experiment on and entertain themselves with nonhuman animals. This is not the extent of it. Every day humans convert billions of nonhuman animal bodies into dietary commodities such as 'meat'. These theriocides are almost entirely legal. They are on such a scale that some nonhuman animal species are being eaten towards extinction. For example, at least 33 percent of sharks (whose fins are used for making soup) meet the *International Union for the Conservation of Nature* red list criteria for being threatened with extinction (Zhou et al., 2021). The human food system is a major instigator of climate heating (Nordgren, 2012; Springmann et al., 2018). A plant-based diet is promoted as one, if not the major, way in which humans can address climate heating (e.g. see Ghahari & McAdam, 2018; Kortetmäki & Oksanen, 2020). Additionally, argues Joseph Poore, the 'worldwide adoption of plant-based diets would mean we would need 3.1bn hectares less farmland' which 'would take pressure off the world's last remaining natural ecosystems and could see vast areas rewilded' (2018, para 10). If this were to happen global greenhouse gas emissions would be reduced by 7 billion tonnes a year (Poore, 2018, para 10). While environmental vegans are concerned about the ecological impact of the 'meat' industry 'they may purchase leather products over polyvinyl chloride (PVC), thinking that leather is a better choice for the environment' (Greenebaum, 2012, p. 130). Research shows that both ecocentric and anthropocentric values can facilitate pro-environmental behaviour (e.g. Kaida & Kaida, 2016). But is this the most important reason not to consume nonhuman animals? Not for ethical vegans.

An ethical vegan approach opposes the commodity status of nonhuman animals, contests speciesism and refutes the notion that there can be a 'humane' use of nonhuman animals⁴ (Peggs, 2020). While being an ethical vegan would likely involve concern about the linkages between climate catastrophe, species loss, human suffering and the consumption of nonhuman animals, the emphasis for ethical vegans is on the elimination of the human oppression of nonhuman animals and an ending of speciesism. The focus for ethical vegans is on justice for nonhuman animals and includes, though expands beyond, diet, by eschewing all forms of consumption and use of nonhuman animals. Solutions to environmental climate heating that involve anthropocentric ideas about and practices that utilise nonhuman animal bodies for biodiesel would be rejected by ethical vegans. After all, 'good' anthropocentrism is not possible (Kopnina et al., 2018b). Ethical veganism draws nonhuman animals

⁴Although not advocating explicitly an ethical vegan commitment, Sue Donaldson and Will Kymlicka (2011) offer a critique of the idea that there can be a 'humane use' of nonhuman animals.

into the forefront of our thinking, not as resources to be used but as intrinsically important beings. This perspective makes us pay attention to nonhuman animals.

For Simone Weil (Weil & Bousquet, 1982, p. 18) ‘Attention is the rarest and purest form of generosity’. Such attention should not constitute the burden of human thinking about how we can intensify the commodification of nonhuman animals ‘bodies for addressing anthropogenic climate change. Rather, giving attention to nonhuman animals involves consideration for them. It means we must think that nonhuman animals matter for their own sake. This requires us to think about them in a way that differs from how we have thought about them before—as intrinsically valuable rather than as resources to be used as we like. Weil implores us to recognise that ‘Every being cries out silently to be read differently’ (1997 [1952], p. 188). Regarding nonhuman animals and the wider environment, this requires ecocentric values that incorporate a recognition of ‘intrinsic value’ with ‘environmental ethics, and the need for both social justice and eco-justice’ (Washington, 2015, p. 200) along with vegan ethics. Discourses have a commanding effect on how humans see the worlds they live in (Wright & Høyen, 2020) and an explicit espousal of ethical veganism values would show that we are giving nonhuman animals our attention rather than burdening them with our thinking.

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Part IV
Veganism, Culture, and Intersectionality

Chapter 19

Indigenous Veganism



Margaret Robinson

Indigenous Veganism

In keeping with Mi'kmaw practices and ecofeminist self-location, I begin by introducing myself. My name is Margaret Robinson, and I am a member of the First Nation often called the Mi'kmaq. Mi'kmaq people generally call themselves the L'nuk, which means “the human beings.” The Mi'kmaq have lived in Mi'kma'ki, our territory on the northeastern coast of North America, for at least 13,000 years, and it is estimated that over 160,000 people claim some degree of Mi'kmaw ancestry (Statistics Canada, 2016). Today, Mi'kma'ki encompasses the Canadian provinces of Prince Edward Island, Nova Scotia, eastern and northern New Brunswick, parts of the Gaspé peninsula in Quebec, and portions of Newfoundland and Labrador.

I am a registered member of Lennox Island First Nation, which is home to 450 Mi'kmaw people, with another 700 or so registered members elsewhere. I am part of that diaspora, the eldest of two children of Jim Robinson (Mi'kmaw) and Heather MacLean (a settler). My grandmother, Margie Robinson, was born Margo Paul on Lennox Island in the district of Epekwitk (occupied by Prince Edward Island) and reports her parents to have been Madeline Abram-Knockwood and Pat Paul. Margie's family has lived in Kijipuktuk (Halifax) for five generations. I am not the

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only academic in our family, but I am the only one whose scholarship examines food sovereignty and our relations with other animals. I do this work as a two-spirit person living without my traditional language.

Although I sometimes think of my scholarly approach as “Indigenous veganism,” such a discipline does not yet exist in academia. Certainly, there are Indigenous people who are vegan. I began walking a vegan path in 2008 and have met a dozen other Indigenous people on the same route. What I have not encountered is the sort of community infrastructure that reflects a distinct identity and community size, such as Indigenous vegan events or organizations. Writing in 1994, vegetarian Rita Laws (Chahta; a First Nation occupied by the states of Mississippi, Alabama, Arkansas, and Louisiana) suggests that Indigenous vegetarians are few in number (para. 24), and nearly thirty years later, that doesn’t seem to have changed. What has changed is that Indigenous epistemologies about veganism are increasingly present, growing in scope, and possess significant potential to support decolonization and Indigenousization at multiple levels. It is Indigenous veganism’s nascent existence and decolonial promise that I explore in this chapter.

Before I delve into the subject of Indigenous veganism, it will help to define some terms. In keeping with current practice, I use “Indigenous” to refer to peoples who are original to the territory in which they live (although colonialism has displaced many of us). My focus is on Indigenous peoples of North America, as this is the region I know best. Where possible, I refer to Indigenous nations by the name their citizens use, even if that name is less familiar to a settler audience. There is enormous variety across Indigenous nations. Environmentalist and politician Winona LaDuke (2020) estimates there are over 700 Indigenous nations on the North American continent. LaDuke’s own First Nation, the Anishinaabe, extends across the United States–Canada border near the Great Lakes and is occupied by four Canadian provinces and four U.S. states. To discuss “Indigenous veganism,” we must be wary of mixing distinct nations and their traditions. If there is an Indigenous veganism at all, it is not a homogenous practice; rather, it is the sum of many veganisms shaped by Indigenous people living, eating, and working in their specific cultural traditions. My Indigenous veganism is that of a Mi’kmaw woman whose nation was primarily fishers and hunters, and whose connection to community was ruptured by Indian Day School (a forced assimilation system). My veganism may be very different, for example, from that of a Kanien’kehá:ka woman raised in community, whose nation has significant agricultural genius.

A second caveat about the term “Indigenous” is that it engages binary logics to define us by our relation to European settlers. Within such a binary, Indigenous people are framed as the exotic “others” encountered during European men’s adventures in the New World, rather than as citizens of our own nations. In Canada, “Indigenous” is also a term of colonial control, appearing regularly in settler government documents and policies. “Indigenous” is considered a more respectful term than previous labels such as “Aboriginal” or “Indian,” but it performs the same function of identifying populations for social control. Indigeneity as a concept is therefore more significant to settlers than to those of us labeled Indigenous (for whom our Indigenous nation is usually most relevant).

To understand Indigenous veganism, we must accept that the modifier “Indigenous” is a fiction founded on the mistaken belief that our nations are essentially similar because they differ from those of Europeans. However, because the term “Indigenous” centers our relation to settlers it can be useful for discussing our ongoing experiences of colonialism, particularly as it shapes our well-being, and the well-being of other animals. If there is Indigenous veganism, it exists partially as a response to the impact of colonial occupation, by which I mean the physical occupation and economic exploitation of our territories, the denial of our nations’ political sovereignty, and the suppression of our distinct cultures.

Some of the work I consider relevant to Indigenous veganism is by individuals who do not self-identify as vegan. By “veganism” I refer to what The Vegan Society calls “A philosophy and way of living that seeks to exclude...all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose” (2022 para. 1). Commonly associated with food, (e.g., a vegan diet), veganism extends beyond abstaining from eating other animals to include cultivating compassionate and non-exploitative relations with other animals in all aspects of one’s life. Vegan is often used as a binary category (e.g., one is or is not vegan). In my experience, however, veganism is a journey on which I continually discover my complicity in the suffering of others and act to reduce or end that suffering. There is no place to stand in which we are innocent; not because humans are innately oppressive, but because we are thoroughly connected to other beings, and our actions inevitably affect them. The framing of veganism as a pathway to better relations with other animals reflects what I see described by my Indigenous vegan contemporaries. In this chapter, I examine veganism as a practice embraced by some Indigenous individuals and as a philosophical thread that runs through the work of Indigenous scholars. The ontologies (or ways of being) embraced by the scholars I highlight share foundational commitments with critical animal studies, which Ruth Koleszar-Green and Atsuko Matsuoka (2018, p. 334) define to include “the belief that animals (including human animals) have inherent value and a right to life,” a commitment to liberating animals by “abolishing the use of animals, thus stopping the commodification of animals,” and a view of oppressions toward humans, other animals, and our environment as necessarily intersecting. These aspects of critical animal studies echo Indigenous frameworks for understanding animals, offering a point from which to leverage Indigenous ways of knowing, and identifying future directions for Indigenous vegan scholarship. For example, a Mi’kmaq animal ontology affirms that other animals are ensouled beings with personal agency (Robinson 2013, 2014).

Veganism and the Cultural Resurgence of Indigenous People(s)

To understand Indigenous vegan practice and philosophy, we must contextualize it in relation to the Indigenous cultural resurgence occurring in North America since the 1960s (Favrholdt, 2022). Spurred partly by Indigenous networks that emerged

in urban centers, and organizations such as the American Indian Movement (AIM), Indigenous people have been reclaiming their Indigenous nation's traditions, and practices for generations now. This search for culture responds to a long history of state-enforced assimilation and is often informed by Indigenous philosophy, art, and grass-roots reflection on colonial systems. In this section, I examine how increasing interest in traditional foodways relates to vegan practice and I offer examples of how some Indigenous people have embraced vegan practices as part of cultural resurgence movements.

While stereotypes present Indigenous nations of North America as nearly obligate carnivores, the truth is that plants have a significant role in the lifeways of most Indigenous nations here. It is estimated that half the foods now grown in the world were originally cultivated by Indigenous peoples of North America (Betancourt et al., 2009, p. 14). Indigenous nations had extensive trade networks with each other prior to European contact and seeds were one of the commodities traded (Mihsuah & Hoover, 2019). The importance of plants, particularly of corn, beans, and squash (often called “the three sisters”), did not go unnoticed by arrivals from Europe and was also taken up into their academic scholarship. As early as 1933, settler anthropologist Glenn Albert Black claimed that “the first American was mainly a vegetarian” (p. 96). Black generalizes beyond his area of study (urban Mississippians of 800–1600 C.E.), but his point about the central role of plant-based food for some Indigenous peoples is well taken. The stereotype of Indigenous people as lacking the social organization or knowledge to cultivate plants is a product of early European propaganda to justify claiming Indigenous land by arguing it was not in profitable use—by which they meant European-style farming (Borch, 2001). We must be equally careful about scholarly portrayals of Indigenous peoples as vegetarian, as such work often used diet to position groups on a social evolutionary ladder—a tactic used by those espousing vegetarianism as more civilized and those denouncing it as primitive. Glenn Albert Black (1933), for example, describes Indigenous agriculture as a “very great step upward, in the cultural scale toward civilization” (p. 97) because it more closely resembles a settler standard. The scholarly record is rife with errors about Indigenous peoples, including how long and in what manner we have lived in our territories. Indigenous scholars, such as Cree-Métis archeologist Paulette Steeves (2021), are beginning to correct the record by using approaches to research that are informed by their Indigenous cultures. In the meantime, Indigenous scholars must weigh settler claims against our own knowledge and oral traditions.

There is evidence from multiple sources that vegetables held a central role for many Indigenous nations, and that seed and plant trading occurred across large distances (Pavlik et al., 2021; Sleeper-Smith, 2018). For example, Sarah Carter (2020) notes that Nueta, Sahnish, and Nuxbaaga “maintained a flourishing agricultural economy on the upper Missouri as far north as North Dakota” (para 2). Indigenous knowledge about soil fertility and crop compatibility enabled the Haudenosaunee Confederacy, for example, to develop a stable and abundant food supply. Archeological research using human remains has determined that corn formed 50% of the diet in Haudenosaunee territory by 100 C.E. (Katzenberg et al., 1995;

Schwarz et al., 1985). Successful agriculture has been identified as providing the economic stability needed to support political confederacies such as the Haudenosaunee (Sioui, 1999; Strobel, 2019). Nevertheless, Indigenous foodways differ significantly from one region to another, as some territories are conducive to agriculture and others are not. Examining hair samples donated by Indigenous people prior to 1892, Diana Roy et al. (2005) reported that evidence of frequent meat consumption was strongest among the Niitsitapi (whose territory extends from the North Saskatchewan River south to the Big Horn Mountains) and evidence of corn consumption was strongest among the Lakota (whose territory extends across current-day North Dakota, South Dakota, Montana, Wyoming, and Nebraska). In my own nation (The L'nuk), analysis of burned waste reveals that fruits, berries, and acorn were being consumed by our ancestors between 500 and 2000 years ago. One of our political districts, Sikepne'katik, is named for the s'gepng, also called wild potatoes, groundnuts, or *Apios Americana* (Deal et al., 2022; McDonald, 2021), affirming the importance of the food by identifying its location. For the most part, however, archeological evidence in our territory echoes Mi'kmaw oral tradition in emphasizing sea animals as a primary food source (Davis et al., 2004).

While many Indigenous nations relied on animals for part or much of their daily food, a subsistence hunting economy differs from colonial animal agriculture in many respects. One of these differences is the lack of animals domesticated for meat. Peter C. Mancall (2018) argues that apart from the dog (used for hunting but occasionally eaten), Indigenous nations in North America not generally domesticate animals (Kim Tallbear (2019), a Sisseton-Wahpeton Oyate scholar, describes domestication as interfering with an animal's natural independence. Although we come from nations separated by nearly 3000 km (Tallbear is a Dakota and I am Mi'kmaw), Tallbear's emphasis on animal freedom is familiar in my own culture as an expression of the value of non-interference. A distaste for domesticating animals for meat means that dairy—a meat industry by-product—was not part of traditional Indigenous diets in North America. As a result, up to 90% of Indigenous people here may have a natural intolerance for lactose (Mishkin, 1997, p. 565; Newcomer et al., 1977; Bose & Welsh, 1973). If we consider that an Australian study found that only 52.3% of self-identified vegans abstained entirely from animal products in the past year (Malek & Umberger, 2021, p. 6), then those Indigenous nations with strong agriculture economies may have had a diet like many vegans today.

Indigenous food economies have been interrupted by colonialism, with land theft, forced moves, economic oppression, and cultural assimilation changing what and when we eat, where food is grown, how it is prepared, and by whom. Residential schools in Canada and boarding schools in the United States attempted to forcibly assimilate Indigenous children into settler society, operating between 1884 and 1996 (Fournier & Crey, 2006). Residential schools eliminated generations of Indigenous women's agricultural expertise by forcing boys to work in animal agriculture but girls to cook and clean (Maclean, 2005, p. 114–115). Survivors of residential schools report that hunger was constant, causing children to resort to eating compost (Mosby & Galloway, 2017). Food historian Ian Mosby (2013) uncovered evidence that nearly 1000 residential school children were used in experiments

that relied on their chronic malnutrition. Generations of enforced malnutrition have significant intergenerational health impacts (Mosby & Galloway, 2017), which may be further compounded by additional trauma, such as that caused by physical and/or sexual abuse at residential schools, and/or trauma from having Indigenous language, spirituality, and culture criminalized by occupying settler governments.

Thirty years after the closure of the last residential school, the Indigenous cultural resurgence has many Indigenous people considering how colonial influences in their lives might be reduced or eliminated. Indigenous veganism, when it is discussed, is often framed in relation to decolonization and indigenization. Decolonizing entails removing colonial influences from one's life. A person decolonizing their diet might abstain from all dairy and eat only food that is Indigenous to their traditional homeland. An article in the *National Post*, for example, describes how Bossy Ducharme, a Métis man from Duck Bay, Manitoba, stopped eating processed foods and the meat of animals such as chicken, cattle, or pigs. "I'm not going to put anything in my body that was not here before the Europeans arrived," Ducharme explained (National Post Staff, para. 2, 2012). As a result of his decolonized diet, Bossy Ducharme reports having "more energy, and both a clearer complexion and mind," and feeling "so present in my daily life" (National Post, 2012). I interpret being present to describe a spiritual effect.

Whereas decolonizing one's diet involves removing settler influence, indigenizing refers to increasing what is Indigenous—in this case, traditional foods and ways of preparing them. Dené Chef Brian Yazzie, for example, describes his approach to cooking as combining "ancestral knowledge with modern techniques" and "bringing together hyper-local Indigenous ingredients" (Lim, 2021, p. x). Indigenizing our foodways must also take changed circumstances into account, as some animals and plants are now scarce due to settler destruction of their habitats and theft of land.

Decolonized and indigenized diets aren't necessarily vegan. Bossy Ducharme's new menu, for example, included wild rice, seeds, berries, and Indigenous vegetables, but also buffalo and elk (National Post, 2012). Decolonizing one's diet might also entail excluding foods grown on stolen land, which could include much large-scale monoculture crop production. From a decolonizing perspective, some plant foods are not ethically sourced, and their production may oppress Indigenous people, such as Indigenous farmers dispossessed from their lands, as well as harming Indigenous animals by destroying their habitat and framing them as a threat to crop production. Decolonized and indigenized diets are thus ethical foodways that may overlap with vegan foodways, but they are not synonymous.

Indigenous people who do embrace veganism have tended to position themselves as embracing traditional food values while adjusting practices to meet current conditions. In an article for *Indian Country Today*, Vincent Schilling, a Kanien'kehá:ka (i.e., Mohawk) man who embraces veganism, notes that animal-based food production requires more land and water resources than plant-based food production (Schilling, 2021). The Kanien'kehá:ka are members of the Haudenosaunee Confederacy, so Schilling's ancestors may have been farmers, and Schilling's approach could be considered indigenizing in that he embraces traditional values of protecting land, plants, and animals. That same centering of tradition, however,

means that Schilling's practice of veganism may differ from that of settler vegans. One of the most significant differences emerges on the issue of hunting, where he writes:

"I do not take issue with anyone hunting as long as there is love, honor, respect and mindfulness about what the hunter is doing and the reasons why. Every hunter has a responsibility to hold a profound respect for the animal they are taking home to their families (Schilling, 2021, para. 54)."

Similarly, Schilling embraces the use of animal bodies for regalia (handmade ceremonial clothing) if the animal is treated with respect and honor. What respect and honor look like will vary, but generally involves supporting the animal's autonomy and agency while it lives (e.g., not domesticating or confining them), respecting their life cycle by not hunting during their reproductive periods and/or not hunting females carrying or rearing young, protecting animal habitats, and ritually expressing gratitude to the animal spirit after death. Schilling contrasts the treatment of animal bodies for regalia with the disrespect he sees in commercial leather products. "In most cases," he writes, "the leather is leftover from a beef slaughterhouse, and in those cases, the animal is not honored or cared for before it is used for people" (Schilling, 2021, para. 5–6). Schilling's emphasis on the relation between humans and other animals is something I consider in my own life as a vegan in a culture where killing animals comes with a responsibility to use as much of the body as possible. This responsibility stems from a context in which eating other animals was a survival necessity and aims to minimize killing by maximizing the resources gained from an individual animal death (Robinson, 2014, 2014). This is a value I view as leaning in the direction of veganism.

Schilling (2021, para. 22–24) emphasizes the health benefits of vegan eating, particularly lowering cancer and diabetes risk, and increasing energy and endurance. Rejecting associations of veganism with purity (Pittsburgh Vegan Society, 2020), Schilling describes being vegan as "a personal journey," and notes "I don't judge others for their choices" (2021, para. 7). Schilling acknowledges that cultural values about food, which differ from one nation to another, may affect how veganism is perceived. "As a Mohawk," he writes, "it is incredibly rude to refuse food as you are stepping outside of the community's belief that we are all together and sharing bounty in order to thrive." (2021, para 45). This practice reflects hospitality values that may be expressed differently in other nations.

If we look beyond individual food choices to examine food economies, we must consider decolonizing and indigenizing foodways as techniques by which Indigenous nations exercise food sovereignty. La Via Campesina (2003; <https://via-campesina.org>), an international organization of farmers, defines food sovereignty to include "the right of peoples to define their own food and agriculture," and "to protect and regulate domestic agricultural production and trade" (para 1). An example of activism on this issue can be found in the Native American Food Sovereignty Alliance, whose Indigenous Seedkeeper Network is dedicated to "collecting, growing, and sharing heirloom seeds and plants" (para. 1), which they call a "critical aspect of indigenous culture" (para 9). The Native American Food Sovereignty

Alliance (<https://nativefoodalliance.org>) works with Indigenous communities to reclaim seeds that originated in their territory and use them to revitalize traditional foodways. The network describes its program as “rooted in the restoration of relationships between communities and their seeds” (NAFSA, n.d., Mentorship, para 9). The movement to restore Indigenous plant cultivation highlights the value of plant diversity. Rita Laws estimates that her ancestors grew “60-80 different crops while the Europeans brought seeds for only 10–15” (Landry, 2018, para. 8). The influence of Indigenous feminism is also evident in food sovereignty activism. The Native American Food Sovereignty Alliance (<https://nativefoodalliance.org/our-programs-2/indigenous-seedkeepers-network/>), for example, refers to their work returning seeds to Indigenous communities as “rematriation” (no date, Seed Rematriation, para. 7) to acknowledge that seed stewardship was often traditionally done by Indigenous women.

Having considered how traditional foodways relate to vegan practice, I will next examine how food sovereignty is taken up by Indigenous scholars in ways that reflect, engage, and challenge veganism in productive ways.

Indigenous Veganism as an Academic Theme

If Indigenous veganism is a nascent discipline, who are its scholars? In this section, I discuss how Indigenous scholarship is engaging veganism, describe the sorts of arguments being made, and note where work in this area engages other critical theories.

The Indigenous scholarship that addresses veganism and related subjects has been interdisciplinary, with good results. In a 1994 article entitled “Native Americans and Vegetarianism,” Chahta vegetarian and psychologist Rita Laws (1994) outlines the central role held by plant-based food in Indigenous food economies across North America, noting that many nations, including Law’s own, were farmers. Traditional Chahta architecture and clothing, Laws explains, used woven plant fibers, and their daily meal was a vegetable stew of “corn, pumpkins, and beans” (1994, para. 2). While much of her essay could be considered history or anthropology, Laws also considers the spiritual significance of food, noting that corn held a sacred value (1994, para. 5) and melons were given cultural significance as the food of the afterlife (para 6). From 1831–1833 the United States government removed the Chahta from their territory in what is currently Mississippi and forcibly marched them to Oklahoma, which settlers then believed to be undesirable barren land. Laws writes, “Although many [Chahta] suffered and died during removal on the infamous “Trail of Tears,” those that survived built anew and successfully in Oklahoma, their agricultural genius intact” (1994, para. 3).

Rita Laws engages cultural resurgence when she urges the descendants of the displaced Chata to embrace their plant-based traditions again:

“We must move away from the European influences that did away with a healthier style of living. We must again embrace our brothers and sisters, the animals, and ‘return to the corn’ once and for all” (Laws, 1994, para 27).

Laws extends her call for decolonized and indigenized plant-based living beyond the Chata—indeed, beyond Indigenous peoples—by posing the question, “What would this country [by which she means the United States] be like today if the ancient ways were still observed?” (1994, para. 26). In answer, Laws identifies benefits to individuals (“longer and healthier lives”) and well as to other animals and the environment (Laws, 1994, para. 26). The emphasis Laws makes on wellbeing is echoed in news stories about Bossy Ducharme and the benefits he associates with a decolonized and indigenized diet. This call to decolonize, like veganism, extends beyond diet to lifestyle more broadly. Although Laws doesn’t explain what healthier living might entail, her description of Chata clothing and architecture suggests that she considers plant-based living as a key element of decolonization. Laws’ proposal also includes indigenizing by relating to other animals as siblings, and by spiritually centering corn. By spirituality in this context, I refer to how Indigenous people understand and express their location within a web of interconnected beings. For Laws, the spiritual element of corn is rooted in Chata storytelling, which describes corn as “a gift from Hashtali, the Great Spirit,” given to the Chahta because they had fed Hashtali’s daughter (Laws, 1994, para. 5). Laws notes that Hashtali means “Noon Day Sun,” and explains that “the Great Spirit resides within the sun, for it is the sun that allows the corn to grow” (1994, para. 5). The spiritual meaning of corn is reinforced as a sacred gift, as a marker of Chata virtue in feeding the Great Spirit’s hungry daughter, and as a reminder of their reliance on the sun. Considering spiritual significance in terms of the relations supported by the plant, Laws frames corn as heavy with spiritual meaning.

Several academic works relevant to Indigenous veganism emerged between 2010 and 2015. In 2010, I presented a personal reflection paper at a Conference of the American Academy of Religion entitled “Indigenous veganism: Feminist natives do eat tofu.” That paper later informed articles in *The Canadian Journal of Native Studies* (Robinson, 2013), and in *Societies* (Robinson, 2014) in which I examined traditional Mi’kmaq stories for their perspectives on the personhood of other animals and connected Mi’kmaq concepts of personhood and kinship to vegan practice. These articles were shaped by my experience as a Mi’kmaq woman but were limited by my failure to engage Indigenous philosophy, with I had only recently encountered, through the work of Vine Deloria (1973, 1988).

One of the most theoretically robust scholars to write an article with relevance to Indigenous veganism in this period is Kim Tallbear, a Sisseton-Wahpeton Oyate (i.e., Dakota) scholar. In an article entitled, “Why Interspecies Thinking Needs Indigenous Standpoints,” Tallbear (2011) engages frameworks of Indigenous relationality that pose three challenges for critical animal studies: (1) a meaning of being that exceeds the material; (2) centering relationality in meaning-making; and (3) challenging the split between the human and the non-human. These ideas are expanded upon in subsequent work, including Tallbear’s, 2015 article, “An

Indigenous Reflection on Working beyond the Human/Not Human,” published in *GLQ: A Journal of Lesbian and Gay Studies*. Tallbear takes up an Indigenous ontology in which “[o]bjects’ and ‘forces’ such as stones, thunder, or stars,” are counted among the living “others” to which the human may relate (Tallbear, 2015, p. 233–234). Tallbear notes how de-animating discourses have been used to rationalize “violence against animals” as well as against “humans who have historically been linked to a less-than-human or animal status” (2015, p. 234). Due to her inclusion of animated objects (such as stones and stars) and forces (such as thunder) as relatable others, Tallbear classifies her work as “queer (in)humanisms” (2015, p. 230), which extend beyond critical animal studies into the field of “new materialisms.” In challenging the division between human and non-human, Tallbear draws on her nation’s traditional stories. Those stories, she writes “feature relationships in which human and nonhuman persons, and nonhuman persons between themselves...prey on, kill, and sometimes eat one another; or collaborate with one another” (2015, p. 235). Tallbear suggests these stories avoid a hierarchical dualism of culture over nature or human over animal. Her use of them to emphasize that the predator-prey relation is not a ladder, but a circle, in which human beings are also eligible to be eaten, strikes me as significant for undermining the hierarchical dualisms (e.g., nature/culture) sometimes prevalent in scholarship about animals.

Another of the most substantial theoretical pieces related to Indigenous veganism is from Billy-Ray Belcourt of Driftpile Cree Nation, whose territory is occupied by the Canadian province of Alberta. Belcourt’s, 2015 article, “Animal bodies, colonial subjects: (Re)locating animality in decolonial thought,” takes up Indigenous, decolonial, and queer theories to critique animal studies. Speciesism, Belcourt proposes, is predicated on settler colonialism, which means that animals cannot be liberated without also decolonizing and ending white supremacy (2015, p. 1). Animal activists and critical animal studies scholars, Belcourt argues, have “failed to center an analysis of settler colonialism” in their work, instead accepting the settler colonial state as a given (2015, p. 2). The effect of this, he suggests, is to normalize colonial relations and center settlers as the decision-makers in human-animal relations. Belcourt’s article situates animal liberation efforts by settlers as mired in colonialism’s necropolitics—that is, the determination of how others must live and die (Mbembé, 2003). Belcourt highlights the dissonance between activists who affirm the right to life for all animals while wishing death upon Inuit people who hunt seals for subsistence. “Is animal life so charismatically grievable,” Belcourt asks, “that it stomps indigeneity into the abject gap between a past genocide and an ongoing social death?” (Belcourt, 2019, p. 235). Belcourt’s question highlights how settler lifeways and distinctions between nature and culture, place distance between human and other animals, and how this distance may be less for Indigenous people living traditionally. “We want a world without suffering,” Belcourt affirms, “but we also have to grapple with the way in which animals underpin Indigenous life in the North” (Belcourt, 2019, p. 237).

Belcourt (2015, p. 3) describes decolonization as “rooted in lived experiences of indigeneity,” and its aim as “*unbecoming* a site of settler colonialism.” Belcourt contrasts decolonization to approaches grounded in difference that stabilize settler

identity by reforming settler systems. Belcourt's project is also an indigenizing one, as he stresses the importance of re-centering Indigenous people and of repatriating the land to Indigenous nations. Belcourt's engagement with postcolonial scholarship makes Indigenous futurity and relationality a central requirement for decolonizing animal studies. Belcourt's turn to Indigenous ways of viewing the world as the basis for critical animal studies makes it particularly relevant to discussions of Indigenous veganism:

"I ... propose a decolonized animal ethic that finds legitimacy in Indigenous cosmologies to argue that decolonization can only be reified through a totalizing disruption of those power apparatuses (i.e., settler colonialism, anthropocentrism, white supremacy, and neo-liberal pluralism) that lend the settler state sovereignty, normalcy, and futurity insofar as animality is a settler-colonial particularity" (Belcourt, 2019, p. 1).

It's worth noting that Belcourt's article (2015) and my own (Robinson, 2014) appeared in sequential issues of *Societies*, which was then a relatively new journal. This may be coincidental rather than an effect of editorial policy, as my article was solicited under Editor-in-Chief Madine Vanderplaat and published by Editor-in-Chief Dr. Bryan R. Hogeveen, and Belcourt's article was published under Editor-in-Chief Dr. Gregor Wolbring (Societies, 2023). An expanded version of Belcourt's 2013 essay (Belcourt, 2020), and my own 2013 work were both reprinted in critical animal studies collections (Hannan, 2020; Montford & Taylor, 2020), increasing their influence beyond their initial publication.

Work by Indigenous scholars such as Belcourt or Tallbear occurs within a broader context of Indigenous cultural resurgence. This resurgence is occurring in Indigenous arts, activism, cultural reclamation, language revitalization, and scholarship. Indigenous scholarship is engaging Indigenous ways of thinking, being, relating, and doing, borrowing across disciplinary divides. Leanne Betasamosake Simpson (2017, p. 158–159) proposes that embracing Indigenous knowledge systems can create "a generation of land-based, community-based intellectuals and cultural producers" who are dedicated to Indigenous futurity and accountable to Indigenous communities. In the context of cultural resurgence, veganism may help Indigenous thinkers discern what a revitalized future can entail for our relation to our other animal relations.

In a chapter called "Being in Relation" that appears in *Messy Eating: Conversations on Animals as Food*, Kim Tallbear rejects the idea that there is an innocent place to stand when it comes to the suffering of others. Discourses of purity that frame veganism as "clean eating" or "ethical living," coupled with judgment against those deemed less innocent, strike Tallbear as "very Christian" (2019, p. 64). "For me," Tallbear (2019, p. 60) writes, "there's no good way to consume anything that we put in our body in the kind of society that we're living in." Tallbear identifies the current food model of "producing and consuming" as problematic and questions whether vegans have merely traded the power to exploit other being for the power to steward other beings (a view foundational to Christian theology; 2019, p. 63). Even when secularized as ecological responsibility, an approach that frames veganism as lacking complicity in animal suffering fails to challenge the

speciesist idea that humans are superior to other animals. The result of this hubris, Tallbear argues, is a system rooted in control and violence. “All of the bodies,” Tallbear writes, “that are used to prop up that system [of producing and consuming], whether they’re human or nonhuman, are being violated and exploited” (Tallbear, 2019, p. 61). This view of human beings as enmeshed in relations with others, some of which are exploitative, is a thread I find in both the scholarly work of Tallbear and Belcourt and the more personal reflection work of Indigenous vegans such as Vincent Schilling.

Atlanta Grant, a member of the Huron-Wendat Nation who does work on food sovereignty echoes Belcourt and Tallbear in connecting food, territory, and Indigenous cultural survival. In an article in the *National Observer* on lab-grown animal protein, Grant invites us to consider what impact the lab-controlled production of salmon might have on Indigenous nations of the West Coast, for whom salmon play a significant role. Grant expresses concern that the mass production of lab-based animal protein could further separate Indigenous peoples from animals (severing a sacred relationship) and undermine Indigenous food sovereignty by further displacing animals from territory. “Once that land goes,” Grant explains, “or those ways of eating go, Indigenous food culture goes as well” (Echner, 2022, para 3). Changes in what food people eat, who prepares it, when it is eaten, and with whom reflect and reinforce cultural food values.

Today, animal populations that once fed entire Indigenous nations are now extinct or endangered due to settler overfishing, settler industrialization and resulting climate change, and the destruction of animal habitats by settler development. Indigenous nations face a quandary over how to protect cultural traditions (many of which are rooted in animal food economies) while also ensuring the survival of animal species significant to our cultures. The case of the gray whale demonstrates this situation well. Europeans had hunted gray whales to extinction off the European coast as early as 500 C.E., and in the greater North Atlantic by the 1600s or 1700s (Perrin et al., 2009, p. 404; Jefferson et al., 1993 p. 70–71). By the 1840s, gray whales of the northeastern coast of the Pacific had been hunted to near extinction twice (Jefferson et al., 1993, p. 72), saved only by international conservation laws that banned whaling (Kim, 2020). Archeological evidence shows that for at least 1500 years gray whales formed up to 80% of the diet of the Q^widičča?á-tš, a First Nation present-day Washington state (Kim, 2021, p. 53). Called the Makah by their neighbors, meaning “generous with food” (Kim, 2020, p. 52), the Q^widičča?á-tš are primarily fishers and their right to hunt gray whales is affirmed in their 1855 Treaty of Neah Bay with the United States. As with other First Nations, the United States Government attempted to eliminate the language, culture, and religion of the Q^widičča?á-tš through forced attendance at Indian boarding schools. Legal battles over treaty fishing rights in the 1950s and 1960s, and the surge of Indigenous activism in the 1970s, further centred the gray whale as culturally significant in the minds of many community members. This role was more ideological than gastronomic, as gray whales hadn’t been consumed since the 1920s. Efforts to decolonize and indigenize led the nation to call for a whale hunt. Claire Jean Kim, a Korean-American political scientist, notes that while 93% of the Q^widičča?á-tš

nation surveyed supported hunting whale, 46% viewed the issue as one of treaty rights, while others saw the issue as cultural (36%) or spirituality (20%) (Kim, 2020, p. 79).

In 1999 the Q^widiččaʔa-t̄x nation organized their first gray whale hunt in over 70 years). That hunt was opposed by seven community Elders, whose statement asserted that the hunt “is only for the money,” and was not accompanied by spiritual training, despite language describing the plan as traditional (Anderson et al., 2012), para 11). Community discussion about whaling was further complicated by the interaction of US law, treaty rights, and International agreements, and by the aggression of anti-whaling activists, some of whom engaged racist tropes and endorsed genocide to support their views (Kim, 2020, p. 75–76).

Within the Q^widiččaʔa-t̄x nation, both sides in the whaling argument endorsed the significance of human-whale relations and of cultural continuity and renewal but differed strongly on how to express these values. The Elders’ letter, for example, proposed whale watching as “an alternative we support” (Anderson et al., 2012, para 11). Elder Alberta “Binki” Thompson, a signatory to the letter, became a spokesperson for those opposing the hunt, appealing to the value of reciprocity. “It’s time to repay the whales for what they gave to us in the past.” Thompson was quoted. “Now is the time to protect them, not to kill them” (Chew, 2012, para 20). Thompson passed in 2012.

Haejoo Kim (2020) describes Indigenous ontologies of North America as having “different foundational understandings about humans, animals, and nature than do Western ones,” the latter of which tend to use dualistic categories of human/animal and culture/nature (p. 52). The result, Kim, suggests, is a view of gray whales as “respect-worthy and important but still edible” (2020, p. 52). Rejecting hierarchical species relations, the condition of being respect-worthy yet edible is also one that Tallbear (2019) applies to human beings. The case of the gray whale highlights the heterogeneity of opinion within First Nations about how to practice shared values, especially when it comes to the practice of Indigenous foodways, which are inevitably complicated by shifting cultural, environmental, political, and economic circumstances.

The values embodied by settler colonial foodways are often individualistic, instrumentalizing of animals, and focussed on ease of preparation and profit over other concerns. Efforts to reduce the negative environmental impact of meat and dairy industries have led to manufacturing animal protein in a laboratory space, essentially producing meat without reproducing animals. During a trip to California’s Silicon Valley, Huron-Wendat scholar Atlanta Grant visited three companies producing lab-based meat. Such products are sometimes called in-vitro meat or “clean meat,” the latter framing the muscle of once-living animals as “dirty.” Grant reports the company executives with whom she met had not considered the impact of their products on Indigenous people, describing such issues as “separate from the technology” (Echner, 2022, para 4). For Indigenous scholars taking up issues of cultural foodways, the process cannot be separated from the outcomes in an ethical or productive way.

Cree scholar Tabitha Robin describes cultured meat as violence because of the disruptive effect it may have on human relations with other animals. “Moose, salmon, [and] deer are kin,” Robin explains, “not just food” (Echner, 2022, para 26). Robin highlights relationality, explaining that from an Indigenous perspective, “the healthiest food we can eat is food that contains the most relationships” (Echner, 2022, para 26). Robin describes meat from a once-living moose as “full of good relationships” due to the moose’s “contact with sun, wind, stars, soil, plants” and other beings, while meat produced in a lab is “devoid of good relationships” (Echner, 2022, para 27). This view of food as embodying a web of relations with other beings, and of those connections as constituting kinship, is absent from de-spiritualized materialist framing of muscle as the product of stem cells fed by amino acids and carbohydrates.

The last academic contribution to Indigenous veganism I wish to note is from Indigenous literary scholar Craig Womack, who is Muscogee Creek and Cherokee. Creek territory is occupied by Georgia, Alabama, and Florida, while Cherokee territory includes Kentucky, Tennessee, and portions of Alabama, Georgia, North Carolina, and South Carolina. Womack (2013, p 13) takes a hard stance on hunting, calling it “an ugly business” and an “injustice.” In an essay entitled “There Is No Respectful Way to Kill an Animal,” Womack shares a story about his last ever hunting trip, in which a deer he mortally wounded desperately attempted to escape. The story begins with Womack’s fear of encountering grizzly bears while hunting, which frames Womack as potential prey as well as predator; a theme also present in Tallbear’s (2019) work. Womack’s narrative shifts from intimate reportage to self-reflection:

“I don’t know what I was thinking then, probably not much of anything as far as suffering goes, but I know what I think now, years later. If somebody shoots me with a high-powered rifle, I’m not going to like it no matter how many prayers and ceremonies the guy does before he pulls the trigger. For me there is no longer any respectful way to kill an animal” (2013, p. 12).

Womack’s changed attitude comes about by imagining himself in the animal’s position as prey instead of predator. This perspectival shift is emotional in that Womack feels differently, spiritual in that his relation to the deer is now seen differently, and axiological in that it imparts a new ethical understanding for Womack. Like other Indigenous scholars who take up the issue of relationality, Womack argues that in a predator–prey relation, “there is no way to escape the fundamental inequity of the relationship. I would go as far as to say the lack of relationship: she’s dead, we’re not.” (2013, p. 12). I find it interesting that a lack of innocent places to stand is affirmed in Womack’s work as well as that of Tallbear and Belcourt, despite the difference in their conclusions about what that standpoint might mean.

Womack reports several criticisms of his ideas and responds to them in his essay. Against the argument that Womack’s position is materialist rather than spiritualist, for example, Womack replies, “I’ve never staked out a position on animal mortality or immortality,” but adds, “I have doubts that they like getting shot, afterlife or no” (2013, p. 24). Counter to suggestions that hunting embodies a spiritual relationship

between hunter and prey, Womack proposes that opposing violence against animals makes a spiritual relation to other animals possible. That Indigenous scholars from differing cultural contexts and histories agree on the significance of relationality strikes me as an important note for the development of Indigenous veganism.

Having come to view killing another animal as essentially disrespectful, Womack (2013) proposes that the challenge hunters face is not how to hunt respectfully, but how to moderate the disrespect of hunting. In my own work, I note how Mi'kmaw hunters report using ceremony such as prayer and laying down tobacco to express gratitude and respect after taking an animal's life (Robinson, 2013, 2014). Womack's changed perspective challenges such framings of ceremony as transformative for the animals eaten as food. Prayers and ceremonies, he proposes, "do something for us [that is, hunters], not the deer, at the very least not the same thing for the deer" (2013, p. 12). In narrating the story of his own hunt, Womack implicitly rejects claiming innocence in relation to animal death, but reaches a place of commitment instead, writing, "I won't eat meat as long as I have a choice not to" (2013, p. 13).

Womack refrains from judging others for hunting, noting that there will always be those who must hunt or starve. "I would be a fool," he writes, "to claim that every person has a choice of giving up meat" (Womack, 2013, p. 27). This hesitancy to judge others (particularly those who hunt for food) is present in writing on Indigenous veganism by Vincent Schilling (2021) and is a recurring thread in my own work, which falls somewhere between Schilling's emphasis on use of animal bodies as a sign of respect and Womack's assessment of all killing as disrespectful. Nevertheless, Womack proposes that for "a very significant proportion of us" (by which he may mean Indigenous people or human beings more generally) the choice to not eat meat is feasible. Such a choice, Womack writes, "requires a sacrifice that is not easy to make" (presumably the pleasure of eating meat which he describes in the essay, but also possibly connections with other humans that hunting or eating meat make possible). This sacrifice, Womack proposes, "done right, it becomes a ceremony. A good one, a meaningful deviation from tradition, as good ceremonies so often are" (2013, p. 27). I am struck by this conclusion, as my own writing has framed veganism as a ceremonial way to remain engaged with other animals as a Mi'kmaw woman. This ceremonial framing is not necessarily spiritual (for me ceremony is a technique for affirming and deepening material and emotional connections), but could easily be taken as such.

Conclusion

Although Indigenous veganism is a nascent academic discipline that lacks significant community infrastructure or critical mass, Indigenous epistemologies that relate to veganism are increasingly present, growing in scope, and possess significant potential to support decolonization and Indigenousization. The promise of Indigenous veganism is evident in testimonials by Vincent Schilling (2021) about veganism as a personal journey toward more just relations, particularly (but not

exclusively) with other animals. The cultural resurgence of Indigenous people(s) in North America since the 1960s has been a significant driving force behind the interest in traditional foodways, some of which resemble vegan practice or draw on similar ethical principles and some of which do not. The challenge of how colonial influences can be reduced or eliminated positions Indigenous veganism as a tool for decolonization and indigenization. Indigenous vegans engage cultural resurgence movements by endorsing traditional food values while adjusting practices to meet current conditions, with an emphasis on context as essential for ethically evaluating practice. Benefits of vegan eating for health, cultural connection, and spiritual development have been noted, but it is essential to acknowledge that cultural values about food differ from one nation to another, and there is no homogenous Indigenous veganism. Nonetheless, veganism and critical animal studies work by Indigenous scholars that responds to veganism, hold significant promise as a tool for promoting decolonization and reconnecting Indigenous peoples with traditional foodways. Efforts to take up a traditional diet may be a form of what Anishinaabe scholar Gerald Vizenor (2008) calls “survivance” (a combination of survival and endurance) that describes resistance to colonial domination paired with physical and cultural survival as a people. Preparing, serving, and eating traditional foods contributes to survivance by sensually affirming our resistance to colonization in daily life. Whether framed as a ceremony as Womack suggests, or medicine, as Rita Laws proposes, the embodied expression of ourselves as Indigenous people is as essential for Indigenous survival as food itself.

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Chapter 20

“One Shall Not Make Their Stomach a Cemetery:” A Musical and Philosophical Approach to Rastafari’s Environmental and Animal Ethics



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The Rastafari movement—which is equal parts political, philosophical, and spiritual—emerged in the early 1930s, largely as a response to racial and colonial violence in Jamaica. The movement is influenced by Garveyism,¹ Ethiopianism,² and Afrocentrism³ and aims at liberating the African diaspora from Western oppression and reconnecting with its African identity, which was trampled by the institution of chattel slavery. In 1930, like Maroons⁴ had done before them (Goldson, 2020), part of Jamaican youth retreated to the mountains and the forests, where they built an alternative lifestyle in opposition to the neo-capitalist project proposed by the colonial state.

From the early 1930s until the end of the twentieth century, Rastafari’s livy (i.e., Rastafari’s lifestyle), which includes, among other things, wearing dreadlocks, smoking ganja, walking barefoot, chosen poverty, a plant-based diet, and a rejection of manufactured products, has made an impact worldwide.⁵ While it gained

¹Garveyism: Ideology centering on the empowerment of people of African descent and repatriation to the African continent founded by Jamaican activist and politician Marcus Garvey.

²Ethiopianism: African and Afro-diasporic religious and literary movement emerging out of the common experience of colonized Africans during the eighteenth and nineteenth century and encouraging Black religious leadership.

³Afrocentrism: a worldview that centers African and Afro-diasporic history and cultural production, largely as a response to Eurocentrism and colonization.

⁴Enslaved Africans running away from plantations and retreating in mountains and forests.

⁵Although Rastafari’s presence remains predominantly in Jamaica, the United States, the United Kingdoms, and Ethiopia, Rastafari communities have increasingly been present in the entire Caribbean archipelago as well as numerous African countries (among which, but not limited to,

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increased acceptance, however, the anti-racist, anti-imperialist, anti-capitalist, pan-African, and environmentalist components of the movement were, at worst, turned into a harmless and marketable aesthetic and at best, partially neutralized as “ethical consumerism” or “Ital chic.” (Jaffe, 2010). I interpret this commodification of the Rastafari movement as an attempt to neutralize the revolutionary potential of a movement that encourages Black people to care for themselves and their environment and build communities outside of the capitalist world.

The Ital diet, a mode of eating aimed at reducing harm to plants, animals, and the planet and emphasizing the spiritual unity of all (Powell, 2021), exemplifies how Rastas’ lifestyle is thought to disengage from the capitalist and neo-colonial society Rastas live in by refusing inclusion in the global market and the colonial State, but also by centering activism on care and healing from the trauma of slavery. Indeed, Rastas consider non-manufactured, raw, plant-based, and organic food the most suitable for the human body and its environment. For the most rigorous Rastas, eating Ital translates into a strict plant-based diet free from canned, refined, and transformed food (Powell, 2021).

Research on Rastafari aims at studying and restoring the movement’s transformative and revolutionary potential. So far, scholars have predominantly highlighted the most confrontational (that is, masculine) aspects of the movement, such as the figure of the dreadlocked outcast, repatriation to Africa, or confrontations between Rastas and the colonial State, often in lieu of its more day-to-day facets such as alimentation, care, farming, or gardening. Shamara Wyllie Alhassan (2022) stresses that although the movement’s visual archives always included all genders, the story told by many scholars about the Rastafari movement tends to erase femme and queer participation in transforming the realms of possibility in twentieth-century Jamaica. While men were most often the primary targets of police violence, women were left to rebuild their communities. “*When I asked Mama Irone, longtime Howellite and former resident, what women did at Pinnacle, she said, ‘Dem work dem ground.’*” (Alhassan, 2022, p. 1)⁶ This gendered binary overlaps another binary that frames Rastafari’s anti-colonial ideologies as necessarily separate from its environmental ones. Even though more recent research emphasizes gender and Rastafari’s relation to the land to a greater extent, overall, research tends to uphold what Martinican philosopher Malcom Ferdinand calls the ‘double environmental and colonial divide of modernity’ (2019, p. 22). Ferdinand defines it as follows: “*The double divide of modernity refers to the thick wall in between both environmental and colonial divides, to the actual difficulty of thinking them altogether and*

Ethiopia, Angola, Benin, Cameroon, Ghana, Ivory Coast, Kenya, Malawi, South Africa, South Sudan, and Zimbabwe). Rastafari communities are also implemented in Asia (mainly south Asia) and south and central America.

⁶Complete quote: “*When I asked Mama Irone, longtime Howellite and former resident, what women did at Pinnacle, she said, “Dem work dem ground.” She enumerated the ways women kept the daily operations at Pinnacle going by farming, pounding rocks into gravel, making clothing, cooking, building houses, and running the school and bakery. Rastafari women’s labor and cultivation of the land created the space for other ritual activities.*” (Alhassan, 2022)

to produce a dual critique.”⁷ (p. 22). The colonial divide places colonizers, their history, and their desires on top of the hierarchy of values, and any other forms of life and lands are subordinated to them; anti-imperialist and anti-racist movements typically address this divide. The environmental divide places humans above nature and non-human animals and is addressed by environmentalist/vegan movements. By “environmentalist movements,” Ferdinand refers to a long apolitical environmentalist tradition from Rousseau to Aldo Leopold (Ferdinand, 2019, p. 19) in which free white men strive to preserve nature intact while considering its colonial and socio-economic history as external. The double divide is, thus, the resistance to thinking of these two strands together. Scholars’ difficulty in thinking of Rastafari’s environmental and anti-colonial fights altogether is not coincidental but rather conforms to colonial Manicheism and episteme, in which race and gender on one side and land and animals on the other should be maintained as strictly separated entities.

Yet, I would argue that the Rastafari movement has articulated one of the most important environmental and animal ethics of the twentieth and twenty-first centuries, and this from within its anti-racist and anti-capitalist fights. Overlooking Rastafari’s engagement with the land and (all) its inhabitants leads to a partial understanding of the transformative power and potential of the movement, which finds its strength in the fact that it extends the scope of colonial violence from societies (understood as separated from nature) to the way people inhabit and experience the land. I will focus on livity (i.e., Rastas’ lifestyle) and, more particularly the Ital diet, as it emblemizes Rastafari’s conversations on the environment and non-human animals. A focus on livity, defined as an ideological, material, and spiritual opting out of colonialism, reveals that the Ital diet is an attempt to counter colonial ways to inhabit the world and propose a different view on what it means to be human. Because Chanting (speaking the truth while singing) is one of the leading Rastafari media to educate and communicate, my approach to livity will be both musical and philosophical. It will include reggae music from 1974 to 2021 addressing Rastafari livity and its transformative power. Reggae is a musical genre that emerged in the late 1960s and stems from Chanting. It is a powerful entry point to Rastafari thinking as it shares the educational purposes of Chanting by formulating Rastas’ ideals while also disseminating them nationally and internationally.

Escaping the Babylonian Superstructure: Transformative Power of Rastafari Livity

Before diving more into the Ital diet, reggae music, and the Rastafari way of life, I will explain why livity ought to be defined not as a “lifestyle” in the apolitical sense, but rather as an act of opting out of the oppressive system that is “Babylon.” Rastas

⁷All translations are mine except stated otherwise “La double fracture de la modernité désigne le mur épais entre les deux fractures environnementales et coloniales, la véritable difficulté à les penser ensemble et à tenir en retour une double critique. Cette difficulté n’est toutefois pas vécue de la même façon de part et d’autre, et ces deux champs n’en portent pas une responsabilité égale.”

do not recognize any form of authority, as they believe leaders and representatives could potentially lead to the creation of states or empires. Thus, the Rastafari movement has no centralized authority or leader. The political essence of Rastafari is embodied in the lifestyle of individual Rastas.

In a Rastafari worldview, the hegemonic and colonial power would be referred to as 'Babylon.' Drawing upon the Bible, Rastas consider modern oppressions to be the offspring of the Babylonian empire exerting dominion over the elect. These oppressions are, in other words, Babylon's most recent reincarnation. "*Babylon is, in sum, the whole complex of institutions which conspire to keep the Black man enslaved in the western world and which attempt to subjugate coloured peoples throughout the world.*" (Owens, 1976 in Perkins, 2012, p. 251). Babylon functions in opposition to Zion, which in the Bible refers to Israel, particularly the royal city of David, Jerusalem, and the land of free Hebrews. Zion is understood in Rastafari's worldview as a utopic yet attainable oppression-free society. For some Rastafari, Zion requires physical repatriation to the African continent while for others it is a more spiritual process of returning to an African paradigm, which can be practiced anywhere.

Therefore, the opposition between Babylon and Zion cannot be reduced to an opposition between Rastas and the police or the State (which is a common interpretation). Instead, Babylon represents a network of agents that includes the police and the State, as well as any institutions or ideologies that attempt to subjugate Black people (e.g., specific modes of production, foreign countries, companies, or even individual actions). This network forms what I will refer to in this paper as the "Babylonian superstructure," as it is a network of Babylonian agents maintaining the imperial order more than a monolithic enemy. On a day-to-day level, this Babylonian superstructure is experienced as what I will refer to as an overwhelming "atmosphere of violence" or, in Fanonian terms, a condition in which the colonized "*perceives life not as a flowering or a development of an essential productiveness, but as a permanent struggle against an omnipresent death. This ever-menacing death is experienced as endemic famine, unemployment, a high death rate, an inferiority complex and the absence of any hope for the future.*" (Fanon, 1994, p. 128 in Opperman, 2019 pp. 69–70) Black Marxist and Fanonian explanations of the colonized condition justify my use of the Marxist notion of 'superstructure' to understand the colonial system not merely as physical and economic violence between colonizers and the colonized (employer/employee in Marx), but as a system that is entertained by—among others—aesthetic, religion, philosophy, education, and food systems.

For Rastas, just as for Fanon, decolonizing is never merely a question of killing the colonist, starting a revolution, or reclaiming and de-privatizing lands (although these might be necessary steps). Instead, it is a slow and difficult opting out of a colonial system that has infused all parts of colonial societies, including colonized bodies, minds, and lands. This view of Babylon as a multiform enemy that can sometimes be diffuse led to a structurally and strategically scattered movement. "*To be specific, the Rastafari movement, by and large, is a decentralized polycephalous movement in which the authority resides in branches or cells that act independently*

of each other.” (Barnett, 2017, p. 40). Contrary to other Garveyite movements⁸ that appeared at the same time, such as the Nation of Islam, the Rastafari movement does not have any central authority or leader; instead, individuals are its essential components. Individuals are not required to join any groups. However, if they wish, they can be affiliated with a house (several Rastas attaching themselves to the house of a bredren⁹ to Reason together) or a mansion (a more extensive group comprising thousands of adherents), which they can leave at any moment. The importance of the “individual” in the Rastafari movement does not stem from an atomistic and liberal view of individuals that values selfhood, property, and productivity. Rather, it stems from a perception of centralized authority and its representatives as fundamentally Babylonian, which leads to valuing the individual as the only level where Rastafari principles can be practiced in complete autonomy. In other words, Rastas reject not merely colonial authority but the very idea of authority, as it is a slippery slope to more developed forms of Babylonian systems such as the creation of States.

Rastafari livity does not stem from a centralized authority but from collective decision-making processes such as Reasoning and Chanting. Reasoning refers to collective conversations among Rastafari that usually occur in a bredren’s yard while sharing the chalice or in informal dining settings, usually on the side of a thoroughfare (Powell, 2021). Chanting refers to the act of speaking the truth while singing, as sounds, according to Rastafari, bring humans closer to the divine. Far from being a list of strict moral rules, livity is “*a set of guidelines flexible enough to accommodate a wide range of ideas and practices (and thus respectful of individual autonomy)*” and is “*tied to a process of collective self-criticism which can be found in similar inward-looking communities*” (Homiak, 1995, p. 174). It is, therefore, not a central authority but livity that is the main political force of the Rastafari movement.

In Rastafaris’ worldview, food, farming, and gardening are integral elements of Rastafari political and spiritual projects. Understanding Rastafari’s livity and all its components as “opting out of Babylon” allows us to understand Ital not merely as a diet but as a concrete political starting point to a broader change of paradigm that aims at ‘eating down’ Babylon.

Herbal is Vital, Natural Is Vital, Ital Is Vital, Vital Is Total (Sister Carol, 1999)

Healing the Body, the Mind, and the Land

The Ital diet—a mode of eating aimed at reducing harm to plants, animals, and the planet and emphasizing the spiritual unity of all (Powell, 2021)—emblemizes how Rastafari’s lifestyle is thought to disengage from the Babylonian superstructure

⁸ i.e., political movements heavily inspired by Marcus Garvey’s pan-African theories, such as the Rastafari movement in which Garvey is by some considered a prophet, and by others a non-prophetic significant intellectual contribution.

⁹ A friend or a comrade.

by refusing inclusion in the global market and the colonial State, but also by centering activism on care and healing from the trauma of slavery.

The Ital diet essentially proceeds from a guiding principle of Rastafari's lividity known as 'the natural man ethos,' which aims at a radical return to the first man in the creation. "*The 'natural man' premise can be defined as a striving towards a sense of primordial existence which seeks to radically return, in its literal definition, to those first in creation*" (Powell, 2021, p. 43). Concretely, the Ital diet encourages the consumption of non-manufactured, raw, and plant-based food, as they are believed by Rastas to be more in keeping with what first humans were eating. Thus, for the most rigorous Rastas, eating Ital translates into a strict plant-based diet free from canned, refined, and transformed food (Powell, 2021). The recurrence of the theme of Ital food or healthy food in Reggae music, a musical genre derived from Rastafari Chanting, attests to the importance of vibrations and sounds in transmitting Rastafari's knowledge and lifestyle. Indeed, while Chanting is usually a local practice, Reggae music (the musical heir of Chanting) heavily participated in sharing Rastafari's thinking with the world, particularly after the 1960s, with prominent artists such as Bob Marley, Horace Andy, Peter Tosh, Burning Spears or more recently Koffee or Ziggy Marley. One of its recent occurrences is rising Reggae artist and activist Macka B, whose music emphasizes a strict plant-based and alcohol-free diet (*Wha me eat*, 2008; *Don't drink too much*, 1992):

*Well me nu eat no meat no fish no cheese nor no egg
Nothing with no foot no eye no wing nor no head
Nothing with no lip no ears no toe nor no leg
Prefer fruit and vegetables instead
Me careful and me choosy about what I'm eating
My medicines my food my food is my medicine
(Wha me eat, 2008)*

Macka B's lyrics are inscribed in a broader tradition of pedagogical reggae music highlighting the importance of eating Ital for the body, the mind, and animals' well-being. This tradition is evident in the music of artists like Dr. Alimantado (*Ital Galore*, 1978), Tappa Zukie (*Ital Pot*, 1976), The Revolutionaries (*Ital Stew*, 1978), Andy Horace (*Ital Is Vital*, 1974), Lee "Scratch" Perry, The Upsetters (*Throw Some Water In*, 1978). It is worth noting that Reggae music produced after the 1990s places a greater emphasis on animal ethics compared to the Reggae music of the 1970s. This is likely due to the inclusion of contemporary vegan ideals in Rastafari's Chanting. In his song *Wha me eat*, Macka B highlights the importance of refusing to eat food that comes from bodies by insisting on meat as being body parts instead of using words that tend to dissociate meat from the body it is from (e.g., ham instead of pig's leg, bacon instead of pig's belly/back, drumstick instead of chicken's thighs). In doing so, Macka B incorporates more recent anti-speciest and vegan rhetoric in reggae songs.

Although the Ital diet can vary depending on the individual, Rastas share as an ideal the figure of the "birdite," which refers to Rastafari ascetics living in Jamaican hills, and eating raw sun food (i.e., food that grows above the ground). "*A birdite—anything the birds eat I'll have*" (Powell, 2021, p. 40). Commitment to natural and

non-manufactured products goes as far as avoiding any potential contaminants throughout the cooking process. Rastafari avoid plastic, iron, and aluminum utensils and prefer using clay, glass Pyrex, dried calabash, or stainless-steel pots (Powell, 2021). Some manufactured containers made of durable and recyclable materials like glass or steel are tolerated. In keeping with the natural man ethos, numerous Rastafari believe that food should ideally be consumed as raw as possible, as it is more in line with the practices of the original human. The belief that health and longevity emanate from nature comes with the natural man ideal. Rastas declare that “*Ital is vital—the natural is life-giving*” (Edmonds, 2012, p. 47). Therefore, altering nature with chemicals and industrial transformations leads to human illness and environmental degradation. In Rastafaris’ view, there is no such thing as ‘improving’ nature, as any modification to nature is degradation.

*No es delicioso nada que sea venenoso
 Mucha sustancia química lo vuelven canceroso
 Tiene conservante le ponen saborizante
 Engañan tus sentidos con sus productos mutantes
 Pasan los aviones contaminando los suelos
 Echando pesticidas cuantas vidas hay en juego
 Patentan la semilla y hoy la tierra está de duelo
 (Ital Love, 2019)*

*Nothing is delicious that is poisonous
 Many chemicals make it cancerous
 It has preservatives, they put flavoring in it
 They mislead your senses with their mutant products
 The planes pass contaminating the soils
 Pouring pesticides, how many lives are at stake
 They patent the seed and now the Earth is mourning
 (Translation Ital Love¹⁰)*

In *Ital Love*, Afro-Uruguayan Reggae singer Alike denounces the chemical deterioration of lands as both a threat to human lives and the land. Her lyrics allude to a specific type of farming, such as large plantation-like monocrops on which pesticides are spread by aircraft sprayers (Pasan los aviones contaminando los suelos), usually spreading chemicals on surrounding populations as well.

In Rastafaris’ worldview, highly transformed products, industrialization, and land poisoning with chemicals are all part of Babylon. Producing food without chemical intrants in a Babylonian world symbolizes Rastafaris’ determination to stay out of the market and the money system. “*These practices also symbolized a determination among the brethren to remain free from a dependency upon the hegemonic system. This went hand in hand with independence from money and, by extension, the entire economic order which implicated Black people in relations of authority and subordination.*” (Homiak, 1995, pp. 145–146). This refusal to participate in the current economic order leads to a prudent relationship with consumption.

¹⁰All translations are mine except stated otherwise

*And when I yod out to street
 There is nothing inna Babylon for I
 'Cause I no eat of dem eat
 And I no sip of dem sip
 'Cause I bun down it
 (Fire Pon a Deadas, 2001)*

In *Fire Pon a Deadas*, Bushman draws an opposition between “I” and “dem” (i.e., Babylon), emphasizing that, by refusing to eat what “dem” eat, he does not participate in the Babylonian superstructure and that his daily actions (sipping and eating) are ways to burn Babylon down (“*Cause I bun down it*”). The emphasis of “I” in Bushman’s song exemplifies the importance of individual Rastas as the political nuclei of a movement corroding the money system from within. Rastas’ willingness to withdraw from the money system can be found in first-account testimonies of Rastafari as early as the 1950s. In the following excerpt, a Rastafari man from the I-gelic house (a Rastafari house created around 1950 that was central in establishing the foundation of Ital codes (Homiak, 1995)) reiterates that Rastas choose and embrace poverty. However, Rastas refuse to be associated with beggars, as beggars ask for money and thus ask to be included in the money system.

“Ya see, dere is people who maybe could sorry for us in a financial way according to how they see we ‘pon de Hill. So, for instance, certain man come look fo’ we there and when him was leaving him guh ina him pocket and tek out two pound and gi it way. And we seh, ‘Fling dat’ pon de ground, man. Yuh affi fling dat ‘pon de ground. [...] It was something to show we didn’t need money—like looking into a more natural ting away from certain pollution dat mix up in dem food. We didn’t touch nothing from shop—none a deam bread, bun, none a dem thing.” (In Homiak, 1995, p. 146).

Rastas, he says, do not need nor want money as it only allows one to buy polluted and unnatural items. Growing food is the most secure way to feed oneself outside of the Babylonian system: “[o]ne main activity was growing food locally in order to resist globalization processes” (Goucher, 2015, p. 150 in Noland p. 8). To the neo-colonial project widespread in the Caribbean, which rejects local farming as a backward industry and promotes jobs in modern global industries (like tourism) as the way forward (Life and Debt, 2001), Rastas propose another project that values a more direct relationship with the land.

*Plant the vegetables them, mr cultivator
 them a life saver
 cause if you carry on a niam the cow
 will kill you sooner or later
 Hear me tell you know dreadlocks
 A lucky thing me know fi use me grater
 fi grate me coconut
 cah me nah have no blender
 you can’t drink no milk, you can’t use no butter
 can’t niam no cheese, can’t niam no pizza
 Mr Mac and Mr Ken deh pon the corner
 One ah sell chicken, one ah sell burger
 But me nah niam from nome of them, neither
 Cause them no care bout the food that them sell the customer*

*As long as your money reach over them counter
you coulda niam all the food and end up a doctor
(Plant Deh Vegetables, 2008)*

The dependence on an unreliable market goes hand in hand with preoccupations regarding health and the lack of sanitary control. In *Plant Deh Vegetables*, Joseph Cotton contrasts “cultivators” with “sellers” of fast-food (e.g. pizza, burger), arguing that the former promotes life (“*life saver*”) while the latter promotes death by trading care for money (“*Cause them no care bout the food that them sell the customer, As long as your money reach over them counter*”). Just as Rastafari’s emphasis on individual actions does not stem from a solipsistic view of the individual, preoccupations regarding health do not merely emanate from a personal desire to be healthy or a depoliticized view of self-care that highlights individual responsibility over material conditions of mental and physical health. Rather, it stems from the belief that care towards Black bodies and minds is the first step in decolonization and, therefore, the fight against Babylon (Roch, 2017).

The problem with Babylonian products is not merely that they are manufactured and industrial, but that they are part of the aforementioned “atmosphere of violence” or the Fanonian “omnipresence of death,” as they induce physical and spiritual illness on Black bodies. Rastafari differentiation between manufactured and natural products is reinforced by a juxtaposing of sick white bodies and minds nourished by Babylonian products with healthy Black bodies and minds nourished by organic and plant-based food. This comparison appears in *The Promised Key*, a tract distributed by Howell, one of the founding members of the Rastafari movement. The view of white people as carrying sickness “*reproduces a deep-rooted concern prevalent among Jamaican peasantry with the relationship between illness and spiritual states.*” (Homiak, 1995, p. 143) As displayed by white colonizers, violence against people and nature is to be connected, in a Rastafari worldview, with spiritual deficiency. Spiritual deficiency, in return, leads to physical illness.

Since Babylonian food is a spiritual and physical attack, Ital food is part of physical and spiritual healing. As Noland (2021) explains, “[i]n the Rasta sublime, livity serves as the vehicle for “*reparation of suffering on earth*” and for an “*exorcism of slavery*” (p. 8). In *Fruit Juice*, Snoop Lion (previously Snoop Dog, until becoming Rastafari) attributes to natural juices anti-depressant qualities that help him to “*take away my worry, my stress, and my blues*” in opposition with Babylonian drinks (‘sprite’ and ‘red bull’ in the text) that ‘*hype*’ in a negative manner:

*Fruit juice
Number one you know me can’t lose
Inna my garden me pick the fruit that me choose
Fruit juice in my glass you know me can’t lose
Take away my worry, my stress, and my blues
[...]
She sip the beet juice, said she really love the medicine
Drink it down slow feel the good vibe settling
The way the flavors going down
She ordered up another round
Tell me that she feel alright*

*Natural juices over Sprite
 Feel the guava juice
 She have a healthy appetite
 No drink the red bull
 Because she don't believe the hype
 (Fruit Juice, 2013)*

The use of natural plants that Rastas harvest, particularly ganja, plays a vital role in psychological healing among Rastafari communities. “*These, they believe, provide the natural energy and healing properties to ensure perpetual physical health and mental clarity. For Rastas, ganja (cannabis sativa or marijuana) is the supreme herb.*” (Edmonds, 2012, p. 48). Additionally, beliefs in plants’ healing properties are hoped to help avoid dependency on the allopathic medical industry and are therefore consistent with Rastafari

*'s goal to subvert the free market. I got a bucket full of herb of some strong
 marihuana, (true)
 Yes you know that I'm a farmer:
 Hey the food that I eat is my medicine,
 Tell dem man, a real bush doctor:
 Cleanse dem wit garlic and bitters,
 I nah go jump pon Rome filthy lickers.
 Go till the marijuana, mek mi slippers,
 No pork chops in a mi fritters.
 (No Bonez no Blood, 2006)*

In *No Bonez no Blood*, singers Ras Attitude, Jah Sun, and Lutan Fyah conflate being a farmer with being a doctor, arguing that eating the food farmers produce is ‘bush’ medicine. The relation between Ital food and healing from slavery and colonialism is implied in the last verse, in which singers reject the presence of food typically associated with slavery (“pork chops”) in a dish associated with Native American traditions (“fritters”). Indeed, during chattel slavery, slave food (which later became soul food) was characterized by aliments of poor nutritional value, often pieces of meat that enslavers would not consume (such as pigtails or pig foot). Although enslaved people’s food was, both in the U.S. and in the Caribbean, often complemented with plants from enslaved Africans’ gardens and influenced by Native American and West African cuisine, it remains strongly associated with the institution of slavery (*High in the Hog*, 2021). Therefore, rejecting meat and valuing plants relates to the “*exorcism of slavery*,” as meat consumed in soul food stems from the masters’ meat waste while plants stem from enslaved Africans’ gardens.

Further in line with Rastas’ understanding of Babylon as a superstructure that infuses society on many levels, the Ital diet tackles not merely the manufactured products and non-organic modes of production but also the very principle from which they originate: colonial mastery. In an article in which she compares French pastry and Ital cuisine, Maria Ann Noland (2021) problematizes both culinary traditions as sites of colonial legacies, arguing that gendered, colonial, and species hierarchies operate through their aesthetics. In other words, it is not just the substance but also the form of Ital cuisine that points towards alternatives to colonial societies. Contrasting the aesthetics of Ital cuisine with pastry reveals that, contrary to French

pastry, which is not only made from thoroughly measured and highly processed colonial products (e.g., chocolate, sugar, coffee, rum) but is also thought to hide components in the finished products, Ital aesthetics mimic the sufficiency of nature. In addition to being composed of ingredients selected according to their organic, local, and health-bringing qualities, Ital ingredients are usually recognizable in the finished products. In French pastry, however, pastel colors and geometrical shapes do not allow consumers to guess most ingredients in the pastry, nor their colonial history, as the pastry industry in France expanded along with slavery and the production of sugar, chocolate, and coffee. In Ital cuisine, ingredients should look and taste like themselves, as they are enough in their most natural form. Therefore, an understanding of Babylon as a diffuse colonial force leads to a lifestyle that tackles not merely Babylonian institutions (the market or the allopathic industry) but also Babylonian paradigms such as the push for mastery of nature, whether it is through farming, through the cooking process itself, or its final aesthetic. Therefore, disclosure and transparency are at the core of Ital food aesthetic, whereas Rastafari would associate French pastry’s aesthetic with duplicitousness, lies, and colonial mastery, as its aesthetic aims at distancing finished products from their components and their colonial and extractive origins. The importance of transparency, as displayed by the Ital aesthetic, also stems from an ideal of harmony with the land. In keeping with this ideal, Rastas do not aim at transforming nature and its inhabitants but celebrate them and establish positive relationships with them.

***“Eating Cadaver Won’t Make You More Alive”*: Eating Ital to Be Fully Alive**

While disengaging from the Babylonian superstructure, Rastafari have articulated alternative environmental and animal ethics that reclaim humanity through harmonization with the land. Although it would be difficult to argue that the Rastafari movement is engaged in animal-centered ethics, Rastafari question the meaning of “identity” for Black people in relation to other land inhabitants and the land itself, which leads to the acknowledgment that humanity is relational and not essential.

Rastafari livity relies strongly on a spiritual conception of collective and personal identity usually referred to as “I&I”—that is, the assertion that everyone possesses a God-like nature and dignity. This is because Rastas believe that Jah (i.e., the Almighty) dwells within all creatures of the Iration (i.e., the creation without interferences) in the form of divine energy (Powell, 2021). From this assertion follows that humanity is divine, but only through its union with the Iration. Therefore, humans’ divinity does not place them above the creation but within the creation. “I&I,” Rastafari spiritual conception of collective and personal identity, refers to individual Rastas discovering their spiritual identity while understanding that they are part of a broader spiritual community including humans, non-humans, and spiritual entities.

Iration sing in the beginning
Jah made everything living thing,
Jungles and the hills,
Morning, Evening
 [...]

Trust not the vain strings of material.
Walk not upon the road of myth and illusion
 [...] *It is Jah holy works*
Rain fall from the sky and bless the earth
It is no curse, nature gives birth
Singing of Iration,
Come sing along, yes, if you love this creation sound
In other words, you know that earth is
In motion. Chant your praises and I say
Use up your vocal...instrumental
 (Iration, 2000)

According to Daweh Congo in his song *Iration*, it is not just “Man” who is “God,” but everything in the Iration, from the “[j]ungles and the hills” to the “[m]orning, [e]vening,” which is why the Iration needs to be celebrated in its entirety: “*Come sing along, yes, if you love this creation sound, In other words, you know that earth is, In motion.*” In his lyrics, Daweh Congo insists on representing the Iration as abundant and blessed rather than cursed: “*It is no curse, nature gives birth.*” In doing so, he goes against views of nature needing to be improved in order to produce more material goods (*Trust not the vain strings of material, Walk not upon the road of myth and illusion*) and religious views representing nature after the Fall from Eden’s Garden as cursed and hostile. In line with the idea that the Iration is already perfect, the opposition between “*strings of material*” and “*Use up your vocal...instrument*” places Chanting over electronic or mechanical sounds, thus implying that human voices are the right instrument to praise the Earth in motion.

For Rastafari, although there is an acknowledgment of specific human sociability, humans do not exist in essence but only in relational terms. Therefore, humans do not have an inherent value, as would be the case in European Humanism, because humanity is created through positive relations with others. Nor do they have a value in opposition with an “other” (i.e. humanity/animality, humanity/sub-humans), therefore inducing that Rastafari is not compatible with any “isms,” which allows for a better understanding of livity as a praxis that makes people more “alive.” If humanity does not exist outside of relations, then one’s level of humanness (that is, spiritual aliveness) can increase or decrease according to the type of relationship one entertains. Consequently, agents of Babylon, such as colonizers, are not humans on the same level as a person on their way to Zion, and this is as long as they choose a life of spiritual degradation. However, fighting agents of Babylon with violence would decrease Rastafari’s livity, leading Rastas to avoid Babylonians’ presence (e.g., by withdrawing and limiting contributions to the Babylonian superstructure) rather than fighting back. In the Rastafari worldview, thus, ‘humanness’ is understood as a state of spiritual awareness and relates to an understanding of the self as intertwined with other spiritual beings in the Iration (I&I).

*Haffi stop eat too much animal
 And then you will see
 You start operate at a different frequency
 Your mind and body
 Get in tune to the elements
 And treat them accordingly
 Compassionately
 You nuh want hurt nobody
 And you want to live consciously
 It's I Macka B
 Try and be the best you can be
 (Health is Wealth, 2017)*

According to Macka B, improving relations with the Iration provokes positive changes at a spiritual level, such as a greater spiritual awareness “*You start operate at a different frequency, Your mind and body, Get in tune to the elements.*” Eating plant-based or vegetarian, for Rastafari, is never merely a matter of animal ethics (such as vegan activism), nor is it merely for personal health reasons. Instead, it is a concrete starting point for a broader paradigm change from which colonial and environmental violence are excluded, and humanness does not rely on domination.

This religious and holistic view of nature serves as a basis for livity, as “*a law of life from which all our other practices emerge, the way you eat, the way you dress, the way you relate to people et cetera*” (Powell, 2021, p. 1). Rastafari’s religious conception of nature largely overlaps the natural man ethos as it relates to an ambition conveyed in the term “Iration,” that is, the creation without interference. A Rasta interviewed by Powell (2021, p. 36) rephrases this theological principle by stating that “*only life can give life [...] he shall not make his stomach a cemetery.*” In other words, eating death cannot make a person more alive. Killing animals, manufacturing products, and using chemicals to cultivate lands are not merely physical attacks on the Iration; they are spiritual attacks leading to a decrease of one’s alive-ness and humanness, which is equally severe. Another Rastafari interviewed by Powell (2021) states that consuming products that are not Ital “*interrupts your connection with Jah and the creation forces, it places a block in the way. You’ve taken processed things into your temple, so your antenna does not connect so well with the almighty*”(p. 39). Many Rastafari emphasize gardening as a direct spiritual engagement with the Iration. This explains Rastafari’s urge to approach the environment with the utmost care and only use organic methods of cultivating and harvesting. “*Through this, many contributors to this study considered farming, cultivation and conservation as the literal pouring of one’s energy and emotion into the earth, the strength and sincerity of this being determinative of how the earth responds and what it reciprocates.*” (Powell, 2021, p. 36).

Interestingly, in Rastafari worldview, the re-humanization of Black people dilutes the Western conception of humanness in a web of otherness. This has been possible because Rastafari have succeeded in articulating environmental and animal ethics not separated from, but from within, their colonial and anti-racist claim and proposing alternative ways to relate to the land that do not reproduce Manichean and colonial attitudes towards otherness but harmonize with the land, and

repopulates it with human, non-human and spiritual beings. These alternative ways to relate to the land through an African prism are in line with Zakiyyah Iman Jackson's (2021) argument that, although African diasporic cultural productions are often interpreted as a plea for human recognition, they tend to critique and move beyond Western conceptions of humanness that "*neither rely on animal abjection to define being (human) nor reestablish 'human recognition' within liberal humanism as an antidote to racialization.*" (p. 2) Rastafari are therefore part of a broader movement of African creative praxis using the viewpoints of beings who went through the colonial, anti-black and anti-non-human process of 'thingification' (Césaire, 2000, p.42) as a creative point of departure to alter the significance of 'being human'.

Conclusion

In conclusion, Rastafari's articulation of environmental and animal ethics cannot be centered on non-human animals and their well-being the same way the mainstream vegan or environmental movements would, as it would maintain the binary separating humans from non-humans and the lands. Instead, Rastafari insists that one's spiritual state depends on acknowledging and respecting otherness in and out of the human species. The broader reflection they propose on the meaning of spiritual aliveness, leading to a complete redefining of humanness, is opposite to Western environmental and animal-ethics activism that keeps anti-racist/anti-colonial and environmentalist activism strictly separated. Rastafari contemplation on what it means to live fully and positively is a fundamental shift from what Martinican philosopher Malcom Ferdinand calls a 'colonial way to inhabit the world'¹¹ (Ferdinand, 2019, p. 53). Ferdinand argues that European colonizers imposed on the Caribbean "*un habiter colonial*" or a colonial way to inhabit the world. Ferdinand recalls that what is called "habitation" in the Caribbean is the master's house. Only white people "inhabit." Enslaved Africans and Indigenous people do not "inhabit"; rather, they pertain to an area of nonexistence. Indeed, although they are the arms working the land, African and Indigenous people are refused agency and creativity when defining the way they wish to inhabit their island, "making the colonial way to inhabit an otherless-inhabiting"¹² (Ferdinand, 2019, p. 59). Not only is livity a way to escape Babylon, or this area of non-existence, by redefining the way Black people wish to inhabit their lands, but it does so by asserting the importance of otherness in the process of being fully alive or spiritually awakened, and therefore in the process of defining a "decolonized way to inhabit the world."

¹¹ "un habiter colonial" (Ferdinand, 2019, p. 53)

¹² "faisant de l'habiter colonial un habiter-sans-l'autre" (in Ferdinand, 2019)

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Chapter 21

From Lifestyle to Activism and Back: Young People's Participation in Vegan Movements



Alexia Renard

A: Then, tell me, how... what made you want to go to a slightly more direct scale of action?

Marion: It happened almost on a whim. I don't remember exactly, but I just said, OK, go, I'm going, I'm trying... then I had nothing to lose either. I don't have a big career and am still in school. I said to myself, if I don't do something big right now, afterward I might not have the opportunity, or else the risks will be too significant compared to the benefits; so, I thought, OK, I'll go for it.

This excerpt is from an interview with a 24-year-old animal rights activist. In 2019, Marion (her name has been changed to protect her anonymity) participated in a blockade in Saint-Hyacinthe, a pig farm near Montreal, Canada. One early morning in December, 12 animal activists entered the barn, quietly sat down and live-streamed the pigs' living conditions. 11 of them were later charged with trespassing and obstructing the police (Animal Justice, 2022).

A vegetarian since 13, Marion became a vegan at 20 after seeing signs held by anti-speciesist activists outside a slaughterhouse. At the time of the interview, she had left activism behind; she had given birth and had returned to school. However, she remained a vegan and emotionally committed to the cause. I met Marion while conducting fieldwork on young people's (aged 12–25) participation in vegan and anti-speciesist movements in Quebec. The analysis of Marion's path reveals several intertwined dimensions: A childhood predisposition to love animals; a daily commitment to veganism; intellectual and moral shock when she discovered anti-speciesism, which led her to immediate collective action. Other activists also encouraged her involvement in the vegan and anti-speciesist movements. Furthermore, Marion had no 'personal constraints' that may have increased the costs and risks of activism, such as 'full-time employment', or 'family

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responsibilities' (McAdam, 1986, p. 70). Social movements scholars call this availability the biographical availability.

Marion's activist path is typical. As highlighted by the sociology of collective action, several dimensions lead people to participate in a social movement: their belief in ideas, their emotions, the recruitment by other activists, associations or grassroots groups, and their biographical availability. I chose Marion's story as the chapter's common thread because of this typicality. I also chose her for another reason: In addition to her participation in collective action, Marion became a vegetarian at a young age and is a vegan. What role did vegetarianism and veganism play in her collective participation in a blockade? To what extent did her childhood experiences lead her to become an animal rights activist?

Recent theoretical frameworks have shed light on less visible parts of social movements. In observing environmental movements, scholars have focused on everyday actions such as recycling, eating locally, and becoming vegetarian or vegan (Derksen & Gartrell, 1993; Haenfler et al., 2012; Hannon & Zaman, 2018; Huddart Kennedy et al., 2018; Kennedy, 2011; Kennedy et al., 2009, 2018; Mihaylov & Perkins, 2015; Ollitrault, 2008; Tornaghi & Certomà, 2018; Véron, 2016; Wrenn, 2011). On the other hand, the increased involvement of young people in environmental movements has led scholars to study their political participation, including that of teenagers (Becquet, 2014; Becquet & De Linares, 2005; Bowman, 2019; Dupuis-Déri, 2020, 2021; Gallant, 2018; Häkli & Kallio, 2018; Kallio & Häkli, 2013; Pfaff, 2009; Pleyers, 2004; Skelton, 2010). This dual trend is interesting for understanding veganism and modern animal rights, which have significant youth components.

In this chapter, I focus on young people's interest in veganism. How does it relate to more collective forms of political action? Drawing on my fieldwork, I bridge structural, relational and cultural theories of the sociology of political participation. While structural approaches focus on the political and organizational context, relational approaches emphasize the roles of relationships, and cultural approaches value the roles of ideas, identity, and emotions. I argue that understanding contemporary animal rights activism means understanding the back-and-forth between structure, ideas and identity, and between individual and collective action. In other words, it means capturing how lifestyle and activism ebb and flow, especially among younger members of the movement. I, therefore, argue for a redefinition of the boundaries of political participation.

I focus first on structural approaches developed during the protest era Western countries experienced in the 1960s and 1970s. I then turn to the sociology of animal advocacy, to grasp the political and organizational context in which young people participate in vegan, anti-speciesist and animal rights movements. I then explain why it is necessary to draw on studies of lifestyle movements (Haenfler et al., 2012) to understand how young people, especially teenagers, get involved in veganism. More generally, I raise the following question: What happens before an individual becomes an animal rights activist?

A Paradigmatic Movement?

While it is difficult to establish a clear trend in the increasing numbers of young vegetarians and vegans, there are proportionally more vegans among the youth and young adults (aged 8–34) than among older population segments. In a recent US survey (Stahler et al., 2021), 5% of 8- to 17-year-olds claimed to be vegetarians (of whom 40% were vegans), and the figure rose to 10% for the 18–34 age group (vs. 5% for the 35–54 age group). In Canada, 63% of the survey respondents who identified as vegan or vegetarian were under the age of 38 (Charlebois et al., 2018). According to a 2020 survey in France, vegetarians are overrepresented among the 15- to 34-year-old compared to older people (France Agrimer, 2020). In a recent pan-Canadian study, 13.6% of young urban Canadians (16–30 years old) said they were vegetarian or pescetarian (Vergeer et al., 2020). In short, vegetarianism and veganism prevail among young people. Why?

Veganism seems to illustrate an ideal of youth engagement. According to Nicole Gallant and Stéphanie Garneau (2016, pp. 110–111, my translation), youth engagement comes ‘from the dual perspectives of global issues and issues of ordinary daily life’. From partisan engagement to ethical consumption via strikes or direct actions, scholars have explored the factors contributing to and the motivations behind young adults’ political participation (Becquet, 2014; Pleyers, 2014; Quéniart, 2016; Gallant & Garneau, 2016; Gallant, 2018). Specifically, 18- to 30-year-old individuals reject partisan engagement and strongly aspire for ecological sustainability (Bowman, 2019). Their vision of social change follows the idea that everyday actions can improve social and environmental justice locally. Finally, some studies note the importance of global citizenship and a lack of interest in domestic political issues (Becquet, 2014; Lipovetsky, 2004; Muxel, 2002; Pleyers, 2004). Not surprisingly, and without denying the rise of far-right conservatism, let alone masculinism (Dechezelles, 2008; Siedler, 2011; Stahl et al., 2022), progressive and solidarity movements remain popular among young people (Bowman, 2019; Gallant, 2018; Pleyers, 2014; Sloam et al., 2019). The vegan and anti-speciesist movements, which denounce the oppression of animals, are indeed part of a broader social justice movement (Ko & Ko, 2017; Larue & Giroux, 2017; Renard, 2019). But how do young people come to participate in such movements? I now turn to the structural theories of social movements to answer this question.

Why and How Do People Participate in Social Movements?

Environmentalists, *dumpster divers*, far-right activists or anti-racist bloggers—despite the great diversity of people studied, common questions recur in the sociology of activism. First, why do people participate in collective action? Second, how, and why do some individuals remain committed while others disengage? As I mentioned earlier, Marion’s case will serve as a common thread. It will show that classic

theories of social movement participation, which emphasize the role of organizations and political context, are relevant to understanding veganism and animal advocacy.

Marion identifies herself as an anti-speciesist and a vegan. She is familiar with anti-speciesist theories and has read books on the subject. However, this ideological adherence seems insufficient to explain her participation in direct action; many people identify as vegans or anti-speciesists without being activists. A call on Facebook from a Montreal-based anti-speciesist organization indeed convinced Marion to take direct action.

The sociology of activism shows that translating political sympathy into collective action is not self-evident (McCarthy & Zald, 1977; McAdam, 1986; Passy, 1998; Mathieu, 2012). Therefore, these researchers have sought to understand the mechanisms that lead to engagement (*the how*) rather than the reasons for doing so (*the why*). Sociologists identified the role played by organizations in recruiting activists as early as in the 1960s, a period of protest in many Western countries (Della Porta & Diani, 2009). According to McCarthy and Zald (1977), social movements depend on resources—money, time and labour. Understanding collective action means understanding the concrete means by which some form of mobilization succeeds in making itself heard. Therefore, cause entrepreneurs and organizations are central players, acting as channels that feed social discontent. According to this theory, known as resource mobilization (McCarthy & Zald, 1977), there are always enough grievances in any society to explain social movements. It is thus essential to examine *how* these claims become audible and organized. In the case of the animal rights movement, organizations such as People for the Ethical Treatment of Animals (PETA), Farm Animal Rights Movement (FARM), Mercy for Animals in North America, and L214 in France, have done much work in recent years to bring their cause into the public debate (Cherry, 2016; Carrié, 2018; Carrié et al., 2023). Along with these structured and well-funded organizations, several grassroots groups, such as Direct Action Everywhere, Anonymous for the Voiceless and the Save Movement, have internationally fostered participation in animal advocacy.

Some questions remain. Why does one person remain just a supporter and another becomes an activist? How does a simple supporter become an activist? Social movement sociology attempts to answer this question using a multicausal model of individuals' social trajectories (Agrikoliansky, 2001; Della Porta, 1992; Fillieule, 2001, 2020; Jacquemart, 2013; Passy, 1998). This work implies positioning the individual paths of commitment in their temporal dimension and the political context. This multicausal model of participation draws heavily on Doug McAdam's work on the US civil rights movement and one of its most notorious actions called the Freedom Summer (McAdam, 1986, 2012). Freedom Summer was a recruitment campaign launched in 1964 on the campuses of major universities in the northern United States. Its goal was to help blacks register to vote in Mississippi, a state plagued by racism. McAdam showed that the political commitment to this high-risk action (the police and the Ku Klux Klan murdered three activists at the beginning of that summer) depended on several factors at individual (micro), organizational (meso) and political (macro) levels. At the macro level, generational and

class effects intersected; most activists were young, white, progressive college students from the North. At the meso level, relationships between future activists and those involved led to increased activism. At the micro-level, biographical availability and prior activist experience were central explanatory elements of engagement.

As well as these civil rights activists's paths, Marion's commitment to the animal cause can only be understood in the broader contexts of the environmental crisis and the public debate on animal rights. She belongs to a generation for which eating meat is no longer as unchallenged as it used to be (Charlebois et al., 2018). This cultural background combines with other microelements: personal availability, the recruitment work by the anti-speciesist organization, sensitivity to animals, her commitment to vegetarianism and relationships with vegan activists. The interaction of all these dimensions has led to her commitment.

However, a person does not mobilize for civil rights in the same way as for animal rights. Similarly, becoming a vegan or a vegetarian differs from blocking a slaughterhouse, participating in a high-risk campaign, or joining an organization. Therefore, I propose to explore two other streams of literature to understand participation in veganism and anti-speciesism: the sociology of animal advocacy, which I briefly review in the next section, and studies of lifestyle movements, which is the subject of the next section.

The Roles of Ideas and Emotions in the Animal Cause

Marion: I was going to school in Montreal. I used to drive a lot, and then I often saw trucks. That just confirmed that I was a vegetarian for the right reason. However, as I was driving by, at one point, I saw activists holding a vigil, and this group had signs that were not necessarily related to the slaughterhouse they were in front of. Let's say it's an Olymel¹ slaughterhouse; they're not just going to put up pictures of pigs; they hold general anti-speciesist signs... then their message really... I was like, 'Oh!'

That very day, Marion discovered anti-speciesist theories. Those ideas struck her. She had never considered her vegetarianism ideological.

I showed that part of the sociology of engagement goes beyond providing explanations for ideological adherence, which is considered insufficient, to focusing on the organizational, relational, and structural mechanisms leading to participation. In the 1990s, a new approach heralded the return to ideas in the study of social movements. With this cognitive turn, the sociology of social movements became once again interested in activists' ideas and intellectual work (Eyerman & Jamison, 1991). This theoretical approach is vital for understanding the animal rights movement. Abundant intellectual production has indeed characterized the vegan and anti-speciesist movements since the 1970s (Carrié, 2015). The anti-speciesist movement was developed in Oxford by the Australian philosopher Peter Singer, who formed

¹Olymel is a Canadian meat packing food processing company, a producer of pork and poultry products, based in Saint-Hyacinthe, Quebec.

an animal ethics research group at that prestigious university a few years before writing *Animal Liberation* in 1975, a flagship book of the movement. In Canada, the work of philosophers, such as Valéry Giroux (2017), a specialist in animal ethics and vegan activist, marked a turning point for the animal cause in Quebec. Thanks to her efforts, animal ethics has acquired its credentials in the province's academic, editorial, and media fields (Renard, 2019).

The models that I have described in the first part of this chapter insist on the sociocultural and political contexts (earlier called structural) as necessary, though insufficient, conditions for activism. Cognitive analysis suggests going further and understanding how the sociocultural context mobilizes and transforms activists. In other words, the sociocultural context is not *just* a context (Jasper, 2010).

Ideas and cognitive representations of the world are more than just a backdrop for social movements; they constitute their depth and breadth. How are these ideas produced, and how are they enacted? In short, social movements' scholars must also be interested in what goes on in people's heads, as James Jasper (1997) quipped. This is especially true in the case of moral protests (Jasper, 1997).

One of the first sociologists to bring culture back into the study of social movements, Jasper defines moral protests as mobilizations that touch on individuals' deepest identities and conceptions of morality. It is clear how fundamental this analysis is for the contemporary anti-speciesist movement, whose members claim a strong ethical vision—to cause the least amount of suffering to sentient beings (Renard & Simoneau-Gilbert, 2021). Moreover, a crucial intellectual production from moral philosophy characterizes the movement: concepts that are developed in the movement, such as anti-speciesism or carnism,² play a significant role in the paths taken by the activists (Carrié, 2018; Carrié et al., 2023; Celka, 2016; Dubreuil, 2009; Traïni, 2011). They influence the collective identity of the movement as much as the participants' identities. For example, Marion, who discovered anti-speciesist theories through collective action, now identifies herself strongly as an anti-speciesist. Not only does she identify as an anti-speciesist, but the idea that discrimination according to species was unjust led her to direct action.

Besides the role of ideas, the cognitive turn has highlighted the role of emotions in activism, notably with the notion of moral shock. A moral shock is an experience that leads people to change their beliefs, values and worldviews; arouses a deep emotion (anger, disgust or sadness); and triggers an imperious commitment. The notion of moral shocks shows that political participation also occurs even when an individual has no personal or professional networks involved in a social movement (Arthur, 2022; Jasper & Poulsen, 1995; Traïni, 2020). For example, activists with no prior experience or relational network joined the anti-nuclear movement after the Three Mile Island accident (Jasper & Poulsen, 1995). The same phenomena occurs in the case of animal advocacy: images, videos, readings, or encounters about animal exploitation often evoke immediate moral shock and participation in

²“Carnism refers to the ideology conditioning people to consume certain animal products. It is essentially the opposite of veganism”.(Gibert & Desaulniers, 2014)

animal rights movements (Jasper & Poulsen, 1995; Jasper, 1997; McDonald, 2000; Traïni, 2011; Herzog, 1993; Gaarder, 2011; Cherry, 2016; Carrié, 2018). Of course, not all animal activists become so due to a moral shock. However, this notion questions the traditional theories that have extensively noted the importance of political context and relational networks. How does this moral shock occur? What are the socio-psychological mechanisms?

Early Socialization: Gender, Childhood Sensitivities and Family

The dominant culture and gender relations shape social movements (Alvarez & Parini, 2005; Falquet, 2005; Jacquemart, 2013). Indeed, the primarily published surveys on women's participation in the animal rights movement, although focused on the United States, note that the movement is almost exclusively female, with 68–80% of its members being women (Galvin & Herzog Jr, 1992; Greanville & Moss, 1985; Jamison & Lunch, 1992; Jasper & Poulsen, 1995; Plous, 1991, 1998). While no recent surveys confirm these figures, they indicate a significant trend. My sample of respondents also has a similar percentage, primarily women (Renard, unpublished). Moreover, women's involvement in the animal cause is nothing new; they have participated in the anti-vivisection struggle and the creation of animal shelters since the 1880s (Simoneau-Gilbert, 2019; Traïni, 2011).

How does gender relate to animal advocacy? The sociologist Emily Gaarder raises the question in an in-depth survey of 27 female activists in the United States (Gaarder, 2011). Gaarder shows how women's animal rights activism often results from a moral shock and is often closely link with other social struggles, such as gender, class and race inequalities. Most female animal rights activists also recognize the common oppression experienced by animals and women. Gaarder also notes a strong sense of empathy and the alignment of personal values (vegetarianism or veganism) with political ones (anti-speciesism). According to Jasper and Poulsen (1995), women are predominant in the animal cause because they are mainly responsible for childcare and, therefore, more likely to consider animals as beings worthy of protection. Although many female activists are not mothers, gender socialization, which values care, and concern for others, likely plays a vital role in this political involvement.

The link between gender and moral shock puts into perspective the suddenness of the shock felt by activists. What if previous dispositions were at the root of moral shock? In their works, Gaarder (2011) and Traïni (2010) note a critical dimension that I pointed out in my field survey—several animal activists have been sensitive to animals since childhood. However, this sensitivity is not a predictive predisposition. Indeed, many children and teenagers love animals yet do not become vegan or anti-speciesists. Moreover, the love of animals, as told by today's vegans, can be overstated in retrospect, based on their activism. That is why other works discuss how

moral shocks, or ‘turning points’, dock with childhood or adolescent sensibilities (Cherry, 2015; Griffin, 2017; Herzog, 1993). This sensitivity can result from shocking scenes (e.g. seeing an animal slaughtered in front of one’s eyes), disgust with meat, cognitive dissonance (e.g. eating veal and petting a cat), and from the family transmission of values (environmentalism, etc.). Some studies also insist on the sociological context that affects the efficacy of moral shocks, such as media bias, countermovement framing, and the dominance of a speciesist paradigm (Wrenn, 2011, 2013).

In other words, the moral shocks that lead to collective action build not only on sociocultural context but also preexisting experiences and individual’s identities. Sociologists who study collective action must therefore analyze the construction of mental worlds, the formation of symbolic representations, and the development of moral ideas through family socialization. To put it even more simply, one is not born politicized and committed to a movement but becomes so at the end of a complex trajectory that begins during childhood. Not only does this observation lead to the necessity of a life course analysis, but it also relativizes the binary of participation/non-participation. But it also raises other questions: In what ways are personal and political participation interwoven? What are the political effects of daily and personal actions in the family sphere? How to think about individual participation that does not necessarily have a public or even a protest dimension? Let us listen to Marion’s words:

Marion: Now, four years later, it’s going great. [My parents] eat vegan when I come to eat with them. They cook for me. My father, as soon as he finds something vegan at the grocery store, he takes it from me, it goes well. On the other hand... at the beginning, I think that the fact of... because it seems that it is a bigger question than just vegetarianism. It was a little bit difficult because it happened very quickly; from one day to the next, I stopped everything [*note from the author: every animal product*], and then quite quickly, I started to talk openly about what I knew related to the [animal] industry and everything... that’s it, the beginnings were a little bit more... it wasn’t confrontation, but we could see that it bothered them a little bit... but I think it’s more their questioning... but it didn’t take long either before they supported me...’

Marion told me about her relationship with her parents after she became a vegan. While the beginnings were challenging because she confronted them about the animal industry, they eventually accepted and supported her commitment. Today, Marion is not as active in the movement as she used to be. She still considers herself very involved, though less collectively, after the birth of her first child and her return to school. Less militant, her commitment to animals remained intact from a daily perspective, notably, by raising her child in a vegan way. This continuum between daily and public engagement is another dimension that the sociology of political participation has sometimes dismissed. Activism is an ‘individual and dynamic social activity’ (Fillieule, 2001, p. 204, my translation) linked to other spheres of life, especially the family sphere. In Marion’s case, family support played a crucial role in both her involvement in veganism and collective action. Family is indeed a crucial and intimate dimension of engagement and political participation, especially in the young years. Therefore, the sociology of activism must work ‘on the

multiplicity of commitments along the life cycles'. (Fillieule, 2001, p. 207, my translation).

Toward a Redefinition of Political Participation's Boundaries

What is the connection between personal involvement and the more openly protesting dimensions of activism? Some studies on the environmental movement have attempted to build bridges between the conventional and the more *low-profile* dimensions of activism. The rise of this movement in the 1990s indeed brought changes in activism that are essential to understanding veganism and anti-speciesism: although distinct, the environmental and animal rights movements have been closely related regarding their members and ideas.

According to the infamous French sociologist Alain Touraine (1978), environmental movements (along with youth and feminist movements) emerging in the 1970s are typical of post-industrial societies because they no longer seek to improve material conditions and focus on culture and identities (Della Porta & Diani, 2009; Touraine, 1978). Alberto Melucci (1983) describes these movements as 'nebulae with uncertain boundaries' (1983, p. 14) that lack access to institutions, retreat into the private sphere, and are not equipped to translate their demands into the partisan political field. Other studies on environmentalists also convey the idea that part of environmental engagement operates in the cultural realm, abandoning the usual political realm (Kennedy et al., 2018; Ollitrault, 2008; Pottinger, 2017; Vaillancourt, 2015).

Individual and daily actions for culture change are essential to the ecological and vegan movements. Environmental activists often become involved through avant-garde everyday practices (de Moor et al., 2017; Dubuisson-Quellier, 2018, Kennedy et al., 2009; Lorenzen, 2012; Ollitrault, 2008). In France, as early as the 1980s, although sorting and composting were not yet institutionalized, some ecologists were engaging in these practices. Ecologically minded elected officials in municipal councils were thus making headlines for riding their bicycles, signalling their commitment to reducing carbon footprints in their daily lives. Similarly, just as environmentalism can consist of adopting specific lifestyles (zero waste, bicycling, vegetarianism, etc.), refusing to exploit animals is translated into daily practice, i.e. being vegan (Cherry, 2015; Griffin, 2017; Renard, 2019; Véron, 2016).

To what extent do these actions have a transformative political impact? This question has generated many English-language studies on what is called lifestyle movements (Cherry, 2015; de Moor et al., 2017; Featherstone, 1987; Gheihman, 2021; Haenfler et al., 2012; Lorenzen, 2012; Maurer, 2010; Portwood-Stacer, 2013). The work on lifestyle movements focuses on the margins of social movements as traditionally conceptualized, rooted in collective action and aimed at political institutions. A seminal article (Haenfler et al., 2012) laid the groundwork for this distinction. According to the authors, while social movements are oriented toward social change, lifestyle movements are based on everyday participation and are oriented

toward cultural change. In this case, a cultural entrepreneur takes over from an activist. Cultural entrepreneurship is defined as ‘the specific activity of establishing cultural businesses and bringing to market cultural and creative products and services that encompass a cultural value but also have the potential to generate financial revenues’. (Dobрева & Ivanov, 2020 p. 23). The vegan movement, for example, counts among its media figures social media influencers, chefs, investors, athletes, researchers, doctors, filmmakers, and authors.

For this reason, Nina Gheihman (2021) suggests decoupling veganism from the animal rights movement and anti-speciesist ideology. This step would allow a better understanding of how an ideology-based movement can become a cultural movement integrated into the consumer society. Some works (Cherry, 2006, 2015; Larue & Giroux, 2017; Renard, 2019; Véron, 2016) take a different view, suggesting that analyzing lifestyle and protest engagement not as various phenomena but as a continuum can enrich the understanding of contemporary social movements. Elizabeth Cherry (2015) highlights the importance of lifestyle activism as a foundation for youth animal activism. In her study of 23 (self-identified) young vegans in the United States, she (2015) shows how they develop political consciousness through their practice of veganism, outside of any organization, by attending punk concerts, partaking in community vegan buffets, and reading zines.

Specifically, this continuum is most visible through personal and political identity connections. Saying ‘I am a vegan’ draws a boundary between a vegan and a non-vegan, thus, it involves a significant identity transformation. And as Haenfler et al. (2012) point out, the self drives social change in lifestyle movements. How does the shift from a personal to a political identity occur? One of the hypotheses I argue is that especially at this stage of life when social identities are being formed, family socialization plays a central role in this transformation through everyday politicization. This is why in the introduction of this chapter, I suggested that grasping lifestyle and activism ebb and flow *over a life course, including childhood* is crucial to understand contemporary animal rights activism. This is also why I chose Marion’s case, which exemplifies these interlocking dimensions. Making the connection between meat and animals, she became a vegetarian at 13. Then, at 20, a moral shock occurred; she went vegan and discovered anti-speciesist theories altogether. A few months later, she participated in a high-risk action. She is now less collectively involved but still a committed vegan. Throughout her journey, and at only 24, she has already alternated between different styles of participation, ending with the full support of her family.

Conclusion

In this chapter, I have attempted to challenge the classical conception of political participation as a public and collective activity. I have first reviewed the theories of collective action and their contributions to understanding activism. I have discussed how activism is always rooted in sociocultural and generational contexts, such as

the ongoing climate crisis, but also depends on organizations and personal availability, that are essential drivers of political action. I have then focused on the roles of ideas and emotions in animal rights activism. I have highlighted the importance of gendered socialization and childhood experiences, structuring young people's moral values. Finally, I have argued for a dynamic understanding of activism. Activism is embedded in multiple spheres of life, whether intimate or public, socio-cultural, or explicitly political. This stance is essential for understanding contemporary social movements, particularly veganism and animal rights.

As shown throughout the chapter, collective action is increasingly channelled outside organizations and rooted in individual daily activities, especially regarding young people's political participation. Thus, youth involvement in veganism seems to embody the 'individualized collective action', that is, 'the assumption of responsibility by citizens who, through the creation of everyday frameworks, alone or with others, seek to confront the problems they believe to affect what they consider the good life' (Micheletti, 2002, p. 7). The focus on youth veganism forces social movement scholars better to understand the continuity between lifestyle involvement and collective participation. One of the hypotheses I am exploring in my study of young vegans in Quebec is to understand the link between individual and collective action through the agency-structure nexus. I focus on how individual dispositions, such as personal availability, moral values, emotions, social background, gender and family interact with institutions. These institutions can be ideological, such as the institutionalized speciesism and carnism that prevail in our societies, but also political, such as the state institutions that shape individuals' behaviours (e.g. schools, and public policies like federal or state dietary guidelines).

Studying minors and more generally young people leads scholars to expand the common conception of political participation beyond the public sphere or collective action. Young activists, such as Marion and others I met during my fieldwork, are acting to change the status quo around them by becoming vegan or vegetarians early in their lives, sometimes as early as childhood. In an era of environmental crisis, not only scholars but above all policy-makers should take these actions seriously.

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Chapter 22

Ahiṃsā



Jonathan Dickstein

Ahiṃsā is a Sanskrit word that refers to the South Asian religio-ethical principle of nonharming. *Ahiṃsā* presents an ideal of the perfect abstention from all forms of injury to all living beings at all times and in all places. The word is a negation of the Sanskrit noun *hiṃsā*, literally meaning “injury” or “harming.” The principle implies nonkilling but also extends to nonlethal harms inflicted by means of body, speech, and mind. As the experience of suffering (*duḥkha*) can be both physical (*śārīra duḥkha*) and mental (*mānasa duḥkha*), harms afflict living—or more precisely, “feeling” or sentient—beings both physically and mentally, albeit to varying degrees according to the physical and mental constitutions of the individual beings. *Ahiṃsā* is also commonly translated as “nonviolence,” yet this translation occludes semantic differences between harm and violence and risks confusing the principle with the political strategies of nonviolence first employed by Mohandas Gandhi and later by Martin Luther King, Jr.

Vedic Traditions

Contrary to popular belief, especially in Western society, the history of Hinduism is not dominated by *ahiṃsā* or any other deep ethical misgiving about animal sacrifice, war-making, and the killing of animals—including cows—for food. The pre-Hindu Vedic period initiated in the second millennium BCE with the migration of Central Asian nomadic pastoralists into the northwest of what is now India. These migrants were responsible for the production of the Vedas, revealed oral “texts” that formed the basis for all later “orthodox” Hindu traditions. Vedic ritualism, grounded in the

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teachings of the Vedic Saṃhitās (hymns) and Brāhmaṇas (exegetical texts; collectively ca. 1500–650 B.C.E.), and later serving as the blueprint for Hindu ritualism, called for the killing and subsequent consumption of animals for sacrificial purposes, and even for the mere reception of honorable guests. In the context of sacrifice, various species of animals were killed, though most commonly the victims were goats, cows, and occasionally horses. In Vedic ritual the sacrificial animal was killed outside the perimeter of the sacred space, with the preferable means of killing being strangulation, referred to euphemistically as “quietening” (there is also evidence for death by axe and knife). Brahmin ritual specialists recited verses emphasizing the post-mortem benefits that would accrue to the sacrificial victims, and later texts maintained that the killing of an animal in a ritual context was not really “killing” at all. Brahminical countermeasures, however, were arguably undertaken primarily to avert ritual pollution and ensure the success of the sacrifice, rather than to assuage direct anxieties about the harming and killing of animals.

Nevertheless, following Schmidt (1968) and later echoed by Tull (1989), Heesterman (1986) has argued that *ahimsā* sprouted “orthogenetic[ally]” (121)—a type of linear and internal evolution—from within Vedic circles, gradually emerging due to mounting concerns over the causing of harm to animals in ritual practice. This shift is epitomized in the eventual abstraction and internalization of ritual sacrifice—and thus the avoidance of killing, whenever typically required—in the late philosophical Vedic texts known as the Upaniṣads (ca. 800 B.C.E.–200 C.E.). The religious practitioner gradually abandoned the external structure of sacrifice and innovatively relocated the ritual arena within their own body, thereby avoiding the need for the use and killing of animals. However, despite various rationalizations for committing harm and the ritual substitution practices expressed in the earlier Brāhmaṇas (ca. 900–650 B.C.E.), there remains more controversy and uncertainty in these texts than any consistent and concrete ethic. Moreover, the later Upaniṣads themselves lack any clear emphasis on *ahimsā* as an ethical principle. In addition, the criticisms of Vedism voiced in the Upaniṣads generally spring from renouncer groups—that is, groups of ascetic seekers—rather than ritualistic ones.

The most plausible determination, but by no means definitive, argued in various forms by Dumont (1980[1966]), Smith (1990), Bodewitz (1999), and Houben (1999), is that *ahimsā* originated within non-Vedic renouncer traditions of ancient India, namely Jains and Buddhists. In all probability, these “heterodox” renunciators of the late first millennium B.C.E. interacted regularly with Vedic renunciators, influencing emerging post-Vedic Hindu traditions (“Hindu” referring to the emerging diversity of “orthodox” religious traditions that accepted the authority of Vedas) in numerous ways, including the appropriation of some notions of *ahimsā* and even the complete abandonment of animal sacrifice. The eventual appeal and adoption of the ethical principle of *ahimsā* by Hindu traditions also may have been assisted by the post-Vedic shift from pastoralism to settled agriculture, which only increased the use-value of cows and motivation for their physical protection (Jha, 2002).

Śramaṇa Origins

A *śramaṇa*, or renouncer, is literally “one who toils, labors, or exerts,” but the word can also mean “wanderer” or “seeker.” *Śramaṇas* are those who have renounced the mundane world in the pursuit of spiritual achievement. In South Asia, the ultimate goal for most *śramaṇas* is liberation (*mokṣa*, *parinirvāṇa*, *kaivalya*), freedom from the perpetual cycle of birth and death (*samsāra*). Renouncer groups have existed in South Asia for millennia, but the two major surviving *śramaṇa* traditions are Buddhism and Jainism. Both traditions (or better said, diversities of traditions) emerged in northeast India in the middle of the first millennium B.C.E, with Buddhism inspired by Siddhartha Gautama and Jainism by Mahāvīra. Both are regarded as “heterodox” traditions due to their rejection of the authority of the Vedas with its associated cosmology, soteriology (a system predicated on a doctrine of “salvation”), rituals, and values.

Jainism

Jainism, more than any other South Asian tradition, ascribes paramount importance to the ideal of *ahiṃsā*. The central slogan of Jainism, *ahiṃsā paramo dharmah*, translates as “nonharming is the highest duty.” Harming living beings—from microscopic organisms (*nigodas*) to plants to animals to even supernatural beings—is one of many acts that cause negative *karma* to “stick” to the individual soul (*jīva*). The sticking or accrual of *karma* is what prevents the soul from attaining release from the mundane world, which is the soteriological objective of Jainism. Freedom from the bondage of this world can reasonably be viewed as the perfection of the highest duty of *ahiṃsā*, for by preventing rebirth one eliminates the possibility of causing any future harm to living beings.

Early Jainism, like early Buddhism, began as a renouncer movement, with rules intended primarily for monks and nuns. Both major Jain sects—Digambara (“sky-clad,” or naked) and Śvetāmbara (“white-clad,” or wearing white garments)—include strict vows (*mahāvratas*) for monks and nuns and relatively relaxed vows (*anuvratas*) for lay followers. One of the earliest and most authoritative Jain texts, the Tattvārtha Sūtra (Umāsvāti, 2010), lists a fivefold vow of personal restraints: abstaining from harming, lying, stealing, sexual misconduct, and attachment (to possessions) (TS 7.1). Monks, nuns, and laypeople are all expected to follow these abstentions, though with varying degrees of rigidity. Monks and nuns attempt to avoid harming to such a serious extent that they traditionally refrain from digging, bathing, lighting or extinguishing fires, boiling water, and other routine acts that may cause death to living beings. Jain monks and nuns may also wear a cloth mouthguard and use a whisk to sweep the ground while walking to avoid the ingestion and trampling of insects and imperceptible living beings.

Since *karma* for Jains is a subtle substance that sticks to the soul and causes its rebirth, the impetus behind the fivefold vow is the avoidance of negative *karma*. Liberation is achieved only when one's *karma*—both positive and negative—is fully eliminated and can no longer propel the soul back into the mundane world. Considered in this light, *ahiṃsā* may seem like a purely egoistic ethic motivated by a personal desire to escape the experience of physical and mental pain associated with negative *karma* and embodied existence as a whole.

The ethic of *ahiṃsā*—whether Jain, Buddhist, or Hindu—is not infrequently criticized for this allegedly self-serving core, an apparent instrumentalization of others for the sake of one's own liberation. However, the Ācārāṅga Sūtra (1884), perhaps the earliest surviving Jain text, states: “All beings are fond of life; they like pleasure and hate pain, shun destruction and like to live life, they long to live. To all, life is dear” (AS 1.2.3.4; cf. Dhammapada, 2006, pp. 129–130). According to this verse, all living beings seek pleasure and the continuation of life, and all avoid pain, dying, and death. Moreover, harming living beings brings negative *karma* to the doer, whereas acts of compassion bring positive *karma* (even if ultimately all *karma* ties one to *saṃsāra*). But if, as the critics suggest, the physical and mental pains of others do not matter in themselves, then why should causing harm result in negative *karma* and compassion result in positive *karma*, and not vice versa (Framarin, 2014)?

While the positive or negative quality of *karma* is often said to be determined by the absence or presence in the mind of the doer of *kaṣāyas*, or “mental impurities” (namely anger, pride, deceit, and greed), the pain and death caused by harming are at the same time intrinsically bad. Why else does the doer not only receive negative *karma* for inflicting harm on others, but also, as is commonly the case, experience physical and/or mental pain as the fruits of negative *karma*? Although harming is considered wrong and prohibited because of its ill effects on the doer, it is also—and arguably more foundationally—considered wrong and prohibited because of the *prima facie* badness (that is, disvalue) of pain and suffering. Causing harm to living beings causes them pain, suffering, and death, and these experiences are bad for any beings who are “fond of life” and “hate pain, shun destruction.”

Buddhism

The historical Buddha, or “Awakened One,” named Siddhartha Gautama, lived around the same time as Mahāvīra in the sixth century B.C.E. Like the early Jain tradition, the early Buddhist tradition originated as a spiritual path for wandering mendicants who rejected the Vedic worldview. Followers of the Buddha not only embraced his teachings about the nature of reality but they were particularly attracted by his pragmatic diagnosis of the problem of suffering and the prescription for its permanent alleviation. Over time, Buddhist teachings expanded to include nonrenouncers whose principal concern is the accumulation of merit for, among

other things, a favorable rebirth. While denying the existence of the soul and other metaphysical claims propounded by Jain and Vedic traditions, the Buddha did accept *karma*, the ultimate goal of liberation from the mundane world, and the ethical principle of *ahimsā*, with some modifications. The ethic of *ahimsā* was included in teachings for monks and nuns as well as laypeople. Instructions for proper Buddhist conduct are found as early as the third century B.C.E., where nonharming is present in both the general teachings of the Buddha (Suttas) and precise regulations for monks and nuns (Vinaya).

The first precept (*sīla*) for all Buddhists is the vow not to kill, and presumably also not to harm (the moral relevance of “harming” microscopic organisms and plants is less clear in Buddhism as compared to Jainism). The remaining four of the five precepts (*pañcasīla*) prohibit stealing, sexual misconduct, lying, and intoxication, with the final act of intoxication prohibited largely due to its contribution to the performance of the other misdeeds (Harvey, 2000, pp. 69–79). Four of these five precepts are identical to the Jain vows, with both traditions presenting *ahimsā* as the primary ethical principle and the adherence to the four others serving as refinements of one’s obligation to refrain from harming. While *ahimsā* generally covers nonlethal harms in addition to killing, early Buddhist traditions tended to focus on the abstention from killing itself. At the same time, the right livelihood regulation of the Noble Eightfold Path prohibits selling weapons, flesh, living beings, or intoxicants, thereby prohibiting one from contributing to acts that cause nonlethal harms in addition to killing.

Later Mahāyāna (“Great Vehicle”) Buddhist teachings include the principle of *upāya*, or “skillful means,” whereby a highly realized Bodhisattva (“enlightenment being”) may appear to violate certain ethical principles in order to prevent even worse consequences resulting from a mechanical obedience to general principles. As the eighth century C.E. master Śāntideva asserts:

Through actions of body, speech, and mind, the Bodhisattva sincerely makes a continuous effort to stop all present and future suffering (*duḥkha*) and depression (*daurmanasya*) and to produce present and future happiness (*sukha*) and gladness (*saurmanasya*) for all beings. But if he does not seek the collection of the conditions for this, and does not strive for what will prevent the obstacles to this, or he does not cause small suffering and depression to arise as a way of preventing great suffering and depression, or does not abandon a small benefit (*alpārtha*) in order to achieve a greater benefit (*mahārtha*), if he neglects to do these things even for a moment, he is at fault (*sāpatti*). (*Śikṣā-Samuccaya* 15, in Goodman 2016, p. 17)

This passage explicitly extends ethical consideration to the prevention of physical and mental pains of any and all living beings and stresses the additional duty of bringing benefits to them as well. It also exhibits, as Goodman (2009) has argued, a consequentialist undercurrent in Buddhist ethics that rejects absolute pacifism or quietism as the proper actualization of *ahimsā*; as Śāntideva states, a Bodhisattva must “cause small suffering and depression to arise as a way of preventing great suffering and depression,” for otherwise they are “at fault.”

Early Upaniṣads and Early Hinduism

While the Jains and Buddhists were in all probability the earliest exponents of the principle of *ahiṃsā*, a semblance of the fivefold vow is found in an Upaniṣadic list of sinful acts. The Chāndogya Upaniṣad, the only Upaniṣad that explicitly mentions *ahiṃsā* as an ethical principle (ChU 3.17.4 in *The early Upanishads*, 1998), gives the five major sins as stealing gold, killing a Brahmin, drinking alcohol, sexual contact with the wife of the guru, and contact with one who commits any of these four sins. The first four sins remarkably resemble the Jain and Buddhist restraints of non-stealing, non-harming, non-intoxication, and chastity.

However, *ahiṃsā* is not prominent as an ethical principle for Hindus until the Dharmasūtras (2009), law treatises composed from the third to first centuries B.C.E. In the Gautama Dharmasūtra, *ahiṃsā* is lacking altogether, though the practice of *dayā sarvabhūteṣu*, “compassion for all living beings,” is included (GDh 8.23). The classic fivefold list of restraints, including *ahiṃsā*, is only found in a later interpolation in the Baudhāyana Dharmasūtra (BDh 2.18.2–3). Overall, the list of five restraints is not fixed even in the latest Dharmasūtras. In the later post-Vedic Mānava Dharmaśāstra or “Laws of Manu” (2005) (ca. 100–200 C.E.), *ahiṃsā* is included in a fivefold list of vows specifically for renunciators (MDh 6.75), whereas in another place it is also prescribed in a fivefold list for laypeople (MDh 10.63). Given the differences in the earlier and later Dharma literature, and the fact that *ahiṃsā* had been well formalized in Jain and Buddhist circles by the post-Vedic period, the most plausible determination is that post-Vedic Hindu traditions were in the process of responding to and appropriating the notion of *ahiṃsā* from the heterodox traditions. Hindu texts such as the Mahābhārata (ca. 200 B.C.E.–100C.E.) and the Bhagavad Gītā (ca. 200 B.C.E.) include teachings on *ahiṃsā*, but they are posterior to the Jain and Buddhist formulations and are rarely consistent concerning the ethics of inflicting harm and violence.

Arguably the clearest Hindu elaboration of the principle of *ahiṃsā*—at least as a mandate for renunciators (in this context, *yogins*) resembling Jain and Buddhist renunciators—is in the fifth century C.E. Yoga Sūtras of Patañjali, the main text of so-called classical Yoga. In this text, the five *yamas* (restraints) for the *yogin* are nonharming, truthfulness, non-stealing, chastity, and non-hoarding (YS 2.30). *Ahiṃsā* is defined in the main commentary as “in no way and at no time to do injury to any living being” (Bryant, 2009, p. 243). The commentary emphasizes *ahiṃsā* as the primary restraint, with the remaining four operating as instrumental restraints in the service of perfecting nonharming. The *yogin* adopts the “great vow” (*mahāvratā*; YS 2.31) by practicing all five restraints unconditionally, irrespective of birth, place, time, or circumstance.

Ahimsā and Vegetarianism

Ahimsā and vegetarianism are intimately connected in Jain, Buddhist, and Hindu texts, which include numerous warnings about consuming animal flesh, whether based on the detrimental physio-energetic effects of consuming flesh as a substance or on the karmic effects for the consumer owing to indirect participation in the killing of animals. With respect to the latter, all three traditions admit that one is not free from blame simply by not being the direct killer of an animal; any person who hires or impels another to kill an animal on their behalf, who sells or buys a dead animal, or who in any other way profits from the killing of animals is also considered to be a killer. Classical Yoga's Patañjali goes so far as to claim that even one who allows harm or killing to take place in their vicinity is also guilty of *himsā* (YS 2.31).

Notably, in the Jīvaka Sutta, a very early Buddhist discourse in the Majjhima Nikāya (“Collection of Middle-Length Discourses”) (2002), the Buddha states that flesh offerings should be accepted and consumed by alms-begging monks as long as the monks have not seen, heard, or had any other reason to suspect that the flesh came from an animal killed specifically for them (MN 55). Here the Buddha presents the oft-repeated Buddhist principle known as the “threefold purity” (Barstow, 2017, pp. 47–50). Leftovers of meat are morally receivable since the consumption of them presumably did not motivate the killing of the now-dead animal, and nor will it (ideally) motivate the killing of existing or future animals. Therefore, the Buddha can be regarded as the first figure to promote ethical vegetarianism with a “freegan” exception—a willingness to accept free or discarded nonvegetarian food due to its lack of connection to the causing of harm. The Buddha’s teaching that nonvegetarian alms should be accepted was also motivated by a duty to receive offerings from the laity so that the latter could accrue merit by providing alms to the monastic community.

Jains, on the other hand, have consistently and unequivocally prohibited the consumption of animal flesh. Not only is flesh consumption unconditionally prohibited, but so too is the eating of eggs, root vegetables, honey, and various other substances. Eggs are avoided because of the harm done to the living being contained therein. Root vegetables are prohibited not only due to the presence of innumerable microscopic beings living within them but also due to the harm inflicted upon living beings through their uprooting. Honey, as one might expect, is prohibited due to the harm done to bees in the process of collection.

In the earlier Vedic traditions flesh was consumed and even recommended, as the very early Śatapatha Brāhmaṇa (1882–1900) stated, “Flesh is indeed the best kind of food” (ŚB 11.7.1.3; ŚB 12.8.32.12). The much later and *ahimsā*-influenced Mānava Dharmasāstra and Yoga Sūtras both include prohibitions on killing and flesh-eating, although the imperative is more explicit in the former than the latter. The Mānava Dharmasāstra stated: “Whether he lives at home, at his teacher’s, or the wilderness, a twice-born man who is self-possessed must never, even in a time of adversity, carry out a killing that is not sanctioned by the Veda” (MDh 5.43). And

soon after: “Having seen the origin of flesh and the binding and slaughter of embodied entities, [a person] turns away from eating all flesh” (MDh 5.49). While explicitly and repeatedly warning against killing animals and consuming flesh for various reasons, the Mānava Dharmaśāstra admits that there are circumstances—those “sanctioned by the Veda,” particularly ritual circumstances—that allow for killing animals and subsequently consuming their flesh. The author of the Yoga Sūtras, by contrast, without explicitly articulating a proscription on animal flesh, asserts that there are absolutely no exceptions to the rule of *ahimsā* (Dickstein, 2017).

Cows, Milk, and *Ahimsā*

One may wonder at the absence of any prohibitions regarding dairy given the harms commonly assumed to occur through the extraction—industrial or otherwise—of milk from bovines, goats, sheep, camels, and other domesticated mammals. While criticisms of dairy can be found in some late South Asian religious texts, when juxtaposed with the scale and centrality of dairy in the history of the region, these gestures prove few and far between. Buddhist monks and laypeople regularly consume dairy products, and many of the fasting techniques for ascetics described in the principal commentary on the Yoga Sūtras include milk and ghee. Dairy is a regular part of the diet of Jain monks and nuns, who follow the most rigid dietary and behavioral protocols.

The underlying assumption for all three South Asian religions is that cows and other domesticated mammals are not harmed in the process of being milked, and therefore the consumption of milk is not a violation of *ahimsā*. For Buddhists who interpret the first precept as prohibiting only killing and not nonlethal harms, even *if* milking were in fact regarded as harmful to mammals, dairy products would still be consumable as the animals are not killed during the actual process of milking. Moreover, most cows in ancient India were not killed after they had ceased lactating, which is now standard practice in contemporary dairy operations. In any event, the much more regularly asserted defense of dairy is not that *ahimsā* solely prohibits killing, but rather that milking itself cannot properly be considered an act of harm; milking cows is not an act of *extraction* but rather one of *reception*.

The sense here is that a cow’s *dharma* (still connoting “duty,” but here more so “purpose,” “nature,” or “essence”) is to *give* milk to humans for the latter’s sustenance (Narayanan, 2018). This ontological claim about the relationship between cows and humans assumes both consent on the part of the cows and a compensatory benefit in the form of the satisfaction of their own *dharma*. Hence the three aforementioned religious traditions do not readily admit that cows experience physical or mental pain in the process of being manipulated and milked. Rather, they claim that the human milking of cows actually provides cows with an immediate benefit through the fulfillment of their *raison d’être*. As dairy products have traditionally been a nutritional staple in South Asia, it is quite possible that the conception of the

“giving cow” has survived as a rationalization for the arguably historical—yet now debatable—necessity of using cow milk for human survival, a rationalization suitable to a period accommodating the emergence of the principle of *ahimsā* and greater sensitivity to nonhuman suffering.

Concluding Remarks

In summary, *ahimsā* as an ethical principle most likely originated and proliferated among non-Vedic renouncer traditions of ancient India, specifically Jains and Buddhists. It is not improbable that the shift within Vedic traditions from animal sacrifice to both ritual substitution and internalization was influenced by the growing popularity of these traditions and their solemn concern to minimize the infliction of harm and death upon living beings. Some rules were softened as the ethic extended to the general public, and in time numerous exceptions were made for monks and nuns as well as laypeople due to necessity, unavoidability, occupational responsibility, and other extenuating circumstances. However, the general conclusion can be made that the harming of living beings in all three traditions is denounced except under special conditions. Given the decreasing global necessity of using animals and animal products for human survival, it is unsurprising that many young Jains, Buddhists, and Hindus now question the continued use of animals for food, clothing, and labor insofar as these uses are conceived as acts of harm.

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Chapter 23

Vegan Stigma



Kelly L. Markowski 

Introduction

Vegan studies is a burgeoning area of academic interest, due in no small part to the rising number of self-identified vegans over the past few decades. In empirical work on veganism, scholars attribute part of this rise to the surge in recent media coverage of vegan diets among celebrities as well as increased discourse surrounding veganism's widespread benefits, such as improved physical health, more ethical human–animal relationships, and less environmental harm (Doyle, 2016; Lea et al., 2006; Lundahl, 2020; Souza et al., 2020). Indeed, research supports these advantages of veganism at the personal and societal level (e.g., Baroni et al., 2007; Dinu et al., 2017; Rosi et al., 2017). However, veganism is also associated with disadvantages, especially as it may affect vegans' social lives. For example, research documents how vegans' interpersonal relationships and social interactions may suffer because vegans are a minority amidst the non-vegan majority (e.g., Markowski & Roxburgh, 2019).

In this chapter, I examine one major drawback of veganism: *stigma*. Stigma is inherently negative and refers to the process by which individuals are labeled by the non-stigmatized as possessing an undesirable characteristic. For vegans, stigma results from being identified as a member of the vegan social category, which implies that the individual eats, thinks, acts, and socializes like vegans do. Vegan stigma is multi-faceted and often leads to unfavorable treatment and other negative

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consequences. Below, I unpack the stigma associated with veganism, detailing the sources, consequences, and mechanisms by which vegan stigma may negatively influence vegans' (and non-vegans') daily lives. In doing so, I draw on the interdisciplinary body of work on veganism that employs qualitative and quantitative research methodology. I end by outlining several promising areas for future study on vegan stigma, emphasizing the methodological and empirical gaps in previous research.

Stigma

In his foundational work on stigma, Goffman defined stigma as an “attribute that is deeply discrediting” (1963, p. 3). According to Goffman, individuals possess a stigma when they hold a characteristic that is perceived as undesirable to the society in which they participate. Scholars have since reconceptualized stigma as part of a larger process by which one is *stigmatized*—or socially defined as having a stigma (Crocker et al., 1998; Link & Phelan, 2001, 2006). In this process, some dimension of human difference is first defined as socially important; then, value is differentially attributed to varying states of the dimension, producing a hierarchy of worth, acceptability, and desirability (Link & Phelan, 2001, 2006). For example, mental health is widely identified as an important marker of human difference; as a result, “good” mental health is perceived as normal, while “poor” mental health or mental illness is perceived as undesirable. Labeling occurs when individuals are linked to and defined by their differences, stratifying those with high-value states (e.g., no mental illness) and low-value or stigmatized states (e.g., mental illness) (Link & Phelan, 2013). This stratification process facilitates the exercise of power by the non-stigmatized over the stigmatized; this serves to enforce norms, control and/or exploit those with stigma, and isolate those with stigma from those without (Link & Phelan, 2014; Phelan et al., 2008).

Stigma may be based on characteristics, identities, or statuses that vary in their degree of visibility and concealability (Bos et al., 2013). Stigma also produces distinct experiences on the part of the stigmatized, associates of the stigmatized, stigmatizers, and the larger society whose institutions perpetuate and legitimate stigmatization (Pryor & Reeder, 2011). The effects of stigma on the stigmatized are well-documented: those with stigma experience a myriad of negative consequences. They often exhibit higher levels of stress, lower self-esteem, lower life satisfaction, and poorer well-being (e.g., Markowitz, 1998; Meyer, 2003; Stutterheim et al., 2009). This is often due to the existence of stereotypes, awareness, and prevalence of prejudice, experiencing or witnessing discrimination, and the self and identity processes that result from each (Earnshaw & Chaudoir, 2009; Major & O'Brien, 2005; Marcussen et al., 2019). Stigma can also influence how the stigmatized behave and how they interact socially. For example, because it is stressful, stigma necessitates coping strategies, some of which involve actively resisting stigmatization and stigma-based discrimination (Frost, 2011; Link & Phelan, 2013, 2014; Meisenbach, 2010; O'Brien, 2011).

Vegan Stigma and Stigma Sources

Vegans are a stigmatized group. Though sometimes veganism is associated with positive characteristics by vegetarians and some omnivores (Markowski & Roxburgh, 2019; Rothgerber 2014; Yeh, 2014), vegans by and large are regarded negatively by the “vegaphobic” omnivorous majority (Cole & Morgan, 2011; Mangan-Taylor, 2021; Vestergren & Uysal, 2022). Vegans are described and portrayed unfavorably in films, television shows, newspapers, online articles, online forums, and even in some social science journals (Brookes & Chalupnik, 2022; Cole, 2008; Cole & Morgan, 2011; Park & Kim, 2022; Potts & Parry, 2010; Wright, 2015). Negative social perceptions of vegans have also been documented among specific segments of the population, such as college students (e.g., Bresnahan et al., 2016; Markowski & Roxburgh, 2019).

Why is veganism regarded so negatively? Being a vegan means that the individual belongs to the vegan social category, which implies that the individual exhibits specific behaviors, interpersonal characteristics, and beliefs. It also implies that the vegan has specific social contacts. Each of these components constitutes the vegan stereotype and is imbued with negative meaning. Importantly, though these components may vary by reason for being vegan, such as ethical versus health concerns (see Markowski, 2022), research suggests that attributes are aggregated into a stereotype that applies to the vegan social category as a whole. Below, I detail each of these components and explore how they contribute to vegan stigma.

What Vegans Eat

One of the most defining features of veganism involves food behaviors, or what vegans eat. For example, people across the dietary spectrum agree that vegans do not eat a specific range of foods, including meat, fish, eggs, and dairy products (see, e.g., North et al., 2021). Since the omnivorous majority serves as the normative group against which vegans are compared, this means that vegans are defined by what foods their diet *lacks* relative to omnivores. As a result, vegan eating patterns are commonly understood and described as ascetic and are defined by abstention, restriction, and self-denial (Cole, 2008; Cole & Morgan, 2011). Negative perceptions may also extend to the “mock meat” and other replacement products, like tofu, that vegans sometimes use to supplement their diets, as foods like these have been described by non-vegans as “artificial” and unnatural (Killian & Hamm, 2021). This perpetuates the view that veganism is a “deficient” way of eating—a behavioral difference regarded as inferior and inadequate.

Who Vegans Are

The vegan stereotype also carries assumptions about who vegans are as people, including how they interact with others in social settings. More than simply just eating vegan foods, cultural tropes assert that vegans will disclose their vegan status in all situations, even those in which food is not present. This propensity, whether real or imagined (Bolderdijk & Cornelissen, 2022), is largely regarded as annoying and unwanted, leading to the negative perception that vegans are outspoken “kill-joys” who are socially inconsiderate and purposely disruptive (Greenebaum, 2012b; Potts & Parry, 2010; Twine, 2014). Other common perceptions of who vegans are include that they are attention-seeking, self-righteous, argumentative, and furthermore, aggressive—despite that vegans, especially vegan men, are also perceived as physically weak from their “deficient” diets (MacInnis & Hodson, 2017; Markowski & Roxburgh, 2019; Park & Kim, 2022; Potts & Parry, 2010; Thomas, 2016). In most settings, these characteristics are defined as undesirable, portraying vegans as generally unlikeable kinds of people.

What Vegans Think

Stereotypes about who vegans are closely relate to assumptions about what and how vegans think. For example, just as much as vegans are perceived as self-righteous and argumentative, vegans are also characterized as opinionated and intolerant of those who do not think or act like them (Markowski & Roxburgh, 2019). Attributions may include the idea that vegans view non-human animals as more worthy and thus superior to humans (Greenebaum, 2012b; Potts & Parry, 2010); it may also include a perspective situated in Whiteness and other social privilege that is ignorant or dismissive of economic or other disadvantage and hardship (Greenebaum, 2018; Harper, 2012; Rosenfeld et al., 2022; Wrenn & Johnson, 2013). These patterns of thinking are regarded as selfish, limited, and discriminatory in and of themselves. Associating them with vegans paints the source of negativity as even more serious and problematic than simple interactional or behavioral propensities.

With Whom Vegans Socialize

Being vegan not only means that an individual belongs to the vegan social category; it also implies the types of social contacts vegans have. It is primarily assumed that vegans interact with other vegans and are members of larger associations or organizations that support their “hypocritical” philosophical belief systems (Greenebaum, 2012b; Potts & Parry, 2010). For example, research shows that some vegans share similar concerns as animal rights activists, leading some to join social movement

groups that participate in activism (Cherry, 2006, 2010, 2015). Though not true of all vegans, this assumption nonetheless constitutes the stereotype descriptive of all in the vegan social category, meaning that the negative perception of animal rights activists and protesters also applies to vegans (Cherry, 2006; Wrenn, 2017). The result is thus an undesirable type of person who also keeps highly undesirable company.

Vegan Stigma Consequences and Mechanisms

What are the effects of vegan stigma, and how are these effects produced? Research suggests that vegan stigma not only carries consequences for those stigmatized but also affects the non-stigmatized. That is, both vegans and non-vegans experience social and interpersonal, psychosocial, and behavioral consequences due to vegan stigma. Some research finds that those more prone to holding stigmatized views toward vegans include those that are younger in age, White, male, those that are politically conservative, and those that reside in rural communities (Judge & Wilson, 2018; Rosenfeld & Tomiyama, 2020); thus, in addition to vegans, these segments of the non-vegan population are especially likely to experience consequences from stigmatizing vegans. Below, I detail these effects for vegans and non-vegans, noting the mechanisms or ways in which vegan stigma produces such consequences.

Among Vegans

Social and Interpersonal Consequences

As part of the stigmatized group, vegans often endure a wide range of negative treatment by non-vegans. Given that most vegans start their lives as a non-vegan (McDonald, 2000), the transition to vegan is often a stark shift that is difficult for non-vegans, especially non-vegan family and friends, to understand. This often leads non-vegans to devalue the decision to become vegan, either regarding the shift as illegitimate or as merely temporary (Greenebaum, 2012a; Hirschler, 2011). Perhaps because of this, many vegans report that they are berated by non-vegans for being vegan: they are interrogated with the intention of illustrating that being vegan is illogical, or they are bribed or even tricked into eating non-vegan foods (Markowski & Roxburgh, 2019; McDonald, 2000; Twine, 2014). Other research confirms that levels of perceived discrimination among vegans are high (Bagci & Olgun, 2019; MacInnis & Hodson, 2017), suggesting highly negative social reception and little social support for veganism.

Unsurprisingly, some vegans report that their interpersonal relationships suffer due to being vegan. Vegans may feel ostracized and/or withdraw from non-vegan social contacts or interactions; they may also actively seek new contacts who also

identify as vegan (e.g., Cherry, 2006). Vegans may also alter how they behave in situations with non-vegans. For example, vegans may engage in various forms of impression management: not discussing veganism unprompted, avoiding discussion of moral or ethical dimensions of veganism in favor of discussing those aspects that are more “palatable” to omnivores (e.g., health benefits), and actively distancing themselves from the vegan stereotype (Buttny & Kinefuchi, 2020; Greenebaum 2012a, b; Hirschler, 2011; Wrenn, 2017). Impression management strategies like these may foster a sense of inauthenticity, which can lead to other psychosocial consequences.

Psychosocial Consequences

Discrimination and other negative treatment endured because of vegan stigma may give rise to psychosocial consequences for vegans. For example, feelings of inauthenticity, perhaps from employing impression management strategies, may lead to negative emotions, like anger or frustration (Greenebaum, 2012a; McDonald, 2000). A recent meta-analysis concluded that vegans exhibited a higher risk of depression and anxiety compared to omnivores (Iguacel et al., 2021). Though the analysis did not link these outcomes specifically to stigma, stigma and the prevalence of prejudice may be a contributor to these outcomes (see, e.g., Marcussen et al., 2019).

Behavioral Consequences

Vegan stigma may also lead to behavioral consequences for vegans. For example, in the context of eating, several studies have documented that vegans exhibit dietary lapses, or experience instances where they knowingly eat non-vegan food, from time to time (Jabs et al., 2000; Hoffman et al., 2013; Rosenfeld, 2019, 2020; Rothgerber, 2015a, b). A recent study found that social identity recognition—the view that it is important for the people with whom one interacts to label the individual as a member of the vegan social category—predicted dietary lapses among health (but not ethical) vegans (Markowski, 2022). Social identity recognition may highlight the vegan’s stigmatized status, leading to treatment that reduces social differences, such as encouraging vegans to eat non-vegan foods (Markowski & Roxburgh, 2019; McDonald, 2000; Twine, 2014). Though plausible, this study also did not explicitly examine stigma; thus, additional research is needed to link vegan stigma to eating behaviors.

Another behavioral consequence of vegan stigma may involve treatment toward non-vegans. For example, one study examined coping strategies among individuals in the *Freegan* community (Nguyen et al., 2014). Freegans are vegan individuals whose primary means of consumption derives from dumpster diving and other methods to obtain disposed goods—practices which are highly stigmatized. Nguyen et al. (2014) find that Freegans may engage in “reverse stigma” processes, redirecting stigma onto normative culture. To the extent that vegans participate in such

defensive coping strategies, this may exacerbate the effects of stigma outlined above as well as perpetuate and reinforce the effects for non-vegans, discussed below.

Among Non-vegans

Social and Interpersonal Consequences

As part of the stigmatizing group, non-vegans also may endure a wide range of negative consequences due to vegan stigma. For example, engaging in negative treatment and ostracism toward vegans may lead to more homogeneous social relationships. Risks may be high if non-vegans do not take such actions; if instead the non-vegan preserves any social ties they have with vegans, the non-vegan may risk taking on a courtesy stigma, or “stigma by association” (Goffman, 1963; Pryor et al., 2012). One study showed that non-vegans anticipate what it would be like to be thought of and treated negatively like those in the stigmatized group (Markowski & Roxburgh, 2019), motivating non-vegans are to socially distance themselves from vegans and treat them negatively. Thus, in one scenario, non-vegans’ relationships may exhibit reduced diversity; in the other, non-vegans risk suffering similar consequences as vegans by associating with them.

Psychosocial Consequences

Non-vegans may also endure psychosocial consequences as active participants in vegan stigmatization. Stigma functions to stratify the stigmatizers from the stigmatized; as a result, stigma actively highlights differences and creates social and emotional distance between vegans and non-vegans. As is likely the case for vegans, this process may also lead to negative emotions for non-vegans, like anger, discomfort, and guilt (Bresnahan et al., 2016). Furthermore, distress may result from the disruption of social bonds with vegans, especially if experienced with family or friends.

Behavioral Consequences

Finally, vegan stigma also leads to behavioral consequences for non-vegans. Stigma benefits the stigmatizing group because it preserves social norms and eliminates threats to the status quo (Link & Phelan, 2014; Phelan et al., 2008). For non-vegans, this means that no food-related changes are required and that their non-vegan eating patterns are reinforced. However, this also means that non-vegans miss the opportunity to reap the personal benefits associated with vegan diets, which can have positive health consequences in the long term.

Future Research on Vegan Stigma

Previous research has leveraged both qualitative and quantitative research methods to yield insight into the sources of vegan stigma. These methods include surveys, in-depth interviews, focus groups, and content analyses. The associated research documents well the social and interpersonal consequences of stigma that result for vegans. This work provides a solid foundation for the study of vegan stigma; however, future research may benefit from additional studies that further develop the links between vegan stigma and psychosocial and behavioral consequences, like dietary lapses. Work that emphasizes social context—specifically, the conditions in which stigmatization occurs—would be particularly fruitful, such as research that examines when specific stigma management strategies are employed. These goals may be facilitated using ecological momentary assessment (EMA), a unique set of methods that capture contextual information in real time (Shiffman et al., 2008). This work would also benefit from research that continues to center the voices of vegans of color and further explores the interrelation between vegan stigma and other held biases. I discuss each of these areas below.

Context of Stigma Management

Many studies on vegans detail vegans' personal experiences and social interactions with non-vegans, including the trials and tribulations of negotiating and maintaining vegan identities in a non-vegan world. This research outlines several stigma management strategies that vegans employ to preserve social bonds as well as the smooth flow of social interaction. For example, vegans often will not discuss veganism unless prompted, will alter the content of their arguments, and will come prepared for social gatherings with vegan food to share with others (Buttny & Kinefuchi, 2020; Greenebaum 2012a, b; Hirschler, 2011; Wrenn, 2017). Each of these strategies are based on educating others about veganism—a core stigma resistance strategy (though it is worth noting that emphasis is placed on doing so in the least socially disruptive way possible).

Other research on stigma management among those with concealable stigmatized identities examines education as but one of several stigma management strategies. Other strategies include explicitly disclosing one's stigmatized identity to others, though this decision is often one that is strategic and planned. By contrast, concealing one's identity with the goal of "passing" as a member of the non-stigmatized group can be protective in hostile situations (e.g., Corrigan & Matthews, 2003; Poindexter & Shippy, 2010). Research on vegan stigma would benefit from exploration on the social contexts and conditions in which disclosure does and does not occur. Here, the concept of social identity recognition may be especially useful (see Markowski, 2022). When does social identity recognition correspond to

disclosure? When might vegans be inclined to conceal their vegan identities, and how does this relate to feelings of authenticity, self-esteem, and well-being?

The Role of Stigma and Perceived Discrimination in Dietary Lapses

A recent topic of empirical interest is vegans' dietary lapses. For example, Markowski (2022) tested a comprehensive model that simultaneously accounted for a variety of factors shown in other research to separately relate to dietary lapses. Importantly, stigma and other experiences of vegan-based discrimination were not included. However, research on vegans' dietary lapses would benefit from the inclusion of these concepts as behavioral predictors. Quantitatively, this would require the development of measures that capture various dimensions of stigma—for example, the extent to which individuals think others endorse stigmatized views about veganism, the extent to which vegans internalize stigma, and the frequency and range of ways in which vegans experience stigma-based discrimination (see, e.g., Kulesza et al., 2013). The wealth of qualitative work on vegans' experiences provides a fruitful starting point for such an endeavor, especially Rosenfeld and Tomiyama's (2019) study in which participants described instances of and situational context leading to dietary lapses.

Intersectionality and Intersecting Biases

Stigmatized views about vegans may co-occur with other entrenched biases. For example, some work finds a connection between speciesist attitudes as well as those that are racist or sexist (Adams, 1990; Dhont et al., 2014). It may be reasonable to assume that speciesist attitudes relate to vegan stigma endorsement, as anti-speciesist attitudes correspond to positive attitudes toward a vegan diet (Brouwer et al., 2022); however, research that examines the possible links between vegan stigma endorsement and other stratification belief systems would help situate vegan stigma in wider social and cultural context. Furthermore, vegan stigma research would benefit from continued exploration of stigma from an intersectional approach. Veganism is often equated with Whiteness and privilege (Greenebaum, 2018; Harper, 2012; Rosenfeld et al., 2022; Wrenn & Johnson, 2013); as a result, the experiences of vegans of color continue to be under-examined in this literature, which queries marginalization at its core. This means that much knowledge about veganism comes from limited segments of the vegan population. Future work should thus seek to expand the diversity of vegans included in research.

Ecological Momentary Assessment (EMA)

The study of vegan stigma, especially those areas outlined above, may benefit from the application of ecological momentary assessment (EMA) (Rosenfeld & Burrow, 2017). EMA refers to a set of methods that capture information as it unfolds in real time and in real-world settings (Shiffman et al., 2008). For example, a cellphone application that periodically sends survey questions to respondents throughout the day can capture contextualized information about how respondents are feeling, what they are thinking or experiencing, and where they are currently located in the geospatial landscape. “In the moment” (or soon thereafter) reports of stigma, vegan-based discrimination, social contacts, and interactions over time not only would facilitate the study of causal relationships but would also advance understanding on when and how vegans experience stigma and how they respond to it. Future research would thus benefit from leveraging EMA’s methodological tools, which are well-suited for the modern, technology-based era.

Conclusion

Vegan stigma is multi-faceted and implies stereotypes about what vegans do, who they are, how they think, and with whom they associate. Vegan stigma is associated with psychosocial, behavioral, and social and interpersonal consequences for vegans as well as non-vegans. There are several promising avenues for future research on vegan stigma. Research that directly examines the link between vegan stigma and these consequences is needed, as is research that examines (and employs methods designed to examine) the social context surrounding experiences of vegan stigma, stigma management strategies, the role of stigma in dietary lapses, and stigma as it is situated in wider social, cultural, and political contexts among diverse populations of vegans.

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Part V
Environmental Health and Medicine

Chapter 24

Plant-Based Diets and Diabetes



John Sebastian Babich and Mahima Gulati

What Are Plant-Based Diets?

Interest in dietary patterns that center predominantly on foods from plants has grown substantially in the past decade, specifically an interest in veganism and vegetarianism (Kamiński et al., 2020). There are a variety of reasons that individuals are interested in or adopting these lifestyles and dietary patterns, including individual health, climate change, sustainability, and/or animal welfare (Craig et al., 2021). While there are often additional ethical and philosophical components to these different lifestyle choices, an underlying commonality is a dietary pattern of eating foods that originate from plants, also called plant-based foods.

There are significant differences in how plant-based diets (PBDs) are defined and it's important to understand the differences between the different terms as well as the dietary pattern that we focus on in this chapter. Generally, those who identify as vegan abstain from consuming animal products in all forms, and in this regard eat foods only of plant and fungal origin (e.g. broccoli and shiitake mushrooms, respectively) (*Definition of Veganism*, 2022). Vegetarians typically abstain from meat and meat-derived products and consume plant foods along with animal-derived byproducts such as eggs, milk, and their derivatives. Both dietary patterns associated with these identities center on foods derived from plants, but are often defined by what

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they exclude, rather than what they include (Antonio Del Ciampo & Lopes Del Ciampo, 2019). Plant-based diets are defined somewhat differently than the dietary patterns of vegans or vegetarians—they emphasize the consumption of whole grains, vegetables, fruits, nuts, seeds, and legumes, and de-emphasize the consumption of animal products (McMacken & Shah, 2017). Thus, while the dietary patterns of vegans and vegetarians may be considered plant-based diets, these are not mutually exclusive. Furthermore, within the spectrum of plant-based diets are varying patterns of eating. As a sub-category of PBDs, the whole food plant-based (WFPB) diet includes the structure of PBDs, but places an additional emphasis on the avoidance of processed foods, added sugar, refined oils, cooking fats, and spreads (Karlsen et al., 2019).

Unfortunately, there seems to be significant heterogeneity in the interpretation of the concept of “plant-based diets” among nutrition intervention studies. A 2022 report encouraged a standardized plant-based dietary intervention checklist for use by nutrition researchers, in order to improve reproducibility and comparability among various studies (Storz, 2022). The authors recommended that researchers report if the studied intervention completely proscribed all animal foods, explicitly restricted sodium, added oils, added sugar intake, restricted overall calories, or high-fat whole plants (such as avocados and nuts), or certain macronutrients (such as carbohydrates or protein). For the purposes of this chapter, we will focus mainly on PBDs, and particularly, on patterns of eating that are closer to that of a WFPB diet.

Introduction to Diabetes

Diabetes mellitus refers to a group of diseases that affect the body’s ability to turn food into energy (metabolism) and is characterized by long-term (chronic) elevated sugar levels in the blood (hyperglycemia). These metabolic diseases are the result of various pathways that affect insulin, a key hormone involved in managing blood sugar. This group of diseases manifests in reduced production or effectiveness of insulin or acts as a combination of these two (Kharroubi & Darwish, 2015; Wilcox, 2005). The most common forms of diabetes are gestational diabetes, type 1 diabetes, and type 2 diabetes (World Health Organization, 2022a).

Gestational Diabetes

Gestational diabetes is characterized as hyperglycemia of the mother during pregnancy, with blood sugar values above the normal range but not as high as in type 2 diabetes. This disease is associated with increased risks during pregnancy for both the mother and the fetus (National Institute of Diabetes and Digestive and Kidney Diseases, 2022).

Type 1 Diabetes

Type 1 diabetes (T1D), often called juvenile, childhood-onset, or insulin-dependent diabetes, is a disease that affects the insulin-making beta cells of the pancreas (World Health Organization, 2022a). As of 2020, around 1.45 million Americans had T1D with an additional 64,000 being diagnosed each year. The percentage of individuals with T1D appears to be increasing as well—between 2001 and 2009, there was an increase in the prevalence of T1D by 21% in individuals under age 20 (*Type 1 Diabetes Facts*, 2022).

Historically, T1D has been thought to be the result of autoimmune dysfunction wherein the body's immune system attacks the beta cells in the pancreas leading to decreased insulin production. Recent evidence indicates that there may be a more complex process occurring beyond this autoimmune dysfunction (Roep et al., 2021). Some research posits that during early developmental stages, exposure to foreign proteins—particularly from meat and dairy—may increase the risk of T1D; other studies have contradicted these findings, and thus, the mechanism is unclear (Kahleova et al., 2020; Muntoni et al., 2013). A cohort of 2939 mother-child pairs from the prospective Type 1 Diabetes Prediction and Prevention Study analyzed maternal dietary composition during the third month of lactation using a validated food frequency questionnaire. It found that maternal consumption of red meat during lactation, especially processed meat, may increase the risk of T1D among offspring by 23% (Niinistö et al., 2015). This review suggested that nitrites or N-nitroso compounds in processed meat products such as sausages could increase the risk of type 1 diabetes. Indeed, the maternal consumption of foods such as meat products and vegetable oils during breastfeeding may be related to a greater risk of T1D in the offspring because they contain higher amounts of advanced glycation end-products (Virtanen, 2016).

In terms of optimal dietary management of T1D, Kahleova et al. discuss two case studies wherein adherence to a PBD improved insulin sensitivity and reduced insulin requirements and make the argument that these and other studies support the use of PBDs in T1D management (Kahleova et al., 2020).

While diet adjustment is common in T1D, proper management of macronutrients can be challenging, and carbohydrates are often restricted due to concerns about blood sugar elevation. However, people with T1D may increase their fat intake to compensate for decreased carbohydrate intake, leading to increased body mass index (BMI) and lipid profiles (Meissner et al., 2014). With the advent of self-monitoring of blood sugar, there is increasing flexibility in how insulin can be given. Due to this flexibility, Meissner et al. recommend that healthcare providers work with T1D patients to increase their complex carbohydrate, fruit, vegetable, and fiber intake (Meissner et al., 2014). Furthermore, a 2017 study by Maffei et al. discovered that dietary quality, BMI, and glycemic control were independently associated with cardiovascular risk in children aged 5–18 years old. Higher total dietary fat intake, especially saturated and trans fatty acids, is associated with higher non-HDL cholesterol (Maffei et al., 2017). Conversely, in another study, fiber and

monounsaturated fatty acid (MUFA) intake showed a significantly beneficial effect on HbA1c in children aged 6–16 years old (Maffeis et al., 2020).

Still, the evidence for T1D and plant-forward diets is lacking. A recent review recommends vegetarian diets in adolescents with T1D but is more cautious of vegan diets unless there is adequate attention paid to receiving necessary nutrients for development including DHA, Vitamin B12, and Vitamin D, although these can be managed with over-the-counter supplements (Tromba & Silvestri, 2021). While special attention may be needed for children and adolescents with T1D, these youths are, like many others in the US, not consuming enough fiber, fruit, and vegetables. Therefore, consistent meal timings and higher intake of fiber, complex carbohydrates—particularly low glycemic index ones like hulled barley, legumes (including legume pasta), cauliflower rice, zucchini noodles, etc.—should be emphasized for patients with type 1 diabetes to maximize health benefits while minimizing glycaemic spikes.

Type 2 Diabetes

Type 2 diabetes (T2D), previously called non-insulin-dependent or adult-onset diabetes, manifests as reduced effectiveness of insulin in managing blood sugar (World Health Organization, 2022a). Uncontrolled diabetes can cause kidney problems, blindness, and cardiovascular disease (Rosenfeld et al., 2022). While the underlying pathology surrounding T2D will be discussed in subsequent sections, insulin resistance, or the impaired response to insulin stimulation of the liver, muscles, and adipose tissue, ultimately leads to T2D (Freeman & Pennings, 2022).

T2D accounts for 90% of the cases of diabetes worldwide, and there has been a quadrupling in the number of people with diabetes in the last 30 years (Zheng et al., 2018). Indeed, T2D affects an estimated 10.5% of adults in the United States and 8.1% globally (Rosenfeld et al., 2022; Zheng et al., 2018). Diet, and especially, diet quality, is one of the main risk factors for diabetes (Burch et al., 2018). Because of the increased and growing incidence of T2D, there is a greater focus on prevention and treatment for T2D. PBDs may be especially effective in both domains.

Lifestyle intervention has been known to be effective in preventing T2D since at least 2002 when the Diabetes Prevention Program Research Group determined that lifestyle change was more effective than metformin, a first-line medication, at treating T2D (Diabetes Prevention Program Research Group, 2002). The EPIC-Oxford study, one of the largest studies of nutrition to date, found statistically significant relationships between plant-based diets and the risk of T2D compared to meat eaters—for vegetarians, the risk was 35% lower than meat eaters, and for vegans, it was 47% lower. However, after these risk ratios were adjusted for BMI, the relationships became non-significant, suggesting that BMI may play a large role rather than diet alone (Key et al., 2022). Similarly, two large Adventist studies with populations

of 25,698 and 60,903 found nonvegetarians had 1.6–2.0 times higher prevalence of diabetes compared to vegetarians and vegans, even after adjusting for body weight (Snowdon & Phillips, 1985; Tonstad et al., 2009; Trapp & Levin, 2012). Other studies have shown similar results, with those consuming PBDs higher in fruits and vegetables and lower in meat and animal products at lower risk for developing T2D (Aune et al., 2009; Fung et al., 2004; Kaushik et al., 2009; Pan et al., 2011; Trapp & Levin, 2012; Vang et al., 2008).

While diabetes prevention is the focus that public health should take in this diabetogenic environment (which is characterized by diets high in proinflammatory foods and low in fiber), it is also essential to treat those with T2D. PBDs are both an effective and low-cost solution. A recent expert consensus publication by the American College of Lifestyle Medicine states that remission of T2D is possible with lifestyle modification, especially including changes to one's diet (Rosenfeld et al., 2022). While there is still a need for longer-term randomized control trials with larger populations, recommending dietary patterns rich in plants for T2D is a promising treatment strategy (Ley et al., 2014; Rosenfeld et al., 2022). In 2016, the Academy of Nutrition and Dietetics, the world's largest organization of nutrition and dietetics practitioners, stated that "appropriately planned vegetarian, including vegan diets are healthful, nutritionally adequate, and may provide health benefits for the prevention and treatment of certain diseases" including T2D, hypertension, cancer, and obesity (Melina et al., 2016). The subsequent sections will cover some of the main factors of PBDs that may reduce the risk of and improve treatment for T2D.

The Benefits of Plant-Based Diets for Type 2 Diabetes

Dietary intervention is generally considered an extremely important part of T2D management, with several guidelines and health-related professional societies emphasizing dietary changes for its treatment (Evert et al., 2019; Kelly et al., 2020; Melina et al., 2016). Many of these dietary intervention guidelines promote weight loss, healthier foods, and caloric restriction. However, they do not often promote interventions within the "context of remission"; in other words, these guidelines instead seek to reduce the severity of symptoms, not reverse the pathology associated with T2D (Rosenfeld et al., 2022).

PBDs, particularly the WFPB diet, may be beneficial in treating T2D as a means of controlling the disease, and importantly, putting it into remission (Kelly et al., 2020). Reviews and meta-analyses have shown that the consumption of whole grains, fruits, and vegetables is an effective means for prevention and treatment of T2D (Austin et al., 2021; Qian et al., 2019). In this section, we will discuss many of the components of this dietary pattern and their effects on T2D.

Carbohydrates

It is commonly believed that foods rich in carbohydrates should be avoided in those with T2D (McMacken & Shah, 2017). Sugar in its processed forms has risen substantially in the diets of Americans over the last several decades, with consumption of added sugars accounting for a 35% increase in calories per day. Furthermore, this trend has a strong correlation with the rise in obesity and diabetes mellitus (Bray et al., 2004; Malik & Hu, 2012). As the largest contributor to added sugar in the diet, the consumption of sugar-sweetened beverages is a proxy for overall sugar consumption. Numerous observational and experimental studies have shown that the consumption of sugar-sweetened beverages is associated with an increased risk of T2D and other cardiometabolic conditions; these foods may contribute to cardiometabolic disease not only via associated weight gain, but also because of the rapid absorption of sugars possible in sugar-sweetened beverages, and due to the metabolic effects of fructose (Malik & Hu, 2012).

While free and refined sugars play a key role in the symptoms and pathology of T2D and may account for up to 40% of caloric intake in industrialized nations, it is essential to distinguish the source and type of carbohydrate when determining its effect on a patient's health (Arnone et al., 2022). Meta-analyses of dietary intake cohort studies have shown that consumption of carbohydrates in the form of whole grains is associated with a decrease in risk of developing diabetes while refined and low-fiber carbohydrates are associated with an increase in the risk of developing diabetes (McMacken & Shah, 2017). Thus, it is not just whether a particular food contains carbohydrates, but how much processing has gone into that food and how much fiber is present. Fiber is well-known to slow food digestion and blunts the absorption of sugar into the blood (Riccardi & Rivellese, 1991).

PBDs that are low in processed and added sugars have been studied and found to be effective in prevention and treatment of T2D. A 2009 randomized controlled trial put a low-fat vegan diet to the test against the American Diabetes Association diet over 74 weeks; the patients in the low-fat vegan diet were advised to eat fruits, vegetables, grains, and legumes and to avoid animal products and fatty foods such as added oils and fried products. While both diets resulted in significant weight loss, the low-fat vegan diet had greater decreases in blood sugar and plasma lipids (Barnard et al., 2009).

Fats

Like sugar and other carbohydrates, fats are not a monolithic macronutrient, and their source and type are also important for understanding how these affect human health. Saturated and trans fats have been shown to increase the risk of developing diabetes, while polyunsaturated fats are associated with lower total mortality in patients with T2D (Jiao et al., 2019).

Saturated and trans fats may play an outsized role in the development of T2D, and thus, recommending a dietary pattern that is lower in these component macronutrients may be particularly effective in treating T2D (Wang et al., 2003). It has been posited that insulin resistance is caused by several mechanisms related to the overconsumption of saturated fats. Fatty acid accumulation in the liver, pancreas, and peripheral tissues (skeletal muscle), increased oxidative stress, lipotoxicity, and others are among the pathways by which insulin becomes less effective, ultimately causing blood sugar to rise (Shulman, 2014; Taylor, 2013).

While PBDs are not devoid of foods containing fats, they tend to have lower overall quantities of fat, especially the saturated and trans fats that are implicated in raising LDL cholesterol (a marker for heart disease). Properly planned PBDs that avoid processed foods and excessive oils will have decreased amounts of saturated fat and may prevent or help treat T2D (McMacken & Shah, 2017).

Fiber

Dietary fiber is a hallmark of PBDs, especially those that are rich in unprocessed plant foods such as WFPB diets (Tuso et al., 2013). Dietary fiber is commonly defined as plant material composed of complex, non-starchy carbohydrates indigestible by humans and other mammals (Turner & Lupton, 2011). Legumes such as chickpeas and lentils, whole grains like oat groats and brown rice, and vegetables such as broccoli and spinach are all sources of dietary fiber. Dietary patterns rich in whole, unprocessed plant foods, and low in fat, processed foods, and animal products have been shown to be effective in controlling blood sugar (Kelly et al., 2020).

Many studies illustrate this point. A 2013 meta-analysis of 16 cohort studies found that consumption of three servings of whole grains (rich in insoluble fiber) per day had a reduction in risk of T2D by 32% compared to controls (Aune et al., 2013). A more recent review furthers the argument for the protective effects of insoluble fiber in whole grains; the authors explain that this fiber may do so by supporting the gut microbiota. The authors posit that as the thousands of species of microorganisms in the intestines thrive on fiber, they improve glucose tolerance, reduce inflammation, and alter the immune response. The authors also discuss the evidence for fruit fiber's (also known as soluble fiber) effect on T2D, noting that studies show its consumption "leads only to a minor reduction in the risk of T2D" (Davison & Temple, 2018). While this shows that the fiber in fruit may not be as effective in treating diabetes as that from whole grains, fruit still provides benefits through its other components, particularly vitamins, minerals, and antioxidants.

Antioxidants Versus Pro-Oxidants

Though carbohydrates, fats, and fiber receive more attention in the discussion about diabetes, the mechanism of diabetes is multifactorial. There is growing evidence that antioxidants and their opposite “pro-oxidants” are important factors in the development of T2D (Vassalle & Gaggini, 2022). Antioxidants are compounds that neutralize unstable molecules that can damage cells and DNA and can be found in foods such as red cabbage and yellow peppers. Pro-oxidants are compounds that can cause or promote this cellular damage and can be found in foods such as processed and preserved meat products (Miranda-Díaz et al., 2020). Taken together, the anti- and pro-oxidant balance defines the overall oxidative stress to a given tissue. If this balance favors antioxidants, there is less opportunity for cell injury and associated disease; if the balance favors pro-oxidants, the opposite occurs (Pisoschi & Pop, 2015).

PBDs, especially those with diverse, unprocessed plant foods, tend to have a wide variety of antioxidants, often in the form of pigments that give them attractive colors. These include carotenoids, lycopene, and anthocyanins present in foods like carrots, tomatoes, and blueberries, respectively (Xu et al., 2017). On the other hand, diets rich in processed and animal-derived foods either contain pro-oxidants, as in the case of the heat-generated advanced glycation end products (AGEs) or promote a local environment within the tissues that increase oxidant stress (Uribarri et al., 2010; Vlassara & Uribarri, 2013). Thus, by consuming a diet rich in whole plant foods and minimizing processed and animal foods, one can maintain low oxidant stress and reduce the risk of diabetes and other diseases.

Pill Burden

Pill burden, defined as the number of pills a patient needs to take each day, is another complication for patients with any chronic condition, including T2D. Many studies of patients with prescription therapies have shown that patient adherence to a pharmacotherapeutic treatment decreases as the number of pills increases (Claxton et al., 2001). As those with T2D are at increased risk for other cardiovascular and metabolic conditions, managing the total pill burden is thus another important consideration when forming a treatment plan (Blüher et al., 2015). While some studies have shown that the adoption of plant-centered diets is more effective than medication in treating T2D symptoms, patient adherence to PBDs has also been shown to decrease overall pill burden; one study found that 34% of 652 patients had their medications discontinued following a 3-week long high-complex carbohydrate diet and lifestyle intervention (Barnard et al., 1994; Olfert & Wattick, 2018). Given the poorer outcomes with increased prescription, treatment with PBDs may be more effective, and additional research should be conducted on this topic.

Economic Burden

While the preceding sections make a clear case for PBDs as a tool to treat and prevent T2D, there are also economic factors at the individual and societal level that may make this case more pressing. According to research published by the American Diabetes Association, individuals with diagnosed diabetes incur medical expenditures about 2.3 times higher than those without diabetes. Furthermore, diabetes is correlated with lower socioeconomic status, meaning that those with lower resources are those disproportionately affected by this disease and the financial burden (American Diabetes Association, 2018; Connolly et al., 2000). On a national level, \$237 billion is spent each year on direct medical costs from diabetes and another \$90 billion on reduced productivity (American Diabetes Association, 2018).

Though PBDs are often perceived as more expensive, this doesn't reflect the data, especially when those diets include more whole plant foods and fewer processed meat- and dairy alternatives; in fact, a recent study found that a dietary pattern that limits meat and dairy reduces food cost by about 14% (Springmann et al., 2021). Furthermore, a 2019 study by Lin et al. in Taiwan shows that adherence to a vegetarian diet can significantly reduce healthcare expenditures when compared to a diet including meat (Lin et al., 2019). Thus, in both individual and societal measures, PBDs can improve the cost burden incurred by T2D.

Treating Complications of Type 2 Diabetes

While the benefits of PBDs are clear for the treatment of T2D, plant-based diets may also provide benefits in the treatment and prevention of other diseases. While other chapters of this book are devoted to other diseases, we will briefly cover a few examples here.

Neuropathy

Neuropathy is the most common chronic complication of diabetes and is a disorder that is generally defined as injury to the peripheral nerves (Duque et al., 2021). The broader spectrum of neuropathies can include a wide range of patterns that affect a nerve cell in different ways—some affect the cell body, and in others, the axons or their protective and insulative coating are damaged (Hammi & Yeung, 2022). The most common neuropathy in industrialized countries is diabetic neuropathy, a complication of diabetes characterized by pain and then sensory loss in the extremities, especially the feet (Said, 2007). While these symptoms are concerning for patients, the damage to nerve fibers that regulate the heart and blood vessels are also damaged; without proper regulations of these crucial organs, those with diabetic

neuropathy are at increased risk for heart attacks and other heart problems, as well as chronic kidney disease. Diabetic neuropathy has also been linked to obstructive sleep apnea, a condition defined by frequent pauses in breathing during sleep which can lead to intermittent hypoxia (lowered blood oxygenation) and other complications (Duque et al., 2021).

Recent research has shown that patients with diabetic neuropathy can benefit from PBDs; a 2015 study of 36 participants with T2D and diabetic neuropathy showed improved nerve function and significantly reduced pain scores when told to follow a low-fat, PBD for 20 weeks, as compared to controls (Bunner et al., 2015).

It is crucial for diabetes patients consuming a PBD (especially those taking long-term metformin therapy), to take adequate vitamin B12 supplementation as the latter is associated with improvement in neuropathy symptoms (Karedath et al., 2022). Conversely, B12 deficiency is linked with higher risk for neuropathy (Alvarez et al., 2019).

Retinopathy

Retinopathy is a disease of the small blood vessels that supply the retina, the nervous tissues responsible for receiving visual input in the eye (Torpy et al., 2007). A major cause of vision loss in middle-aged and older adults, retinopathy is another very common complication of diabetes (Wong et al., 2016). As retinopathy progresses, there is an abnormal growth of blood vessels in the retina leading to swelling; ultimately, this can lead to vision loss and blindness (Wong et al., 2016).

While the effect of PBDs on diabetic retinopathy has not been widely studied, PBDs are effective in controlling its risk factors including elevated blood sugar, blood pressure, and blood lipids (Jardine et al., 2021). Furthermore, a systematic review of dietary intake and diabetic retinopathy showed that dietary patterns with increased fiber are associated with lower risk of diabetic retinopathy, though these patterns were neither WFPB nor PBDs (Wong et al., 2018). More recently, a 2022 case study showed that over the course of 10 months, a patient with diabetic retinopathy was able to put this condition into remission by following intensive lifestyle changes including a PBD (Gunadhar, 2022). This case study aligns with the case of New York City Mayor Eric Adams' own story, in which he put his own diabetes and diabetic retinopathy into remission by adopting a PBD (Adams, 2020). Still, further research is warranted to elucidate the effect that PBDs can have on this complication of diabetes.

Nephropathy

Nephropathy is characterized by damage to the blood vessels in the kidneys and excess urine albumin excretion; as a result, those with nephropathy exhibit decreased blood filtration and kidney function (Lim, 2014, p. 201). Diabetic nephropathy is

one of the most severe and frequent complications of diabetes and is associated with an increased incidence of chronic kidney disease and, eventually, end-stage kidney disease. Furthermore, elevated blood pressure and blood sugar can influence the progression of diabetic nephropathy (Samsu, 2021). Thus, in the maintenance and treatment of diabetes, considering this complication is essential.

Many studies have demonstrated the benefits of PBDs toward decreasing the progression of kidney disease from diabetes and diabetic nephropathy, particularly via reducing inflammation, maintaining a more alkaline acid-base balance, and ameliorating high blood pressure (Adair & Bowden, 2020). Whole plant foods may be exceptionally effective in these areas due to their fiber content, protein quality, and alkalinizing effects (Babich et al., 2022; Hariharan et al., 2015). Thus, there are few to no downsides in adopting a PBD for managing and treating nephropathy (McMacken & Shah, 2017).

Cardiovascular Disease

Cardiovascular disease is a broad term that includes coronary heart disease, cerebrovascular disease, and peripheral artery disease, and generally, is defined by disease that affects the blood vessels (Stewart et al., 2017). The World Health Organization designated cardiovascular diseases as the leading cause of death globally, accounting for an estimated 17.9 million deaths in 2019, or 32% of global deaths (World Health Organization, 2021). Diabetes and cardiovascular disease are closely connected, and properly considering both is paramount in effective treatment; fortunately, the evidence for treatment of cardiovascular disease with PBDs is strongly associated with lowered cardiovascular risk (Bruemmer & Nissen, 2020; Satija & Hu, 2018). This has been well established with studies showing the inverse relationship between plant foods and cardiovascular disease dating back to the 1950s (Esselstyn, 2017). It is posited that PBDs improve cardiovascular disease by improving weight management, enhancing glycemic control, improving lipid profile, reducing blood pressure, improving vascular health, decreasing inflammation, and improving gut microbiome, many of which are implicated in the treatment of T2D (Satija & Hu, 2018).

Other Complications

PBDs may provide unforeseen benefits for several other diabetes-related diseases, including Alzheimer's Dementia (AD), depression, and various forms of cancer.

A 2020 review detailed the close link between type 2 diabetes and AD showing that the processing of amyloid- β ($A\beta$) precursor protein toxicity and clearance of $A\beta$ are attributed to impaired insulin signaling, and insulin resistance mediates the dysregulation of bioenergetics and progress to AD (Nguyen et al., 2020). In fact, a

recent prospective cohort study found that vegetarians had a 38% lower risk of dementia compared to non-vegetarians when controlling for age, sex, education, and other health conditions using data from over 12,000 participants over a 9-year period (Lin et al., 2019). Indeed, another study in 2022 shows similar outcomes with participants who had higher levels of adherence to healthy PBDs seeing significant association with lower risk of cognitive impairment in older adults (Zhu et al., 2022).

Another condition of the mind, depression, is widespread with some estimates of over 300 million people worldwide experiencing depressive symptoms; as these symptoms can lead to suicidal ideation and suicide, finding treatments and ways to reduce depression is paramount. While studies have shown mixed evidence for prevalence of depression in vegans and vegetarians, a recent study sought to look at dietary quality instead and found that a high-quality PBD is associated with lower risk of depressive symptoms among 216 participants (Lee et al., 2021). The researchers noted that this evidence is limited to a few studies, however, and it is important that a causal mechanism for the effects by which PBDs may impact mental well-being is investigated.

Cancer is among the most common causes of death in the United States and in the world with approximately 10 million deaths per year in 2020, or nearly one in six deaths worldwide (World Health Organization, 2022b). Another chapter in this book will discuss the connection between diet and cancer, and more specifically, how PBDs may improve the risk for various cancers. Regardless, many organizations that focus on cancer research and advocacy promote plant-forward diets and encourage these patterns for cancer prevention, including the World Cancer Research Fund and the American Cancer Society (American Cancer Society, 2020; World Cancer Research Fund International, 2022).

Current Gaps in the Literature

While the evidence shows that PBDs may help manage blood sugar and reduce the risk of diabetes, there remain areas within the literature that require further research.

First, though PBDs have been followed in many cultures for thousands of years, there is relatively little long-term (greater than a few years) evidence of its health impacts and less so for diabetes (Bye et al., 2021). Unfortunately, this gap will remain until longer-term studies can clarify what benefits and risks these patterns may have.

Another gap is in how these dietary patterns are defined. As many of the studies cited throughout this chapter show, PBDs can be defined based on different criteria. Some studies use terms like vegan, vegetarian, Mediterranean, the DASH diet, or more recently, flexitarian and semi-vegetarian (Derbyshire, 2017). Each of these dietary patterns has varying levels of inclusion of unprocessed plant foods and exclusion of animal and processed foods. Future studies should consider how they are categorizing these dietary patterns and focus on specific food groups included

and excluded within each participants' diet. Some studies have used the plant-based diet index (PDI), healthful plant-based diet index (hPDI), and unhealthful plant-based diet index (uPDI) created by Satija et al. to categorize diets according to a standard scoring structure (Kim et al., 2020a, b; Satija et al., 2016). This allows for more granular detail of what a given dietary pattern includes and eliminates some of the ambiguity that patterns like "flexitarian" can create.

While some studies have proposed mechanisms through which plant-based diets may affect diabetes risk, such as changes in gut microbiome diversity or improved insulin sensitivity, there is a need for more research to understand the underlying mechanisms behind these effects (Wong, 2014). Some researchers believe that genetic components may also play a role in these pathways, raising questions about how different populations may benefit from these changes.

Finally, there is generally a need for more studies on plant-based diets in different diabetic populations, such as older adults, people of different ethnicities, and people with different comorbidities.

Conclusion

While there remain gaps in the literature about the efficacy of PBDs in preventing and treating diabetes with PBDs, there is strong evidence for its use in people of all ages, backgrounds, and stages of life. There are relatively few risks to a well-planned PBD and the benefits can be tremendous, not only for diabetes, but for many other health conditions. Furthermore, while this book explores different perspectives on veganism and its associated philosophies, we believe that while reducing animal suffering is of the utmost importance, it needn't be mutually exclusive with the goal of improving human health and reducing needless human suffering from many preventable and dietary-related diseases. In fact, human–animal suffering and non-human–animal suffering are mutually inclusive, as a reduction in one supports the reduction in the other (through reduced use of antibiotics, reduced zoonotic disease (defined as diseases that pass from nonhuman to human animals), improved planetary health, and of course improved human–animal health. As a 2017 *Lancet* article concluded, the impact of suboptimal diets across the world contributed to 11 million human deaths and 255 million disability-adjusted life-years (a unit used to measure the equivalent loss of 1 year of healthy living) owing mostly to high sodium intake, low whole grain intake, and low fruit intake (Afshin et al., 2019). As human animals are just one of many types of animals that have the capacity to suffer, we must also find ways to eliminate this suffering and improve our ability to thrive. Medicine offers one part of a multifaceted equation, and we strive to furnish people with the tools and data to better prepare themselves for a more informed and healthier lifestyle.

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Chapter 25

***N* = 1: A Science-Guided Personal Investigation into What a Plant-Based Diet Can and Cannot Do to Address Cardiovascular Diseases**



Paul Greenberg

“Heart disease? Oh, c’mon, that’s so old school.” So went my thinking as I rode a conveyor belt into a CT scan in one of those dreary medical-imaging facilities I’d managed to avoid for the entirety of my 51 years. I was fairly certain this was just another test that didn’t really apply to me, one of the many my doctor had tacked on to the growing list of exams we Americans find ourselves subjected to as we move through the decades.

And why should it? I’d never smoked, I drank only in moderation—usually red wine. I exercised for a half-hour on most days, meditated not infrequently, and did all the other things one is supposed to do to manage stress. The EKG tracings of my heartbeats were suitable for framing. True, I didn’t *exactly* follow Michael Pollan’s dictum to “Eat food. Not too much. Mostly plants.” But I did mostly avoid processed junk. (Doritos while driving were, for some reason, allowed.)

I’d managed to limit myself to what I thought was a tolerable dozen or so pounds of extra weight and I ate red meat only a couple times a month. That my “bad” LDL cholesterol had been creeping up slowly since my early 40s didn’t concern me that much. My “good” HDL levels were, well, *good*, and my GP assured me that my ratio of good cholesterol to bad was, also, well, good. And anyway, hadn’t the whole cholesterol thing been debunked by some *New York Times* writer or something?

Yeah, yeah, yeah, both of my grandfathers had died of cardiovascular disease. And yeah, yeah, yeah, my blood pressure had started sneaking up on me too. Just as sneakily, in 2017 the American Heart Association and American College of Cardiology lowered the standard for normal blood pressure by 10 points, placing

This trial was conducted by the author at his own personal risk. The author in no way advocates that other individuals follow the author’s methodology.

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me on the border of hypertension. Still, I continued to think of all this heart disease stuff as something that only applied to guys who carried around tackle boxes full of pills, listened to Sinatra on AM radio, and instructed waitresses to “Go easy on the salt, will ya sweetheart? I gotta watch my presha.”

But unbeknownst to me, as my medical practitioners logged the various changes in my numbers, they were starting to reconsider my normally salubrious state of affairs, moving me out of what they considered “low risk” up into the mid-range for a heart attack or stroke, which is why, in January of last year, I was told to get a coronary calcium scan (aka heart scan), a test—not covered by insurance, thank you very much—that uses a highly specific X-ray technology to measure amounts of calcium-containing plaque in the arteries of the heart. Even as the CT scanner zoomed back and forth across my chest, I comforted myself that a friend had cholesterol levels nearly twice as high as mine and had just gotten a perfect zero score on hers. “I got this,” I thought.

Two days later, my doctor called to say I scored a 90 out of 400—more calcification in my arteries than 60% of men my age. Without even asking, he phoned in a prescription for statins. If I followed the doctor’s orders, I would be taking pills every day for the rest of my life. The pharmacy left five messages confirming that my drugs were ready. But I didn’t pick them up. I just didn’t want to. I was convinced that I wasn’t a statin kind of a guy. Wasn’t there another way?

During the next years I would find out that, yes, there was. Although it sure as hell wasn’t as easy as taking a pill.

If there was one comfort in all this, it was the fact that I was hardly alone in the diagnosis I’d received. Heart disease remains *overwhelmingly* the top cause of death for Americans, picking off more than 800,000 of us every year. According to the American Heart Association, nearly half of all Americans (48%) are living with some form of cardiovascular disease (which includes coronary heart disease, heart failure, stroke, and hypertension), and two-thirds have at least two major cardiovascular risk factors, such as high cholesterol, poor diet quality, and sedentary lifestyle. And while new medical procedures have come along since Sinatra’s salad days—like stents and bypasses that have saved countless lives—most cardiologists focus on addressing the accumulation of arterial plaque before a stent or bypass becomes necessary.

Plaque is a combination of fats, calcium, cholesterol, and other molecules that can chronically impede blood flow to the heart and brain. An acute situation can arise if a piece of unstable plaque cracks, exposing the blood vessel to clotting agents in the blood—causing a rapid blockage that leads to a heart attack. And in 40% of such cases, that’s that.

Stopping or slowing plaque accumulation is where statins enter the picture. Today, most cardiologists agree that excessive LDL cholesterol, which is produced by the liver, is a major contributor to plaque buildup. Statins block the enzyme that prompts the liver to make LDL cholesterol and also enable the liver to take up excess LDL from the blood, preventing some or all of it from accumulating. But statins do other interesting things. They can also lock the more dangerous, unstable plaque in place, preventing it from cracking. And studies published in the journal

Nature and others have found that these drugs have an anti-inflammatory effect in the body and may relax veins and arteries, easing blood flow.

Yes, heart disease, on a *population* level, is as serious as it is common, and “on a population scale, statins are miracles,” according to renowned diet-centered physician Michael Greger, M.D., author of the bestselling *How Not to Die*. Which is why the default for my very mainstream cardiologist was to call in the medication cavalry. Most studies put the mortality risk reduction between 5% and 25%. But when you take it down to a *personal* level, Greger told me, the benefits of statins are not as great. In men 70 and older (two factors that automatically up your odds) with no previous history of heart disease, the risk of dying from a heart attack or stroke is reduced much less—only by around 0.1% “No doctor tells people that because no one would take these drugs if they did,” said Greger. “I mean, what risk reduction would you need to justify taking a drug every day for the rest of your life?”

Now, *that’s* what I wanted to hear. I am an individual, damn it, not a population. And I am a pretty motivated one to boot. What if I adopted the most heart-healthy eating pattern possible, amped up my exercise regime and dropped those pesky extra pounds? I decided to give myself a discreet period of time to make it work. And if it didn’t, the drugstore was right around the corner.

Before I go into what worked from a dietary perspective, it’s important to get a sense of what didn’t. Because, really, who wants to go to extremes when they change their eating habits if something doesn’t really do anything?

Since generally I’m known as someone who reports and writes about the ocean, my first stop in trying to address my cardiovascular issues was an obvious one: the omega-3 fatty acids prevalent in oily fish. I’d spent several years reporting on the omega-3 phenomenon for a book I was writing that eventually was published under the title *The Omega Principle*. For that book, I’d traveled to omega-3 conferences, probed the interiors of supplement processing plants, and interviewed the original doctors who first discovered extraordinary low rates of cardiovascular disease among fish-eating Inuits in Greenland.

With my own cardiovascular news in hand, I decided to make myself into something of an *n* = 1 subject. What if, as I journeyed around the world doing my fish reporting, what if I took a dietary journey through the world of omega-3s? What if, for a year, instead of eating landfood meats I would everyday eat the most oily fish I could find? True I’d never be able to mirror the diet of Greenlanders. I could no longer get my hands on seal blubber, the dietary staple of the Greenlanders that comes in at 1500 mg of omega-3s per 4-ounce serving. I *could* come close. Salmon: 400 mg per serving, herring: 500, anchovies: 600, mackerel: 700!

I found once I put on a pair of omega-3 glasses I started to see omega-3s everywhere. And alongside I became hyperconscious of omega-3’s evil twin—omega-6 fatty acids that tend to be present in large amounts in the grains and meats of modern-day industrial agriculture. In the Hebrew Bible, landfood omega-6 grower Cain slew shepherd of grass-fed omega-3-rich meat Abel, and Isaac’s good son, the hunter Esau, is cheated out of his inheritance by his landfood omega-6 farming twin Jacob. Even in the battle of good and evil, it seems to announce itself, the holy trinity (3) versus the mark of the devil (6).

In our food system too I saw it everywhere. In the omega-6-rich soy-based emulsifier lecithin that kept chocolate solid and served as a stabilizer in 75% of all processed food. Corn and soy are the number one and two crops in America and nearly universally go to feedlot animals that are in turn much more omega-6 inclined than their much less numerous grass-fed brethren. In the broad swaths of omega-6 corn and soy that belted the mid-drift of the North American continent and the fast food franchises that lined our highways boasting nary a leafy green nor a slice of unfried fish.

And so I doubled down on my seafood diet. In so doing I hoped that I would go from being an omega-6 person to an omega-3 person. A transformation that would be evident to anyone who saw me. I also carefully logged my seafood diet. Going back through my records now I see that in the first 2 months of the $n = 1$ trial I ate a pound-and-a-half of Mediterranean anchovies, six pounds of wild salmon, four-and-a-half pounds of farmed salmon, two pounds of farmed barramundi, eighteen ounces of canned tuna, six ounces of oysters, two pounds of mussels, eleven ounces of American eel, nine ounces of scallops, four ounces of black sea bass, eight ounces of shrimp, five ounces of swordfish, and two ounces each of fluke, striped bass, fake crab (aka Alaska pollock) and several handfuls of sardines. I had also scooped out the innards of some two dozen sea urchins and, in one unfortunate instance in the Italian province of Puglia I was served a *cicala di mare*, literally a “cicada of the sea” that looked to be a kind of prehistoric lobster. I would later learn that the waiter, so proud to be able to insert a rare treat into an American’s seafood diet, had served me an animal that was on the IUCN red list. An endangered species.

By my count, all that seafood intake amounted to a daily dose of about ten ounces. True, some of the commonplace American seafood items on my menu—the shrimp and the pollock (the first and fourth most consumed seafoods in America)—offered very little in the way of omega-3s. A typical American miscalculation. In fact, if you add in tilapia, pangasius catfish, and cod (respectively the fifth, sixth, and seventh most consumed seafoods in America), it turns out that something like half of all the seafood Americans eat is unimpressive in its lipid profile. Each of these non-oily fish and shellfish offer about as much omega-3 content per ounce as an egg laid by an industrially produced chicken.

Even with these omega-3-lite interlopers, I calculated that my all-seafood diet was probably providing me with 500 mg of omega-3 fatty acids per day, the equivalent of the average amount of EPA and DHA contained within a daily supplement pill sold at most pharmacies and supermarkets. The end goal was to achieve an omega-3 blood plasma level where the omega-3s in my blood would rise above 7% of my overall lipid profile. The average American, I had learned from my research had an omega-3 level of about 5% whereas people like the Japanese had omega-3 blood lipid levels of around 8%.

A year after beginning my fish-only experiment, I pricked my finger, took a blood sample, and sent it off to a company called “OmegaQuant” in South Dakota. A little while later the results came back. I called Bill Harris, OmegaQuant’s founder, and went over the results.

“I’d say you’re in pretty rarified territory here,” Harris said, clearly impressed. I had in fact achieved what I’d set out to do, at least as far as my lipid levels were concerned. The omega-3 percentage in my blood was now at the far end of the spectrum at 10.5%. Harris reminded me that much of the observable omega effect captured by observational studies occurs when “deficient” populations go from what OmegaQuant considers subpar to acceptable. I had gone far beyond that. Was this good? Would I be *much better* than the average American as a result?

“We haven’t seen an effect with levels that high,” Harris cautioned.

“So I’m not getting a cardiac benefit?”

“I wouldn’t say that,” Harris laughed in a good-natured Midwestern way. “I think what you’re doing here is great. You maybe started a little late in life. But this is something you’re going to continue, right?”

“I guess.”

“If you were to do this for maybe 40 years I think you would see an effect.”

Forty years. Hmm.

It was drastic to say the least to consider that kind of change. And no sooner had I rejoiced over my high omega-3 levels then I sought out another range of results. I went up to see my family physician, a kindly avuncular figure named Richard Shepard who tends to answer questions of existential dread with a little Upper West Side shrug. Shepard was a regular taker of fish oil capsules himself. I thought he’d be a natural to approve my diet. But looking over my non-Omega-3 numbers he was singularly unimpressed.

“Cholesterol? ... unchanged. Triglycerides? ... basically the same ... blood pressure? A little bit up. Maybe. Could it be salt? But basically, unchanged.”

“So,” I began with frustration, “if you were to look at me today versus a year ago and you were to see these two versions of me what would conclude?”

“Unchanged. Basically the same.”

“But are these numbers,” I asked him, “Are they an indication of my health?”

Here Shepard paused and shot a glance at me and gave a carefully calibrated response.

“They are an indication of the nature of your blood.” And with that our interview concluded.

This seemingly endless and unsuccessful omega-3 experiment was dispiriting to say the least. And, to be honest, I suspected throughout that very fishy year that I was missing something. With the various diet gurus I’d interviewed as part of my research I always had a sense that veganism was out there. That I needed to try it. Even a very fishy diet is carbon intensive. Landfood is even worse. Animal agriculture contributes nearly two-thirds of the greenhouse gas emissions created by food production globally—and 78% of its methane emissions. A vegan diet felt straightforward; it eliminated whole categories of foods I might be too tempted by.

In terms of health outcomes, plant-based diets have shown promising results—although there’s conflicting evidence as to whether going vegan, vegetarian, or eating mostly plants allowing for some meat, fish, and dairy is best. What I found most impressive were the studies that cardiologist Dean Ornish, M.D., founder of the Preventive Medicine Research Institute, conducted in the 1990s—looking at what

happened to cardiac patients when they were put on a plant-based (though not completely vegan) diet. In many cases, Ornish discovered that with people like me who had significant calcification, their arteries actually opened up. This phenomenon has been attributed in part to the high amounts of anti-inflammatory micronutrients that a plant-centered diet—full of vegetables, fruits, whole grains, pulses, and nuts—delivers.

More recently, a review published in the *American Journal of Clinical Nutrition* reported that among a group of 96,000 Seventh-Day Adventists—who adhere to varying types of plant-based diets—those who were vegan had the lowest risk of hypertension, as well as the lowest BMIs, compared to participants eating a vegetarian diet or a plant-based diet that included small amounts of animal foods. Other research on this cohort has linked veganism to better cholesterol levels, reduced inflammation, and lower rates of heart disease.

So, plants it was. But which plants? Here again, I turned to Ornish, or rather Greger, Ornish's colleague. In his hundreds of short nerdfest online videos, Greger has over the years tried to take all the studies of all the foods out there and wedge them into what amounts to a mega meta-analysis of everything from broccoli to beans to beets. Based on that distillation, Greger recommends a diet to his patients that meets nearly all of your nutritional needs and delivers the fiber, antioxidants, and other micronutrients that are thought to be the key to tamping down inflammation, lowering LDL cholesterol, and improving cardiovascular health. What most decidedly wasn't on the list were animal products and highly processed foods of any kind.

The transition was choppy. Going out to eat was a nightmare. Restaurants had to be pre-vetted and I became that irritating member of a social circle who didn't partake in the shared appetizer platter. At home, though, things went much smoother. I've always loved to cook and swapping in mushrooms for pork in my Bolognese didn't bother me much. In fact, I was impressed with all the many ways plant-based cooking had advanced since I last tried vegetarianism back in the '80s. Making cashew mozzarella was a revelation, as was the totally convincing swap of aquafaba (canned-chickpea water) for eggs in homemade mayonnaise. And by the time I arrived for my three-month checkup, I felt confident that I could sustain my new diet.

In preparation for my experiment, I had also switched to a more lifestyle-centered cardiologist, Suzanne Steinbaum, D.O., president of the SRS Heart Center for Women's Prevention, Health, and Wellness in New York City. She's used to challenging establishment assumptions, having been a leader in drawing attention to the overlooked fact that for American women, too, cardiovascular disease is the №1 cause of death. But even Steinbaum was cautious about the idea of holding off on drugs. In fact, like pretty much every doctor I interviewed for this article, Steinbaum saw many benefits in statins. "I know cardiologists who, after putting in so many stents on so many patients say, 'They should just put statins in the water,'" she told me. Indeed, many of the cardiologists I talked to were themselves on statins.

But a week later, when the results of my first blood tests came back, Steinbaum was impressed. In just a few months, my LDL had dropped from 160 to 127 mg/dL. My blood pressure—which had been stubbornly stuck at 140/90 mm Hg—was

trending downward to something like 135/85. Still, she said, we should really dive deeper to try to figure this out. In other words, more tests.

We have come a long way in the last 60 years in understanding the root causes of heart disease. Way back in the Rat Pack days, when the physiologist Ancel Keys first started peering into arteries and finding fatty deposits in the vascular system of middle-aged males, the thought was that fat and cholesterol from food were somehow literally oozing into our blood vessels and clogging them up: a kind of plumbing problem. But as medical research has become more fine-scaled in its ability to identify nuanced pathways, we've come to understand that coronary artery disease is a multi-factor issue, one that hinges on a complicated interlinking dynamic of diet, lifestyle, and genes.

As I entered the second quarter of my vegan trial, Steinbaum and I started trying to tease out how I stood on those other factors. She ordered a battery of new tests that looked both at my liver's natural ability to deal with cholesterol, as well as at my genetic proclivity to have faulty LDL-clearing enzymes in the first place. (I should say here that I am lucky to be covered under my partner's excellent insurance—or getting to the root of things could have made a serious dent in my finances.)

On the good side, a test for APOE (apolipoprotein E), a hereditary marker that is strongly linked to heart disease and Alzheimer's, came back with a normal reading. On the not-so-great side was the result of a panel of tests done by Boston Heart Diagnostics. Generally, Boston Heart judged me to be sound. But one factor that showed red in the user-friendly pamphlet the lab gives its patients was an elevated level of apolipoprotein B—the protein component of what cardiologists call “small and dense” LDL. These particles are very strongly associated with heart attack risk. Worse, small dense LDL levels don't change all that much in response to what we eat. If it turned out that apoB-driven LDL was at the root of my problem, it's possible that my endeavors might hit a wall, regardless of how much broccoli and beets I shoved down my gullet. Nevertheless, I persisted.

When I let Greger know that I'd lowered my LDL by more than 40 points, he was pleased but not particularly surprised. Most of his patients, he said, saw a 30% reduction in LDL in just a few weeks after switching to a vegan diet. This is partially due to actual changes the diet seems to engender in the functioning of the liver, but also because the switch generally drops your weight. And weight has a considerable correlation with cholesterol. Greger explained that for every pound lost, people also tended to shed about one point of LDL. Seeing as I was still above the normal BMI range, I decided to up my exercise and see if I could knock both numbers down.

This might have been as important a choice for me as changing diets. Exercise, it turns out, is about the most statistically effective form of intervention there is for reducing cardiac “events,” as doctors call heart attacks and strokes. According to Benjamin Levine, M.D., a professor of internal medicine and cardiology at UT Southwestern Medical Center and Texas Health Presbyterian Dallas, in people like me with calcium scores of less than 100, studies have found a whopping 50% reduction in heart attacks and strokes when subjects exercised regularly compared to those who remained sedentary. (He notes that the benefit seems to plateau at around 5 h a week.) Besides shaving off pounds and reducing stress, exercise also lowers

blood pressure, stabilizes the heart's rhythm, and even improves its overall structure. Particularly relevant to my dilemma: There is evidence, too, that exercise helps transform unstable plaque into the calcified stuff that won't break off and cause ... an event.

Since I had already been doing 30 min a day, I upped my "dose" to the upper part of Levine's range and started running 45 min daily.

It's hard to say if I was experiencing a massive kale-induced placebo effect, but I can truthfully say that by month nine of my experiment, I felt fantastic. I had lost a dozen pounds, had more energy and could manage 10 K runs without joint pain or shortness of breath, though I did miss a good steak from time to time. And my labs from Steinbaum cheered me. "The most compelling markers that we have are the cholesterol and blood pressure," she wrote. "Your LDL cholesterol before you started your trial in February was 160, in May it decreased to 127 and now it is 118. Your ambulatory blood pressures in May were 120–145/80–95. Currently, your blood pressures are in the 120s/70–80s." Based on all that, it seemed I had beaten the rap. On the presumption that a continuation of my diet and exercise plan would further lower my numbers, Steinbaum was holding off on statins for the moment.

As I started taking a victory lap, I consulted a bunch of other doctors to fact-check (but also to crow about my numbers). Sadly, several suggested that my whole experiment might be flawed. "The oversimplification of LDL has been driven by the promotion of drugs that lower LDL, rather than the *science* which says the driver is inflammation," Mark Hyman, M.D., head of strategy and innovation at the Cleveland Clinic Center for Functional Medicine, explained on a Zoom call this past winter. "While LDL is a useful risk factor, it is not as important as the overall pattern of cholesterol—small dense LDL particles, high triglycerides, low HDL—and inflammation. The most dangerous pattern is driven by a diet high in sugar and starch not fat."

Other physicians I interviewed agreed that animal fat isn't the biggest problem. Rather, it's sugars and simple carbs that drive insulin spikes and inflammation and, in turn, heart disease. Indeed, a study review published in *Progress of Cardiovascular Diseases* found that some sources of saturated fat may have no impact on heart disease, while refined carbs—particularly added sugar—lead to an uptick in inflammation, LDL, and other changes that increase heart disease risk and can lead to a threefold risk of dying from it.

"But I bake my own bread and it's 100% whole-wheat!" I protested. Not enough, Hyman said. "My rule of thumb is the only bread you should eat is a loaf you can stand on that won't squish." As a precaution, I followed his advice and switched to a Danish health loaf that indeed bears a certain resemblance to a tasty brick. And in general, as I continued to modify my diet, I favored Greger's advice to eat only whole, plant-based foods and eschewed the products coming out of the rapidly emerging highly processed vegan-food sector.

If there is one thing I've learned after a year of being more in contact with the medical world than I'd normally care to be, it's that tests beget tests. As I geared up to see Steinbaum for a final evaluation, we planned a repeat cardiopulmonary exercise test (CPET) to see if the impressive 112% VO₂ score I'd gotten earlier was a fluke or a trend. We'd redo the apoB test and find out if I'd managed to tackle the

“very bad” bad cholesterol issue. And we’d test to see if I had any “endothelial dysfunction,” a way of charting whether the calcium picked up in my calcium score was inside or outside of my arteries.

But then the coronavirus swept across New York City. All nonessential services were shut down, including Steinbaum’s office. In mid-March, I developed a dry cough, slight difficulty breathing, a fever, and extreme fatigue. I knew people with impaired heart health were particularly vulnerable to Covid-19 and I was sure I had it. I worried.

And then, just as suddenly as they arrived, my symptoms vanished. My breathing returned to normal. I started running again. I felt great. Had my improved cardiovascular health contributed to my mild viral experience? Had all that diet and exercise paid off in actual life-saving in the face of a deadly pandemic? I wanted to think so. When I finally tested positive for Covid antibodies in May of 2020, that very much seemed to be the case. I’ve seen the results of changes in lifestyle and diet and am committed to doing better with how I eat and exercise. Because, really, in these crazy times with all the stresses ahead, I know I’m going to need a whole lot of heart.

Postscript

At a certain point the *n* = 1 days came to an end. As the urgency of COVID restrictions waned and I was able to pay more frequent visits to medical professionals the words of one of the doctors I’d met on my diet trial journey came back to me. Like me, this particular physician was still caring for young children and, also like me, had high cholesterol and blood pressure issues. But unlike me, he was on statins. “When I looked at the risks to myself and the risks it posed to my family,” he told me, “I just couldn’t justify *not* taking statins.” It was then that I realized how an *n* = 1 experiment really was very much a selfish undertaking. It assumed that no other people in the world were involved in my experiment and that I somehow “stood” for something “important” all by myself. But if I were to die, drop dead of a heart attack leaving my children without a father, what kind of experiment would I really be running? Who would be the beneficiary of that data?

A year after I’d logged my improved cholesterol numbers, I submitted myself to a new cardiologist and a new battery of tests. I soon found that in spite of my better numbers, my calcium score, the number which had sent me down the road of dietary experimentation had not improved. Upon a repeat of the coronary artery scan, I showed continued progression in the direction of arterial calcification anticipated by my first cardiologist. Even though my LDL cholesterol was significantly lower than it had been (somewhere in the 120s), I was advised that it was still not low enough to meet the criteria for primary prevention of a heart attack or stroke. Blood pressure, too, eventually, inched up. In short by the winter of 2022, I joined the ranks of millions of Americans and began taking a statin and blood pressure medication. Sad but true: in the presence of medication, my LDL cholesterol immediately plummeted an additional 30%. There was, I decided really something to unmovable genetic factors in blood lipids and cholesterol. I had to face it. I had some bum genes.

But, and this is a big but, committing to western medication had its ill effects. I'm not talking about the reams of side effects that always trail the name of a medication when you see it advertised on television. No, I'm talking about basic psychology. I found that as soon as the cholesterol threat was gone, the guard rails came down from my lifestyle. While I stayed mostly vegan at home, I decided to stop being the vegan jerk in the carnivore crowd when going out to dinner. If there was a steak on the menu at a place where I was bound to drop \$50 on a meal, then, hey, sure, I'll have the steak. If a big, creamy dessert was being shared at the table, pass me a fork. I wanted to be part of "normal" society again. I ate and I ate and I ate. And, because of the statins, my numbers stayed low.

What didn't stay low was my weight. Once again the heft of my early 40s returned. Whereas during the $n = 1$ days standing on the bathroom scale was a daily affair, I started to consciously step over it and not even look at it. Pound by pound I grew. Parallel to that I grew lazy. Daily exercise became every other day. When I did exercise the added weight messed with my joints and added further discouragement to a healthy lifestyle. I came to realize I had not just decided to go on statins and blood pressure medication. Medication had taken all the fight out of me. I had surrendered.

"No one number tells the whole story," I remember an accountant telling me long ago. In my days of capitulation, I had not heeded that advice. I had decided that if my LDL cholesterol number was good, I was good. Move on, I'd told myself. The experiment is over. Except for one thing: until you die, the experiment is never over. Everybody's body is one ongoing $n = 1$ trial where the most important data point is death. You have this handful of years to live as well as you can live, love as well as you can love and extend your life number as far as you can into the murky future.

Having a regime helps. No matter if it's losing weight, regulating blood lipids, forestalling Type II diabetes, or stemming the progress of atherosclerosis, tracking your food and responding to the way your body reacts to your diet has marked advantages to blindly moving through the American food system and filling your gullet with whatever comes your way.

And so now, after a wander in the Standard American Diet, I have returned to a mostly vegan regime. The weight has started to come off again. I'm back to an exercise program that is increasingly more rigorous. If a plant-centered way of eating didn't entirely solve my cardiovascular issues I know it brought me part of the way to a better place. It has contributed so far to my ability to use only very low doses of prescription medications. I continue to believe that traditional eating patterns like the Mediterranean diet with their emphases on low amounts of animal protein and high amounts of unprocessed whole grains, fruits, and vegetables not only lower one's personal carbon footprint, they also appear to lower risk of death from cardiovascular disease.

I am but one patient. $N = 1$. But it is clear to me from the year of living vegan that prescription medications are not the only tools in our tackle box to extend life and health. We exist within a context. By improving that context we improve our relationship with our own bodies. Perhaps more importantly, we improve our relationship with the planet that makes life itself possible.

Chapter 26

The Impact of Plant-Based Diets on Cardiovascular Disease and Its Risk Factors



Kathleen Allen, Sandhya R. Bassin, and Robert J. Ostfeld

Introduction

Case A 60-year-old man presented to his primary care physician with progressive chest discomfort. At the time, his discomfort would occur after walking only half of a block and sometimes would even occur at rest. A stress test was performed, revealing evidence of obstructive coronary artery disease, which was likely the cause of his symptoms. Nevertheless, he declined medical therapy, even opting not to take an aspirin. He then presented to the cardiology clinic, where he reaffirmed his desire not to take any medications. He also declined invasive testing. With physician counseling, he adopted a whole-food plant-based (WFPB) diet. He transitioned from his “healthy” diet, which included skinless chicken, fish, low-fat dairy, and some fruits and vegetables, to a diet primarily of fruits, vegetables, whole grains, legumes, and nuts. In just 4 months, he saw improvements in his weight, blood pressure, and cholesterol. In addition, his symptoms significantly improved; he was able to walk an entire mile before experiencing chest discomfort. His condition continued to improve and 2 years later, he could run four miles without chest discomfort despite being neither on any medications for coronary artery disease nor pursuing invasive testing. Although just a single case, this example highlights how lifestyle change may positively impact patients with atherosclerotic cardiovascular disease (ASCVD) and associated risk factors (Massera et al., 2015).

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Epidemiology Atherosclerotic cardiovascular disease (ASCVD) is the number one killer in the United States, as well as globally (Roth et al., 2020). Approximately every 40 seconds, someone in the US suffers a heart attack (Centers for Disease Control and Prevention, 2022b). Unfortunately, ASCVD begins early in life: autopsies of young American soldiers (average age of 26 years) who died in the Korean and Vietnam Wars revealed ASCVD in 77.3% and 45% of men, respectively (Joseph et al., 1993). Thus, adopting a healthful lifestyle to address risk factors for ASCVD early on is critical for quality of life (Domanski et al., 2023). ASCVD risk factors are common: 47% of adults have hypertension, over 42% of adults meet the criteria for obesity, and more than 11% of adults have type 2 diabetes or elevated cholesterol (dyslipidemia) (Centers for Disease Control and Prevention, 2022a, 2023b; U.S. Department of Agriculture, 2020). Strikingly, the prevalence of risk factors for ASCVD is expected to increase, with projections for hypertension, obesity, and diabetes rising to 41%, 49%, and 14%, respectively, by the year 2030 in the United States (Kulkarni, 2021; Lin et al., 2018; Ward et al., 2019).

Both ASCVD and its risk factors decrease quality of life, increase mortality, and place a significant financial burden on healthcare systems. Moreover, ASCVD is the leading cause of disability-adjusted life years (DALYs) in patients older than 50 and results in more than 900,000 American deaths each year (Centers for Disease Control and Prevention, 2023c; Vos et al., 2020). Coronary artery disease (CAD) and stroke, both manifestations of ASCVD, cost the US healthcare system \$216 billion per year. If costs related to ASCVD risk factors, such as diabetes and obesity, are included, costs soar by an additional \$500 billion annually (Centers for Disease Control and Prevention, 2023c).

Pathophysiology Atherosclerotic cardiovascular disease, or atherosclerosis, is characterized by cholesterol plaque buildup within the arterial wall and causes conditions such as angina, coronary artery disease, heart attack, stroke, erectile dysfunction, and peripheral artery disease (Jebari-Benslaiman et al., 2022; World Health Organization, 2021a). ASCVD begins when the endothelial cells that line the inner wall of blood vessels, akin to wallpaper, become injured (Fig. 26.1) (Jebari-Benslaiman et al., 2022). This injury can occur from inflammation stemming from environmental pollutants, smoking, and even a typical Western diet (Aldaham et al., 2015; Rückerl et al., 2007; Steffen et al., 2005). After endothelial cell injury, cholesterol particles can more readily burrow from the vessel lumen (center of the artery where the blood flows), across the endothelial cells, and into the wall of the artery. There, these cholesterol particles may be oxidized and act like an irritating splinter, promoting oxidative stress, inflammation, further endothelial cell injury, and plaque growth (Jebari-Benslaiman et al., 2022). In sum, inflammation from insults such as poor dietary quality, may lead to endothelial cell injury, facilitating cholesterol entry into the vessel wall and atherosclerotic plaque growth.

With repeated exposure to these pro-inflammatory insults, cholesterol influx into the vessel wall continues, resulting in further atherosclerotic plaque growth. Over time, this enlarging plaque can partially occlude the blood vessel lumen, reducing blood flow and essentially converting a four-lane superhighway into a narrow road.

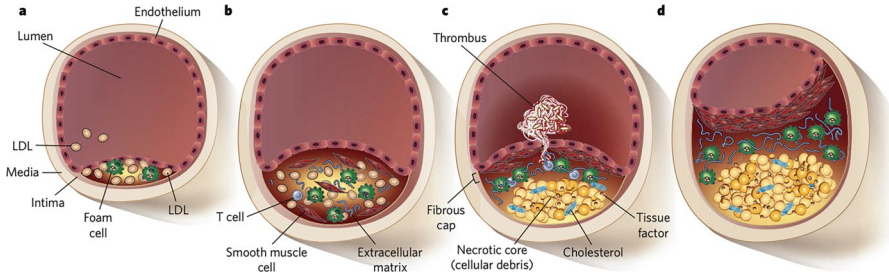


Fig. 26.1 Translating molecular discoveries into new therapies for atherosclerosis. <https://pubmed.ncbi.nlm.nih.gov/18288179/>

Accordingly, these narrow blood vessels may struggle to supply tissues with sufficient blood. For example, if a coronary artery is partially occluded, there can be adequate blood flow to the heart at rest. However, during physical activity, the additional demand for blood (i.e., fuel necessary for the now more vigorously beating heart) may outstrip the blood vessels' ability to supply it, causing angina or chest pain. Of note, there is a key difference between the chronic process above and an acute heart attack.

In general, heart attacks, or heart muscle death, occur when the thin layer, called the fibrous cap, separating the cholesterol plaque in the vessel wall from the inner lumen of the vessel, cracks (Fig. 26.2). This process exposes the plaque to the blood, promoting blood clotting within the lumen of the vessel. With a large enough clot, blood flow may abruptly become entirely blocked, like a newly clogged drain. This blockage then prevents the blood vessel from providing oxygen and nutrients to the heart muscle, and a heart attack may ensue (Jebari-Benslaïman et al., 2022). Fortunately, diet and medications can help slow the atherogenic process and help prevent heart attacks (Bundy et al., 2021).

Diet and Atherosclerosis Lifestyle choices, including unhealthy diet, physical inactivity, and smoking, initiate and accelerate the development of ASCVD and its risk factors: hypertension, type 2 diabetes, dyslipidemia, and obesity (World Health Organization, 2021a). Diet, along with lifestyle, is a significant mediator of inflammation, and a promoter of all aspects of atherogenesis, from initial endothelial damage to a heart attack. More specifically, animal-based foods, such as red and processed meats, which are associated with an increased risk of ASCVD, contain compounds that promote inflammation, including heme iron, nitrites (used as preservatives), advanced glycation end-products (AGEs), myeloperoxidase, N-Glycolylneuraminic acid (Neu5gc), and L-carnitine (Choi et al., 2017; Wang et al., 2022).

L-Carnitine from food, for example, interacts with our gut microbiome. The gut microbiome consists of ~100 trillion organisms, predominately bacterial, which reside within the intestinal tract and help regulate health. These microbiotas then produce L-carnitine metabolites which are ultimately metabolized into TMAO (trimethylamine N-oxide) in the liver (Koeth et al., 2013). TMAO is of interest as it has

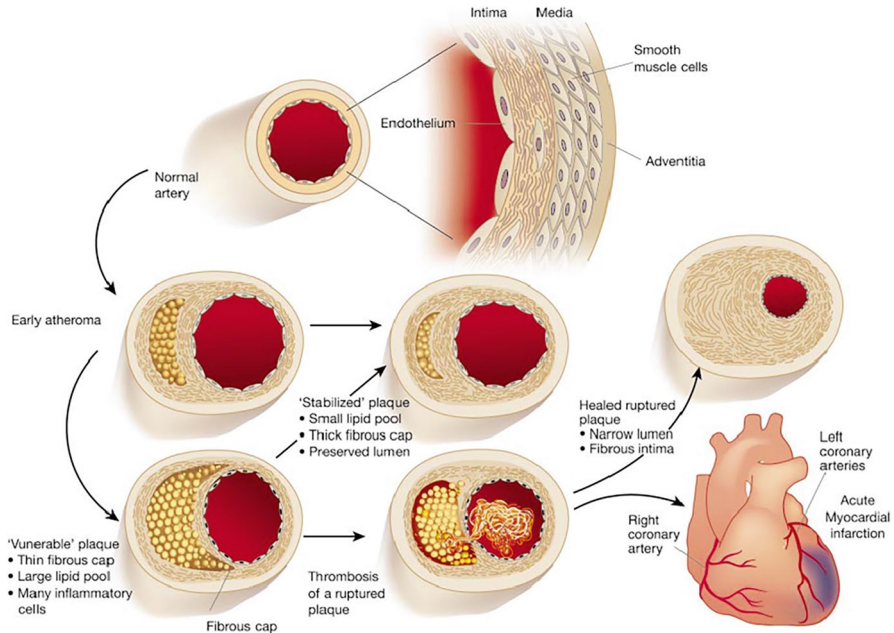


Fig. 26.2 The cellular biology of atherosclerosis with atherosclerotic lesion classification and biomarkers. <https://bnrc.springeropen.com/articles/10.1186/s42269-021-00685-w>

been associated with cardiovascular diseases, such as ASCVD and heart failure (Tang et al., 2014). Mechanistically, TMAO increases inflammation and decreases cholesterol elimination, creating a milieu for atherosclerosis development (Koeth et al., 2013; Yang et al., 2019). Red meat is especially abundant in L-carnitine and therefore results in large amounts of TMAO production (Koeth et al., 2013).

Given the prevalence of these inflammatory compounds, animal-based diets result in higher levels of various inflammatory biomarkers such as C-reactive protein (CRP) and interleukin-6 (IL-6) when compared to plant-based diets (Jaceldo-Siegl et al., 2018; Menzel et al., 2020). Conversely, the consumption of fruits, vegetables, and other plant-based foods can help reduce inflammation and result in decreased risk of ASCVD, in part by lowering the microbiome's production of inflammatory substrates (Tomova et al., 2019). For example, compared to the microbiota of omnivores, the microbiome of vegans and vegetarians produces less trimethylamine, a precursor to TMAO (Koeth et al., 2013). Lower TMAO concentrations may contribute to the decreased risk of cardiovascular events seen with plant-based diets (Li et al., 2017a). Additionally, whole-food plant-based diets are minimally processed. When compared to ultra-processed foods, minimally processed foods are associated with decreased serum levels of inflammatory biomarkers, such as CRP, IL-8, and IL-6 (Lopes et al., 2019; Martins et al., 2022; Silva Dos Santos et al., 2022).

Furthermore, fiber, which is found in high concentrations in plant-based foods and not in animal-based foods, has a variety of beneficial effects, including promoting a more healthful microbiome (Cronin et al., 2021). Accordingly, healthful bacterial strains propagate in high-fiber environments and can then break fiber down into short-chain fatty acids (SCFA). These SCFAs feed the intestinal cells and thus maintain the integrity of the intestinal wall (Desai et al., 2016). A less healthful and less diverse gut microbiome, more often seen with an animal-based rather than plant-based diet, produces lower levels of SCFAs and thereby damaging intestinal cells. This damage may result in “intestinal permeability” (colloquially known as leaky gut) and cause subsequent inflammation by allowing toxins to enter via the intestines (Alwarith et al., 2019; Xiao et al., 2022). Accordingly, one study illustrated the impact of diet on colonic health in a mere 2 weeks. After 14 days of eating a high-fiber diet, colonoscopy results demonstrated increased diversity in the gut microbiome, decreased inflammation, and increased mucosal cell proliferation through the aforementioned mechanisms (O’Keefe et al., 2015). Of interest, in *in vitro* studies (cell models), SCFAs have been shown to downregulate the expression of genes involved in cholesterol synthesis, possibly decreasing serum cholesterol (Alvaro et al., 2008).

Furthermore, minimally processed plant foods contain numerous antioxidants. Compared to animal-based foods, such plant-based foods contain, on average, 64 times higher antioxidant (e.g., phenolic compounds, vitamins A, C, and E) levels (Carlsen et al., 2010). Importantly, antioxidants neutralize free radicals, preventing them from causing oxidative damage to blood vessels (Arulselvan et al., 2016).

Chapter Overview In this chapter, we will review how various whole-food plant-based (WFPB) diets and individual macro- and micronutrients impact the development and treatment of ASCVD. Since ASCVD risk factors—such as hypertension and type 2 diabetes—are covered in depth in other chapters, dyslipidemia and obesity will be primarily highlighted here, followed by a review of ASCVD sequelae.

Hypertension

Definition Hypertension is commonly defined as a consistently elevated blood pressure greater than 130/80 mmHg (Centers for Disease Control and Prevention, 2021).

Epidemiology Hypertension develops over time, often due to poor lifestyle choices such as inadequate physical activity and unhealthy diet (Centers for Disease Control and Prevention, 2021). Nine in ten individuals in the Western world aged 55 to 65 are expected to develop hypertension (Vasan et al., 2002). It is estimated that if hypertension were to be optimally treated to within normal ranges (<120/80 mmHg) for as little as a year, rates of ASCVD would decrease by 40%; however, over half of individuals are not optimally treated (Bundy et al., 2021). Furthermore, just a

5 mmHg decrease in systolic blood pressure has been reported to decrease ASCVD events by approximately 10% (Bundy et al., 2021).

Pathophysiology Proposed mechanisms underlying high blood pressure are multifactorial and include inflammation, atherosclerosis, and dysbiosis (altered microbiome). It is important to recognize that there is a bidirectional relationship between hypertension and atherosclerosis (Harrison et al., 2021). On the one hand, increased blood pressure can damage the endothelium through oxidative stress, resulting in inflammation and plaque growth. On the other hand, atherosclerotic plaques stiffen blood vessels, increasing systolic pressure. Fortunately, a healthy diet can be used to improve, treat, and prevent hypertension (Alexander et al., 2017). Common advice given for mitigating high blood pressure (including that provided in the American Heart Association (AHA) Primary Prevention Guidelines) is to increase intake of plant-based foods and decrease salt intake (Arnett et al., 2019). Whole plant-based foods reduce inflammation and optimize the microbiome, thereby potentially slowing the progression of atherosclerosis and improving vascular health (Alexander et al., 2017). In contrast, high salt intake can increase blood pressure by expanding blood volume and inducing endothelial inflammation (Grillo et al., 2019).

Dietary Studies The most widely popularized study on diet and hypertension is the DASH (Dietary Approach to Stop Hypertension) trial. This randomized control trial (RCT) demonstrated that in 3 weeks, a diet high in vegetables and fruits and simultaneously low in saturated and total fat can reduce systolic blood pressure by 5.5 mmHg and diastolic blood pressure by 3.0 mmHg (Alexander et al., 2017; Appel et al., 1997). Further, cross-sectional (point-in-time) and prospective cohort studies (following groups of individuals over time) demonstrate that the prevalence of hypertension rises with increasing intake of animal-based products. According to cross-sectional data of 11,004 participants from the EPIC-Oxford study, 5.8%/7.7% (male/female) of vegans versus 15.0%/12.1% (male/female) of omnivores had high blood pressure (Appleby et al., 2002). Similarly, a prospective cohort study of Taiwanese vegetarians indicated a 34% reduction in the incidence of high blood pressure compared to non-vegetarians (Chuang et al., 2016). In a subgroup analysis of the prospective cohort CARDIA (Coronary Artery Risk Development In Young Adults) study involving over 4000 individuals followed over a 15-year period, greater intake of whole plant-based foods was associated with a decrease in hypertension: individuals in the highest quintile of whole plant-based food intake had a 36% reduced risk of developing hypertension (defined in this study as a blood pressure >130/85 mmHg or requiring anti-hypertensive medications) compared to the lowest quintile (Steffen et al., 2005). Conversely, those in the highest quintile of red and processed meats consumption had a 67% increased risk of developing hypertension (Steffen et al., 2005).

Mechanism Whole-food plant-based diets improve hypertension, in part, by (1) decreasing inflammation, (2) reducing weight, and (3) improving insulin resistance. Such diets contain fewer inflammatory compounds, such as saturated fat, sodium,

and nitrates, which can increase blood pressure (Milanski et al., 2009; Steffen et al., 2005). The reduction in inflammation improves the vasodilatory function of blood vessels, contributing to reduced blood pressure. In line with this mechanism, those following a vegetarian diet have improved vasodilation compared to those following non-vegetarian diets (Lin et al., 2001; Yang et al., 2012).

Whole-food plant-based diets also improve blood pressure by mediating other conditions associated with hypertension, including obesity and type 2 diabetes (Centers for Disease Control and Prevention, 2021). Obesity may worsen blood pressure, in part, by increasing sympathetic nervous system activity (Kotsis et al., 2010). Fortunately, WFPB diets improve weight status (discussed in detail in the section “Obesity”). In addition, increased plant-based food intake may improve insulin sensitivity, thereby improving endothelial function and potentially blood pressure (Cardillo et al., 1999; McKeown et al., 2002).

Type 2 Diabetes

Definition While diabetes is often discussed as a singular disease process, the etiologies behind type 1 and type 2 diabetes differ tremendously. Type 1 diabetes is characterized by autoimmune destruction of the insulin-producing (beta) cells of the pancreas. Conversely, type 2 diabetes (T2DM) involves decreased responsiveness of tissues to insulin (insulin resistance) coupled with impaired secretion of insulin from beta-cells (Galicia-Garcia et al., 2020). Type 2 diabetes is more common than Type 1 and is typically present in individuals who are overweight or obese. Prediabetes, the stage between normal and T2DM, is also associated with overweight and obesity. Concerningly, up to 70% of those with prediabetes ultimately develop T2DM (Hostalek, 2019).

Epidemiology Worldwide prevalence of diabetes is estimated at over 400 million, with T2DM accounting for more than 85% of these cases (Du et al., 2017; Forouhi & Wareham, 2014). By 2035, the prevalence of diabetes is anticipated to increase to 592 million, primarily fueled by poor lifestyle habits and rising rates of obesity (Forouhi & Wareham, 2014; Low Wang et al., 2016). While global data on the prevalence of prediabetes is sparse, US statistics demonstrate that over 33% of Americans currently have prediabetes (Centers for Disease Control and Prevention, 2023a).

The sequelae of diabetes are extensive and include an increased risk of heart attack, stroke, peripheral arterial disease, erectile dysfunction, amputations, blindness, kidney failure, and reduced life expectancy (Du et al., 2017). A systematic review identified patients with T2DM to be at a 53% greater risk of heart attack and a 58% greater risk of stroke than the general population (Einarson et al., 2018). Additionally, those with T2DM have a 6-year reduction in life expectancy compared to those without diabetes (Centers for Disease Control and Prevention, 2022d). Fortunately, the sequelae of diabetes may be mitigated by lifestyle changes and more optimal medical treatment of diabetes and its complications (American

Diabetes Association, 2018). For example, achieving a hemoglobin A1c (a blood test that reflects long-term serum glucose levels) of less than 5.7% for even just a year is predicted to decrease ASCVD rates by over 20% (American Diabetes Association, 2023; Bundy et al., 2021).

Pathophysiology Atherosclerotic cardiovascular disease is the leading cause of both disability and mortality in those with diabetes and arises around 15 years earlier in those with T2DM compared to those without (Low Wang et al., 2016). More specifically, high blood sugar can increase inflammation, impairing the function of endothelial cells. In addition, insulin resistance and subsequent hyperglycemia result in elevated fatty acid levels and the production of advanced glycation end-products (AGEs), both of which facilitate LDL oxidation and thereby promote inflammation and atherosclerotic plaque formation (Low Wang et al., 2016).

Dietary Studies Studies demonstrate that achieving remission of diabetes (a hemoglobin A1c of <5.7%) can be achieved through lifestyle interventions, including eating a WFPB and engaging in physical activity (McMacken & Shah, 2017; Taheri et al., 2020). More specifically, research has demonstrated that a healthful WFPB diet can result in improved blood sugar control, decreased insulin resistance, and decreased incidence of diabetes. For example, an RCT of 99 subjects with T2DM compared a low-fat vegan diet (75% calories from carbohydrates, 15% from protein, 10% from fat; no calorie deficit) to the diet recommended in the 2003 American Diabetes Association (ADA) dietary guidelines (60–70% calories from carbohydrates, 15–20% from protein; <7% saturated fat; calorie deficit of 500–1000 calories). In subjects without medication changes during the study, those randomized to the low-fat vegan arm had a significantly greater hemoglobin A1c reduction of 1.23% versus 0.38% in the ADA group, despite higher caloric intake by 500–1000 calories (Barnard et al., 2009). Similarly, a prospective cohort study (of 200,727 individuals) examining data from the Nurses' Health Studies (NHS) and Health Professionals Follow-up Study (HPFS) found that the highest quintile of a whole-food plant-based intake (i.e., consuming the lowest amounts of animal-based foods, added sugars, refined grains, potatoes, and fruits juices) conferred a 34% reduction in the incidence of T2DM (Satija et al., 2016). Furthermore, a meta-analysis of 58 clinical trials and 185 prospective cohort studies, including more than 4600 individuals, found that higher fiber intake (35–39 g/day versus 15–19 g/day) was associated with a 16% reduced risk of incident T2DM (Reynolds et al., 2019). Accordingly, one of the diets recommended by the American Association of Clinical Endocrinology (AACE) for individuals with T2DM is a WFPB diet (Blonde et al., 2022).

Transitioning towards a more WFPB diet can also decrease the overall risk of developing T2DM. Analysis of the Adventist Health Study 2 which included data from 61,903 individuals demonstrated that vegans, lacto-ovo-vegetarians, pesco-vegetarians, and semi-vegetarians have decreased odds of T2DM of 49%, 46%, 30%, and 24% compared to non-vegetarians, respectively (Tonstad et al., 2009). Similarly, fruit, despite being high in carbohydrates, has been demonstrated to

decrease rates of diabetes and improve outcomes. Another prospective cohort study followed 482,591 individuals without T2DM for an average of 7 years. Subjects with the highest daily fresh fruit consumption had a 12% decreased risk of incidence of T2DM compared to those with the lowest consumption. Furthermore, in the 30,300 individuals with T2DM, those consuming more fresh fruit had better outcomes: a 28% lower risk of microvascular complications (e.g., retinopathy), 13% lower risk of macrovascular complications (e.g., atherosclerosis), and 17% lower risk of mortality from all causes (Huaidong Du et al., 2017).

Conversely, the risk of developing T2DM appears to increase with a greater degree of animal-based food intake. The aforementioned NHS and HPFS showed a 13% increase in incidence of T2DM when consuming the highest quintile of animal protein and a 9% reduction in incidence of T2DM when consuming the highest quintile of plant-based protein. The risk is especially pronounced with red and processed meat. Data from other meta-analyses suggest a 13–19% increased risk of T2DM for every 100 g (~3.5 oz) of red meat and a 19–51% increased risk of T2DM for every 100 g of processed meat (Kim et al., 2015). Furthermore, switching 5% of calories from animal protein to plant-based protein reduced incident T2DM risk by 23% (Malik et al., 2016).

Mechanism Whole-food plant-based diets may mitigate T2DM risk by their (1) anti-inflammatory effects, (2) associated weight reduction, (3) lower saturated fat content, and (4) greater complex carbohydrate content (McMacken & Shah, 2017). Accordingly, greater saturated fat intake has been associated with insulin resistance, while greater complex carbohydrate intake (greater than 60% versus less than 45% of caloric intake) has been associated with improved blood sugar control (Estadella et al., 2013; Vitale et al., 2016). Such high levels of complex carbohydrate intake are found only in plant-based foods (Vitale et al., 2016). Please see the section “Obesity” for additional detail on weight and ASCVD and Chap. 10 for further discussion of WFPB diets and diabetes.

Dyslipidemia

Definition Dyslipidemia is defined as elevated levels of certain blood cholesterol macromolecules, including (1) total cholesterol (TC), (2) low-density lipoproteins cholesterol (LDL), and (3) triglycerides (TG), as well as low levels of high-density lipoproteins (HDL) (Hill & Bordonni, 2022). Dyslipidemia can also be defined as having an elevated level of ApoB, a particle found on the outer shell of most cholesterol molecules, including LDL and TG. Hence, high ApoB levels may more optimally reflect the burden of risk from dyslipidemia (Glavinovic et al., 2022). Hence, ApoB assessment is increasing in frequency because it reflects the broader population of atherogenic cholesterol particles rather than LDL alone (Glavinovic et al., 2022). Of note, lipoprotein (a), another atherogenic cholesterol particle, is beyond

the scope of this discussion and is felt to be primarily mediated by genetics rather than by lifestyle (Farzam & Senthilkumaran, 2022).

Pathophysiology Dyslipidemia, particularly elevated LDL (or elevated ApoB levels), leads to the progression of atherosclerosis and its complications, including heart attacks (Hill & Bordonni, 2022). As previously mentioned, systemic inflammation may damage the blood vessel wall's inner lining (endothelial cells). This damage may facilitate LDL (or ApoB-containing lipid particles) crossing the endothelial cells, where these particles may then deposit within the intima (or inner wall) of the blood vessel. There, these LDL (or ApoB-containing) particles can become oxidized, further promoting inflammation and oxidative stress, thereby facilitating the growth of atherosclerotic plaques and worsening blood vessel function (Hill & Bordonni, 2022).

Epidemiology Increasing levels of ApoB-containing particles, such as elevated LDL and TG, can nearly double the risk of ASCVD (Sierra-Johnson et al., 2009). Nearly 40% of American adults have an elevated LDL level, 21% have high TG levels, and 38% have an elevated TC level (Tsao et al., 2022). The percentage of individuals over 40 on cholesterol-lowering medications, like statins, increased by 79% from 2002 to 2013 (Salami et al., 2017). Primarily due to this increased utilization of lipid-lowering medications, there has been a decline (decrease of 37% from 1990 to 2019) in age-standardized mortality secondary to dyslipidemia (Heyue Du et al., 2022; Pirillo et al., 2021). In fact, reducing TC and LDL levels by just 39 mg/dL (1 mmol/L; note: to convert mmol/L to mg/dl, multiply mmol/L by 38.67) results in a 28% decrease in cardiovascular disease-related mortality (Schwingshackl & Hoffmann, 2013). Furthermore, it appears that having a lower LDL serum level for a longer period of time further reduces vascular risk (Cohen et al., 2006).

Diet Studies

While medications are often necessary to help reduce cholesterol levels and hence, cardiovascular risk, lifestyle changes, including diet, may also improve dyslipidemia and are a pillar of cardiovascular prevention (Arnett et al., 2019). Meta-analyses, systematic reviews, randomized controlled trials, and case series have demonstrated that WFPB diets can lower LDL cholesterol levels.

Meta-Analyses and Systematic Reviews

One systematic review by Dr. Neal Barnard's group, which included almost 11,000 participants, found that after approximately 25 weeks, those following vegetarian diets had reductions both in TC of 12–30 mg/dL and in LDL of 12–23 mg/dL compared to those consuming an omnivorous diet (Haney et al., 2007; Yokoyama et al.,

2017). Similarly, an umbrella review of 20 meta-analyses by Dr. Jean-Louis Guéant and a meta-analysis of 10 studies by Dr. Duo Li found that compared to omnivores, vegetarians had lower TC (by 12–30 mg/dL versus 6–21 mg/dL, respectively) and lower LDL (by 13–23 mg/dL versus 4–22 mg/dL, respectively) (Oussalah et al., 2020; Wang et al., 2015). Furthermore, in a review of 14 RCTs, when compared to omnivorous diets, WFPB diets, and lacto-ovo-vegetarian diets reduced LDL by 10–15%, and vegan diets reduced LDL by 15–25% (Ferdowsian & Barnard, 2009). A review of 10 studies examining the effects of a Portfolio diet (a high-fiber, low-saturated fat WFPB diet) found an average reduction in LDL of 22–30% at 4 weeks, while more extended Portfolio dietary studies (>6 months) found a more minor, approximate 15% reduction in LDL, likely due to a decline in dietary adherence over time (Harland, 2012). For context, high-intensity statin medications reduce LDL levels by approximately 50% (Law et al., 2003; Ridker et al., 2016).

Randomized Control Trials

Several randomized control trials (RCTs) support the beneficial impact of WFPB dietary patterns on serum cholesterol profiles. For example, Dr. David Jenkins and his team compared the Portfolio diet's to lovastatin 20 mg tablets' (a low-intensity statin medication) effect on serum cholesterol over a 4-week period. Both lowered LDL similarly: the Portfolio arm lowered LDL 29%, and the lovastatin arm lowered LDL 33% (Jenkins et al., 2003). Dr. Barnard's team performed several RCTs comparing cholesterol levels on low-fat vegan diets to various other dietary patterns. In their 74-week RCT comparing a low-fat vegan diet to an American Diabetes Association (ADA) diet in 99 patients with T2DM, they found that the low-fat vegan diet lowered LDL cholesterol by 10.5% more than the ADA diet at both 22- and 74-week time points (Barnard et al., 2006, 2009). In their 16-week RCT with 62 subjects comparing a low-fat vegan diet to a Mediterranean diet, LDL decreased by 15.3 mg/dL in the low-fat vegan arm but remained unchanged in the Mediterranean diet arm (Barnard et al., 2022). A 16-week study of 244 subjects with overweight/obesity and T2DM compared a low-fat vegan diet to a control group that made no dietary changes. Lipid levels within the liver fell 34% in the low-fat vegan arm and did not change in the control arm (Kahleova et al., 2020).

In a fascinating randomized cross-over metabolic ward (a controlled environment where all food consumed is monitored) study by Dr. Kevin Hall's group, a total of 20 participants first consumed either an animal-based ketogenic diet or a WFPB diet for 2 weeks, then switched to eating the other diet for 2 weeks. Every item of food consumed was measured. Compared to baseline, LDL fell significantly in the WFPB diet arm (87.9 to 64.7 mg/dL) and rose non-significantly in the animal-based ketogenic arm (87.9 to 92.4 mg/dL) (Hall et al., 2021).

Case Series

Case series (a grouping of cases with similar characteristics) of subjects consuming a WFPB diet have also demonstrated reduced LDL. For example, over 8 weeks, 78 subjects who participated in 16 group classes that covered why and how to follow a low-fat WFPB diet had a mean decrease in TC of 25 mg/dL and LDL of 15 mg/dL (Campbell et al., 2019). In a 10-day study where subjects consumed a low-fat WFPB diet with 10% of daily calories from fat, 81% from carbohydrates, and 9% from protein, TC decreased by 22 mg/dL, and LDL decreased by 16 mg/dL (McDougall et al., 2014). Furthermore, premenopausal women without dyslipidemia consuming a WFPB diet for 8 weeks had significant decreases in TC by 13% and LDL by 17% (Barnard et al., 2000).

Effect of Macronutrients on Cholesterol Profile

Carbohydrates Evaluation of cholesterol profiles in 24,000 patients who completed dietary assessments of all food and beverages they consumed in 24 h showed higher LDL (1.68%) and TG (10.83%) levels with increased free sugar (i.e., added sugars or natural sugars like honey and fruit juice) intake and lower LDL (2.20%) and TG levels (5.30%) with complex carbohydrate (found within foods like legumes, whole grains, bread, and rice) intake (Kelly et al., 2021). Similarly, increased intake of starches from whole grains led to a small but significant decrease in TC (1.7%) and LDL (2.11%); however, increased intake of starches from refined grains did not significantly alter cholesterol (Kelly et al., 2021). These findings are in line with a review of 24 studies which demonstrated that whole grain intake over 6–8 weeks significantly lowered TC (4.64 mg/dL) and LDL (3.48 mg/dL) when compared to non-whole grain consumption (Holl ander et al., 2015).

Other studies suggest improvements in cholesterol with the consumption of various fruits and vegetables. One meta-analysis of 22 studies showed a reduction in LDL (8.12 mg/dL) with berry consumption (cranberry, blueberry, elderberry, raspberry) over 2–24 weeks (Huang et al., 2016a). However, there were no significant changes in TC, TG, or HDL. Another study demonstrated that the intake of tomatoes (70–400 g/day) reduced LDL levels by 8.51 mg/dL and improved endothelial function (Cheng et al., 2017).

One subtype of carbohydrate that has been demonstrated to reduce cholesterol levels significantly is fiber. A meta-analysis of RCTs with a total of 1513 subjects over an average of 12 weeks found that increased consumption of total fiber through fiber supplements or high-fiber foods, decreased TC (8.89 mg/dL) and LDL (5.41 mg/dL) (Hartley et al., 2016). Similarly, in a large meta-analysis (67 trials), soluble fiber (a type of dietary fiber) consumption, when compared to low fiber diet and insoluble fiber consumption (i.e., cellulose) reduced TC (1.74 mg/dL per gram of fiber intake) and LDL (2.20 mg/dL per gram of fiber intake) (Brown et al., 1999). A summary of 13 review articles showed high-quality evidence for moderate

reductions in LDL with the intake of soluble fibers, including psyllium and b-glycans (a soluble fiber from plant cell walls) from barley and oats (Schoeneck & Iggman, 2021). Psyllium (2–10 g per day) consumption decreased TC (1.43 mg/dL) and LDL (2.59 mg/dL) to a small yet significant degree, but had no significant effect on TGs (Brown et al., 1999). Oat b-glycan (3.5 g per day) administered for 3–12 weeks significantly decreased LDL (7.35 mg/dL) and non-HDL cholesterol (7.73 mg/dL) (Ho et al., 2016). Barley b-glycan (3–6 g per day) decreased LDL by 17.4% and total cholesterol by 10% over 5 weeks (Behall et al., 2004). Based on this data, the European Food Safety Authority recommends consuming around 3 g per day of b-glycan from oats or barley to achieve cholesterol-lowering effects (EFSA Panel on Dietetic Products & Nutrition and Allergies, 2011). For context, one serving of oatmeal meets about 40% of this daily recommendation (Quaker, 2022). The above data suggest that the subtype of carbohydrates is key: complex carbohydrates appear to positively affect serum lipid profile, whereas simple carbohydrates do not.

Fats The World Health Organization evaluated trends in cardiovascular disease in 15 million people over 10 years and found that increased animal fat (composed predominantly of saturated fat) intake was associated with higher serum cholesterol levels and risk of ASCVD (WHO MONICA Project Principal Investigators, 1988). Accordingly, reducing saturated fat intake can help improve cholesterol profiles. In the DASH dietary trials, reducing saturated fat intake from 16% to 5% of daily caloric intake was associated with an 11% decrease in LDL (Obarzanek et al., 2001; Welty, 2020). The Oslo Diet-Heart study compared men randomized to a dietary counseling intervention to reduce saturated fat and increase polyunsaturated fat intake or a control group without dietary counseling. Five years later, saturated fat made up an average of 8.2% of the total caloric intake of those in the intervention group and 18.3% in the control group. Along with this decrease in saturated fat consumption, there was a 13% decrease in total cholesterol and a 47% reduction in the incidence of CAD in the intervention group (Hjermann et al., 1981). Given these benefits, the USDA recommends minimizing daily saturated fat intake to less than 10% of daily calories (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015).

Monounsaturated fat (MUFAs) and polyunsaturated fat (PUFAs) differ from saturated fats as their fatty acid chains have had hydrogen molecules replaced by double bonds between carbon molecules, thus making the compounds no longer fully “saturated” with hydrogen. MUFAs contain one carbon double bond, and PUFAs contain multiple double bonds (Bazinet & Chu, 2014). Olive oil and rapeseed/canola oil are good sources of MUFAs (Schwingshackl & Hoffmann, 2012). In a study where participants consumed 25 mL (~5 teaspoons) of olive oil daily, a small decrease in TG by 4.43 mg/dL and a slight increase in HDL by 1.74 mg/dL were seen after 3 weeks (Covas et al., 2006). While no significant changes in LDL were noted, significant decreases in oxidized LDL (3.21 U/L), a more vascularly damaging form of LDL, were seen (Harland, 2009). Similarly, when 1 g of rapeseed oil replaced 1 g of saturated fat, TC and LDL both decreased by 1.16 mg/dL (Harland, 2009).

The most common PUFAs, omega-3 and omega-6 fatty acids are associated with improved cholesterol biomarkers (TC, LDL, TG) (Kelly et al., 2021). For example, an RCT comparing high doses of omega-3 fatty acids (4 g icosapent ethyl) to placebo showed an average 41.2 mg/dL (22%) reduction in TG levels (Bhatt et al., 2019). However, another study found flaxseed consumption, a rich source of omega-3 fatty acids, had no significant effect on TGs, but decreased LDL (3.09 mg/dL) and TC (3.87 mg/dL) (Harland, 2012; Pan et al., 2009). Accordingly, the USDA recommends substituting saturated fat with MUFAs and PUFAs to reduce LDL and TGs (Pearson et al., 2010).

Another detrimental type of fat is trans fats. While the use of trans fat has substantially decreased since its ban in 2015, commercial products may still contain up to 0.5 g of partially hydrogenated oils (a type of trans fat) and list “0 grams of trans fats” on the nutrition label (American Heart Association, 2017). In addition, trans fats naturally occur in small amounts in foods like dairy and meats (U.S. Food and Drug Administration, 2018). The impact of these naturally occurring trans fats on dyslipidemia is unclear: some studies have shown increases in LDL, while others have shown no change in LDL and even a small rise in HDL with consumption of natural trans fats (Baer, 2012; Brouwer et al., 2010; Motard-Bélanger et al., 2008).

Interestingly, there has been debate about the impact of dietary cholesterol on serum cholesterol (Carson et al., 2020). Nevertheless, while dietary cholesterol intake has not been unequivocally shown to increase serum cholesterol levels, meta-analyses of dietary patterns suggest a correlation between dietary cholesterol and ASCVD risk (Carson et al., 2020). For instance, the Mediterranean and DASH diets, which are both inherently low in cholesterol (typically <300 mg/day), reduce serum cholesterol levels and the risk of ASCVD compared to omnivorous diets (Carson et al., 2020). Further supporting the hypothesis that dietary cholesterol impacts serum cholesterol levels, plant sterols, which are structurally similar to cholesterol and compete with cholesterol for absorption into the body, are associated with reductions in serum cholesterol levels. In one meta-analysis, those with the highest quintile of intake (2.0–3.2 g/day of the plant sterols sitosterol and campesterol) had reduced serum levels of TC by 6.8% and LDL by 9.1% compared to the placebo groups. Compared to those with the lowest quintile of sterol consumption (between 0.3 and 1.5 g/day), those with the highest quintile of consumption had reduced serum levels of TC by 2.2% and LDL by 2.5% (Ras et al., 2013). Similarly, the consumption of 2.0 g of plant sterols or stanols daily significantly reduced TC (13.92 mg/dL) and LDL (13.53 mg/dL) levels (Wu et al., 2009). Furthermore, a large analysis pooling 84 observational studies and 54 RCTs identified an 8.8% LDL reduction with consumption (average 2.15 g) of both plant sterols and plant stanols (a compound structurally similar to sterols) (Demonty et al., 2009).

Protein Patients following a high-protein diet (25% energy intake from protein) exhibit additional decreases in LDL (11% more) compared to those following a lower-fat diet (27% energy intake from fat, 15% from protein), suggesting a benefit for protein over fat consumption in improving cholesterol profile (Furtado et al., 2008). However, it is important to consider the protein’s source and degree of pro-

cessing. Substituting 1 to 2 servings of animal protein with plant protein (e.g., from soy, legumes, and nuts) has been shown to decrease LDL and non-HDL cholesterol by around 5% (Li et al., 2023). Accordingly, an analysis of the NHS and HPFS (approximately 130,000 participants) found that low-carbohydrate, high-animal-based protein diets were associated with increased mortality; conversely, intake of plant protein had an inverse relationship with mortality (Fung et al., 2010; Li et al., 2017b). Similarly, a meta-analysis of soy consumption's impact on lipids, over an average of 8 weeks, found significant reductions in TC (5.33 mg/dL), LDL (4.83 mg/dL), and TGs (4.92 mg/dL), as well as an increase in HDL (1.40 mg/dL) (Tokede et al., 2015). In subgroup analyses, natural soy products (soy milk, whole soybeans) resulted in more significant reductions in LDL (11.06 mg/dL) compared to processed soy (extracts, supplements) (3.17 mg/dL). Furthermore, patients with dyslipidemia had greater reductions in LDL (7.47 mg/dL) compared to those without dyslipidemia (2.96 mg/dL) (Tokede et al., 2015). In addition, a review of 10 RCTs found that legume consumption (chickpeas, navy beans, pinto beans, and peas) reduced TC (12.00 mg/dL) and LDL (8.12 mg/dL) (Bazzano et al., 2011). Nuts (approximately 1.5–3.5 servings/day of almonds, groundnuts, pecans, and walnuts) also improve cholesterol profiles: a systematic review showed a 2–16% decrease in TC and a 2–19% decrease in LDL (Mukuddem-Petersen et al., 2005).

One point of contention is that vegan and vegetarian diets have been associated with lower high-density lipoproteins, or HDL, levels than omnivorous diets (Ornish et al., 1998). While some studies have correlated low HDL levels with an increased risk of ASCVD, vegetarian diets have been associated with decreased risk of ASCVD and improved cardiovascular health (Ornish et al., 1998; Rader & Hovingh, 2014). Increased HDL levels, independent of their function, may not be protective as previously thought (Allen et al., 2019). Accordingly, Mendelian studies (a common type of genetics-based RCT) demonstrated a lack of benefit from higher HDL levels, and drug intervention studies with drugs that raise HDL levels demonstrated neither benefit nor harm (Haase et al., 2010; Keene et al., 2014). Hence, many feel that a higher HDL level in isolation does not necessarily decrease the risk of ASCVD. Instead, it may be that properties of the HDL particle independent of its absolute number, such as its efflux capacity and antioxidant capacity, modulate HDL's impact on ASCVD risk (Bardagjy & Steinberg, 2019). Thus, the intake of foods such as whole grains and virgin olive oil which improve HDL efflux capacity may benefit cardiovascular health (Hernández et al., 2019).

Mechanism Vegetarian diets are hypothesized to reduce total and LDL cholesterol levels through multiple mechanisms, including (1) decreased saturated fat intake and (2) increased fiber intake (Wang et al., 2015). Plant-based fats, such as olive oil and avocados, are low in saturated fat and high in unsaturated fats; these unsaturated fats reduce LDL levels by increasing liver LDL receptor expression and thus increasing LDL uptake from the blood into the liver, lowering serum cholesterol levels (Fernandez & West, 2005; Mensink & Katan, 1989).

Vegetarian and vegan diets may increase fiber intake compared to omnivorous diets, as fiber is only found in plant-based foods (Wang et al., 2015). Soluble fiber,

which is particularly effective in lowering TC and LDL levels (Brown et al., 1999), may lower these levels by reducing cholesterol and bile acid absorption in the gut (Satija & Hu, 2018). Decreased bile acid absorption stimulates the liver to increase its uptake of serum cholesterol to make more bile acid, thereby further reducing serum cholesterol levels (Andersson et al., 2002).

Obesity

Definition Both obesity and overweight status are defined as excess fat accumulation and have negative health implications (World Health Organization, 2021b). Body mass index (BMI), calculated as weight/(height²), is the most common screening tool for classifying weight status. A normal BMI is between 18.5 and 24.9 kg/m², while overweight status is 25 to 29.9 kg/m², and obesity is greater than 30 kg/m² (Centers for Disease Control and Prevention, 2022c). While BMI has limitations as a measurement tool (e.g., it does not directly measure body fat or distribution of fat), it has been correlated with both increased risk of and adverse outcomes from ASCVD (Flegal & Graubard, 2009; Willett et al., 2006).

Many factors contribute to excess weight gain, including diet, physical activity, genetics, social determinants of health, and certain medications (Centers for Disease Control and Prevention, 2022c). Recently, there has been a push for a new diagnostic term for obesity, “adiposity-based chronic disease” (ABCD), in order to emphasize the chronicity of the condition, avoid the stigma associated with the term obesity, and allow for more accurate diagnostic coding for the condition (Frühbeck et al., 2019; Mechanick et al., 2017).

Epidemiology About 70% of US adults are overweight, 40% are obese, and these statistics are only expected to rise (Li et al., 2022; Trust for Americas Health, 2022). Obesity may accelerate mortality, largely due to death from heart disease, cancer, and T2DM: a BMI of 40–44.9 kg/m² is associated with 6.5 years of life lost, and a BMI of 55–59.9 kg/m² is associated with 13.7 years of life lost (Kitahara et al., 2014). Furthermore, independent of hypertension and dyslipidemia, overweight status increases ASCVD risk by 17%, and obesity status increases ASCVD risk by 49% (Bogers et al., 2007). Accordingly, obesity-associated costs to the US health-care system are massive, costing \$173 billion in 2019 (Centers for Disease Control and Prevention, 2022c).

Pathophysiology Obesity can accelerate ASCVD through three broad mechanisms: chronic inflammation, insulin resistance, and neurohormonal activation (Fahed et al., 2022). Chronic inflammation is promoted by excess visceral fat (i.e., fat distributed around critical organs), which triggers the release of inflammatory cytokines (immune system messengers), such as CRP, IL-6, and tumor necrosis factor (TNF) alpha. These cytokines damage endothelial cells, facilitating LDL chole-

terol uptake into and oxidation within the vessel wall, hence promoting atherogenesis (Fahed et al., 2022; Powell-Wiley et al., 2021).

Insulin resistance creates a milieu for the development of atherosclerosis, in part, by facilitating (1) high blood sugar levels, which can ultimately increase inflammation, and (2) dyslipidemia (Ormazabal et al., 2018).

Neurohormonal activation is largely mediated by fat cells, which act as an endocrine organ and release hormones such as leptin, chemerin, and adiponectin. Levels of pro-inflammatory leptin and chemerin rise with increasing body fat, whereas levels of the anti-inflammatory adiponectin, which promotes insulin sensitivity, fall. This pathophysiology, however, is complex. Paradoxically, while levels of the satiety hormone leptin increase with increasing adiposity, so does resistance to leptin, thereby decreasing its effects on satiety (Fahed et al., 2022).

Dietary Studies Epidemiologic studies have shown that those who follow vegetarian and vegan diets have a lower prevalence of obesity compared to those who follow omnivorous diets (Newby et al., 2005; Spencer et al., 2003). Furthermore, significant weight loss is seen in individuals following WFPB diets compared to other dietary patterns (Huang et al., 2016b; Mishra et al., 2013; Termansen et al., 2022; Turner-McGrievy et al., 2015). For example, in a meta-analysis of 12 RCTs with a mean follow-up of 18 weeks, those following vegetarian diets lost 2.0 additional kg of weight versus those following non-vegetarian diets (Huang et al., 2016b). Furthermore, greater weight reductions were seen with increasing intake of plant-based foods: those following lacto-ovo-vegetarian diets had an average weight loss of 1.5 kg, while those following vegan diets had an average weight loss of 2.5 kg (Huang et al., 2016b).

In addition to short-term weight loss, vegetarian and low-fat diets can be effective for weight loss maintenance (often defined as sustaining more than 10% of initial body weight loss for at least 1 year) (Wing & Hill, 2001). One study of 64 postmenopausal women with overweight or obesity compared weight loss maintenance at 1 and 2 years in those following a low-fat vegan diet (less than 2 daily servings of high-fat items) versus a diet based on the National Cholesterol Education Program (NCEP) guidelines (Turner-McGrievy et al., 2007). The NCEP diet consisted of less than 6 ounces of lean meat and fewer than 2 servings of high-fat items daily (e.g., margarine, salad dressings, oil, avocados, nuts, high-fat pastry), and greater than 5 servings of grains, fruits, and vegetables per day. After 1 year, participants in the vegan group lost an average of 5 kg, and those in the NCEP group lost an average of 2 kg. Furthermore, at 2 years, the vegan group had, on average, an additional 2 kg of weight loss, while the NCEP group had no further weight loss (Turner-McGrievy et al., 2007).

Mechanism When compared to other dietary patterns, low-fat WFPB diets may reduce weight, by improving (1) satiety and (2) the health of the gut microbiome (Menni et al., 2017).

Satiety is driven, in part, by the stretching of the stomach, resulting in the release of satiety-inducing hormones. Accordingly, given their high fiber and low-caloric density, WFPB diets can “stretch” the stomach at lower caloric densities compared

to non-WFPB diets and hence lead to greater satiety at lower caloric intake (Bakaloudi et al., 2021; Barnard et al., 2005).

The gut microbiome is an important mediator of health. Dietary fiber, found only in plant-based foods, promotes a healthful gut microbiome (Aoun et al., 2020; Tomova et al., 2019). Accordingly, a WFPB diet, with its higher fiber content when compared to a typical Western-style dietary pattern, facilitates a more healthful gut microbiome population. A more healthful microbiome is associated with anti-inflammatory effects, a lower BMI, and reductions in both cholesterol and insulin resistance (Aoun et al., 2020; Fischer & Relman, 2018; Klimenko et al., 2018; Tomova et al., 2019). For example, increased fiber consumption boosts the production of SCFAs by the microbiome. SCFAs have been associated with increased energy metabolism and the release of satiety hormones like peptide YY (Brooks et al., 2017; Canfora et al., 2019; Reynés et al., 2018).

Stroke

Definition A stroke (essentially “brain attack”) happens when there is a sudden cessation of blood flow to the brain, resulting in brain cell death (American Stroke Association, 2023). There are two primary stroke etiologies: ischemic (often related to plaque rupture blocking blood flow to the brain) and hemorrhagic (where a blood vessel ruptures, causing bleeding into the brain) (American Stroke Association, 2023; Kuriakose & Xiao, 2020). The focus herein will be on ischemic strokes as they account for 87% of strokes and are directly related to atherosclerosis (Centers for Disease Control and Prevention, 2022e).

Epidemiology There are more than 795,000 strokes (most commonly ischemic) annually in the United States, equivalent to a stroke occurring nearly every 40 seconds. Approximately 1 in 5 of those strokes are fatal. Those who survive often face significant disability. The annual total societal cost of strokes is estimated to be over 50 billion dollars (Centers for Disease Control and Prevention, 2022e; Medical University of South Carolina, 2023).

Pathophysiology Blood vessels within the brain can become occluded by a thrombus (e.g., local plaque rupture) or an embolism (e.g., material traveling from a more distant site), resulting in brain cell death (Kuriakose & Xiao, 2020; Medline Plus, 2020).

Dietary Studies A WFPB diet is associated with a decreased incidence of stroke. In a large prospective cohort study with a follow-up period of over 25 years, the highest intake of plant-based foods was associated with a 6% reduction in stroke risk compared to the lowest intake (Baden et al., 2021). This study also demonstrated that the quality of plant-based foods matters: while healthy WFPB diets, consisting of whole grains, fruits, vegetables, and legumes, were associated with an 8% reduc-

tion in stroke risk, unhealthy plant-based diets, including fruit juices, refined grains, and desserts, were associated with a 5% increase in stroke risk (Baden et al., 2021; Satija et al., 2016).

A meta-analysis examining prospective cohort studies of Seventh-day Adventists, with a total of 183,321 individuals, found an average reduced stroke risk of 29% in vegetarians compared to non-vegetarians (Kwok et al., 2014). Similarly, in a meta-analysis of studies (total of 760,629 individuals) spanning 3 to 37 years, the highest consumption of vegetables and fruits was associated with an average reduction in stroke risk of 21% when compared to the lowest consumption (Hu et al., 2014). On the other hand, each daily serving of meat (100 g) was associated with a 24% increase in ischemic stroke risk (Micha et al., 2010). Of note, purely vegan diets, which exclude all animal products, contain little vitamin B12 (Rizzo et al., 2016). As B12 deficiency may increase the risk of stroke, it is imperative to supplement B12 while following a WFPB diet (Medawar et al., 2019).

Mechanism Like the mechanisms described above, WFPB diets reduce the incidence of stroke by attenuating ASCVD risk factors such as hypertension, T2DM, dyslipidemia, and obesity (McMacken & Shah, 2017; Steffen et al., 2005). Additionally, a WFPB diet promotes a healthful gut microbiome that protects the intestinal wall by increasing the production of SCFAs. Short-chain fatty acids may be linked to reduced inflammatory markers in the brain (e.g., IL-17) and improved post-stroke recovery (Zou et al., 2022).

Heart Failure

Definition Heart failure occurs when the heart fails to adequately circulate blood to meet the body's metabolic requirements and can occur when either the heart's contractile (or squeezing) function is reduced (heart failure with reduced ejection fraction) or when the heart's filling capacity is reduced (heart failure with preserved ejection fraction) (Malik et al., 2022).

Epidemiology Heart failure is a common and morbid condition. The prevalence of heart failure in the United States is 6.5 million with approximately 87,000 deaths annually. The average 5-year mortality after hospitalization for heart failure is 42.3% (Tsao et al., 2022).

The development of heart failure is impacted by diet and the aforementioned risk factors. For example, those with blood pressure greater than or equal to 160/100 mmHg were 200% more likely to develop heart failure than those with blood pressure <140/90 mmHg (Lloyd-Jones et al., 2002). Patients with diabetes have a 400% increased risk of developing heart failure compared to the general population (Rosano et al., 2017). Furthermore, those with obesity were 200% more likely to develop heart failure (Kenchiah et al., 2002).

Pathophysiology The most common cause of heart failure in Western society is a prior heart attack. In a heart attack, heart muscle cells die. If enough heart muscle cells die, the heart's overall contractile function may fall, and heart failure with reduced ejection fraction may ensue. Of note, cardiovascular risk factors (high blood pressure, diabetes, dyslipidemia, and obesity) contribute to atherosclerosis, heart attacks, and, potentially, subsequent heart failure with reduced ejection fraction.

Heart failure with preserved ejection fraction is physiologically complex. Nevertheless, the aforementioned cardiovascular risk factors, particularly high blood pressure, may result in stiffening of the heart and blood vessels throughout the body, decreasing the ability of the heart to fill with blood and increasing the resistance against which the heart pumps. As such, the heart may pump less blood with each contraction (Malik et al., 2022).

Dietary Studies Besides improving cardiovascular risk factors, diet may reduce the incidence of heart failure and improve heart failure outcomes (Kerley, 2018). Accordingly, a prospective cohort study with over 34,000 women demonstrated that an intake of 6.9 servings of vegetables per day compared to less than 2.8 servings per day decreased the incidence of heart failure by 20% (Rautiainen et al., 2015). Furthermore, in a prospective cohort study of 16,068 individuals followed for an average of 8.7 years, those with the highest intake of plant-based foods had a 41% decreased risk of being hospitalized for heart failure (Lara et al., 2019). Small case series and case reports have also demonstrated that WFPB diets may improve heart function and quality of life of those with heart failure. However, further study is needed as data are limited (Alasmre & Alotaibi, 2020; Allen et al., 2019).

Mechanism The high antioxidant content of minimally processed plant-based foods helps account, in part, for the beneficial impact of WFPB diets on risk factors for heart failure (Kerley, 2018). More specifically, antioxidants in WFPB diets counter pro-oxidant reactive oxygen species (ROS), which promote thickening and stiffening of the heart (fibrosis), death of heart cells (apoptosis), decreased contractility of the heart muscle, and worsened blood vessel function (Allen et al., 2019; Belch et al., 1991; Benzie & Wachtel-Galor, 2010; Carlsen et al., 2010; Lopez et al., 1997; Münzel et al., 2015; Poljsak et al., 2013; Uribarri et al., 2010). Conversely, animal-based foods lead to increased ROS formation and, thus, may facilitate incident heart failure.

Erectile Dysfunction

Definition Erectile dysfunction (ED) is defined as the inability to establish or sustain a penile erection adequate for sexual intercourse (Ostfeld et al., 2021).

Epidemiology Erectile dysfunction is a common condition. Studies estimate that approximately 50% of 40- to 70-year-old men have at least some degree of erectile dysfunction (Feldman et al., 1994). Further, over 322 million men worldwide are expected to have some degree of ED by 2025 (Ruan et al., 2022). Moreover, it is likely that the prevalence of ED may be underreported, as persons may choose not to disclose or discuss this medical issue (Baldwin et al., 2003). Erectile dysfunction is often called the “canary in the coal mine” for coronary artery disease, as ED often predates overt manifestations of ASCVD, such as angina and heart attack, by 3–5 years (Ostfeld et al., 2021).

Pathophysiology There are multiple causes of ED, including vascular, psychological, hormonal, neurologic, and drug-related side effects. Vascular erectile dysfunction (or ED due to atherosclerosis), however, is the most common cause of ED in the Western world.

Atherosclerosis is a systemic disease. Since the artery to the penis is smaller than the coronary arteries, by the time an atherosclerotic blockage is limiting blood flow to the penis, causing vascular ED, it is probable that atherosclerotic blockages are also present in the coronary arteries but still too small to detect clinically (Ostfeld et al., 2021).

Dietary Studies Consuming more plant-based foods is associated with improved erectile function (Ostfeld et al., 2021). For example, a prospective cohort study including 25,096 men from the HPFS found a 14% reduced incidence of ED in those in the highest versus lowest quintile of fruit consumption (Ostfeld et al., 2021). Similarly, in a cross-sectional study involving 1500 men with T2DM, one-fourth of whom had ED, each daily serving of fruit or vegetables decreased the odds of having ED by 10%. Further, in a case-control study of 92 Chinese men, the highest quintile of healthy plant-based food consumption was associated with an approximate 22% decreased odds of erectile dysfunction compared to the lowest quintile (Lu et al., 2021).

Small RCTs have produced similar data. In two RCTs where the intervention group consumed a Mediterranean-style dietary pattern and received counseling on exercise and weight loss, the researchers found that the intervention group had significantly improved erectile function compared to the control group (who consumed a Western-style dietary pattern). These studies support the beneficial effects of consuming more plant-based foods on erectile function (Esposito et al., 2009).

Mechanism A WFPB diet, and its associated improvements in cardiovascular risk factors, may reduce vasculogenic erectile dysfunction through three broad mechanisms (1) reduced inflammation, (2) increased bioavailability of the vasodilatory nitric oxide, and (3) a more healthful microbiome composition (Ostfeld et al., 2021).

Conclusion

Atherosclerotic cardiovascular disease is the number one cause of death globally. Risk factors such as hypertension, type 2 diabetes, dyslipidemia, and obesity predispose people to ASCVD. Atherosclerotic cardiovascular disease and its risk factors are heavily influenced by diet. Studies demonstrate that greater consumption of healthful plant-based diets reduces ASCVD risk and improves ASCVD risk factors via multiple mechanisms.

Despite this strong evidence, plant-based diets are often underemphasized during patient visits given barriers within the healthcare field. This underemphasis is due, in part, to time constraints, limited reimbursement for dietary counseling, and insufficient practitioner knowledge/self-efficacy (there is no formal nutrition education requirement throughout medical training) (Bassin et al., 2020; Crowley et al., 2019; Devries et al., 2021).

In light of the current literature, we recommend a plant-based diet to reduce the incidence of ASCVD and its risk factors. Given the significant barriers to its implementation, we also recommend healthcare system and societal level change where adopting the healthy choice becomes the easy choice.

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Chapter 27

Plant-Based Diets and Hypertension



Leonie Dupuis  and Shivam Joshi 

Hypertension, commonly referred to as high blood pressure (BP), is one of the most widely diagnosed medical conditions. Whether detected at a health fair, workplace health screening, or at a formal doctor's visit, the Center for Disease Control (CDC) estimates that almost half of adults in America (47%) have hypertension (Centers for Disease Control and Prevention, 2022). Hypertension is defined as a systolic blood pressure greater than 130 mmHg or a diastolic blood pressure of greater than 80 mmHg (Flack & Adekola, 2020). When recorded, systolic blood pressure will be the first (or top) number and diastolic blood pressure will be the second (or bottom) number. For example, a blood pressure of 135/88 mmHg would be classified as hypertension.

Unfortunately, hypertension is a known risk factor for cardiovascular disease, kidney disease, and death (Mills et al., 2016). It is also the number one risk factor in the world for the development of death and disability-adjusted life-years (Lim et al., 2012). Despite the gravity of its impact, the National Health and Nutrition Data Examination Survey found that only 21.6% of adults with hypertension had their high blood pressure under control and that 38.8% of adults with hypertension were

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unaware they had it (Tsao et al., 2022). In all, most patients with hypertension do not have their blood pressure under control. Finally, the prevalence of hypertension increases with age and approaches 80% for those above the age of 75 (Whelton et al., 2018).

Fortunately, there are ways to prevent and treat hypertension with lifestyle changes, especially nutrition (Appel, 2003). In their joint statement on the prevention and treatment of hypertension, the American Heart Association and American College of Cardiology emphasized the intrinsic role of non-pharmacologic interventions in the modulation of blood pressure (Whelton et al., 2018). They recommend six non-pharmacologic interventions:

1. A Heart-Healthy Diet
2. Sodium Reduction
3. Potassium Supplementation
4. Weight Loss
5. Physical Activity
6. Reducing or Avoiding Alcohol

Of these six recommendations, four can be achieved through dietary changes such as adopting a plant-based diet. In this chapter, we will focus on diet and review the hypothesized mechanisms by which plant-based diets may contribute to lowering blood pressure, outline some of the scientific evidence supporting plant-based diets for the treatment and prevention of hypertension, and compare the impact of different lifestyle changes for lowering blood pressure.

Mechanisms of Plant-Based Diet in Blood Pressure Reduction

Plant-based diets tend to lower blood pressure via mechanisms that are not fully understood, but many explanations (discussed below) have been proposed (Fig. 27.1).

Possible explanations for the benefits of plant-based diets on blood pressure include weight loss, low-sodium content, high-potassium content, lack of animal protein, antioxidative properties via promotion of nitric oxide signaling, gut microbiome composition changes, and epigenetic phenomena, processes we will discuss and define below.

Weight Loss

Plant-based diets are rich in fiber, low in fat, and have reduced energy density (Barnard et al., 2019). All of these factors promote weight loss, and having a lower body weight is associated with lower blood pressure (Aucott et al., 2005). On the contrary, weight gain and obesity are associated with higher blood pressure

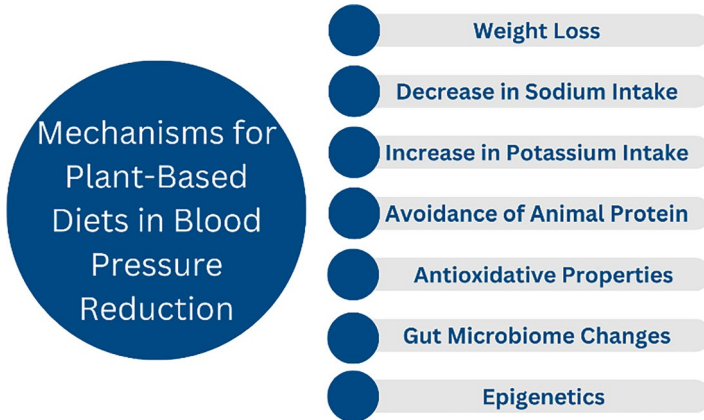


Fig. 27.1 Mechanism for plant-based diets in blood pressure reduction

measurements. In the case of obesity, physiologic mechanisms promote higher blood pressure including sodium retention, activation of the blood pressure hormone system (renin-angiotensin-aldosterone system), and increased sympathetic nervous system activity (Jiang et al., 2016).

However, weight loss does not appear to be the only factor in reducing blood pressure. In one study, the blood pressure of endurance athletes consuming a Western diet and running 48 miles per week, sedentary participants consuming a Western diet, and sedentary vegans were all compared (Fontana et al., 2007). Interestingly, despite being matched by BMI (making sure the different groups had a similar average body mass index), the sedentary vegan diet group had lower blood pressure. Other studies have also shown lower blood pressure in vegetarian and vegan participants when adjusting for weight (Appleby et al., 2002; Borgi et al., 2015; Ophir et al., 1983).

Sodium

Excess total body sodium can also contribute to hypertension (Adrogué & Madias, 2007; O’Shaughnessy & Karet, 2004). Typically, a whole-food plant-based diet has a lower sodium content than a non-vegan diet. Fruits, vegetables, legumes, and whole grains are all low in sodium, so following a dietary pattern that emphasizes the consumption of these whole foods may explain some of its antihypertensive effects.

As processed vegan and plant-based options continue to grow more available, prudence must be taken to emphasize whole, unprocessed foods to capitalize on the lower sodium content of a whole-food plant-based diet. The International Study of Macro-/Micronutrients and Blood Pressure (INTERMAP) study was designed to

explore the underlying metabolic pathways of dietary effects on blood pressure. Although the original study included participants following a DASH diet (which can be omnivorous or free of animal products), later analyses were conducted on the study data to explore the relationship between healthy and unhealthy plant-based diets and blood pressure. This analysis demonstrates that a healthy plant-based diet is associated with lower systolic and diastolic blood pressure whereas an unhealthy plant-based diet is associated with adverse effects on systolic blood pressure (Aljuraiban et al., 2020). The study defined a healthy plant-based diet as one rich in vegetables, whole grains, fruits, nuts, legumes, vegetable oils, and tea/coffee while limiting intake of less healthy foods including refined grains, sugar-sweetened beverages, and animal foods.

Regardless of dietary pattern, a meta-analysis on sodium intake showed that reducing salt intake from 201 to 66 mmol/d led to a reduction in systolic and diastolic BP in those with hypertension (Graudal et al., 2012). The relationship between sodium and BP was further confirmed by the Intersalt study, which examined more than 10,000 participants across 30 different countries and found a statistically significant relationship between sodium excretion and BP (Intersalt Cooperative Research Group, 1988).

Potassium

A 1928 case report noted that giving patients potassium salts could lower their blood pressure (Addison, 1928). Since then, most studies have confirmed the benefits of potassium in blood pressure regulation (Joshi et al., 2020). According to the Institute of Medicine, Americans should aim for the consumption of 4700 mg of potassium per day (Campbell, 2004). However, data from urine samples in a study by Jackson et al. showed an average consumption of 1997 mg of potassium per day—less than half the recommended amount (Jackson et al., 2018; Whelton, 2018). In contrast, our paleolithic ancestors were estimated to be consuming upwards of 15,000 mg of potassium per day (Palmer & Clegg, 2016).

Although modern dietary patterns do not achieve the potassium content of our ancestors, an Australian study on men ages 20–59 found that vegans, on average, consumed more potassium daily when compared with ovo-lacto vegetarians and moderate meat-eaters (Li et al., 2000). However, this study also found that the people who consumed high volumes of meat also had high daily potassium intake (second only to the vegan group). Although the people who consumed high volumes of meat ingested large amounts of potassium, their urine samples showed high sodium content, resulting in a high sodium-to-potassium ratio (Li et al., 2000). The vegan group showed lower urinary sodium, resulting in a lower urinary sodium to potassium ratio than the high meat-eater group, which has been associated with lower blood pressure (Jackson et al., 2018; Mente et al., 2014).

As for the exact mechanism of potassium, it is believed that potassium can inhibit sodium reabsorption in the kidney which then results in lower BP

(Murillo-de-Ozores et al., 2019). In other words, potassium reduces sodium retention. Potassium also stimulates an ion channel called the sodium-potassium ATPase (Fig. 27.1) which causes increased intracellular potassium at the expense of decreased intracellular calcium which results in smooth muscle vasodilation (Murillo-de-Ozores et al., 2019). Smooth muscle is located on our arterial blood vessels which helps to generate blood pressure. If these arteries dilate, blood pressure is reduced. Furthermore, potassium can also inhibit the sympathetic nervous system and increase nitric oxide production, both of which may also contribute to lower BP (Houston, 2011) (Fig. 27.2).

In this simplified diagram of a smooth muscle cell, the increase in potassium outside of the cell results in activation of the Na⁺/K⁺ ATPase pump (labeled #1). The increased concentration of potassium inside of the cell results in a more positive environment inside of the cell. This thus causes increased excretion of Ca⁺⁺ (labeled #2). The reduced concentration of calcium inside the cell results in smooth muscle relaxation, including the smooth muscle surrounding our arteries.

Animal Protein

What if the molecular makeup of our food is driving blood pressure changes? One study analyzed nutritional data from an observational cohort study of participants consuming either a low-fat diet or a Mediterranean diet (Tuttle et al., 2012). Specifically, they analyzed amino acid intake (the building blocks of protein) and found that individuals consuming greater proportions of methionine and alanine had higher BP and that individuals consuming more threonine and histidine had lower BP. Of note, methionine and alanine are more common in animal foods and conversely, threonine and histidine are more commonly found in plant-based foods. A detailed review of the putative mechanisms for the reduction of blood pressure from plant foods is beyond the scope of this review but has been published elsewhere (Joshi et al., 2020).

Another way that animal protein may increase BP can be explained by the way it is prepared. When animal protein (e.g., red meat, pork, high-fat cheese, poultry, and eggs) is cooked to enact browning of the product, a chemical reaction occurs that results in the formation of advanced glycation end products (AGEs) (Yang et al., 2015).

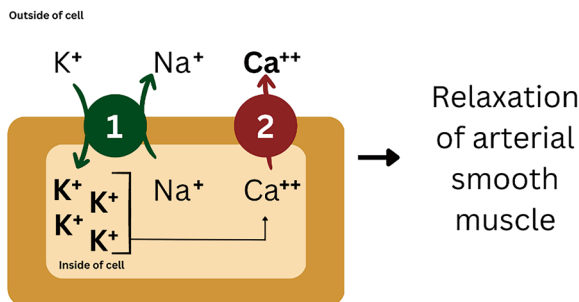


Fig. 27.2 Molecular mechanism of potassium's effect on blood pressure

Antioxidants

Redox signaling is another example of the ways that a vegan diet can impact blood pressure at the molecular level (Murillo-de-Ozores et al., 2019). Redox signaling refers to the way that the transfer of electrons inside cells can act as intracellular communication. Cells inside our vascular system sometimes release a substance known as nitric oxide (NO). NO works via redox signaling to signal for the vasodilation of blood vessels and lowering of BP, and a decreased level of NO is associated with arterial hypertension (Hermann et al., 2006).

NO is produced by an enzyme called endothelial nitric oxide synthase (eNOS) which is sensitive to oxidative stress. Oxidative stress occurs when environmental triggers (smoking, airborne pollution, exhaust fumes, and other toxins) or cellular triggers (inflammatory cells) cause an increase in oxygen byproducts (Pizzino et al., 2017). The rise in oxygen byproducts creates oxidative stress and when oxidative stress increases, eNOS can lose its ability to generate NO and will instead produce a harmful substance known as superoxide (Forte et al., 2016). Compounds known as polyphenols can serve to support NO signaling and metabolism, increase the presence of eNOS and reduce the deactivation of eNOS (Forte et al., 2016). These properties of polyphenols are also referred to as antioxidant properties as they promote the production of NO and reduce the production of superoxide. Because plant-based foods contain polyphenols, the increased production and bioavailability of NO may serve as another mechanism by which a plant-based diet can lower BP.

Furthermore, some foods are rich in natural nitrates, such as leafy greens and beets. There is data to show that these high-nitrate foods are associated with lower BP, perhaps due to increased NO bioavailability (Ashworth & Bescos, 2017; Joshi et al., 2020).

Gut Microbiome

In both human and nonhuman animal models, research demonstrates that the gut microbiome relates to hypertension. The term gut microbiome refers to the microbes that inhabit our digestive tract. Everyone's gut microbiome is composed of a collection of organisms unique to them. Animal studies suggest that gut microbiome composition impacts blood pressure. In rats, it was shown that a fecal transplant (which also transplants the gut microbes) from a hypertensive rat to a normotensive rat caused hypertension in the recipient rat (Durgan et al., 2016). In another study, researchers examined the composition of gut microbiomes of hypertensive rats and found that hypertensive rats had increased proportions of certain bacterial species and decrease in bacteria that could produce acetate and butyrate (Yang et al., 2015). In humans, a study found that fecal microbiome composition is associated with BP (Verhaar et al., 2020).

Acetate and butyrate are known as short-chain fatty acids (SCFA). SCFA are produced when bacteria ferment fiber in the colon (Cummings et al., 1987). Fiber is plentifully found in plant-based diets, and SCFA have been shown to have vasodilatory properties (Macfarlane & Macfarlane, 2003; Mortensen et al., 1990; Nutting et al., 1991). In animal studies, a direct link between the production of SCFA and BP has been proposed and explained by SCFA receptors in the kidney and on blood vessels (Pluznick, 2017). In human studies, data remain conflicting, and more studies are needed to explore the relationship between SCFA and BP (de la Cuesta-Zuluaga et al., 2018; Huart et al., 2019; Verhaar et al., 2020; Yan et al., 2017).

Epigenetics

Epigenetics refers to the way that a person's genes can be expressed differently depending on various signals rather than making changes to the genetic code itself. Substances in foods may influence BP by causing epigenetic changes. On a mechanistic level, epigenetic changes typically occur using one of three mechanisms: DNA methylation (i.e., adding a methyl group to DNA which changes other molecules' ability to interact with the DNA), histone modification (i.e., the addition of chemical groups to histone to change its physical properties) and RNA mechanisms (i.e., small signaling molecules that activate or inactivate other pathways) (Kalea et al., 2018; Liang et al., 2013). Data shows that many plant-derived compounds do show activity in inhibiting DNA methylation or in histone modification (two of the three mechanisms), making it possible that plant-based foods can epigenetically impact blood pressure (Al Disi et al., 2015). This possibility is further supported by the fact that DNA methylation and histone modification are associated with changes in the levels of BP-related hormones (angiotensinogen, part of the electroneutral sodium channel, glucocorticoid receptor, and angiotensin-converting enzyme) (Mattson et al., 2005).

Other

Lastly, there are other hypotheses that could explain the benefits of a plant-based diet on blood pressure. Some of these hypotheses include the high fiber content of plant-based diets, the low amount of high-fructose corn syrup present, and direct effects on the hormonal system and nervous system controlling BP (Chen et al., 2012; Jayalath et al., 2015; McCarty, 2004; Streppel et al., 2005).

Scientific Evidence

We have so far outlined the multiple mechanisms by which a plant-based diet can impact blood pressure. In this section, we will review the “real-world” implications of those mechanisms. Looking at studies on human subjects, whether they were via randomized trials or observational studies, allows us to see the clinical impact of plant-based diets on blood pressure.

Cross-Sectional Data

Cross-sectional studies look at data at a single point in time. Beginning in 1930, with a report on vegetarian German monks who had lower BP than their omnivorous counterparts, researchers began exploring the relationship between dietary patterns and BP (Saile, 1930). Later, in the 1970s, Anholm began studying the differences in BP between vegetarian Seventh-Day Adventists and omnivorous Mormons. These two groups were considered to have similar lifestyles, matched for age and sex, and it was found that the vegetarian Adventists had lower BPs (Anholm, 1978). In continuation of this work, Rouse et al. decided to compare vegetarian Adventists to both omnivorous Adventists and Mormons which led to the same conclusion: vegetarian Adventists had lower BP and lower rates of hypertension (Rouse et al., 1983a).

Through the 1990s and early 2000s, many cross-sectional studies were published about dietary patterns and BP. In 2014, Yokoyama et al. (2014) conducted a meta-analysis of 32 of these studies. In his meta-analysis, there were a total of 20,604 individuals (pooled from the data of the 32 published studies) and Yokoyama found that consuming a vegetarian diet was associated with an average decrease in systolic BP of 6.9 mmHg and an average decrease in diastolic BP of 4.7 mmHg (Yokoyama et al., 2014).

Prospective Cohort Data

Prospective cohort studies take groups of individuals who are alike in many ways but differ by a certain characteristic (diet, for example) and follow them over time to determine how that different characteristic relates to a certain outcome. In the Coronary Artery Risk Development in Young Adults (CARDIA) study, 4304 individuals ages 18–30 were followed for more than 15 years (Steffen et al., 2005). The study found that the more plant foods people consume, the lower their incidence of high BP. Conversely, the study also found that red and processed meat intake was associated with an increased incidence of high BP.

In a combined analysis of the Nurses’ Health Study I, Nurses’ Health Study II, and the Health Professionals Follow-up Study, researchers studied a combined total

of 188,518 participants which led to a total of 3 million person-years of follow-up data (Borgi et al., 2015). Person-years are a way of measuring both the number of individuals in a study and the amount of time each person spent in the study. Borgi et al. found an association between developing hypertension and the consumption of red meat, processed meat, poultry, and seafood. In fact, they calculated that the consumption of one serving per day of any animal flesh was positively associated with developing hypertension.

Nonrandomized Experimental Evidence

Experimental evidence takes a group of study participants and assigns each participant to a specific intervention (or no intervention to serve as a control group). Early experimental data did not employ randomization of subjects to each desired intervention, so we have labeled them as “nonrandomized.” These early data include Donaldson’s 1926 case series of five vegetarian students who had higher BPs after adding meat to their diet (Donaldson, 1926). There are also data published from Heun in 1936 showing an average reduction in BP of 60/28 mmHg in 14 hypertensive patients who were treated with a fruit and vegetable diet (Heun, 1936).

Lastly, there is the work of Walter Kempner from Duke University who treated patients with hypertension using a “rice diet” throughout the 1940s (Klemmer et al., 2014). This “rice diet” included the use of white rice, fruits, and sugars with a sodium limit of 3500 mg per day. The diet’s calorie content was adjusted based on patient’s needs, and over the years, Kempner treated thousands of patients using this strategy. In his published data, 777 patients were treated with the “rice diet” for an average of 92 days yielding an average decrease in BP from 196/166 to 150/96 mmHg (Kempner, 1949). However, it should be noted that Kempner’s rice diet is no longer recommended due to its overuse of processed carbohydrates and the potential risk for nutritional deficiencies.

Randomized Experimental Evidence

Beginning in the 1980s, Australian researchers were the first to study the effects of vegetarian diets on BP in a randomized experimental manner. These researchers studied 59 normotensive individuals and found that consumption of a vegetarian diet lowered BP by 5–6 mm Hg systolic and 2–3 mm Hg diastolic (Rouse et al., 1983b). In another study, 58 participants were placed on either an ovo-lacto-vegetarian or omnivorous diet. Participants consuming the ovo-lacto-vegetarian diet had an average 3.5 mmHg reduction in SBP and an average 1.2 mmHg reduction in DBP (although the decrease in DBP was not statistically significant) (Margetts et al., 1986).

The mounting evidence for dietary approaches to treating hypertension led to the creation of the Dietary Approaches to Stop Hypertension (DASH) trial (Svetkey et al., 1999). The DASH trial was a large, randomized controlled trial with the goal of evaluating the effects of a mostly plant-based diet on BP. It became one of the major trials defining the preferred treatment for hypertension; you may have even heard of the DASH diet through a friend, family member, or physician! Per the creators of the DASH Trial, the diet was created to “have the blood pressure-lowering benefits of a vegetarian diet yet contain enough animal products to make them palatable to nonvegetarians” (Karanja et al., 1999, p. S20). To achieve this goal, they defined the DASH diet as being rich in plant foods, but they also included low-fat dairy and limited amounts of lean animal protein. The trial had 3 subject groups: a control group representing the Western diet, the DASH diet, and a “fruits and vegetables” diet meant to serve as an intermediate between the DASH diet and the control diet. None of the subject groups were completely vegetarian or vegan, and all food was provided to the participants to minimize dietary noncompliance and control participants’ weight and sodium intake. Between the 3 groups, there were 459 adult participants, and the trial concluded that the DASH diet reduced BP by a mean of 5.5/3.0 mmHg when compared with the control diet (Appel et al., 1997). The effects of the DASH diet were more pronounced in African Americans and in those who were already hypertensive (Svetkey et al., 1999).

The fruit and vegetable group also had a reduction in BP but to a lesser extent than the DASH diet. However, looking at the dietary composition of the fruits and vegetables group versus the DASH diet group may help explain the smaller BP reduction (Table 27.1).

When observing the values in the table, it can be argued that the DASH diet group was more plant-based than the fruits-and-vegetables diet group. The DASH diet group had the same number of servings of fruits and juices than the fruits and vegetables group, and the DASH diet group had greater servings per day of vegetables, grain, nuts, seeds, and legumes. Despite the differences in diet composition, both groups had an average fiber intake of 31 grams per day, a much greater amount than the 9 g of fiber per day consumed by the control group.

A few years later, the DASH diet was tested in conjunction with sodium restriction in the DASH-sodium trial. The DASH-sodium trial showed that sodium restriction had additional benefits on BP than the DASH diet alone (Sacks et al., 2001). In

Table 27.1 Servings per day of selected food groups in the DASH diet and fruits and vegetables diet groups of the DASH Trial

Food group	DASH diet	Fruits and vegetables diet
Fruits and juices	5.2	5.2
Vegetables	4.4	3.3
Grains	7.5	6.9
Nuts, seeds, legumes	0.7	0.6
Beef, pork, ham, poultry, and fish	1.6	2.5
Dairy	2.7	0.3

a subsequent analysis of the DASH-sodium diet data, it was found that the DASH-sodium diet reduced BP by an average of 20.8/7.9 mmHg in participants who started the trial with a BP of 150–159/90–95 mmHg. This secondary analysis concluded that the DASH-sodium diet’s ability to reduce BP increased with increasing baseline BP (Juraschek et al., 2017).

Outside of the DASH and DASH-Sodium trials, additional trials have continued to support the utility of plant-based foods in the treatment of hypertension. Yokoyama et al. (2014) conducted a meta-analysis of seven clinical trials on plant-based diets (excluding the DASH diet trials) and found that consumption of plant-based diets reduced BP by an average of 4.8/2.2 mmHg when compared to omnivorous dietary patterns.

Comparing Modalities

There exist many lifestyle interventions for hypertension. Outside of diet-related interventions, weight loss, physical activity, and alcohol limitation are the three other non-pharmacological approaches recommended by the American Heart Association and the American College of Cardiology (Whelton et al., 2018). The impact of various lifestyle interventions varies, and we have summarized the approximate reduction in SBP for selected lifestyle interventions in Table 27.2. Most lifestyle interventions listed in Table 27.2 can be achieved by adopting a plant-based diet, especially when combined with sodium restriction.

Table 27.2 Lifestyle interventions for hypertension

Modification	Reduction in SBP (mmHg)	Reference
Dietary sodium <2400 mg per day	2	Murtaugh et al. (2018)
Mediterranean diet	2.4–7.1	Estruch et al. (2006)
Aerobic exercise	3.8	Whelton et al. (2002)
Vegetarian diet	3.8–4.8	Yokoyama et al. (2014)
Alcohol limitation	5.5	Roerecke et al. (2017)
DASH diet	5.5	Appel et al. (1997)
Dietary sodium <1500 mg per day	7	Murtaugh et al. (2018)
DASH-sodium diet	11.5	Sacks et al. (2001)
Weight loss	5–20 (per 10 kg loss)	Ghadieh and Saab (2015)

Note: Shaded rows are interventions achievable using a plant-based diet

Conclusion

In conclusion, plant-based diets are an effective way to prevent and treat hypertension. Plant-based diets have been proven to reduce blood pressure in observational and experimental studies over the last one hundred years. Although the exact mechanism by which they do so has not yet been identified, a variety of mechanisms have been proposed and likely contribute to a plant-based diet's positive effect on blood pressure. Moving forward, an opportunity exists for further research on the mechanisms of action of plant-based diets on blood pressure as well as the cumulative impact of diet when combined with other lifestyle changes on reducing blood pressure. However, more research is needed in the form of large-scale, long-term RCTS using plant-based diets to further support the use of this dietary pattern for the prevention and treatment of hypertension.

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Chapter 28

Plant-Based Diets and Cancer



Leonie Dupuis  and Urvi A. Shah 

The average lifetime risk of developing and dying from cancer is 40% and 21% for males, and 39% and 18% for females based on the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) database for the United States from 2016 through 2018 (Cronin et al., 2022). A cancer diagnosis is a stressful event, but research advancements increasingly suggest that there are multiple modifiable risk factors such as obesity, diabetes, reduced physical activity, and poor dietary habits linked to it (Rock et al., 2020; Shah & Iyengar, 2022). The American Institute of Cancer Research states that about four of every ten cancer cases in the United States could be prevented with lifestyle modifications in diet, weight, and physical activity. Therefore, we can contribute to reducing our risk of cancer and improving our outcomes once diagnosed through healthy dietary and lifestyle habits.

In the United States, among people aged 20 and over, 41.9% were living with obesity and 14.8% were living with diabetes according to the 2017–2020 National Health and Nutrition Examination Survey (Stierman et al., 2021). Obesity has been associated with an increased risk of 13 different cancers—meningioma (i.e., tumor that arises from the membranes that surround brain and spinal cord), thyroid, breast, liver, gallbladder, upper stomach, pancreas, colon and rectum, esophagus, kidney,

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uterus, ovaries, and multiple myeloma (i.e., blood cancer that forms in a type of white blood cell called plasma cell) (Lauby-Secretan et al., 2016). Furthermore, diabetes is associated with certain cancers including liver, pancreas, uterus, colon, rectum, breast, and bladder cancer (Giovannucci et al., 2010). Diabetes and obesity are metabolic derangements that often result from a diet rich in refined carbohydrates, saturated fats and animal protein, such as the Western Diet. Whole-foods, plant-based (WFPB) diets reduce the risk of obesity and diabetes, and therefore may reduce the risk of developing cancers associated with them (Barnard et al., 2015; Huang et al., 2016; McMacken & Shah, 2017).

The connection between diet and cancer has been studied at the population level. Three large, epidemiologic studies identified a lower number of new cancer diagnoses in participants eating a plant-based diet when compared to the participants eating a standard diet. These studies include the Adventist Health Study-2 (Tantamango-Bartley et al., 2013), EPIC Oxford and Oxford Vegetarian Cohort (Key et al., 2014), and NutriNet-Sant , outlined in Table 28.1 (Kane-Diallo et al., 2018). The percent risk reduction indicates the magnitude by which the plant-based diet reduced the risk of developing cancer relative to the control group that did not eat a plant-based diet.

Much of the evidence points toward a WFPB dietary pattern as a pathway to reduced risk of cancer development, increased response to cancer treatment, and reduced risk of cancer relapse. This is defined as a diet rich in whole unprocessed plant foods like vegetables, fruits, whole grains, nuts, seeds, and legumes. Conversely, it is a dietary pattern that minimizes consumption of processed foods, fats, oils, animal foods, and refined carbohydrates (table sugar, white flour, etc.). Throughout this chapter, we will explore the scientific evidence behind the connection between WFPB diets and cancer in three settings: in the prevention of cancer, in patients undergoing cancer treatment, and in survivorship after a cancer diagnosis.

Current Dietary Guidelines for Cancer

The nation's leading health organizations dedicated to cancer research, such as the American Cancer Society and the American Institute of Cancer Research, publish guidelines on optimal lifestyle habits to reduce cancer risk. They review published studies, gather evidence for different interventions, and release statements outlining their summary of the findings. In 2018, the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR) published a joint statement on Cancer Prevention Recommendations (the full recommendations can be found in Table 28.2). Of its 10 recommendations, six can be accomplished through the adoption of a WFPB diet. A similar sentiment is echoed in the American Cancer Society's Guideline for Diet and Physical Activity (Rock et al., 2020). In its publication, the American Cancer Society (ACS) suggests a healthy eating pattern that promotes consumption of foods "high in nutrient amounts that help you get to and stay at a healthy body weight," a variety of vegetables, and whole grains. They conversely

Table 28.1 Percent risk reduction in cancer incidence in large epidemiologic studies with plant-based diets

Study	Country	Sample size	% Risk reduction	Comparison
Adventist Health Study	USA	69,120	16%	Vegans compared to non-vegetarians
EPIC Oxford and Oxford Vegetarian Cohort	UK	61,647	18%	Vegans compared to meat-eaters
NutriNet-Santé	France	42,544	15%	Highest tertile of pro-plant-based dietary score compared to lowest tertile

encourage limiting or entirely avoiding red meat, processed meat, sugar-sweetened beverages, highly processed foods, refined grain products, and alcohol.

These recommendations summarize the findings from the evidence available to date, where eating more plant-based foods is associated with reduced cancer incidence.

Mechanisms

How can we explain the epidemiologic findings associated with plant-based diets and cancer risk reduction as well as improved outcomes? There are multiple well-studied mechanisms, and in this section, we will discuss the evidence available to date (Shah & Iyengar, 2022) (Fig. 28.1).

Maintaining a Healthy Weight

Given obesity is a risk factor for several cancers, maintaining a healthy body mass index (BMI) can attenuate the risks associated with obesity (Lauby-Secretan et al., 2016). The relationship between overweight/obesity and cancer is multifactorial, but mechanisms have been proposed regarding hormone levels and metabolism, inflammation, and impaired immune function.

In overweight/obesity, there is an increased amount of fatty tissue called adipose tissue. This adipose tissue produces hormones (estrogen, leptin, and adiponectin) and pro-inflammatory substances called cytokines (Byers & Sedjo, 2015). Adipose tissue also converts androgen hormones into estrogen, which leads to higher levels of circulating estrogens in the body that may drive endometrial cancer and post-menopausal breast cancer development (Byers & Sedjo, 2015).

Leptin, one of the hormones released by adipose tissue, signals satiety to the brain. In overweight/obesity, there is leptin resistance which leads to more leptin

Table 28.2 The 2018 WCRF/AICR Cancer Prevention Recommendations (WCF/AICR, 2018)

Recommendations	Details	Goals
1. Be a healthy weight	Keep your weight within the healthy range and avoid weight gain in adult life	Ensure that body weight during childhood and adolescence projects toward the lower end of the healthy adult BMI range Keep your weight as low as you can within the healthy range throughout life Avoid weight gain (measured as body weight or waist circumference) throughout adulthood
2. Be physically active	Be physically active as part of everyday life—walk more and sit less	Be at least moderately physically active and follow or exceed national guidelines Limit sedentary habits
3. Eat a diet rich in whole grains, vegetables, fruits, and beans	Make whole grains, vegetables, fruits, and pulses (legumes) such as beans and lentils a major part of your usual daily diet	Consume a diet that provides at least 30 g/day of fiber from food sources Include in more meals foods containing whole grains, non-starchy vegetables, fruits, and pulses (legumes) such as beans and lentils Eat a diet high in all types of plant foods including at least five portions or servings (at least 400 g or 15 oz in total) of a variety of non-starchy vegetables and fruits every day If you eat starchy roots and tubers as staple foods, eat non-starchy vegetables, fruit, and pulses (legumes) regularly too if possible
4. Limit consumption of “fast foods” and other processed foods high in fat, starches, or sugars	Limiting these foods helps control calorie intake and maintain a healthy weight	Limit consumption of processed foods high in fat, starches, or sugars—including fast foods; many prepared dishes, snacks, bakery foods and desserts; and confectionery (candy)
5. Limit consumption of red and processed meat	Eat no more than moderate amounts of red meat, such as beef, pork, and lamb. Eat little, if any, processed meat.	If you eat red meat, limit consumption to no more than about three portions per week. Three portions are equivalent to about 350 to 500 g (about 12 to 18 oz) cooked weight of red meat. Consume very little, if any, processed meat.
6. Limit consumption of sugar-sweetened drinks	Drink mostly water and unsweetened drinks	Do not consume sugar-sweetened drinks
7. Limit alcohol consumption	For cancer prevention, it’s best not to drink alcohol	For cancer prevention, it’s best not to drink alcohol
8. Do not use supplements for cancer prevention	Aim to meet nutritional needs through diet alone	High-dose dietary supplements are not recommended for cancer prevention—aim to meet nutritional needs through diet alone

(continued)

Table 28.2 (continued)

Recommendations	Details	Goals
9. For mothers: breastfeed your baby, if you can	Breastfeeding is good for both mother and baby	This recommendation aligns with the advice of the WHO, which recommends infants are exclusively breastfed for 6 months, and then up to 2 years of age or beyond and/or alongside appropriate complementary foods
10. After a cancer diagnosis: follow our recommendations, if you can	Check with your health professional about what is right for you	All cancer survivors should receive nutritional care and guidance on physical activity from trained professionals Unless otherwise advised, and if you can, all cancer survivors are advised to follow the Cancer Prevention Recommendations as much as possible after the acute stage of treatment

production in the fatty tissue as a mechanism to overcome this leptin resistance (Font-Burgada et al., 2016). Leptin can stimulate the growth of blood vessel cells, making it a pro-tumor hormone (Font-Burgada et al., 2016). Although leptin and estrogen are both increased in overweight/obesity, adiponectin is decreased. Adiponectin levels are decreased in obesity. It plays an important role in insulin sensitivity, and low levels of adiponectin lead to hyperglycemia and increased insulin resistance (Renehan et al., 2015). Hyperglycemia then triggers a pathway that increases cancer cell survival in low-oxygen states and the increased insulin promotes both the growth of tumor cells and the longer life cycle of cells (Font-Burgada et al., 2016; Renehan et al., 2015). Therefore, improvement in BMI from elevated to normal leads to improvements in adiponectin, leptin, and insulin levels.

Lastly, in overweight/obesity, pro-inflammatory immune cells known as M1 macrophages are increased. These M1 macrophages release tumor-promoting cytokines (pro-inflammation signals) (Font-Burgada et al., 2016). These three mechanisms all occur in overweight/obesity and are some of the mechanisms leading to an increased risk of cancer (Parikh et al., 2022).

Plant-based diets help normalize BMI (Greger, 2020). Fiber-rich foods that are low in calories lead to early satiety, helping to reduce calorie intake, which leads to weight loss (Slavin & Green, 2007). The mechanisms connecting body weight to cancer risk (hormone level changes, increased insulin, and increased inflammation) may be improved with even modest weight loss of 3–10% body weight (Anderson et al., 2014; Campbell et al., 2012; Gallagher & LeRoith, 2015; van Gemert et al., 2015).

The influence of intentional weight loss (via both surgical and non-surgical approaches) is associated with decreased cancer incidence, especially in obesity-related female cancers (Abbenhardt et al., 2013; Birks et al., 2012; Foster-Schubert et al., 2012; Imayama et al., 2012). For example, in the Iowa Women's Health Study, women who lost at least 5% of body weight had a 25–40% reduced breast cancer risk when compared to weight-stable women (Eliassen et al., 2006). Similar results

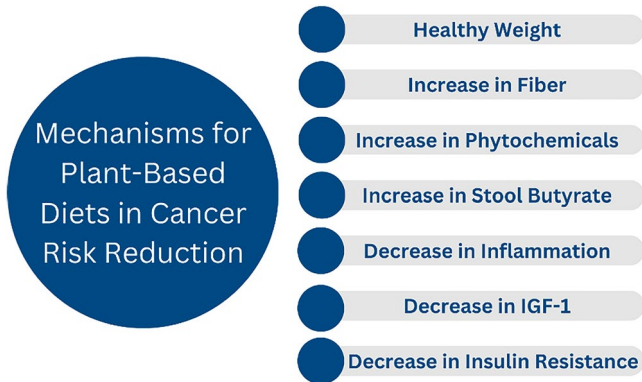


Fig. 28.1 Mechanisms for plant-based diets in cancer risk reduction. There are many mechanisms for the benefits of plant-based diets in cancer. These include—maintaining a healthy weight, increasing dietary fiber, increasing phytochemicals (plant chemicals with antioxidant properties such as fruits, vegetables, whole grains, nuts, seeds, and legumes), increasing short-chain fatty acids such as butyrate, decreasing inflammation, decreasing insulin, and decreasing insulin-like growth factor 1 (IGF-1) levels

were seen in the Nurse’s Health Study where a 10% weight loss was associated with a 50% reduction in breast cancer risk (Eliassen et al., 2006). However, unintentional weight loss after a cancer diagnosis and being underweight too has been associated with worse outcomes in cancer patients across various cancer subtypes (Shah et al., 2023b). Therefore, maintaining a healthy BMI is important.

Increasing Dietary Fiber

Fiber is a complex indigestible carbohydrate found exclusively in plant-based foods. Fiber intake increases stool bulk (weight and size) which can regularize bowel movements and improve overall gut health. Beyond gut health, a meta-analysis of 45 studies found a decrease in cancer mortality and all-cause mortality per 90-g-per-day increase in whole grain intake, or an increase of about 3 whole grain servings per day (Aune et al., 2016). The EPIC-Oxford study also found fiber intake to be inversely correlated with the risk of cancer (Bradbury et al., 2014).

We will discuss two examples of the benefits of increased fiber intake in melanoma and colon cancer. Patients diagnosed with melanoma on treatment with checkpoint inhibitors had longer progression-free survival if they consumed ≥ 20 g of fiber per day. This improved survival was not seen in patients with adequate fiber intake who also used commercially available probiotics likely due to a reduction in microbiome diversity by the probiotic supplement (Spencer et al., 2021). As for colon cancer, a meta-analysis found that the risk of colon cancer decreased by 21% for proximal colon cancer and 14% for distal colon cancer when comparing individuals in the highest dietary fiber intake quartile to the lowest dietary fiber intake

quartile (Intersalt Cooperative Research Group, 1988; Ma et al., 2018). Another meta-analysis of 185 trials and 58 clinical studies found an inverse correlation between fiber intake and colorectal cancer risk meaning the more dietary fiber was consumed, the lower the risk of colorectal cancer (Reynolds et al., 2019).

Furthermore, increased dietary fiber is associated with weight loss and reduced insulin resistance, whose benefits are discussed in their respective sections (McNabney & Henagan, 2017).

Increasing Phytochemicals and Short-Chain Fatty Acids

Plant-based foods are rich in phytochemicals (chemicals derived from plants) and include flavonoids, polyphenols, carotenoids, and more. These substances are the antioxidants found in plant foods. Epidemiological studies have found that moderate flavonoid intake is inversely associated with all-cause and cancer-related mortality (Bondonno et al., 2019). Flavonoids have anti-inflammatory and antioxidant effects as well as the ability to halt cell growth and metabolism (important in cancer development).

Furthermore, our digestive tracts are filled with microbes that work to process the foods we eat and produce nutrients/chemicals as a byproduct. Consuming plant foods results in an increased production of short-chain fatty acids (such as butyrate) by the gut microbiome (Shah et al., 2022). Butyrate is known to have anti-cancer and anti-inflammatory effects (McQuade et al., 2019; Pryde et al., 2002). In multiple myeloma specifically, patients with higher stool butyrate content and higher relative abundance of butyrate producers were more likely to be in complete remission (with no measurable residual disease in the bone marrow) while receiving maintenance therapy (Shah et al., 2022, 2023a).

Decreasing Inflammation

Plant-based diets are associated with lower levels of oxidative stress and inflammation (reductions in C reactive protein) through multiple mechanisms such as butyrate production and normalization of body weight (Aleksandrova et al., 2021; Shah et al., 2023c, 2024).

Decreasing IGF-1 Levels

Insulin-like growth factor 1 (IGF-1) is a hormone that promotes growth independently as well as synergistically with Growth Hormone that is produced by our pituitary gland. As such, IGF-1 has been shown to be associated with cell

proliferation and the inhibition of apoptosis (Guevara-Aguirre et al., 2011; Knuppel et al., 2020). Apoptosis is a necessary part of a cell cycle wherein cells “auto-destroy” when they auto-detect damage in their DNA or are aging. The inhibition of apoptosis permits the growth of damaged cells which can lead to the development of cancer.

Significantly lower levels of IGF-1 have been found in individuals following a vegan diet as well as higher levels of IGF-binding proteins 1 and 2 (Allen et al., 2002). IGF-binding proteins act as “traps” for IGF-1, binding to the growth hormone and preventing it from carrying out its pro-growth activities.

Decreasing Insulin Resistance

Insulin is one of the hormones produced by our body to help glucose (sugar) in our bloodstream enter our muscle, fat, and liver cells so that it can be used as energy by these cells (“Insulin Resistance & Prediabetes,” 2018). Insulin resistance occurs when these muscle, fat, and liver cells no longer respond as well to insulin. To overcome this resistance, the pancreas produces greater amounts of insulin. Insulin is known to activate the phosphoinositide 3-kinase (PI3K) signaling pathway which promotes cell survival and cell proliferation (Shah & Iyengar, 2022). Thus, a high insulin state can promote and maintain tumor growth (Hopkins et al., 2018). A study using data from Diabetes Control and Complications Trial (DCCT) and the Epidemiology of Diabetes Interventions and Complications (EDIC) study showed that daily insulin dose was associated with cancer risk in type 1 diabetes mellitus (Zhong & Mao, 2022).

A whole-food, plant-based diet is associated with decreased blood insulin levels and increased insulin sensitivity (Crosby et al., 2022; Kahleova et al., 2020; Shah & Iyengar, 2022).

Diet-Related Carcinogens

Diet-related carcinogens are either innate components of certain foods, created using certain cooking or preservation methods, or the result of environmental changes (Archer, 1988). Select carcinogens will be discussed in this section, outlining their source and how to avoid them.

(i) Nitrates, Nitrites, and N-nitroso Compounds

Nitrite is a compound often added to processed meat as an antibacterial agent and to help produce the characteristic pink tone of cured meat (Baer-Dubowska et al., 2005). Nitrates and nitrites are found in processed meat and smoked cheeses and serve as the precursors to N-nitroso compounds (NOCs) (Ferguson, 2010). The formation of NOCs can be impacted by other dietary factors, such as the intake of

heme iron which can expedite the formation of NOCs (Grosse et al., 2006). NOCs can be potent carcinogens due to their ability to form mutation-promoting DNA adducts (Shephard et al., 1987). Nitrate and nitrite intake have been associated with colorectal adenomas and colorectal cancer (Cross et al., 2010; Ferrucci et al., 2012). A genetic alkylating signature associated with damage induced by NOCs from high intake of red and processed meat has been identified in colorectal cancer (Gurjao et al., 2021).

(ii) *TMAO*

Choline and carnitine, two substances found in red meat, eggs, certain fish, milk, and cheese is converted to trimethylamine by the gut microbiome and then once absorbed into the circulation is converted to trimethylamine-N-oxide (TMAO) by the liver (Coutinho-Wolino et al., 2021). TMAO is associated with a wide variety of chronic diseases including diabetes, heart failure, chronic kidney disease, liver steatosis, and Alzheimer's disease (Tan et al., 2019; Tang & Hazen, 2017; Vogt et al., 2018). In cancer, TMAO has been linked to an increased risk of colorectal cancers, prostate cancer as well as other cancers (Oellgaard et al., 2017). Inflammation appears to provide the link between TMAO and cancer development (Gurjao et al., 2021). Plant-based diets are effective in lowering blood and urine TMAO levels (Lombardo et al., 2022).

(iii) *Heme Iron*

Dietary iron is found in two forms—heme and non-heme iron. Heme iron is present in meat, poultry, and fish. To calculate heme iron intake, one estimation method suggests using meat-specific percentages at a rate of 65% for beef, 39% for pork, and 25% for chicken or fish (Sinha et al., 2005). Therefore, red, and processed meats have the highest heme iron concentrations. Red and processed meats have been associated with increased risk of colorectal cancer and a variety of other cancers and it is thought that heme iron is one of the major drivers of this increased risk. Heme iron mediates formation of NOC, and lipid oxidation products in the digestive tracts which maybe the mechanism through which it increases this risk (Bouvard et al., 2015). Heme intake has been associated with colorectal, lung, and prostate cancer (Cross et al., 2010; Ferrucci et al., 2012; Sinha et al., 2009; Tasevska et al., 2009).

(iv) *Heterocyclic Amines and Polycyclic Aromatic Hydrocarbons*

Heterocyclic amines (HCAs) and polycyclic aromatic hydrocarbons (PAHs) are compounds formed when animal meat is cooked. PAHs form via a chemical reaction between meat fat and an open flame and then deposit on the meat (Phillips, 1999). As such, grilled/barbecued meat are a common source of dietary PAHs. PAHs are associated with an increased risk of colorectal adenomas, kidney cancer, and prostate cancer (Abid et al., 2014). HCAs form via another chemical reaction between creatine/creatinine, amino acids, and sugars found in meat at high cooking temperatures (Jägerstad & Skog, 1991). HCAs are associated with an increased risk of colorectal, pancreas, gastric cardia, lung, and kidney cancer (Abid et al., 2014).

(v) *Microplastics*

Microplastics are a direct consequence of human waste especially from lost fishing gear such as nets, lines, and ropes. When plastics are discarded, the breakdown of the plastics leads to microscopic microplastics and even smaller nanoplastics (Yee et al., 2021). Microplastics are now ubiquitous in our environment and can be found in aquatic and terrestrial ecosystems, atmospheric air, mountains, foothills, terrains, glaciers, and snow (Kumar et al., 2022). Dietary microplastics are especially prevalent in seafood and fishes (Barboza et al., 2020; Dawson et al., 2021; Jabeen et al., 2017). Although further research is needed on the impact of microplastic on the risk of cancer, evidence suggests many carcinogenic mechanisms by which microplastics can impact DNA and cells (Kumar et al., 2022).

Clinical Research Correlates

While we discussed the risk factors and mechanisms for various dietary patterns and foods in cancer, it is also important to be able to understand how modifying these risk factors can improve outcomes for cancer patients in the real world. There are several interventional clinical trials incorporating a plant-predominant, whole-foods approach encouraging participants to increase fruit and vegetable serving or reduce fat intake. Below, we offer a few examples of relevant clinical trials.

Prostate Cancer

In patients diagnosed with prostate cancer, the consumption of a WFPB diet was associated with a statistically significant reduction of radical prostatectomy, radiotherapy, or androgen deprivation, or conventional prostate cancer treatment (Frattaroli et al., 2008). In other words, patients with prostate cancer were able to avoid or delay conventional treatment by making lifestyle changes. However, in a randomized controlled trial known as the Men's Eating and Living (MEAL) study, men were counseled to eat seven or more servings of vegetables daily. At the end of the study, there was no difference in the time-to-cancer progression, perhaps due to low adherence to the goal of seven vegetable servings per day, but also perhaps due to the challenge of changing dietary habits with counseling alone (Parsons et al., 2020).

In the laboratory setting, prostate cancer cells were exposed to serum from patients eating a plant-based diet versus a control diet (Ornish et al., 2005). The cells exposed to the WFPB serum were inhibited almost eight times as much as the control. The same research group also found that men following a WFPB diet also had favorable changes in their gene expression and telomere length, two protective findings against prostate cancer (Ornish et al., 2008, 2013).

Breast Cancer

When it comes to breast cancer, studies have been performed in the prevention setting (looking at women who have no cancer diagnosis at the onset of the study) and in the post-diagnosis setting. A large study in the preventive setting with 48,835 postmenopausal women showed that those in the low-fat diet group had improved breast cancer-specific and overall survival (Chlebowski et al., 2018). In terms of post-diagnosis studies, the Women's Healthy Eating and Living Study tested the impact of a diet with 5 vegetable servings, 3 fruit servings, 30 g of fiber, and 15–20% of calories from fat per day when compared to a control group (Pierce et al., 2007). They found that over a period of 7.3 years, the dietary intervention did not significantly reduce recurrent or new invasive breast cancer or death from any cause. In another post-diagnosis study, the Women's Intervention Nutrition Study (WINS), a reduced fat diet (with <15% of calories from fat) was studied in women with resected, early-stage breast cancer receiving cancer treatment (Chlebowski et al., 2006). In this study, a significant reduction in breast cancer relapse was found when compared with the control group, but this effect diminished over time and long-term follow-up (Chlebowski et al., 2008). As such, these limited data show that we need more research on dietary interventions in cancer to draw better conclusions and there are multiple ongoing studies.

Challenges to Nutrition Studies in Cancer

There are multiple challenges to studying nutrition and its relationship to cancer. First and foremost, cancer studies require a large sample size over a long period of time to observe meaningful changes and outcomes. If you think back on your dietary pattern over the last 5–10 years, it is likely that there have been shifts, changes, or trends that you adopted. Whether these changes you adopt were short-term or long-term changes would impact the validity of a study examining nutrition over an extended period.

Some studies have been able to achieve dietary interventions over extended periods of time, but review of the current literature in oncology shows that oncology studies lack standardization when it comes to the duration of interventions, the composition of dietary intervention (WFPB diet vs diets that emphasize certain food groups), and a lack of adherence to the intervention.

Cancer can lead to weight loss for some patients, also referred to as cachexia when very significant. In the case of a cancer diagnosis, a plant-based diet is feasible and can be done safely but it is important to discuss with a registered dietitian or healthcare professional and transition gradually to maintain caloric intake and weight.

Debunking Common Myths

Individuals considering following a plant-predominant eating pattern may encounter some myths associated with diet choices. In this chapter, we will address some of the most common myths relating to plant-based diets and cancer: the impact of soy products in breast cancer, protein completeness, protein quantity, sugar-feeding cancer growth, and the consumption of organic foods.

Myth 1: Soy Increases Breast Cancer Risk

Soy is an excellent source of protein, fiber, and flavonoids and could be beneficial for breast cancer survivors. They can safely eat unprocessed soy products such as edamame, soy milk, tofu, and tempeh. Confusion about soy likely arises regarding one of its nutrients, phytoestrogens, also known as soy isoflavones. These nutrients were named as such for their chemical resemblance to human estrogen. However, phytoestrogens are weaker than human estrogens and are selective estrogen receptor modulators (Mauny et al., 2022). They additionally have antioxidant and anti-inflammatory effects.

In fact, there is research to suggest that soy foods reduce the risk of breast cancer development, reduce cancer recurrence rates, and improve survival. In a meta-analysis of four breast cancer recurrence studies and 14 breast cancer incidence studies, it was found that soy isoflavone consumption was inversely associated with breast cancer incidence, or the new onset of breast cancer and breast cancer recurrence (Dong & Qin, 2011; Kucuk, 2017).

The effect of processed soy products such as soy protein isolate and supplements are less clearly understood as they are a stripped-down version of soy and mainly contain only protein with variable levels of phytoestrogens. Examples of these products include soy protein isolate protein powders—they should be limited, especially in hormonally-driven cancers.

Myth 2: Plant-Based Proteins Are Incomplete Proteins

A WFPB diet can meet daily protein needs. Protein is one of the three main “macronutrients” used by our body to build, maintain, and repair tissues. Protein is composed of 20 different amino acids, of which 11 are created by our bodies. So how do we get the other 9? Through our food! Previously, it was thought that certain plant foods needed to be consumed together to get their “full protein” value, but that myth has been busted and we know that a WFPB diet with varied whole grains, legumes, and vegetables can meet these requirements (Craig & Mangels, 2009). In fact, all

plant foods contain all 20 dietary amino acids (Gardner et al., 2019). Gardner et al. also reviewed the environmental impact of shifting from animal food to plant food and found that a 25% decrease in protein intake combined with a 25% shift from animal food to plant food would result in 40% fewer carbon dioxide emission and 10% less consumptive water use (Gardner et al., 2019).

See the table below for healthy plant protein sources with their relative protein content in grams (U.S. Department of Agriculture (USDA), 2021).

Plant Protein Sources (grams of protein)	
Black beans, cooked (1 cup)	15.2
Lentils, cooked (1 cup)	15.9
Tempeh (1/2 cup)	16.9
Tofu, firm (1/2 cup)	21.8
Quinoa, cooked (1 cup)	8.1
Spinach, cooked (1 cup)	3.0

Myth 3: The More Protein in One's Diet the Better

Daily protein requirement is an individualized amount that should be determined by you and your healthcare team. The average woman needs 46 g of protein per day and the average man needs 56 g of protein per day according to the United States Department of Agriculture's Recommended Daily Allowance rate of 0.8 g/kg/day (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2020). However, for a person undergoing cancer treatment, average protein needs may increase to support protein balance to 1.0–1.5 g/kg/day (Ravasco, 2019). For example, in the case of cachexia, calorimetry may be warranted to accurately estimate a person's energy and protein needs (Arends et al., 2017).

In one study, individuals aged 50–65 years old with low protein intake were found to have a four-fold reduction in cancer mortality when compared with high protein intake (Seidemann et al., 2018). Low protein intake was defined as a diet with less than 10% of calories coming from protein and the high protein intake was defined as a diet with greater than 20% of calories coming from protein. Typically, WFPB diets have lower protein content.

Additionally, quality of protein, prioritizing plant over animal sources, is important too. Individuals with the highest plant-protein intake had lower all-cause mortality (death from any cause) when compared to individuals with the lowest plant-protein intake (Sun et al., 2021). In 2015, The International Agency for Research on Cancer (IARC) graded processed meat as a group 1, that is, definitely carcinogenic to humans, and red meat as group 2a, that is, probably carcinogenic to humans (Bouvard et al., 2015).

Myth 4: All Carbohydrates Are Bad

The final myth we'll address in this chapter is that sugar feeds cancer. Sugar comes in many forms and in its simplest form it is broken down to glucose. All cells in our body depend on glucose. Without adequate carbohydrate intake our bodies will make glucose from other sources such as protein and fat. Glucose is critical for cells to survive and function properly. Not consuming sufficient carbohydrates can lead to the breakdown of protein stores in our body, which can contribute to muscle loss and possibly malnutrition. Following a restricted diet with very low amounts of carbohydrates can also cause unintentional weight loss. This can impact the ability to tolerate cancer treatment.

It is important to differentiate refined carbohydrates such as sugary foods and beverages from complex carbohydrates such as whole grains. Refined sugar intake causes insulin spikes which increases the expression of IGF-1 levels which, as discussed in the pathophysiology section, can increase cancer risk (Guevara-Aguirre et al., 2011; Joh et al., 2021; Knuppel et al., 2020; Rachdaoui, 2020). Furthermore, eating refined sugars and other processed foods can lead to weight gain and excess body fat which are also both associated with an increased risk of cancer (Lauby-Secretan et al., 2016). However, whole grains and carbohydrates from whole food sources are rich sources of dietary fiber, antioxidants, vitamins, and minerals and one of the pillars of a WFPB dietary pattern which, as we've discussed throughout the chapter, have many benefits in reducing cancer incidence and recurrence (Rachdaoui, 2020; Rock et al., 2020).

Myth 5: One Should Only Eat Organic Fruits and Vegetables

Increased consumption of any fruits and vegetables has beneficial effects. It is estimated that about 20,000 cancer cases per year could be prevented if even 50% of the US population increased their fruits and vegetables intake by one serving per day (Reiss et al., 2012). From this same one-serving increase in fruits and vegetables by 50% of the US population, a maximum of 10 cancer cases per year would be attributed to the pesticides present in these fruits and vegetables (Reiss et al., 2012).

A French study on 68,946 participants found that increased organic food intake was associated with a reduced overall risk of cancer (Baudry et al., 2018). Organic food standards do allow the use of specific variants of natural pesticides, but synthetic pesticides are prohibited (U.S. Department of Agriculture, 2021). As a result, organic products are less likely to have traces of pesticides (Barański et al., 2014; Intersalt Cooperative Research Group, 1988).

Multiple studies have reported a strong association between organic food consumption and healthy dietary and lifestyle habits, so it is possible that this reduced cancer incidence with organic foods is due to the healthy lifestyle habits and not truly the direct effect of organic food. Further studies are needed in order to

determine what role organic food plays in preventing cancer (Baudry et al., 2017; Eisinger-Watzl et al., 2015; Kesse-Guyot et al., 2017; Petersen et al., 2013). In the meantime, it would be wise to increase consumption of fruits and vegetables irrespective of whether organic or not.

Practical Tips: Cancer Prevention with Your Plate

Now that you've learned about the science and data behind WFPB dietary patterns and cancer, we will discuss a few tips to implement these changes. If you have a chronic medical condition such as obesity, diabetes, or cardiovascular disease, are undergoing treatment for cancer, are a cancer survivor, or are healthy but would like to learn to reduce the risk of developing cancer, we recommend working toward a WFPB diet (which is a diet focused mainly on unprocessed plant-based foods). Even if one is overall healthy with no chronic medical conditions, one may see the benefits of preventing their development in the long term.

When creating a WFPB plate, the goal should be to fill up half of your plate with a variety of fruits and vegetables, one-fourth of your plate with whole grains, and the other fourth of your plate with a protein source (mostly plant proteins such as beans, seeds, nuts, and tofu). Healthy fats, such as avocado and nuts for example, can be used in modest quantities.

Identifying WFPB blogs, cookbooks, and workshops to help you get inspired with recipes, tips, and tricks and can also provide additional motivation. For free recipes consider the following websites: the American Institute for Cancer Research and Forks Over Knives. You may also find that a social network (group or meet up or festival) that participates in a WFPB dietary pattern is beneficial to help you stay on track. For more resources, we recommend visiting the American Institute for Cancer Research's website (<https://www.aicr.org/cancer-prevention/food-facts/>), which features the benefits of specific foods, how to plan your plate on a plant-based diet, and recipes.

Conclusion

In summary, we have reviewed the evidence behind a WFPB diet to reduce the risk of cancer development and recurrence. The evidence to date points toward reducing processed foods, refined sugars, and animal proteins and shifting toward a diet rich in whole, unrefined plant foods with an emphasis on vegetables, fruits, legumes, and whole grains for overall health and cancer prevention. In order to grow the body of evidence on nutrition and its relationship to cancer, further studies are needed with more standardized dietary protocols, methods to increase adherence to the desired dietary intervention, and focused direct comparisons of different plant-predominant diets.

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Chapter 29

Lifestyle Medicine: Mental Health and Nutrition



Gia Merlo  and Gabrielle Bachtel 

The Current Mental Health and Mental Illness Climate

The current mental health climate is complex and characterized by both challenges and opportunities. According to the American Mental Health Association, there are 350 individuals for every mental health professional in the country, and most adults with mental illness (56%) do not receive any treatment for their mental condition (Reinert, 2022). Mental illnesses, particularly depression and anxiety, were leading drivers of global health-related burdens before 2020 (Santomauro et al., 2021). A multitude of determinants of poor mental health have been amplified by the COVID-19 pandemic. Worldwide anxiety and depression prevalence increased by 25% after the COVID-19 pandemic (Santomauro et al., 2021). Mental illness currently affects one in five U.S. adults (Felion & Merlo 2022). One out of five children will suffer from a mental disorder each year (CDC, 2022a). Mental illnesses, such as schizophrenia, bipolar disorder, or major depression, affect one in 25 Americans, <https://www.cdc.gov/mentalhealth/learn/index.html>. Suicidal ideation rates among U.S. adults have increased every year since 2011–2012, with the highest rates among those who identify with two or more races (MHA, 2023). More than half of the population will experience a mental illness or disorder at some point in their lives (Kessler et al., 2007).

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Neurological and neurodevelopmental conditions such as stroke, migraine, dementia, meningitis, and epilepsy are the leading global cause of disability-adjusted life years and account for approximately 70% of the disease burden in low-and-middle-income countries, [https://doi.org/10.1016/S1474-4422\(24\)00038-3](https://doi.org/10.1016/S1474-4422(24)00038-3). Research shows that adults over the age of 50 in the U.S. believe that mental health and brain functioning are more important than other aspects of life, including social security and physical health (Blazer et al., 2015). There were an estimated 900 million people aged 60 years and over worldwide in 2015. It is expected that there will be two billion people aged 60 years and over by 2050, https://www.who.int/health-topics/ageing#tab=tab_1. The aging and growth of the population have increased the global burden of disease for neurological disorders, as well as compounded challenges associated with maintaining brain health throughout individuals' lifespans. Physical disability, cognitive or mental disorders, and social limitations are more common in people with neurological disorders, which leads to a significant societal and economic burden. A growing body of evidence suggests that almost 40% of dementia cases can be prevented by modifiable lifestyle factors (Montero-Odasso et al., 2020). However, there is a paucity of accessible, implementable, and efficient tools for evaluating and quantifying brain health in household or healthcare settings. There is also a limited number of effective approaches for preventing and treating cognitive dysfunction and declining brain health in dementia and other serious neurological diseases.

The recognition of the importance of mental health and brain health, as well as the advancement of prevention and early intervention strategies for improved mental health and brain health outcomes for individuals and communities, continue to progress. It is pertinent to note that the decline in mental health in America predated the COVID-19 pandemic. The COVID-19 pandemic intensified the worsening mental health among Americans and further exacerbated pre-existing racial and ethnic group divides and socioeconomic stratifications related to mental health and brain health (Thomeer et al., 2022; Czeisler et al., 2021; Ettman et al., 2020). The COVID-19 pandemic has highlighted the societal need for increased focus on public health and support of overall well-being, as well as technological advances to identify early warning signs of declining mental health or mental health issues, promote access to mental healthcare services via telehealth, develop more effective personalized treatment plans based on an individual's unique needs and preferences, and predict treatment outcomes. Societal stigma and discrimination associated with mental health also continue to challenge patients with mental health issues, the healthcare system, and mental health professionals (Merlo & Vela, 2021). Mental health stigma can lead to reluctance to seek help or treatment; increased psychiatric symptoms; reduced likelihood of adherence to treatment; social isolation; fewer opportunities for work, school, and social connection and relationships; bullying, physical violence, or harassment; lower self-esteem and self-efficacy; and reduced hope (Yanos et al., 2020). Mental health awareness, education, and support are essential to challenging stigma surrounding mental health and increasing overall population health outcomes.

Lifestyle Psychiatry

Research has demonstrated that each pillar of lifestyle medicine is bidirectionally related to quality of mental health, mental health interventions, and treatment outcomes (Merlo & Vela, 2021). The six pillars of lifestyle medicine include a whole food, plant-predominant eating pattern; physical activity; restorative sleep; stress management; risky substance harm reduction; and positive social connection. The American College of Lifestyle Medicine (ACLM, 2023) defines lifestyle medicine as “a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity. Clinicians certified in lifestyle medicine are trained to apply evidence-based, whole-person, prescriptive lifestyle changes to treat and, when used intensively, often reverse such conditions” (ACLM, 2023). Lifestyle psychiatry is an emerging field of medicine that focuses on the impact of lifestyle factors on brain health, well-being, and the onset and symptoms of various mental disorders (Noordsy, 2019). It is an interdisciplinary approach that combines principles of psychiatry, psychology, and lifestyle medicine to help individuals achieve optimal mental health. Lifestyle psychiatry is part of a larger movement in lifestyle medicine.

Both nutritional psychiatry and lifestyle psychiatry emphasize the importance of using nonpharmacological approaches to support mental health and brain health but differ in their focus and scope. The field of nutritional psychiatry specifically examines the impact of different foods and dietary patterns on mental health, cognitive function, mood, and various mental disorders and brain illnesses, as well as the role nutritional interventions play in treating and preventing mental health and brain health problems (Marx et al., 2017). The field of lifestyle psychiatry encompasses a broader range of nonpharmacological interventions beyond nutrition and recognizes that lifestyle factors such as diet, exercise, sleep, stress management, social support, risky substance harm reduction, and environmental influences can have a significant impact on mental health outcomes. Lifestyle interventions are considered an important part of the treatment plan for many mental health conditions, alongside more traditional forms of therapy and medication (Merlo & Vela, 2021). Lifestyle psychiatry practitioners often work with individuals to identify areas of their lifestyle that may be contributing to mental health challenges and provide personalized recommendations to help improve their overall well-being (Minich & Bland, 2013). This may involve developing a personalized exercise plan, recommending dietary changes, incorporating stress management techniques, and addressing sleep disturbances. In *Lifestyle Psychiatry: Through the Lens of Behavioral Medicine*, Merlo, and Fagundes describe lifestyle psychiatry as a field that utilizes the same pillars of health as lifestyle medicine to facilitate the treatment, management, and prevention of mental and brain health conditions through the biopsychosocial model of health (Merlo & Fagundes, 2023, p. 1–15).

The current medical landscape predominantly treats mental illnesses through pharmacotherapy (i.e., antidepressants) and psychotherapy (i.e., cognitive

behavioral therapy). It is noteworthy that the increasing global disease burden of poor mental health and mental illnesses indicates a need for additional interventions in order to prevent and treat mental disorders. Individuals can improve their overall quality of life and reduce their risk of developing chronic mental and physical health conditions by addressing lifestyle factors that contribute to mental health challenges, such as nutrition.

The Bidirectionality of the Diet–Brain–Body–Mind Connection

Research supports the existence of a direct relationship between nutrition, stress susceptibility, mental health, and mental function (Adan et al., 2019). Literature indicates that mental health conditions (e.g., depression, anxiety, schizophrenia, bipolar disorder, stress-related disorders) are correlated with a variety of detrimental lifestyle behaviors compared to healthy controls, such as poorer dietary and sleeping patterns, low levels of physical activity, and tobacco and substance use (Firth et al., 2019a). A healthy and balanced diet can positively affect mood, cognition, and behavior, while an unhealthy diet can contribute to the development of mental health problems (Muscaritoli, 2021).

Nutrient Deficiencies

There is evidence that suboptimal nutrition plays a role in the development of mental health conditions and may also hinder the recovery and treatment of these conditions (Ramsey & Muskin, 2013). It has been consistently found that a vegan diet is the healthiest diet with regards to indexing systems based on multiple factors constituting various healthy dietary models and frameworks (e.g., U.S. Dietary Guidelines for Americans, compliance to the Mediterranean Diet) (Clarys et al., 2014). Dietary patterns with more plant foods and fewer animal-based foods have been shown to benefit overall health outcomes and improve daily intake of dietary fiber, magnesium, polyunsaturated fatty acids, folate, copper, and vitamin B1, B6, C, E (Neufingerl & Eilander, 2022; Sobiecki et al., 2016). Studies have found that meat-eaters are less likely than those adhering to a plant-based diet to consume fiber, polyunsaturated fatty acids, folate, and vitamin E in adequate amounts. The consumption of a plant-based diet requires planning due to the risk of inadequate intakes of eicosapentaenoic acid (an omega-3 fatty acid), docosahexaenoic acid (an omega-3 fatty acid), vitamin B12, vitamin D, calcium, iron, zinc, and iodine (Allès et al., 2017). Of note, those who consume meat are also at risk for deficiencies in vitamin D and calcium. Research has demonstrated a consistent correlation between overall mental health and psychological functioning and dietary intake of macronutrients and micronutrients (Jacka et al., 2017).

Blood Sugar Levels

Maintaining healthy blood sugar levels is crucial for optimal mental health. Blood sugar, or glucose, is the primary source of energy for the body's cells, including brain cells. The brain relies heavily on glucose to function properly. A nutrient-poor diet high in sugar and refined carbohydrates can cause fluctuations in blood sugar levels, which can negatively affect mood, cognition, and behavior, and contribute to mental health conditions such as anxiety and depression (Penckofer et al., 2012). Fluctuations in blood sugar levels can cause emotional disturbances and mood swings that affect ability to perform daily tasks. Anxiety, irritable mood, fatigue, depression, and psychiatric symptoms ranging from delirium to confusion to psychosis have been linked with excessively low or high blood sugar levels (Matlock et al., 2022; Sahoo et al., 2016). High or low blood sugar levels can also affect cognitive function, including attention, memory, and decision-making, which can lead to confusion, difficulty concentrating, and impaired judgment (CDC, 2022b). Chronic imbalances in blood sugar levels and poor glycemic control, such as those experienced by individuals with diabetes, can increase the risk of cognitive dysfunction and mental health disorders such as depression and anxiety (Li et al., 2021; Nguyen et al., 2012). The presence of mental health disorders and/or cognitive impairment affects individual glycemic control through their relationships to behavioral mediators and executive function performance (Pappas et al., 2019).

Whole food plant-based diets can provide a wide range of nutrients, including vitamins and antioxidants, that are essential for overall health and can help support healthy blood sugar regulation. Poor glycemic control and related conditions, such as type 2 diabetes, are increasing in prevalence worldwide, especially among older adults. It is well-recognized that diet and lifestyle interventions, particularly plant-predominant eating patterns, are effective tools for the prevention and management of type 2 diabetes (Ganguli et al., 2022). Research has indicated that there are a variety of mechanisms through which eating patterns that emphasize whole and minimally processed plant foods reduce insulin resistance and improve glycemic control (Banaszak et al., 2022). Plant-based diets tend to be high in fiber which can slow down the absorption of sugar into the bloodstream. Fiber is only found in plant foods and is fermented by intestinal bacteria to produce short-chain fatty acids, which can improve insulin sensitivity, insulin signaling, and the body's response to glucose (Baothman et al., 2016; Lattimer & Haub, 2010). Improvements in insulin sensitivity as well as glucose tolerance, can help to prevent spikes in blood sugar levels and promote more stable blood sugar levels. Plant-based diets are also high in antioxidants and magnesium, which have been associated with improved insulin sensitivity (Kostov, 2019; Felion & Merlo 2022). Antioxidants naturally found in plant foods, such as polyphenols, may enhance insulin-dependent glucose uptake and insulin secretion and reduce hepatic glucose output (Kim et al., 2016). Many plant-based foods, such as whole grains, fruits, and vegetables, have a low glycemic index (Navarro et al., 2019). Low-glycemic foods are digested and absorbed more slowly than high-glycemic foods like refined grains and sugars, which can also help to regulate blood sugar levels.

Weight and Metabolic Status

There is a complex and bidirectional relationship between weight, metabolic status, and mental health. Overweight and obesity contribute to poorer quality of life, reduced life expectancy, and increased risk of chronic health conditions, including depression, anxiety, and other mental health problems (Firth et al., 2019a). Contributors to poor mental health (e.g., stress, trauma, shame, emotional eating) and mental health conditions can contribute to weight gain and difficulties with weight management (Blasco et al., 2020; Kuppili & Nebhinani, 2019). Studies have shown that individuals who are overweight or obese are more likely to experience depression and anxiety than those who are of a healthy weight. Research demonstrates that adults who are overweight or obese have a 55% higher risk of developing depression than those within a healthy weight range (Luppino et al., 2010). The stigma and discrimination associated with being overweight or obese can also lead to social isolation and lower self-esteem, further exacerbating mental health issues (Sarwer & Polonsky, 2016).

Research suggests that following a plant-based diet can support healthy weight management and healthy weight loss (Turner-McGrievy et al., 2017). A plant-predominant eating pattern has consistently been found to reduce body fat in overweight and obese individuals (Najjar & Feresin, 2019; Huang et al., 2016; Barnard et al., 2015). Lower intake of fruits and vegetables has been associated with a significantly increased likelihood of developing metabolic syndrome (characterized by multiple risk factors: abdominal obesity, high blood pressure, high blood sugar, and an abnormal blood lipid profile) independent of sedentary lifestyle or adherence to the globally recommended guidelines for 150 weekly minutes of moderate-to-vigorous physical activity (Papaioannou et al., 2022; Tian et al., 2018). Adherence to eating patterns that include foods high in saturated fat, trans fat, and sodium has been associated with increased risk of metabolic dysregulation in individuals (Lapuente et al., 2019; Rouhani et al., 2023). Adequate intake of whole plant foods may be a significant independent contributor to metabolic health status.

As suggested above, it is important to note that not all plant-based diets are healthy or conducive to weight management or weight loss. A diet that is high in refined carbohydrates, processed foods, and added sugars can lead to weight gain, even if it is plant-based. Portion control and overall calorie intake are important factors to consider for weight management, regardless of whether a plant-predominant eating pattern is adopted. Weight loss through a plant-predominant eating pattern may improve mental health by improving mood, increasing self-esteem, reducing inflammation, improving cognitive function, reducing stress, and promoting better sleep and emotional regulation (Głąbska et al., 2020; Lee et al., 2021; Dharmayani et al., 2021; Nguyen et al., 2017; St-Onge et al., 2018). Historically, in the context of eating disorders, plant-based diets were not considered to be ideal for recovery for patients with eating disorders due to existing cognitive distortions and/or tendencies to reduce caloric intake (Bardone-Cone et al., 2012). However, plant-predominant eating patterns emphasize the consumption of nutrient-dense foods

with adequate daily caloric intake and should not be confused with the unhealthy eating patterns present in patients with eating disorders. It is important for health-care professionals to reduce their bias against plant-predominant eating because it can be helpful for patients to reduce chronic disease and promote overall health and well-being across the lifespan.

The Brain–Gut–Microbiota System and Healthy Gut Microbiota

The growing body of evidence linking brain to gut health suggests that what we eat and how we feel are codependent. The brain–gut–microbiota system is a complex network of nerves, hormones, and chemicals that connect the brain, gut, and the trillions of microorganisms living in the human digestive tract to maintain physical and mental health. Therefore, gut health can have an impact on brain health. Microbiome composition in the gut plays a critical role in regulating digestion, immune response, metabolism, central nervous system function, and other bodily functions throughout the entire lifespan, including behavior and mood (Huang et al., 2019). The gut microbiota are microorganisms that have coevolved with humans to live in the gastrointestinal tract and interact bidirectionally with their host. The microbiome is the collective genetic material of the gut microbiota. Gut microbiota helps to break down food, produce vitamins, and regulate the immune system. They also communicate with the brain through the brain-gut-microbiota axis and can influence mood, behavior, and cognition (Carabotti et al., 2015). The composition of gut microbiota is influenced by a variety of factors, such as diet, age, host genetics, medication, body mass index, stress, and the environment (Eltokhi & Sommer, 2022). A growing body of evidence suggests that the gut microbiome is implicated in a wide range of diseases, including skin, metabolic, and cardiovascular diseases, as well as cancer, infectious diseases, neurodegenerative disorders, and psychiatric disorders (Bull & Plummer, 2014).

Inflammation

The gut microbiome, and therefore the diet, play a key role in regulating inflammatory processes (Al Bander et al., 2020). Excessive nutrient-deficient calorie-dense processed food intake may contribute to increased inflammation, which is associated with poor mental health and severe mental illnesses (e.g., major depressive disorder, bipolar disorder, schizophrenia) (Firth et al., 2019b). Accumulating evidence suggests that diets high in saturated fats, trans fats, and simple/refined carbohydrates increase markers of inflammation in the body, whereas diets rich in fiber and plants reduce inflammation (Hlebowicz et al., 2011; Oddy et al., 2018).

Therefore, gut health can affect brain health through inflammation. Inflammation is a natural protective immune response that occurs when the body is exposed to harmful stimuli, such as bacteria, toxins, or viruses. However, chronic inflammation can damage cells and tissues and has been linked to a range of health problems, including depression, anxiety, and cognitive decline (Miller, 2020; Yuan et al., 2019). Imbalances in the gut microbiome (dysbiosis) can lead to or exacerbate chronic inflammation and related health problems. An unhealthy diet high in processed foods, sugar, and saturated fats can lead to chronic inflammation, which has been linked to mental health conditions such as depression and anxiety (Peirce & Alviña, 2019).

Food plays a significant role in shaping the gut microbiota and its interactions with the brain. Certain types of foods can promote the growth of beneficial gut bacteria, while others can lead to the overgrowth of harmful bacteria (Rinninella et al., 2019). Food choices can have a significant impact on the brain–gut–microbiota axis. Making healthy dietary choices can promote a healthy gut microbiota and improve overall health and well-being (Berding et al., 2021). The type and quantity of food consumed can impact the composition of the gut microbiota. For example, diets high in fiber, fruits, and vegetables promote the growth of beneficial gut bacteria, while diets high in sugar, fat, and processed foods can lead to an overgrowth of harmful bacteria. Research suggests that a plant-based diet may be an effective lifestyle intervention to promote microbial diversity in the gut that is supportive of mental health, physical health, and overall health (Tomova et al., 2019; Miao et al., 2022). Additionally, the gut microbiota can metabolize dietary components, such as fiber, and produce short-chain fatty acids that have been shown to have anti-inflammatory and neuroprotective effects and can affect brain function and behavior (Silva et al., 2020). Conversely, the gut microbiota can also produce metabolites, such as lipopolysaccharides, that can promote inflammation and contribute to neurodegenerative diseases (Candelli et al., 2021).

The gut and the brain are connected through a complex network of nerves, hormones, and signaling molecules. The gut microbiota can influence this signaling by producing neurotransmitters and other signaling molecules that can interact with the brain and affect mood and behavior. Neurotransmitters are chemicals that transmit signals between nerve cells in the brain. Serotonin is a neurotransmitter that is involved in regulating mood, appetite, and sleep. About 90% of the body's serotonin is produced in the gut (Vuong et al., 2017). Imbalances in the gut microbiome can lead to changes in serotonin levels, which, in turn, affect mood and cognitive function (Appleton, 2018). Low levels of serotonin have been linked to major depressive disorder, mood disorders, attention deficit hyperactivity disorder, anxiety disorders, schizophrenia, autism, and substance use disorders (Lin et al., 2014). However, the effects of inflammation and dysbiosis on neurotransmitters are not limited to serotonin. Data have revealed that diets high in sugar, saturated fat, and trans-fat cause diet-induced dysbiosis in gut microbiota, damage the gastrointestinal tract, and alter neurotransmitter metabolism in the brain-gut-microbiota axis (Guo et al., 2021; Dhailappan & Samiappan, 2022).

Oxidative Stress

An important mechanistic pathway that may contribute to depression and other mental health conditions is persistent oxidative stress (Che et al., 2010). Free radicals are byproducts of regular cellular metabolic processes that can damage DNA, proteins, and lipids in cells. Exposure to environmental stressors (e.g., pollutants, radiation, cigarette smoke) can also induce free radical formation in the body. Oxidative stress occurs when free radical formation exceeds the body's defense mechanisms and can contribute to the development of various diseases, including neurodegenerative disorders such as stroke, migraine, meningitis, epilepsy, cardiovascular disease, and cancer. Current literature indicates that oxidative stress is implicated in neuroinflammation, brain function, mental illness, and behavioral and functional alterations associated with psychiatric and brain disorders (Rossetti et al., 2020; Salim, 2014). Many plant-based foods contain antioxidants that can assist in neutralizing free radicals and reducing oxidative stress. Antioxidants protect the body from the damaging effects of free radicals by neutralizing them. The consumption of plant-predominant eating patterns has been associated with decreased levels of oxidative stress and inflammation (Aleksandrova et al., 2021). Data has demonstrated that a plant-based diet can effectively attenuate postprandial oxidative stress compared to dietary patterns indicative of the standard Western diet (Malinska et al., 2021).

Mitochondrial Dysfunction

Evidence has suggested that there may be a link between poor diet and mitochondrial dysfunction (Sergi et al., 2019). An excessive intake of dietary fat has been associated with abnormal mitochondrial biogenesis, which leads to an increase in free radical production, inflammation, and insulin resistance (Yuan et al., 2022). The saturated fats, heme iron, and other compounds found in many animal products can cause oxidative stress, inflammation, and damage to mitochondrial DNA when consumed in excess.

Diet and Depression

Higher consumption of proinflammatory diets and Western diets has been associated with an increased incidence of depression, whereas higher intake of fruit and vegetables has been linked with decreased incidence of depression (Matison et al., 2021). Several diet-induced factors (e.g., insulin resistance, metabolic abnormalities, inflammation, oxidative stress) have been correlated to the development of depression (Lassale et al., 2018). The common neuroprotective elements in all

studies regarding the link between diet and depression include higher intakes of fruits, vegetables, and nuts in conjunction with lower intakes of proinflammatory foods, including red meat, processed meats, trans-fats, and alcohol in moderation.

Conclusion and Future Directions

A plant-based diet can protect mental health and brain health by reducing inflammation, increasing antioxidant intake, improving gut health, and lowering the risk of chronic diseases. It is well established that low fruit and vegetable consumption is a modifiable risk factor contributing to the increasing global burden of non-communicable diseases (Lim et al., 2012). Although there is a growing body of evidence on plant-predominant eating patterns and their effects on mental health, brain health, and overall well-being, there are still significant gaps in knowledge that need to be addressed to further research and adoption of evidence-based healthy eating patterns. The cutting-edge research from the fields of lifestyle psychiatry, nutritional psychiatry, and neuroscience provides compelling evidence that the relationship between mental/brain health and physical health is bidirectional. Collaborative transdisciplinary translational research efforts will be essential to prevent the devolution of lifestyle medicine into silos that fail to recognize the centrality of mental health in physical health and overall well-being.

Future research directions ought to include longitudinal studies to provide insights into the long-term effects of plant-based diets on mental and brain health outcomes and elucidate underlying mechanisms and biological pathways through which plant-based diets influence mental, brain, and physical health. There is also a current paucity of evidence related to diverse populations, including those with various mental health diagnoses. Inclusion of study participants from different socioeconomic backgrounds, cultures, and ethnicities may improve access, generalizability, and effectiveness of plant-predominant eating patterns. Potential confounding factors in pre-existing data may be addressed by conducting more randomized controlled trials to gather stronger evidence on the causal relationship between plant-predominant eating patterns and mental and brain health outcomes and better evaluate the nutritional adequacy of plant-based diets for optimal mental and brain health. Prospective benefits and feasibility of plant-based dietary interventions in clinical settings may be expounded through more intervention studies to explore the efficacy of plant-based diets as therapeutic interventions for individuals with mental health conditions, as well as discriminate the causality and/or correlation between disordered eating patterns in those with eating disorders versus the impact of healthful dietary choices that are plant-predominant. The investigation of lifestyle habits and actions, such as the adoption of plant-predominant eating patterns, and their impact on both mental/brain health and physical health is a burgeoning exciting area grounded in science that may prove pivotal for future personal and planetary health (Shah & Merlo, 2023).

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Chapter 30

Plant-Based v. Omnivorous Diets: Comparative Environmental Impacts



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Key Acronyms and Symbols Used

ASF	Animal-source food
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide warming equivalent
GHG	Greenhouse gas
GHGE	Greenhouse gas emissions
HSPBD	Healthy, environmentally sustainable, plant-based diet
kcal (= Calorie with capital C)	1 kcal = amount of energy needed to raise the temperature of 1 kg of water 1 °C
NCD	Non-communicable disease
Nr	Reactive nitrogen, the form used by living organisms
PBD	Plant-based diet
PBF	Plant-based food
PM _{2.5}	Inhalable particulate matter, diameter ≤ 2.5 micrometers

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Introduction: The Anthropocene Crisis and the Global Food System

Since the evolution of modern humans about 200,000 years ago, the last 12,000 years have been the only period with a climate stable enough to support agriculture, which in turn has both encouraged and supported population growth to the current 8+ billion, estimated to increase to almost 10 billion by 2050. The growth rate in human consumption and its impacts on the planet increased with the Industrial Revolution beginning at the end of the eighteenth century and increased further with the Great Acceleration in the growth of the “global socioeconomic system” since the mid-twentieth century (Steffen et al., 2015). There is now increasing evidence that “social and economic systems run on unsustainable resource extraction and consumption” have led to exceeding boundaries for maintaining stability and resilience of the Earth system to support life as we know it (Rockström et al., 2023). When criteria for intergenerational, intragenerational, and interspecies justice to protect humans and other living being through space and time are included in eight Earth system boundaries that have been adequately quantified, seven have already been exceeded, affecting the climate, ecosystems, freshwater availability, and nutrient cycles. Safeguarding Earth system stability and resilience over time by staying within these boundaries is required to protect humans and other living organisms from significant harm.

The result of human impact on the Earth has led many scientists to propose a new geological epoch, the Anthropocene. The term has been adopted to describe the increasing impact of humans across a broad range of physical, biological, and social parameters (Zalasiewicz et al., 2021), and the Anthropocene crisis, now threatens human society, the existence of many species, and the very stability of the favorable conditions that led to agriculture.

Paradoxically, the human behaviors that have led to the Anthropocene crisis are also those that have facilitated humans’ biological evolutionary success, defined as increasing population numbers and increasing control and consumption of resources (Cleveland, 2013). Today these behaviors are promoted by the dominant cultural, social, and economic system of neoliberal capitalism, which promotes responding to the Anthropocene crisis by continuing growth in total consumption, only more efficiently, by using fewer resources and creating less pollution per unit of growth. However, this “green growth” in total consumption cannot be completely uncoupled from increased environmental impact, so the absolute amount of resource consumption and pollution would continue to increase, only at a slower rate, failing to avoid Anthropocene catastrophe (Hickel & Kallis, 2020; Jackson, 2016).

Fortunately, there are other evolutionarily selected human behaviors, motivated by values of empathy, altruism, and caring for other living beings that can support sufficient consumption, reducing demand on the environment to avert catastrophe by reducing our environmental pollution and consumption of resources equitably. This will entail reducing superfluous consumption (consumption that does not contribute to well-being) by the wealthier populations that comprise the Global North

(Fanning et al., 2022), as well as stabilizing, and even reducing, the human population. The cultural, social, and economic systems that have led to the Anthropocene crisis must be radically transformed—the main challenge is not technological, but cognitive and cultural—to deemphasize the values that drive increasing superfluous consumption and to emphasize the values that can support sufficient consumption, and that can avoid the catastrophe and lead to human and planetary thriving (Cleveland, 2013).

As documented in this chapter, the global food system is a major contributor to the Anthropocene environmental crisis, as well as the public health crisis—increasing zoonotic diseases and a pandemic of obesity and diet-related non communicable diseases (NCDs). The food system is dominated by animal source foods (ASFs) and ultra processed foods, with high rates of food loss and waste, and negative environmental and health impacts (Fig. 30.1) A major driver of food system impact is the current nutrition transition—a product of powerful multinational food corporations and supportive governments promoting the increased production and consumption of profitable but environmentally destructive, relatively unhealthy ASFs and ultra-processed foods, which replace more environmentally sustainable and healthy foods (Godfray et al., 2018; Swinburn et al., 2019). The food system’s negative environmental impacts and their monetary costs are not borne by the food corporations that profit from the food system but are externalized to the present and future society and environment.

Because the food system is a major cause of the Anthropocene crisis, it is also key to resolving it. The large number and mass of livestock animals on the Earth producing ASFs produce a large proportion of the negative impact of food on the environment, though ASFs are not required for a healthy diet. This means that much of the ASFs eaten in the Anthropocene is superfluous consumption. In addition,

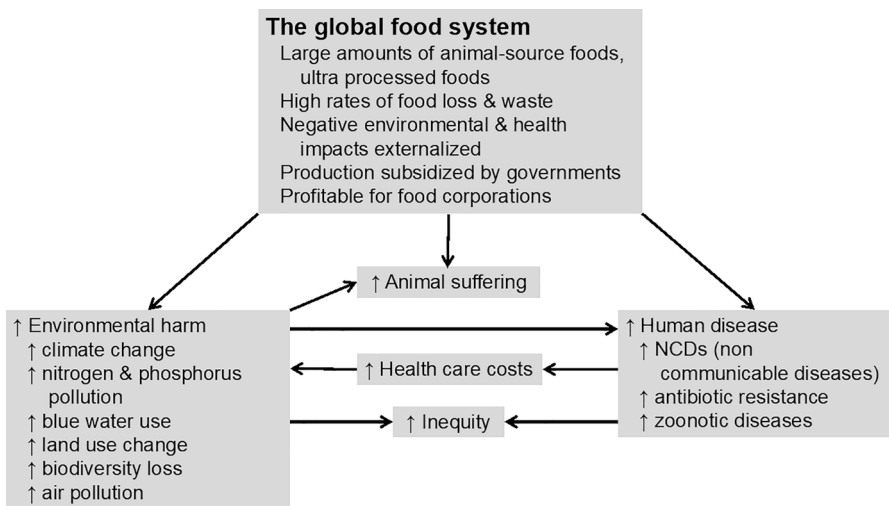


Fig. 30.1 The global food system. (© 2024, the authors used with permission)

about 10% of energy and 28% of protein in the global human diet are in excess of nutritional requirements (Alexander et al., 2017). A critical part of a successful response to the Anthropocene crisis will be drastically reducing superfluous ASF consumption and production in overconsuming populations, by moving toward healthy, sustainable, plant-based diets (HSPBDs) (McGreevy et al., 2022). A change to more sufficient consumption can greatly reduce environmental impact, doesn't require extensive research, technology development, or resources (Ivanovich et al., 2023), and could increase equity by making resources available to increase consumption to sufficient levels in underconsuming populations.

In this chapter, we compare the environmental impacts of HSPBDs with different omnivorous diets, i.e., those containing ASFs, (including beef, chicken, pork, fish, seafood, dairy, and eggs). We include "healthy" and environmentally "sustainable" in our definition of plant-based diets (PBDs) because some plant-based foods (PBFs), and PBDs, are relatively unhealthy and environmentally harmful. (*Note: we use "omnivorous diets" to mean diets with significant amounts of ASFs, and HSPBDs to mean diets with all or mostly all PBFs, including vegan diets with no ASFs, vegetarian diets with dairy and/or eggs, and flexitarian diets with small amounts of meat.*)

Environmental Impacts of Plant-Based and Omnivorous Diets

There is some uncertainty in estimates of the impact of the food system, including the differences between PBFs and ASFs, because of lack of data, inconsistency in methods, and differences in the impacts of foods based on their specific contexts. However, a large majority of the growing scientific research on human diets increasingly leads to the conclusion that overall, HSPBDs have much lower negative environmental (and health) impacts than omnivorous diets.

Environmental Impacts of Actual and Model Diets

Animals are on a higher trophic level in the food web than plants. In moving from lower to higher trophic levels there is an increasing use of energy and resources per unit of mass (Bonhommeau et al., 2013), therefore, it is more ecologically efficient to eat plants than to eat the animals that eat the plants. One global estimate is that from crop harvest (including feed crops) through to product available for use, there is an 11.3% loss of energy and 7.6% loss of protein, while for livestock, from inputs (feed, silage, hay, grazed grass) to product available for use, the loss is 87.3% of energy and 81.9% of protein (Alexander et al., 2017). As a result, while ASFs supply only 18% of calories and 37% of protein in the diet, ASF production occupies 77% of all land used for food production globally, about 85% of this for grazing and pasture, and the rest for feed crops (equal to one-third of crop land) (Ritchie &

Roser, 2013). ASFs use other resources less efficiently too. For example, in the US, it requires only about 10% of the environmental resources to produce PBFs with the equivalent amount of energy and/or protein as ASFs (Shepon et al., 2018). The much lower resource use of PBFs is a major reason they are also much less polluting.

Therefore, it's not surprising that analysis of actual and model diets shows that HSPBDs have much lower negative environmental impact than omnivorous diets. For example, analysis of the diets of 29,210 French adults found greenhouse gas emissions (GHGE), energy use, and land use were highest for omnivorous diets and lowest for vegan diets (Rabès et al., 2020). One extensive analysis used impact data from 570 life cycle assessments, accounting for variations in sourcing and production methods, for ~38,000 farms in 119 countries for GHGE, land use, water use, eutrophication risk (dramatic, harmful growth of algae in bodies of water due to influx of nutrients, primarily nitrogen and phosphorus, e.g. from agricultural fertilizer runoff), and potential biodiversity loss (limited to vertebrate species extinctions) (Scarborough et al., 2023). The authors linked these data to diets of a sample of 55,504 vegans, vegetarians, fish-eaters, and meat-eaters in the UK. Results showed impacts for vegans compared with high meat-eaters (≥ 100 g total meat consumed per day) were lower by 75% for GHGE, 75% for land use, 54% for water use, 73% for eutrophication, and 67% for biodiversity loss. Low meat eaters also had a large reduction in environmental impact compared with high meat-eaters.

Model diets also show lower environmental impact of HSPBDs. In a review of studies comparing existing diets with modified diets based on those existing diets, HSPBDs with no ASFs showed the highest reduction in GHGE and land use (Hallström et al., 2015). The impacts of global warming in terms of human health, terrestrial ecosystems, and freshwater ecosystems were significantly lower for model vegan diets compared to the Mediterranean diet based on Italian nutritional recommendations (Filippin et al., 2023). A number of studies have shown that the model EAT-Lancet flexitarian diet (a reference diet designed to meet targets for a global food system to promote human health and stay within Earth system boundaries) can reduce environmental impact while improving health (Willett et al., 2019). For example, compared with existing European diets, the EAT-Lancet diet could improve health (measured as reduced mortality and cancer) while also reducing GHGE 50% and land use 62% (Laine et al., 2021).

Food that is lost (pre-retail) or wasted (retail and consumer level) is also an important contributor to environmental impact while contributing nothing to nutrition. Globally, about one-third of all food produced is lost or wasted. Animal foods also contribute greater environmental impacts per unit of food lost and wasted, because of their greater environmental impacts of production. In the US for example, one study found that animal foods were 33% of the mass of food wasted, while the GHGE from this waste was 74% of the GHGE from all food wasted at this level, with ruminant meat accounting for 3% by mass of food wasted, but for 31% of GHGE from waste; in contrast, fruits and vegetables accounted for 33% of waste by mass, but only 8% of GHGE (Heller & Keoleian, 2015).

Resolving Confusion About Diets' Environmental Impacts

Life cycle assessment (LCA) is the method used for most analyses of food system environmental impacts, whether based on empirical data or modeling (Cleveland & Gee, 2017). While the data available for use in LCAs are constantly being improved, they vary in quality, and there are many empirically based and value-based assumptions about what impacts to include, and how they should be attributed to different aspects of a food's life cycle, from the inputs for production, through to post-consumer waste. More empirically based assumptions include e.g. those about what impact data are most accurate, and how to allocate impacts among different products of a process, like milk, meat, or manure. More value-based assumptions include those about how to define system boundaries, e.g., whether to include land use change in the past in estimating impacts of a food, and those about whether to estimate impacts per kcal, grams of protein, or servings. Despite this, a large number of LCAs making different assumptions have shown that HSPBDs have a much lower environmental impact than omnivorous diets.

An important source of variability both between and within LCAs of diets is the wide range of impacts for the same foods, at different spatial scales from local to global, and in different seasons, and by different processes. However, the most comprehensive study of this to date found that despite large differences in environmental impacts of the same foods produced by different entities, ASFs overall have a much higher impact than PBFs (Poore & Nemecek, 2018).

Not accounting for the different roles that different foods play in the diet can also lead to confusion. For example, model diets that replaced some meat with fruits and vegetables on a calorie-for-calorie basis, increased GHGE of PBDs over omnivorous diets (Tom et al., 2015). However, these foods provide different nutrients; plant foods with high vitamin and mineral densities, like vegetables, can have low energy density, leading to high CO₂e per kcal, an illustration of why it is inappropriate to substitute foods with very different characteristics on a caloric basis.

Perhaps the greatest contributor to confusion about the impact of different diets is the food industry that profits from selling unhealthy, environmentally unsustainable food, and encourages excess consumption, controls so much of our food environment, and has an outsized influence on governments, civil organizations, and university researchers (Nestle, 2018; Swinburn et al., 2019, p. 32). This includes ASF industries that influence public policy and scientific research to suppress information about the negative environmental impact of ASFs, for example in the US in dietary guidance by government and professional nutrition associations (Rose et al., 2021). Also in the US, the beef industry has a major campaign to convince the public that beef is environmentally sustainable, funded by the US government, and funds research, e.g. at the University of California, that promotes beef (Fassler, 2023).

Disentangling the Diet, Environment, Health, Equity Nexus

PBDs, including those with no ASFs, can be healthier than standard omnivorous diets, while also reducing environmental impact (WHO, 2021). However, while there is a lot of overlap between healthy and environmentally friendly foods (Clark et al., 2022), not all PBDs are healthy, e.g., ultra-processed PBFs (Anastasiou et al., 2022). One study of 100 dietary patterns found that reduced GHGE from diets was associated with poorer health indicators, because some low GHGE diets low in animal foods, saturated fat, and salt, are also low in essential micronutrients, and high in sugar (Payne et al., 2016). Sugar is a plant food with relatively low environmental impact, but current levels of consumption of added sugar, as in sugary beverages like soda and coffee drinks, increase the risk of NCDs including diabetes, liver and heart disease, and dental cavities (Huang et al., 2023).

In addition, there are trade-offs, because ASFs can have higher levels of some bioavailable nutrients than comparable PBFs (Beal et al., 2023), and nutrients in ASFs are a critical part of the diet of some populations, like nomadic herders. In populations obtaining most of their energy from starchy carbohydrates, the addition of meat “or other major protein sources,” e.g., legumes and nuts, “is likely to mitigate micronutrient deficiencies and have metabolic benefits by reducing high glyce-mic load” and improve overall health, for example in the EAT-Lancet diet (Willett et al., 2019, p. 10).

Overall, however, increasing PBDs are critical for increasing equity, because the diminishing resources for production and sinks for pollution in the Anthropocene means that high and increasing consumption of ASFs by wealthier populations results in fewer resources available for low-income, under consuming populations (Cleveland, 2020). These populations can also be exposed to more water, soil, and air pollution from ASF production because a larger proportion of them often live near polluting animal food production facilities (e.g. Lenhardt & Ogneva-Himmelberger, 2013).

Climate Change

Climate change is one of the most critical of human environmental impacts, “a threat to human well-being and planetary health” with “a rapidly closing window of opportunity to secure a livable and sustainable future for all” (IPCC, 2023, p. 25). The food system accounts for one-third of all anthropogenic GHGE driving climate change (Crippa et al., 2021), and about 57% is from ASFs, 29% from PBFs, and 14% from other sources (Xu et al., 2021). The potential of HSPBDs to mitigate climate change is even greater than suggested by these estimates because large amounts of carbon can be sequestered when land is reverted to natural vegetation from grazing and feed production (Hayek et al., 2021).

While CO₂ emissions from fossil fuels have had the largest climate warming effect, other greenhouse gases (GHGs) play a major role, especially methane, which accounts for about 30% of global warming. The different warming impacts of non-CO₂ GHGs, and of all GHGs combined, are expressed as CO₂ equivalents (CO₂e). Animal food production emits a large proportion of methane which has a 100-year climate warming potential of 28 times that of CO₂, but a 20-year global warming potential of 81 times that of CO₂ because of its short life span in the atmosphere (Smith et al., 2021, p. 16), therefore, reducing methane emissions over the short term is critical. ASFs accounted for 69% of food system methane emissions in 2020 (based on Ivanovich et al., 2023). The food system is also a major source of nitrous oxide, another powerful greenhouse gas that has a 100-year warming potential almost 273 times that of CO₂ (Smith et al., 2021, p. 16), and ASFs account for 59% of global nitrous oxide emissions (based on Ivanovich et al., 2023).

An analysis of 120 publications found that at the global level, ruminant meat had the highest CO₂e per serving, per gram of protein and per kcal, e.g., over 250 times as much CO₂e as legumes per gram of protein, mostly due to methane (Tilman & Clark, 2014). A comparison of the climate impact of Mediterranean, U.S. Healthy, U.S. Current, Healthy Vegetarian, and Vegan diets for the U.S. found kg CO₂e/person/day of 3.42, 3.33, 3.19, 1.57, and 0.72 respectively, with ruminant meat the largest contributor of CO₂e to the three omnivorous diets, and dairy the largest contributor of CO₂e to the vegetarian diet (Jennings et al., 2023).

If the current growth in GHGE of our food system continues, food system emissions will surpass the total allowable GHGE *from all sectors* needed to stay below 1.5 °C of warming (Clark et al., 2020). Reducing food system emissions by achieving 50% of the potential for adoption of HSPBDs, along with higher yields, reduced waste, and high efficiency, is needed for a 67% chance of staying below 1.5 °C. With 100% compliance for all these strategies, food system net cumulative emissions could become zero by dramatically lowering emissions, or even negative due to sequestering carbon on abandoned croplands.

Although pasture-raised (grass-fed) beef is being promoted as a climate solution, net benefits are likely to be quite modest (Garnett et al., 2017). Any climate benefits of grazing are specific to local contexts, limited by the capacity of the soil to sequester carbon, and the amount of carbon already in the soil, and stored carbon can be quickly released by poor management, natural events such as droughts or fires, and by land-use change (Godfray et al., 2018). Evaluating the effect of grass-fed beef on the climate must also include the potential alternative uses of grazing land when cattle are removed. One global analysis found that shifts to HSPBDs by 2050 could enable sequestration on former grazing land of CO₂ equal to 99–163% of the CO₂ emissions budget required for a 66% chance of limiting warming to 1.5 °C (Hayek et al., 2021).

Nitrogen (N) and Phosphorus (P) Use and Pollution

N and P are both nutrient elements required for living organisms and are common in crop fertilizers. Even though our atmosphere is 80% inactive nitrogen gas, plants require reactive nitrogen (Nr) that can participate in biological processes, and the transformation of nitrogen gas to Nr, a process called nitrogen fixation, is a limiting factor for food production. Until the early twentieth century, this process was mostly through soil bacteria and cultivation of N-fixing plants, like legumes, when the Haber-Bosch industrial process was invented, which converts nitrogen gas to ammonia, a form of Nr, via a chemical reaction under high pressure and temperature. Today about 70% of the Nr used in food production is from the Haber-Bosch process, contributing about ~40% of dietary protein in the human diet. (Galloway et al., 2003, p. 345).

Only about 50% of the Nr in fertilizers used for crop production is incorporated in the crops, while the other 50% pollutes the environment through leakage into the soil, water, and atmosphere, causing major disruption of terrestrial and aquatic ecosystems, leading to reduced biodiversity, acidified surface waters, and emissions of the GHG nitrous oxide. Nitrate, a common N compound polluting drinking water, is a major health problem, and N-containing compounds from fertilizer and other sources in the lower atmosphere contribute to ozone and smog, important causes of respiratory illness (Galloway et al., 2003).

While the source of Nr for crop production is the air, the source of P is mining a small number of global mineral deposits which, with rapidly increasing demand for P fertilizers, will be exhausted in several generations, and the remaining deposits are lower quality and more expensive to mine (Vaccari et al., 2019). Like Nr, P use in crop production is very inefficient, with only about 15% of P mined is consumed as food (Vaccari et al., 2019). Thus, increased efforts to recover P from agricultural and municipal waste streams are critical for global food security.

N and P often contaminate surface waters, mostly through runoff from agricultural fields, due to inefficient fertilizer application and use by plants, and animal waste (Bechmann & Stålnacke, 2019). In many aquatic systems, either N or P is the “limiting nutrient,” so that that contamination by field runoff stimulates algal growth, leading to eutrophication. When the algae die, decomposing bacteria use up oxygen in the water, resulting in “dead zones.” Reducing agriculture’s impacts on biogeochemical cycling includes applying N and P fertilizers optimally with respect to type, amount, location, and timing.

ASFs account for much more N and P use and pollution than PBFs. A global estimate of N and P in animal manures in 2011 was equal to the amount used in synthetic N and P fertilizers (Liu et al., 2017). Estimates for P use in Germany agriculture range from 1.4 and 2.7 g of P per kg of food for fruits and vegetables, to 5.3 g for grains and 10 g for vegetable oils, while for animal products it ranges from 10 g of P per kg of food for eggs, up to 70 g for butter and 98 g for beef (Meier & Christen, 2013). In the US ASFs contribute 70% of N and 80% of P leaked to the environment from the food system, with beef alone accounting for 40% and 50%

respectively (Metson et al., 2020). Nitrogen pollution for plant foods range from 0.0 and 2.8 kg N loss per kg for oil and starchy roots up to 16.1 g N loss per kg for pulses (legumes), while for animal products the range is from 20.4 for milk to 234.0 g N for beef (Leach et al., 2017).

Blue Water Use

The water footprint has three components: blue water (fresh surface and groundwater), green water (rain water that is evaporated or transpired through plants), and gray water (water needed to dilute polluted water to harmless levels). Production of ASFs accounts for 75% of land use change for agriculture, which leads to losses of green water, and lower soil moisture which degrades ecosystems (te Wierik et al., 2021).

Blue water for irrigated crop production diverts it from supporting healthy ecosystems. Globally about 70% of blue water use is for agriculture, with over a third for livestock (98% of this for feed crops) (Mekonnen & Hoekstra, 2012). In the arid western US diversion of surface water greatly increases instances of risk of local extinction for fish species, with 70% of these instances due to diversion for irrigating cattle feed crops (Richter et al., 2020). The Colorado river basin is a major source of water in this region, but it has been drastically depleted over years of overuse, and now by climate change-related prolonged drought: 70% of the Colorado River withdrawn is used for agriculture, 71% of this (or 56% of the total) to irrigate feed for beef and dairy cattle (Richter et al., 2020).

PBFs have a much lower water footprint than ASFs. For example, the combined blue, green, and grey water footprints per kg of beef, chicken, eggs, and milk are 48, 13, 10, and 3 times that of vegetables, and even the combined water footprints of just the protein content of these foods is 4.3, 1.3, 1.1 and 1.2 times that of vegetable protein (based on Mekonnen & Hoekstra, 2012).

Land Use Change and Biodiversity Loss

In 2017 there were more than 30 billion terrestrial vertebrate livestock animals (82% poultry) in the world (four times the number of humans), with 75 billion slaughtered annually (95% poultry) (FAOSTAT, 2019). This large and growing population of domestic food animals is replacing wild animals, with one estimate that 85% of wild mammal biomass has been lost, with livestock biomass now 14 times that of wild mammals, and 1.7 times that of humans (Bar-On et al., 2018).

The large number of animals required to produce ASFs for high and rising consumption is a major cause of land use change, driving the alarming loss of biodiversity through habitat loss, with extinction rates about 1000 times the background rate, the 6th mass extinction in the Earth's history (Machovina et al., 2015). For

example, in Mexico, increasing ASFs in the diet has led to environmentally damaging land use change (Tello et al., 2020). Over 37% of the Earth's ice-free land surface is used for agricultural production, of which livestock production accounts for about 75% (which includes one-third of cropland used for animal feed) (FAOSTAT, 2019). While the effect of grazing domestic animals can increase biodiversity in some circumstances, the overall effect is a large loss of biodiversity (Filazzola et al., 2020). Increasing ASF consumption and production continue to drive land use change, e.g., in the Amazon, an area uniquely rich in biodiversity, three-quarters of the deforested land has been converted to livestock grazing and feed crop production (Machovina et al., 2015). Land use change is often fragmented, which increases habitat destruction including because areas bordering a developed area are also impacted.

Air Pollution

Air pollution is currently the most significant environmental risk factor for decreased human health globally, and agriculture is a major source. Exposure to atmospheric particulate matter, 2.5 micrometers or less in diameter ($PM_{2.5}$), is the largest contributor to premature death due to cancer, stroke, and cardiovascular disease, and global $PM_{2.5}$ -related emissions from the food system are linked to 23% of the 3.9 million $PM_{2.5}$ -attributable premature deaths per year (Balasubramanian et al., 2021). $PM_{2.5}$ may be emitted directly (primary $PM_{2.5}$), or it can be formed in the atmosphere by various precursors including ammonia. Globally, ASF production (manure management and grazing) accounts for 60% of ammonia emissions (Balasubramanian et al., 2021).

In the U.S., agricultural production results in 17,900 deaths per year due to impaired air quality, with a greater number attributable to ASFs v. PBFs per kg, per serving, per kcal, and per g of protein, except for per g protein for fruits (Domingo et al., 2021). Primary $PM_{2.5}$ from agriculture including tillage, fuel combustion for farm equipment, livestock dust, and burning of fields comprises 27% of this pollution, and secondary $PM_{2.5}$ from ammonia emissions 69%, mostly from livestock waste and fertilizer application. Reducing ASFs via HSPBDs, e.g. a vegan, vegetarian, or flexitarian (EAT-Lancet) diet, would reduce deaths from agricultural $PM_{2.5}$ by 68%, 76%, and 83%, respectively (Domingo et al., 2021).

Diet-Related Disease and the Impact of Health Care

Eating ASFs, especially in the large and growing quantities consumed today, is not required for human health, and is associated with a number of NCDs. Globally, unhealthy diets (low in fruits, vegetables, legumes, whole grains, nuts, and seeds, and high in red and processed meat) are among the top three risk factors for poor

health (along with tobacco use and air pollution) (Murray et al., 2020). The pandemic of NCDs contributes to rapidly rising health-care costs which could reach \$47 trillion annually by 2030 globally (Bloom et al., 2011), and a total of \$95 trillion, or \$265,000 per person, for 2015–2050 in the US (Chen et al., 2018).

An important, often overlooked, environmental impact of these unhealthy diets is the health care associated with diet-related disease. For example, in 2018 GHGE from health care in the US were about 553 metric tons of CO₂e, 8.5% of total US emissions, and the combined effect of GHGE, PM_{2.5}, and ozone pollution from health care resulted in 388,000 DALYs (disability-adjusted life years, or years lost to premature mortality and disability due to illness) (Eckelman et al., 2020).

A modeling study compared the standard American diet (SAD) to a healthier diet that eliminated red and processed meat (with no change in other ASFs), and increased fruits, vegetables, whole grains, beans, and peas (Hallström et al., 2017). This diet would reduce relative risk by 20–45% for the three diseases examined (colorectal cancer, type 2 diabetes, coronary heart disease), and associated health care costs \$93 billion/year (equal to 42% of the total health care costs of these diseases).

This reduction in health care costs would in turn reduce GHGE by 84 kg/capita/year. While this reduction in GHGE from health care is a small portion of GHGE from ASFs in the SAD, and even smaller portion of a typical U.S. resident's total, due to lack of data the healthier diet did not include reductions in other diseases (e.g. hypertension, stroke, other cancers) linked to ASFs, which would reduce GHGE further.

The Food System, the Environment, and Human Infectious Disease

As we have seen, the scale of animal agriculture has huge effects on the environment, which negatively affects human health. In addition, the widespread use of antibiotics in producing ASFs is causing an increase in antibiotic-resistant pathogenic bacteria, and the ongoing conversion of natural habitats driven by ASF production, and the large, dense concentration of farm animals are driving increasing prevalence of zoonotic infectious disease. The resulting increase in human disease and associated health care costs add to the environmental impacts of ASFs, along with those from the health care costs for diet-related NCDs.

Antibiotic Use and Antibiotic-Resistant Bacteria

The development of antibiotics over the twentieth century led to large improvements in human health. However, widespread use of antibiotics in animal agriculture is reducing their efficacy by increasing the prevalence of antibiotic-resistant bacteria. In fact, according to the World Health Organization, antibiotic resistance

is “one of the biggest threats to global health, food security, and development today” (WHO, 2020).

In 2017 73% of all antibiotics used globally were in ASF production, mainly in low doses to promote growth, with an estimated 99,502 tons of active ingredient used in animal agriculture in 2020, projected to increase 8% by 2030 (Mulchandani et al., 2023). This creates a selection environment in farm animals that favors antibiotic-resistant bacteria, which therefore multiply faster than those without resistance.

Manure from industrial food animal production contains high levels of antibiotic resistant bacteria, which can contaminate surface and groundwater, and the air (Sanchez et al., 2016), and be exported from farms as commercially available fertilizers (Cira et al., 2021). A growing number of studies find adverse health impacts associated with living in proximity to livestock operations and manured fields. Livestock workers have been found to be five times more likely than controls to test positive for Methicillin-resistant *Staphylococcus aureus* (MRSA) (Ye et al., 2015).

It has been shown repeatedly that after antibiotics were licensed for use in animal agriculture, the proportion of antibiotic-resistant bacteria resistant to those antibiotics increased in humans. For example, the bacterium *Campylobacter jejuni* is a frequent cause of human gastrointestinal infection and is commonly found in domestic animal feces. Before 1990, the proportion of these bacteria in humans resistant to fluoroquinolone was less than 5%, but after fluoroquinolones were licensed for use in farm animals in 1990, this increased to 50% by 1993, and over 80% by 1996 (Silbergeld et al., 2008).

Animal Agriculture and Zoonotic Diseases

According to the UN, “Over the last 60 years, the majority of new zoonotic pathogens have emerged, largely as a result of human activity, including changes in land-use (e.g. deforestation), and the way we manage agricultural and food production systems” (Maruma Mrema, 2020, p. 2). As discussed above, animal agriculture accounts for the large majority of land use change currently and in the past, leading to a loss of habitat for wildlife and increased contact between humans and disease vectors, both of which can result in increased transmission of zoonotic pathogens.

Industrial agriculture continues to replace traditional farming, including facilities that confine animals in high densities. The lack of fresh air, insufficient space, inability to perform normal activities, and long-distance transport for slaughter leads to decreased well-being and increased stress, lowering immune response and increasing the ability of pathogens to pass through many animal hosts, which facilitates the evolution of greater pathogenicity (Jones et al., 2013). For example, avian influenza virus that produces only mild symptoms can be transmitted extensively among poultry populations, facilitating its evolution into a highly pathogenic avian influenza capable of human-to-human transmission (Dhingra et al., 2018).

Similarly, large, dense swine populations on farms have been associated with elevated prevalence of swine influenza, and evidence shows that pigs can host viruses from humans and birds along with swine viruses, allowing horizontal transfer of the genes between viral populations that can result in strains capable of transferring between species (Baudon et al., 2017).

How Can We Increase HSPBDs to Address the Anthropocene Crisis?

Increasing awareness of the negative environmental impacts of ASFs in omnivorous diets will be one critical aspect of motivating adequate responses to the Anthropocene crisis, through both bottom-up changes by individuals, and top-down changes by schools, universities, governments, businesses, and other institutions.

Information

Information about the environmental impact of foods and diets can motivate individuals to change food choices, especially when this information resonates with or changes values. An experiment with US consumers showed they lacked knowledge of the GHGE of foods, underestimated this the most for animal foods, and when provided labels with information on the GHGE of canned vegetable and beef soup, they chose the vegetable soup with lower emissions more often (Camilleri et al., 2019). A randomized control trial in France found that front-of-package traffic light labeling of environmental impact led to participants choosing less meat-based and more vegetarian meals (Arrazat et al., 2023).

Reaching young people, e.g., in educational settings, is especially important because this can affect food choices over lifetimes while contributing to institutional goals for reducing climate and environmental impact (Cleveland & Jay, 2021). A US experiment compared the effects of two, two-quarter courses on university student food choice, a control course on cosmology, and a treatment course which provided information on the climate effects of ASFs (Jay et al., 2019). Students in the control reported no change in diets at the end of the course compared to the beginning of the course, while students in the treatment reported diets at the end of the course that were 17% lower in kg CO₂e than at the beginning, mostly due to lower beef consumption, which declined from 3.5 to 2.5 servings/student/week. Similarly, US students who took a one-unit Foodprint seminar reported significantly increased vegetable intake and decreased ruminant meat intake relative to control course students and reduced dietary GHGE 14% (Malan, 2020).

Food Environments

Food environments are important determinants of food choices, and institutions can change these environments to include a larger proportion of PBFs, with the goal of reducing environmental impact. The dining service at one university substituted vegan mayo for egg-based mayo in all its foods after testing to assure that gustatory and physical properties were the same, which reduced CO₂e 43%, blue water use 77%, reactive nitrogen use 98%, and land used 63% (Cleveland et al., 2021). At another university, eliminating beef 1 day a week in campus dining halls reduced their CO₂e food emissions by 20% (Cleveland & Jay, 2021).

Institutions can also nudge people toward PBDs by changing the way choices are presented, e.g., exploiting the tendency to accept a default. A recent study showed that by offering a plant-based meal as the default compared to a meat-based meal as the default, invitees to campus events choosing plant-based meals increased from 18% to 66%, which decreased GHGE, land use, and nitrogen and phosphorus pollution 39–43% (Boronowsky et al., 2022). However, major progress on college campuses toward environmentally sustainable food systems requires higher education institutions to relinquish neoliberal business policies in favor of the public good (Cleveland, 2023).

Because the development of dietary knowledge, attitudes, and habits in college can persist long after graduation (Movassagh et al., 2017), more healthy plant-based food environments on campus can positively affect health and the environment in later years (Hu et al., 2016). For example, a prospective cohort study that followed young adults over 30 years found that an increase in nutritional quality of plant-centered diets was associated with statistically significant lower risk of type 2 diabetes, weight gain (Choi et al., 2020), and coronary vascular disease (Choi et al., 2021). In turn, improved health from more plant-based diets will reduce GHGE from the healthcare system over time (Hallström et al., 2017), and reduced health care in general will reduce a range of healthcare system environmental harms (Lenzen et al., 2020).

Prices

Taxing or subsidizing foods based on their environmental impact has much potential, and there are some successful examples. The government of Denmark taxed saturated fat from October 2011 to January 2013 to improve health, which resulted in a 4.0% reduction in saturated fat intake, as well as a decrease in salt, and increase in vegetable consumption for most people (Smed et al., 2016). Since most saturated fat in the diet is in animal foods, this tax would also decrease environmental impacts.

A modeling study found that taxing food based on climate impact globally and using tax revenues to increase the availability of fruits and vegetables, could avoid 509,480 deaths, and reduce GHGE by 8.6% in 2020 (Springmann et al., 2017).

Two-thirds of the GHGE reduction was due to reduced beef consumption and one quarter to reduced milk consumption, with a 40% increase in beef cost leading to almost 15% reduction in consumption.

Conclusion

In the Anthropocene epoch, it has become clear that our dietary choices are existential choices. To feed a human population of 10 billion equitably in 2050 while staying within the sustainable Earth system boundaries requires a major shift toward HSPBDs, in addition to reducing food loss and waste, and improving the efficiency of agricultural and food processes.

Although there is some uncertainty about the details of the environmental impact of diets, understanding the well-documented greater negative environmental, health, and equity impacts of standard omnivorous diets compared with HSPBDs can lead to needed changes in behaviors and policies. The rapid, radical cultural and social changes required include replacing neoliberalism's values that promote superfluous consumption, with scientific understanding of the role of ASFs in the Anthropocene, and the need for rapid and radical change to emphasize the values of sufficiency, community, and compassion. Replacing excess consumption in over-consuming populations with sufficient consumption is also essential for increasing equity by enabling under-consuming populations to have access to the food production resources and the food needed for HSPBDs.

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Part VI
Food, Agriculture, and the Anthropocene

Chapter 31

Stockfree Organic Farming for the Future Needs of the Planet



Iain Tolhurst

So, what Is Stockfree Organic?

You would almost definitely have heard of organic farming, bought some produce and have a general idea as to what makes organic farming different from conventional farming. In a nutshell, organic is a regulated and certified system of food production. It excludes the use of most chemical inputs and relies on natural methods of fertility building and pest control. It can be anything from a tiny field producing a few mixed vegetables to a multi-thousand-hectare farm growing cereals and livestock products. Farmers are inspected at least annually, and the main framework of standards is set by the International Federation of Organic Movements IFOAM¹ an international body. There are some slight variations to the standards, acknowledging cultural and geographical differences, but for the most part, they are very similar from country to country. Any private company wishing to establish a certification system for farmers needs to adopt at the very least the IFOAM standards. In some cases, the company may adopt additional stricter standards to that defined by IFOAM.

It is a common assumption that all organic systems will include an element of livestock production within the rotations of the farm. The integration of livestock is for many organic farmers considered an essential component of the fertility-building aspect of the farm and is considered central to soil health. For the purpose of this chapter, I will be using the United Kingdom example of organic farms, but similar situations exist in many parts of the world.

¹ www.ifoam.org

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There are many organic farms that do not have any livestock at all, for the most part, these are usually fairly small farms producing fruits/vegetables, generally on less than 5 ha. Farms larger than this without livestock do exist, but they are relatively few in number and will be mostly specialising in cereal production. These larger farms in most cases will be importing animal manures from neighbouring farms where livestock numbers are high. This manure will not be from an organic farm as they tend to need to keep it for their own land. The manure will be from conventionally reared livestock that meet a minimum welfare standard. This is allowed in most certified organic systems subject to specific handling of the manure via a recognised composting system. The organic standards² also have a strict code in respect of the timing of application and the amounts applied. Some larger farms may be utilising grazing animals brought in specially from other organic farms to add fertility by grazing temporary green crops.

The smaller, less than 5 ha farms will also be importing manure in the same way as the larger farms, but often in greater amounts per hectare on the assumption that vegetables require a higher level of fertility inputs. They rarely have any livestock due to the expense of keeping animals on small farms and the complications that this creates with vegetable production. Increasingly, these small farms are moving away from sourcing animal manures in favour of using composted household wastes. The main reasons being the difficulty of handling and composting the manures along with the near impossibility of finding manures that meet the organic certification standards. Many small farmers are concerned about the problems of chemical residues, in particular the now common occurrence of the herbicide aminopyralid,³ this being very common in manure from horse stables. The increased production of composted green waste materials and the relatively low cost have encouraged many small growers to use this material, sometimes in very high applications on “no dig” systems. Farmers are in some cases becoming concerned about the intensive use of green waste compost due the emerging evidence of microplastic contamination.⁴ This contamination occurs during the collection and production processes that the final compost has to go through. And another growing concern is that those farmers that have developed systems that are dependent on very large applications annually, sometimes as much as 500 cubic metres of green waste compost which may be causing problems of soil obesity⁵ and nutrient leaching to ground water. This could be causing some environmental problems. Such large applications of the material also have implications for other farmers not being able to source material for more extensive and lower input systems as it becomes in short

² https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjvz9qY1f7_AhVwTqQEhc2DDhEQFn0ECAsQAQ&url=https%3A%2F%2Fwww.soilassociation.org%2Ffour-standards%2Fread-our-organic-standards%2F&usq=AOvVaw1G2jm2ZP4E2j4kJPPT8yfw&opi=89978449

³ <https://organicgrowersalliance.co.uk/aminopyralid-the-herbicide-that-hasnt-gone-away/>

⁴ <https://www.soilfixer.co.uk/plastics-in-compost-and-soil>

⁵ <https://organicgrowersalliance.co.uk/technical-article/soil-obesity-is-your-soil-putting-on-weight/>

supply. The importation to small-scale farms of large organic inputs is seen as the use of “ghost acres”—land elsewhere that is exporting fertility usually as a result of their own farm importing large amounts of fertility in the form of animal feeds for livestock.

Such farms devoid of livestock have historically been referred to as “stockless organic”⁶ systems, so without any resident livestock on the farm. “Stockfree organic” (note-stockless has been changed to stockfree) is a completely different farming system. This farm has a definite policy of no commercial for-gain livestock present on the farm, this includes bees for honey, which may sometimes be allowed for pollination purposes. No animal manures or animal by-products are allowed to be used on the farm, and no hunting or trapping of animals is allowed. There are also some other detailed differences with organic standards. The farmer is not expected to become vegetarian or vegan, the farm could be described as a vegan farm. In many cases, the farmer may well be vegetarian or vegan, and this may have been one of the motivations for converting to a stockfree system. The farm has to be registered as organic before it can convert to stockfree organic and presently in the United Kingdom this means being certified organic with the Soil Association,⁷ the leading certification body in United Kingdom. Other certification companies are also interested in adding this additional certification to their services.

The stockfree organic inspection is an additional inspection, that takes place at the same time as the normal organic certification; this reduces the cost and time involved. The farmer will, if passed, be able to display the stockfree organic symbol, alongside his existing organic symbol. Customers then have the additional security of knowing that the produce is of the highest possible standards and that no animals have been subjected to any harm. With the rapid rise in vegan diets in the United Kingdom, this is becoming an additional marketing element of food certification.

The stockfree organic standards⁸ were developed during 2005, instigated by the Vegan Organic Network (UK). The Vegan Organic Network (VON) produced the world’s first set of stockfree (animal free) organic standards during 2005. I worked closely with VON⁹ to establish these standards and we were the first farm in the world to become registered as such. Consumer led, the stockfree organic standards were set up for those wanting high quality, locally available and organically grown food without the use of slaughterhouse by-products or animal manures. The symbol actively promotes local food production, and by removing animal inputs, it presents fewer pathways for pathogens—an ever-increasing concern with regard to diseases such as *Escherichia coli*.

Before I explore the practicalities of how a stockfree organic system can work, I should tell you a little about my own history in agriculture.

⁶<https://orgprints.org/id/eprint/6593>

⁷<https://www.soilassociation.org/our-standards/read-our-organic-standards/>

⁸<https://stockfreeorganic.net/>

⁹<https://veganorganic.net/>

I started work on a large commercial dairy farm, back in the early 70s. I had always liked the idea of farming, although there was nobody in my distant family past, that we knew of, that had indulged in this noble profession. I am from a working-class background, my father was a carpenter and my mother stayed at home to manage a spread-out family of 4 children. I was number two. During my childhood, I became very interested in gardening, especially growing food, so by the time I was a teenager I had had several years' experience of gardening. Career expectations in my family were not especially high, and I had to leave school at the age of 15 and find a job. I drifted around for several years, not really staying at anything for too long, and spent several years working with my father as a chippy. It was fine as a profession, and I love working with wood and still do, but I really fancied getting into something with the land, I loved being outdoors in the country.

By the age of 21 I was married with a child, and we found ourselves homeless. United Kingdom was going through a very bleak period, with high numbers of unemployment, a housing crisis and energy cuts. I had invested in a building project, but the contractors went bust, and we lost a lot of money and several months' work. After some months of extreme insecurity, we found ourselves on a dairy farm in Buckinghamshire, and I became a second herdsman on the farm, looking after 160 dairy cows. This was a large dairy farm for its time.

At the time, I really enjoyed this experience. The farmer (still in regular contact) was a lovely person, very supportive and I was learning about a whole new life. We stayed there for almost 4 years, we had another baby, and created a very large garden, from which we were able to sell some produce to the local Health Farm. We used organic methods, although this was the early 70s, and there was little known about growing fruits and vegetables by this novel method. We were particularly successful at growing strawberries, and this wetted our appetite for something more.

I suppose, I had a picture book idealist image of what made up a farm. Cows in the meadow, sheep in the corn, lazy summer days, that sort of thing. The reality was somewhat different; the land was under intense pressure to produce, and was looking rather sick. Not to mention the unhealthy animals, that rarely managed to last more than 5–6 lactations, before being sent off to slaughter, riddled with disease. So this led me to explore the organic alternative. In those days, there was not much to find out about; most people thought we were crazy to try and grow without chemicals; indeed some people thought it was reckless.

Eventually, we found a scrubby piece of land high up on the moors in Cornwall and started to carve a living from it, supplemented by odd jobs to bring in some cash. In part, we were an example of the 'back to the land' movement and fancied the concept of self-sufficiency. I wanted to prove, that it was commercially viable to grow organically; to serve as an example to others. By this time, we had been vegetarian for several years; it was an inevitable result of the large dairy unit, that brought about this radical lifestyle change. I had decided that I did not wish to be working with animals and wanted to farm without the hassle and obligations, that they bring upon you. I also hated the idea of having to sell them for meat.

The question was - how would we be able to grow organically, without animals? It was an accepted philosophy of Lady Eve Balfour¹⁰ and the Soil Association that animals were an integral part of the whole system; you needed the muck to grow the food, to feed the animals, to grow the food. But I was only interested in growing food to feed people, not animals. I did not have room for them on my miserable windswept 5 acres. We had a few goats for a while (you need to be a masochist to keep goats, they pull your arms out of their sockets) just to provide a means of getting manure. But then we had to buy expensive cereal to feed them, and use valuable land for hay. Sure enough, they kept the hedges tidy and ate all the brambles, but they forever wanted to get into our vegetable fields to eat our best crops, so in the end, they were dispatched off to another 'masochist'.

We toyed with bringing in manure from off the holding, but this was hard work to handle; we had no tractor, and it used to make our van smell a bit whiffy, which did not go down too well when we dropped the kids off at school. It needed composting, and then there was the problem of a reliable source, without chemical contamination. Plus the fact that we would need in excess of 70 tonnes a year, to support our vegetable unit. So, in time, we developed another system, based almost exclusively on green manures.

I had heard a vague mention somewhere that until the mid-twentieth century, the Chinese had managed to feed their people on a mostly vegetarian diet, with the extensive use of green manures. So I began thinking that this ought to be achievable in our climate, too. It was a clear fact, that you could certainly feed a lot more people this way, as much as three to five times more, so why was not everybody doing this?

For the same reason, that most farmers were not organic, vested interest from the global conglomerates, selling all those expensive goodies to support the system. Farms that run on green manures do not have to buy much in at all, apart from seeds, and even those could be home produced. And farmers are locked into believing that, to produce, you have to be plugging in massive inputs. And then, of course, everybody tells you, that this concept is impossible to operate in the real world. But that is what they told me about organics, fifty years ago. At the back of my mind was this nagging fear, that a huge swath of my valuable and now slightly improved land would be sitting around, doing nothing, except growing pretty clover and lucerne, and other green manure crops. Not going to be easy persuading the bank manager, that this was the way forward to prosperity.

A new farm from 1988, with a longer tenancy, slightly better land and much better climate in South Oxfordshire, was the catalyst that brought around a radical change in my farming system. I designed a rotation that was completely stock-free. In fact there are three separate rotations - one for field vegetables (7 ha), one for garden crops (0.5 ha) and one for the poly-tunnels (1700 sq.m). The longest rotation is in the garden, with 9 years. The field rotation is 7 years long, and the tunnels are just 4-5 years. Extensive use is made of a whole range of green manures,

¹⁰https://en.wikipedia.org/wiki/Lady_Eve_Balfour

especially important are legumes such as clover, trefoil and lucerne. These are primary fertility builders, and the outdoor rotations have a period of at least 30 months when they are present. The problems of having too much land tied up in green manures and not producing a saleable crop have been much reduced by under-sowing growing crops with legumes, to follow on after the crop is harvested. I am also able to plant some crops direct into fertility builders, and produce a good result.

So, the area ratio of crops to green manures is now up to 70% cropped land, and this is economically viable. Regular soil analysis has shown that we are steadily improving fertility, especially phosphate P and potash K, due to the deep rooting foraging of the legumes. The soil fauna has improved dramatically with better health of the 90 different vegetable crops that we grow for our 200-customer weekly Box Scheme.

It is not just small intensive production units, such as ours, that can make this system work, the big boys can play this game too. Trials at Elm Farm Research Centre¹¹ over many years have shown that large-scale stockless systems for cereals work both in terms of sustainability, and economic viability. This has been endorsed by similar trials at ADAS Terrington,¹² growing potatoes and cereals using red clover.

But hang on a minute, I hear you say. What about feeding the green manures to livestock? That way you get the best of both worlds, earning from the animals, as well as fertility for crops. Well, actually no, it is not so simple. Firstly, animal production, unless done on a huge scale, will lose you money. We would need fences, buildings, water supply and a market for small amounts. Too much bureaucracy too, with hundreds of forms to fill in. Secondly, you do not get anything for nothing. Animals use energy, and they produce heat, methane and lots of waste products. You cannot expect to get more fertility, than you started with. You will inevitably need to buy in food to feed your animals. So you are buying in acres from elsewhere, somebody else's fertility being lost - "ghost acres".¹³

Look around the UK countryside. What do you see? lots of grass and maize in the West, lots of cereals and maize in the Midlands and East. More than 60% of these cereal crops go to feed animals.¹⁴ And then there is the huge amounts imported from all over the world, at great cost to the environment. Rain forest clearance is, in many cases, for the production of soya crops, of which less than 10% is used for human food.¹⁵ Organic farmers are no exception here, they are also importing feed cereals to support their livestock farms. Some of this manure is going to support vegetable and more cereal production. As it stands, the organic movement is far from sustainable in its present form, and if there were a ban on imported cereal, even more of our countryside would end up looking like a cereal prairie. An increase in organic

¹¹ <https://www.organicresearchcentre.com/>

¹² <https://orprints.org/id/eprint/6693/>

¹³ https://www.greenpeace.org/eu-unit/issues/nature-food/45159/majority-of-european-crops-feeding-animals-and-cars-not-people/ttps://en.wikipedia.org/wiki/Land_footprint

¹⁴ <https://www.greenpeace.org/eu-unit/issues/nature-food/45159/majority-of-european-crops-feeding-animals-and-cars-not-people/>

¹⁵ <https://www.tabledebates.org/blog/soy-uk-what-are-its-uses>

conversions in United Kingdom would compound this problem even more, as stocking levels would be lower, and more land would be needed to feed animals.

By now, hopefully, you are getting to see the picture. Clearly, there has to be a reduction in livestock farming, if we are to even contemplate being able to feed the growing global population. Much good land is going to livestock production; it could be growing primary food products for feeding direct to people. Of course, there is much land in poorer hilly parts, where it is not possible to grow crops. But how about planting trees? They will grow on the worst soils, provide fruits, nuts and timber for fuel and enhance the landscape, as well as providing real rural jobs for local people. Sure enough, people love to eat meat, but this will use up too much land in the process. They will have to reduce or remove this from their diet. And of course, they love to see animals wandering in the countryside; well, if it is that important then there could be herds of semi-wild beasts wandering around on common-type land. We just need a bit of land reform, to bring about some sensible sustainable land use. Given that the EU is committed to funding agriculture to such a high level, then it is just a question of distributing the money a bit differently. Now that organics is so mainstream, the time is ready to move forward to stockfree systems, that truly respect the land and our fellow animals.

Our Stockfree Organic farm¹⁶

Before I tell you how our stockfree organic farm operates, I shall explain a little about our soil:

Layout

The farmed land of our farm comprises three plots.

Walled Garden 1.2 ha

This has been used as an intensive vegetable/fruit production area and contains 2,065 square meters of protected cropping. It has been in production for over 1,000 years. Fertility levels are high, particularly in respect of P+K values, pH is also very high, with some values of pH 8.4. Long-term historic use has affected these levels. The gardens are very sheltered and get extremely hot, especially towards the top end, due to the steep slope. It is subject to late frosts. Occasional flooding occurs to the lower section. Stone content is lower than the field, as many have been removed in the past. The soil is very prone to drought.

¹⁶<https://www.tolhurstorganic.co.uk>

Some areas, particularly the protected cropping, have very high soil organic matter levels, up to 9.1%. P levels are also very high.

The soil is infected with *Verticillium dahliae* (Verticillium wilt) and *Stromatinia cepivora* (onion white rot). Both these diseases are very problematic to vegetable production and are as a result of previous historical cropping, going back to the war years for verticillium and Victorian times for onion white rot.

Despite the high pH, soil borne diseases, excessive soil organic matter, high stone contents and general unsuitability for intensive horticultural cropping, the site produces good yields of quality produce.

Upper Knights field 4.08 ha

Permanent grassland until 1985, when it was in an arable rotation with the farm for two years. It was intensively cropped during the period 1939–45 with potatoes. Since 1987, it has been under our use as intensive stockfree organic vegetable production, and has a 7-year rotation. Neither animal inputs, nor fertilisers of any type have been used during this time.

When we took over in 1987, the soil was in poor condition, with very low P+K reserves, due to a long-term history of hay cropping and little return of any organic materials. It was heavily infested with perennial weeds. Land carries a high burden of *Verticillium dahliae*.

Both of the fields are now in good heart and carry good yields of most crops. All the land is irrigated during the growing season which invariably has lengthy periods of drought.

Lower Bec field 2.8 ha

As in Upper Knights field, however clay content is lower, at around 16%, and organic matter is higher, at 5%

Soils in the production fields are derived from two major sources:

- *Glacial* The ice fields of the last ice age extended to the very edge of the Chiltern Hills which lie adjacent to the fields. They carried large amounts of debris from other parts of the country as they travelled south. This debris consisted of large stone, silts and clay, which fell down onto the fields, as the ice melted.
- *Alluvial* The melting of the ice created large amounts of flood water, which flowed down to the River Thames. The river would have been very much larger, than it is now (7,500 years ago, the Thames was a tributary of the Rhine, when Great Britain was still joined to Europe land mass) and would have carried large amounts of sediment. As the water levels dropped, deposits of silt, sand and clay were deposited onto the site. This was mixed with the moraines from the glaciers, to form the soils as they are today. Further erosion would have reduced the depth of soils, as would the long-term history of agriculture on this site.

Soil type

The soil is classified by the Soil Survey of England and Wales as follows.¹⁷

- *Sutton 2*- sandy clay loam Soil classification Grade 3b

Soil analysis gave the following results, although there is some variability within the 8 ha:

The soil is calcareous Clay content is 18%. Silt is 32% Sand 50% Organic matter is 4–4.5% pH is 6.5

Topsoil depth varies, but the average is around 200 mm, before hitting clay and larger stones.

Soil is generally well drained, with the exception of the lowest area that is subject to seasonal water logging, due to high water table levels.

The main problem with the soil is a high incidence of stones. The depth of soil is 25 cm, in this zone it contains 40% stone. This has the effect of reducing the soils capacity for nutrient and water. The stone, being predominantly flint, has a very damaging effect on equipment. High permeability has the effect of the soil being at high risk of nutrient losses during wet periods.

Subsoils

From 25 to 90 cm, the soils are comprised of flints, chalk and sand/silt/clay mix. They are generally well drained, but low in nutrients. Below this level, the bedrock is comprised mainly of chalk, with some areas of clay and gravel.

To summarise, the soils are low-grade agricultural soils, which would normally be suitable for grassland, trees, or occasional arable crops, although the latter would not be expected to give high yields. Being very stony means that they are subject to high nutrient losses and will not be able to store large reserves of water, so they are droughty soils. Our annual rainfall average is around 550 mm, and we do sometimes experience long periods of drought in the summer.

Our farm

We are well known in the United Kingdom as a stockfree organic farm and get visitors from many countries to see what we are doing. Of particular interest is in the way that the farm is able to sustain a high level of crop output and maintain, and improve the fertility of the soils, without resorting to importing high levels of fertility-building materials onto the farm.

¹⁷<https://www.landis.org.uk/downloads/downloads/Soil%20Classification%20v2.pdf>

Over the course of a year, we produce around 100 tons of food, the bulk of which is sold very locally to the farm. We are harvesting crops throughout every week of the whole year and distributing to customers through our own box scheme, as well as through our farm shop. We have always been involved in research and development, with a number of partners who are primarily dealing with research into organic systems. This has enabled us to build a lot of long-term data into various aspects of the farms systems. It has also enabled us to develop those systems further and fine-tune them to the farm.

The farm does not receive any significant financial support and relies primarily upon the sale of its products, to maintain its income. Around 15% of farm turnover is attributed to advisory services, mostly based on the farm. The R+D work is not paid, but we do receive compensation for some elements of time and materials costs.

Building optimum fertility comes from the inherent fertility of the soil itself and is not dependant on importing fertility from somebody else's land. We inherited a soil that had been heavily mined for many previous decades and was very low in P+K. The biological function of the soil had been depleted and it took several seasons of green manure crops and appropriate tillage, to improve the biology of the soil. We designed a viable and sustainable rotation, with suitable green manures, and we were able to begin the return of organic materials and build some long-term fertility.

Rotation design is the key to fertility management; this needs to be tailored to individual farms and every situation is different. A range of factors has to be taken into account, such as soil type, climate, cropping, any inherent pest and disease problems and scale of operation. The stockfree rotations, that I have been designing, are an attempt to reduce the amount of fertility loss due to "leaky systems," where nutrient is lost mostly due to winter leaching and bad soil management. Many organic horticultural systems are presently working on the basis of bringing huge amounts of bulky organic manures and composts onto the holding, to plug these leaks. It is better to trap the limited amount of nutrient available, and optimise its use for maximum crop growth.

To do this means making extensive use of green manures within the rotation, but also allowing for the maximum cropping that the land is capable of, without compromising long-term fertility. Deep rooting green manures and other crops within the rotation will be able to recover nutrients from deep down.

Another very important aspect of soil fertility is the role of the soil fauna. The soil is an enormously complex organism, yet little is really known about it. A spoonful of soil will contain incalculable numbers of different microbes; each one has a vital role to play in processing and making plant foods available. But also, they have just a role in helping to protect plants against pest and disease attack. The greater the range of crops and green manures that are grown on a site, the greater the diversity of soil microbes within it. This has enormous benefits in making modest amounts of fertility available for plant growth, by aiding their release and reducing pest and disease incidence.

The earthworm is top of the soil food chain and reigns supreme in its ability to shift huge amounts of material. It is also a very reliable indicator of soil health.

Charles Darwin¹⁸ rated this as the “most important animal on the Earth”. During my farming career, I have made a casual study of them and have to agree completely with his statement.

The most dramatic effect on fertility building on our soils came about with the introduction of tree woodchip materials. For some years, I had felt that although we had managed to improve the soil fertility, we still had quite some way to go. Yields had improved, but were not exactly high. Earthworm counts were average, at around 200/m, but somehow, I felt, we could do better. And I was worried, that we may not have developed a system that was truly sustainable for the long term. I had heard of the use of ramial-chipped wood in agricultural systems in France. This was not a common input, but some limited research work had been done in North America and France within arable systems, nothing about vegetables. I had concerns about the addition of wood materials to our soils, the main problem being the locking up of nitrogen as the C/N ratio of fresh woodchip can be as high as 600:1. As the fungi begin to break down the lignin in the wood, they feed on the nitrogen in the soil. This can leave soil short of N for what can sometimes be quite lengthy periods of time. The effect on following crops can be quite dramatic, with excessive N deficiency causing low yields or even complete failure. This effect can sometimes last for several seasons, before the wood is completely broken down and eventually releases its own nitrogen and the one it has borrowed from the soil. So, all comes good in the end, but not ideal for vegetable growing during the interim period.

I needed to come up with a solution to this temporary loss of N from the soil, if we were to continue vegetable cropping. Our 7-year-long rotation has a fertility-building break, which occupies a 30-month period. This is a time when we allow soils to rejuvenate, a period of rest and recuperation from tillage and cropping. During this essential period, we grow a diverse green manure mix of plant species with legumes such as lucerne, clovers of various types, trefoils, chicory, and around 20 wild flowers. This floral mix is there for multiple reasons:

- To build soil structure via a complex mix of different root systems.
- To increase biological activity in the soil. Every different species of plant has its relationship with soil microbes and fungi. The greater the number of these, the better the soil’s ability to supply nutrients, and pest and disease defence mechanisms to crops.
- To allow for the increase in earthworm populations, we see up to 1,400 per square metre of soil. The earthworm for us is a key indicator of soil health, but it is also accompanied by a healthy population of other fauna within the soil, a huge range of insects will multiply and give huge benefits to plant health and protection.
- Exploit deep soil reserves through the very deep rooting components, such as the chicory and lucerne. This enables earthworms to easily transit the topsoil to the subsoil. This allows the movement of water in both directions and connects the soil layers together.

¹⁸<http://darwin-online.org.uk/content/frameset?viewtype=text&itemID=F1357&pageseq=1>

- Build organic material that will become long-term humus, replacing that which may have been lost during the 5-year cropping period but also increasing the overall humus content deep into the soil profile, not just around the surface.
- By allowing this green manure mix to flower several times encourages above-ground fauna activity. This has huge benefits for crops in creating a viable and strong pest: predator balance. Biodiversity of soil and site is an essential component of a healthy system. We have seen major improvements in birdlife populations.

By the end of this fertility-building phase, the soil is in top condition, and the first crop in the rotation is potatoes, a nutrient-demanding crop which will produce average yields of 40 tonnes/ha in a normal season. Other crops follow through the next four cropping years, and land is always covered with green manure crops, as soon as a crop is harvested or, in the case of some - by “relay sowing” green manures into the growing crop. This is a technique we have pioneered here on the farm, and it has many advantages:

- Maintains and improves soil structure.
- Encourages biodiversity above and below the ground.
- Creates potential humus.
- Protects soil surface from heavy rains and harvesting foot traffic.
- Looks great, especially as many are allowed to flower in spring.
- Improves N values, especially with any legume species.
- Prevents rapid desiccation of soil by wind in spring.

The last and final year of the rotation-year 7 - is growing squash for winter storage. This crop is relay sown with the long-term fertility building green manure, and this will stay in place for over 30 months before land is returned to cropping again.

Back to the woodchip. Ramial chipped wood (RCW)¹⁹ is the material cut from trees during the winter dormant period. We have a 0.6 ha area of willow (*Salix alba*) that we planted specifically for biomass production on a wet part of the field, that floods every winter. The ideal material is from young wood, less than around 75 mm in diameter, chipped quite small - 15 mm, and spread immediately onto our long-term fertility builder (years 1 + 2 of rotation). Application rates are around 50–70 cubic metres per hectare, and we do this usually between November and March when the crop is dormant and the ground is dry enough to drive on. This winter harvest of RCW fits in well with the farm schedule when things are less busy. The material is left upon the soil surface sitting on top of the living green manure. It is rapidly processed by the earthworms and soil fungi that are very prevalent at this point in the rotation. The high incidence of legumes means that there are ample reserves of nitrogen to feed the soil life and prevent any problems of denitrification.

The addition of woodchip has a lot of benefits to the soil:

¹⁹ <https://www.organicresearchcentre.com/news-events/ramial-woodchip-production-and-use-on-farm/>

- Improves humus content.
- Encourages a diverse range of soil microbes, mycorrhiza in particular is very prevalent as a result of the woodchip, and this fungus plays an important role in enabling crops to find available P levels.
- Creates dramatic increases in earthworm activity and the multiple benefits that they bring to soil health.
- Improves soil water-holding capacity.
- Feeds flora and fauna.

Levels of fungal activity on our soil have increased dramatically since using this technique. This has been a major factor in increased yields, higher levels of pest and disease resistance and improved soil health.

Since starting this technology, we have increased the number of trees on the farm, to provide for future demands of RCW. We have done this with the establishment in one of our fields of an agroforestry system, with over 600 native trees in rows 23 m apart. We continue to grow vegetables within the space between the treelines. We have given up around 15% of our land to the trees, but consider that we will not sacrifice any drop in overall yields from this loss of production area, as the benefits to soil health and fertility of using the RCW will cancel out any crop losses. From our research, we are confident that fertility on the farm can be maintained in a sustainable way, by having around 20% of the farm in permanent tree crops being utilised on a 7-year cycle of coppicing. We are also using perimeter hedges in the same way. As well as the RCW, we are also using tree waste from a local tree surgeon, who is chipping the material. This comes from domestic gardens and will be a mix of many species some of which will be exotic types. This material is delivered to us regularly, and we process it by windrow-composting, turning it four times over one year. This produces a very useful material, some of which we use directly for plant propagation; we grow around 100,000 plants per year. Some of it is also spread onto the year 1 + 2 fertility crop in the field as we do not presently have enough RCW to do all the field plots.

The Organic Research Centre conducted an extensive study and trial into the use of RCW on our and two other farms, with some very interesting data.²⁰

One of the most common questions we get asked after “how do you maintain fertility?” is “how do you control pest and disease problems?”. We are mostly free of any major P + D problems, and any problems tend to be very slight and are not considered economically significant. We use a “systems-based approach”.

A system is a complex whole set of interconnected things or parts. Each component of the system is dependent on each other, with the health of the soil central to the whole system.

When I get asked how I control a particular pest, it is never a simple answer such as “Oh well, I use so and so”. Prevention is the key, and that involves the rotation to develop optimum fertility and strengthen a plant’s natural defence mechanisms.

²⁰ <https://www.organicresearchcentre.com/our-research/research-project-library/woofs-woodchip-for-fertile-soils/>

Looking after the local habitats encourages predatory insects. Choosing appropriate crops and varieties for the conditions prevailing, and a host of other measures are in place. Weeds, pests, disease and fertility are all managed in this way, with the aim to try as far as possible to balance the whole system. Take any one component out of the system, and the rest will fall apart. This will manifest itself in poor crops with weed, pest and disease problems. This is nature's way of showing us that something is wrong. For successful organic production, the farmer has to learn to co-exist with, rather than dominate natural systems. The health of the soil is of particular importance in this systems approach.

This highly complex and diverse system does not happen overnight. It takes time to develop such a system, and there is always room for improvement. As farmers, we must be capable to develop these systems of food production, that are truly sustainable and ensure that agriculture will continue to feed a growing population fairly and totally for the good of the planet and its people.

Carbon footprint on the farm

Since we have become increasingly aware of the extremes of weather coming our way, we have had to consider ways to make our farming system more resilient. This has actually been very productive in a host of unpredictable ways. It has brought our farming system ever closer to nature, as we have learned to diversify and adapt, bringing in biodiversity and enabling us to look closer at our carbon footprint. We have been on a quest to reduce the carbon footprint of the farm, for well over a decade, before such things became fashionable.²¹ Organic farming is very much about farming carbon; that is what we do, we use carbon to produce crops to eat, and we have to make sure that we put at least as much back as we take out. If we fail to do that, then the fertility of our soils is gradually depleted, and our yields will drop for evermore. We then feed fewer people, and that is the other thing we do, we feed people.

So, carbon is a big deal to us, and we make sure we manage it well. There are two aspects to this - how we accumulate carbon and how we spend it. The first is about collecting carbon from the atmosphere. We do this through growing crops and particularly through the use of green manures, to improve fertility and the use of chipped wood materials. The carbon is then transferred to the soil via the action of billions different micro-organisms, bacteria and fungi. We also accumulate carbon through our hedges, trees, beetle banks, field margins and a host of other biodiversity features, that we have installed within our growing systems. This is our positive carbon footprint.

The second aspect of our carbon management is how much of this accumulated wealth we spend. This is our negative carbon footprint. This is the energy we use to produce the crops, via diesel and electricity, our delivery service, the embodied

²¹<https://farmcarbontoolkit.org.uk/>

energy in tools and equipment, any new buildings, packaging, and a host of other inputs. We use a sophisticated programme to measure everything that goes out and everything that goes in.

The results are encouraging and for 2012 the last full year we monitored, the business produced just over 16 tonnes of CO₂ (that is a measure of all greenhouse gases expressed as the equivalent CO₂) This is a remarkably low figure for any business, and is about the same as two small United Kingdom households would produce in a year. But better news was that our carbon sequestration—what we put back into the soil through a range of bio-diversity features, came to 21 tonnes. We are actually carbon positive, by 4 tonnes in a year. There are few businesses that can say they are carbon neutral, let alone carbon positive.

However, 2012 was not a typical year. We did very little irrigation, as it rained the whole summer long, and irrigation takes quite a lot of energy. And due to the fact of poor weather and growing seasons, our business had shown little or no profit for several years. This meant that we had not invested in new equipment or any building projects. Not spending on the business reduces the carbon footprint considerably. If I have to go and purchase a new tractor this week, it would have the effect of wiping out our positive carbon footprint for a long time. So, we make do and mend; our two tractors have a combined age of 64, their carbon debt was paid a long time ago and our delivery van is now 10 years old and has reached the age in carbon calculations of no longer having any cost.

The carbon picture is changing and will vary from year to year, and we continue to look at ways to improve it and develop alternatives to reduce our energy consumption, whilst maintaining high levels of food production.

Our vision of the future farming

We believe that stockfree organic systems have a great potential for reducing the negative effects of livestock farming. It is inevitable that livestock numbers on farms will reduce dramatically in the near future, to avoid the collapse of our natural systems. Farms will need to change from livestock-based to more sustainable systems, utilising the power of cover crops and forestry, to preserve and improve soils. Land released from arable cropping, due to declining livestock numbers, will be producing crops for human consumption, in particular - pulses, which fit well into organic arable rotations, and fibre crops for materials. Increasing tree cover will be important for carbon sequestration, as well as providing carbon for soil improvements. Such a change will need farm support, especially in respect of training farmers to adopt the new system and embrace the enormous agricultural opportunities that this will bring about. In the United Kingdom it would only add around 0.5% of land to the farmed area in order to double the production of fruit and vegetable. There is plenty of land available for this change. Removing feeds grown for livestock will potentially free up more than 50% of the arable area.

Stockfree organic has clearly demonstrated that growing viable crop yields is perfectly feasible, without damaging or compromising the environment.

Chapter 32

More of the Flavor and None of the Flaws: Marketing Plant-Based Foods as Authentic to American and British Consumers



Carrie P. Freeman, Matthew Cole, and Allen Zimmerman

A 2023 parody commercial for eco-friendly “Wood Milk” featuring actress Aubrey Plaza milking trees ridicules the idea of real milk coming from anything but cows. Similarly, a 2015 MilkLife commercial comparing “real milk vs. almond milk” shows American kids in an “ingredient spelling bee” having trouble spelling words like *lecithin* that are in almond milk, while “milk” is easy to spell. These examples reflect an attempt by America’s Milk Companies to establish cow’s milk as the “real” and natural milk while positioning plant-based milks as a heavily processed, odd knock-off. Indeed, the label “real” abounds on their most recent milklife.com website, where they appeal to “moms” to recognize that “non-dairy milk alternatives are not created equal,” differing greatly in “nutrition, ingredient list, added sugars, price, and taste.” Certainly, the plethora of new vegan products in grocery stores—like almond and oat milks; Impossible Burgers; breaded nuggets; coconut-based yogurts, cheeses, and ice creams; JustEgg scrambles; and Vegenaïse spreads—indicates their growing popularity. But it seems vegan foods have made inroads in the Western marketplace when animal-based food manufacturers start bad-mouthing them in advertisements as a true competitor—no longer to be ignored as a fringe product just for the vegan minority.

According to the Good Food Institute’s (2022a) U.S. Retail Market Insights Report, sales of plant-based foods “grew three times faster than total food sales in 2021” (p. 1). It reported the largest selling category of plant-based foods is plant-based milk which accounts for 16% of all retail milk sales. Household penetration

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of plant-based milk is 42%; consequently, this product is seen as a major entry point for households to try other plant-based products. Somewhere between 33% and 38% of U.S. consumers identify as flexitarians (who routinely eat plant-based meals but not exclusively) (The Good Food Institute, 2022b; Zimmerman, 2022). This trend toward flexitarianism is most prominent among women, Millennials, and Gen Z, with 63% of Millennials saying that they are working to include more plant-based foods in their diets. And racial minority groups are more likely than the average U.S. consumer to express interest in plant-based meals. Three quarters of consumers have tried (or are willing to try) plant-based meats, and 90% of those who have would be willing to eat them again (The Good Food Institute, 2022b).

The market for plant-based meats has steadily grown, particularly burger patties, and is expected to rise from \$7.9 billion USD in 2022 to \$15.7 billion USD by 2027, which yields a compound annual growth rate of 14.7% (PR Newswire, 2022). Central to this growth trend is the European market, which is cited as the largest market for plant-based meats during the next 5 years, particularly in the UK. Significantly:

the UK is projected to be the largest plant-based meat market in Europe during the forecast period. The rising health concerns among the consumers regarding meat products, consumers' growing inclination toward healthy plant-based meat products, and the exponentially growing veganism trend in the country are the key factors driving the growth of the plant-based meat market. (p. 6)

Because of this competition, animal-based meat, egg, and milk producers are using marketing as well as lawsuits to claim their higher status as the real thing, attempting to make vegan products the wanna-be's and imitations that can't compare—literally trying to maintain ownership of descriptive terms like milk, mayo, meat, beef, butter, etc. (Cockburn, 2021; Muller, 2022; Negowetti, 2020). While a Longhorn Steakhouse commercial assures us “you can't fake steak,” even vegans sometimes use words like “fake” or “faux” to describe plant-based milks and meats. While vegans may be proud to do so for ethical reasons, this rhetoric arguably constructs animal-based foods as primary and authentic, which may be hindering the vegan movement's efforts to culturally mainstream plant-based diets.¹ So, as vegan scholars in critical animal studies in the United States and United Kingdom, we were intrigued by the notion of how to counter the animal-based food hegemony, the “meat culture” as Annie Potts (2016, p. 2) phrases it, and establish vegan foods as “real” (natural and culturally authentic) within the British and American marketplace.

¹We recognize that veganism is broader than just food and encompasses a boycott of all types of animal-derived or animal exploitative products and processes (from leather, to fur, to wool, to products tested on animals) and that, as a social movement, this individual consumer boycott is part of a larger systemic effort for animal liberation to end legalized exploitation and use of other animal species (Nocella et al., 2014; Vegan Society, 2022a). However, for purposes of this study, we are concentrating on the strategic promotion of vegan foods and the competition with animal-based foods, primarily in a marketing sense selling grocery store items direct to UK and US consumers.

In this chapter, we will offer strategic communication suggestions to marketers and activists to promote vegan foods around notions of truth and authenticity by affirming their superiority, reclaiming traditional or indigenous plant-based culinary histories, using terminology transparently, and revealing the violent realities and unnatural practices in processing animal-based foods. We do this based on analyzing notions of authenticity in a sample of vegan product marketing in the United States and United Kingdom from 2016 to 2022 and sharing sample phrases and slogans throughout. Psychologist Melanie Joy (2010) notes how animal-based foods claim to be “normal, natural, and necessary” (p. 96), and Piazza et al. (2015) adds the 4th N of people describing meat as “nice” to eat. Thus, we offer ways to affirm the normality, naturalness, necessity, and niceness of vegan foods, while also applying Derek Thompson’s (2017) recipe for achieving cultural popularity by framing plant-based replacements as a “familiar surprise” (p.45).

Literature Review

To set up our upcoming marketing analysis and activist recommendations, in this section, we explore scholarship on authenticity’s meaning and function, truthfulness and transparency in marketing ethics, problems with animal agribusiness and fishing industries, and vegan communication strategies.

Authenticity

In an anthropological sense, to say that something is authentic is to claim it is genuine or real in terms of the object’s known origin (its genealogy) and/or its content (identity), where its claims match its reality (Lindholm, 2008). In terms of marketing, truthfulness is but part of authenticity, by providing evidence for originality or similarity. But truth is not a synonym for authenticity. For example, an advertisement can convey truthful information about a product, but it still may not convey that the product is “authentic” in terms of what the consumer is looking for (Grayson & Martinec, 2004). Authenticity relies on personal perception and context, so in many senses, it is socially constructed by the marketer and/or the consumer. Therefore, outside of a positivist context, scholars do not like to claim that a product is inherently or objectively “authentic,” rather that authenticity is subjectively determined by the beliefs, experiences, and preferences of the evaluator (Bruner, 1994; Ewing et al., 2012; Grayson & Martinec, 2004; Jones, 2010). Objects can “become embedded in regimes of value” (p. 198), dependent in part upon the observer’s way of seeing that object (Jones, 2010). Additionally, consumer researchers Grayson and Martinec (2004) find that consumers may also perceive a product as being *some-what* authentic, meaning that authenticity does not have to be a categorical decision and can sometimes be assessed by degree, as if along an authenticity spectrum.

Grayson and Martinec (2004) drew upon semiotics to classify two types of product authenticity in advertising: indexical vs. iconic. Indexical authenticity emphasizes a material originality, while an iconic authenticity emphasizes similarity to the original—a realistic re-creation.

Given the concept's variance and subjectivity, why is authenticity valued? Archeologist and social anthropologist Sian Jones (2010) sees the current significance placed on authenticity as intertwined with some of Western modernity's classic practices: categorization, order, and purity, including suppression of hybridity. She concludes "people use authenticity to negotiate their own place in a world characterized by displacement" (p. 184). This resembles Peter Berger's (1973) theory that people search for meaning through authenticity because modern society feels fake and plastic. In a similar sense, authenticity (sincerity) helps modernity's alienated urban dwellers feel more connected and trusting of relationships, to avoid being deceived by the many strange people and products now in our lives (Lindholm, 2008; Trilling, 1972).

Jones (2010) believes the way people experience the authenticity of objects is through connection with "networks of relationships between objects, people and places" (p. 183), past and present; personal incorporation into this relational network is often more important to them than the object itself. A material object can represent a certain historical way of life and thus engagement with this object may transport a viewer into this past experience or narrative: "The effectiveness of this process depends upon people's abilities to establish relationships with objects, and the networks of people and places they have been associated with during their unique cultural biographies" (Jones, 2010, p. 189). A person's use of authentic objects is a bridge to a person's search for their authentic self.

Soren Kierkegaard (1962) asserted that this quest to authentically become who we are requires finding meaning through a passionate commitment that goes beyond ourselves. This fits with Taylor's (1991) argument that personal authenticity should be about self-transcendence more than self-indulgence. For there to be a moral/normative aspect to seeking self-fulfillment through our authentic self-identity, we must consider not just internally determined preferences, but external notions of communal good and our social ties with others (Taylor, 1991). Applying these relational and personal conceptions of authenticity to the vegan marketing topic in this chapter, we assert that activists for animals and the environment can offer the self-transcendent projects that can add meaning to people's lives in modern society, showing the authentic connection between veganism (starting with our food choices) and building healthier and more natural relationships with fellow animals and nature needed to reform this artificial era of mass exploitation and crises in ecology and health. Similarly, in Freeman's (2014) *Framing Farming* book, she recommends that animal rights organizations should create "ideologically authentic" (p. 75) food campaigns that frame appeals based on their true motivations to end animal use (rather than human health or animal welfare appeals). In this way, any campaign to advance veganism is also, by default, advancing all animal rights issues by affirming a post-humanist and anti-speciesist worldview that society needs to adopt to transcend this violent oppression, falsely justified by the human moral superiority complex.

Communication Ethics: Authenticity and Truth

Whether a nonprofit activist is campaigning on behalf of farmed animals, or a food company is marketing animal meat or vegan products, any public communicator must follow certain standards of honesty and fairness (toward competitors and especially toward the public) to be considered ethical and socially responsible, according to codes of ethics from professional organizations such as the UK Advertising Standards Authority (asa.org.uk), Institute for Advertising Ethics (iaethics.org), the Public Relations Society of America (prsa.org), and the American Marketing Association (ama.org) (Christians et al., 2020; Freeman, 2009). To be ethical, persuasive communication should be distinct from propaganda and manipulation by following guidelines such as truthfulness and social responsibility of the message, authenticity and transparency of the speaker, and respect for the audience, including making persuasive appeals equitable (not taking advantage of vulnerable groups) (Baker & Martinson, 2001; Drumwright & Murphy, 2009).

These principles of honesty, authenticity, transparency, and fairness are especially pertinent when marketing food, given food's association with personal and public health, environmental sustainability, animal rights and welfare, and worker well-being (Akhtar, 2012; Cassuto, 2010; Marshall & Levy, 2011; Meftaul et al., 2020; Mekonnen & Hoekstra, 2012; Pachirat, 2011; Pluhar, 2010; Singer & Mason, 2006). Grocery shoppers rely on product labeling to make decisions about health, nutrition, and ethical consumption (including vegan, dairy-free, humane, and heart healthy) (Browne, 2020), yet consumers are often confused by marketing claims that a product is "humane," "cage-free," "sustainable," or "natural," and those common labels could therefore use more government regulation, mandating added transparency or more limited use (Animal Welfare Institute, 2019; Parasidis et al., 2015). U.S. consumers, especially younger people, are willing to pay more for animal products certified to be "humanely raised" but would demand honest labeling by an independent third party (as the food manufacturer is not necessarily a trustworthy source of what constitutes humane treatment) (Spain et al., 2018). The Animal Welfare Institute (2020) produces an online consumer guide to U.S. food labels (in the context of animal welfare) to help clarify which welfare or health labels tend to be most authentic and trustworthy (i.e., those with independent third-party certification), which labels to be wary of for vagueness (e.g., cage-free eggs, crate-free veal or pork, free range, grass fed, and no added hormones or antibiotics), and which labels are meaningless regarding welfare (e.g., naturally or humanely raised, kosher, halal, vegetarian fed, and cage-free poultry).

Animal agribusiness lacks transparency with consumers regarding the extent of their negative business impacts on human and nonhuman animals and nature, often through deliberate knowledge suppression such as "ag-gag" laws (Clarke et al., 2022); thus, consumers do not know the full effects of the life cycle of most animal meat, cow's milk, and chicken's egg products, since marketing and corporate communications focus more on pleasurable consumption than problems with production (Adams, 2015; Pachirat, 2011; Singer & Mason, 2006; Freeman & Treadwell,

2022). For example, Scrinis et al. (2017) criticize the egg industry food labeling and certification schemes in the United Kingdom, United States, and Australia that emphasize hens' happiness, freedom, and naturalness, while obscuring cruel realities of the egg industry:

Other characteristics of production that impact on welfare, such as de-beaking, are typically not mentioned on labels. Labelling claims, logos and images on packaging have also been shown to exaggerate or misrepresent the actual production conditions, thereby providing an “ethical halo” for products that may only provide minor incremental improvements from baseline industry standards. (p. 789)

To avoid consumer deception, responsible media style guidelines, outlined by Freeman and Merskin (2015) at animalsandmedia.org, suggest advertising and public relations campaigns avoid greenwashing, humane-washing, and misrepresentation of an animal's emotional well-being and suffering (when she or he is used and sold by a business). Further, Freeman and Treadwell (2022) call for voluntary corporate disclosure of how nonhuman animals and their habitats are impacted by each company's business practices and their use of animals, similar to what would be expected of a company's social responsibility disclosures in annual reports.

Problems with Animal Farming and Fishing

The vast majority of the animal products consumed in the Western world are from intensive confinement operations or commercial fisheries, killing trillions of individuals annually, which is necessary to produce such historically unprecedented high quantities of animal flesh, milk, and eggs, at a price low enough to make daily or routine consumption affordable for most consumers, often by externalizing costs onto taxpayers (e.g., subsidies, pollution, public health problems, etc.) (Potts, 2016; Simon, 2013). According to the Sentience Institute (Anthis, 2019), which considered the scope of intensive animal farming in the United States, by species, 99.9% of chickens raised for meat, 98.2% of chicken raised for eggs, 98.3% of pigs, and 70.4 percent of cattle are raised on factory farms their entire lives. All animal farming, even small-scale, involves suffering and exploitation on some level, but these intensive “factory farming” systems that aim to maximize profits are notably cruel in their treatment of farmed animals (including farmed fish) (e.g., selective breeding and genetic modification of bodies for profit; cramped and crowded conditions; medical manipulations without pain relief; rough handling; and separation of families) and their disregard for the rights and well-being of human workers and rural communities (Ball-Blakely, 2017; Imhoff, 2010; Nibert, 2017; Pachirat, 2011).

Given animal agribusiness's disproportionate use of the world's land, inefficient production of calories per acre (compared to growing human food crops), deforestation and displacement/harm to wildlife, excessive use and pollution of freshwater, and emission of greenhouse gases, farming animals is an unsustainable and overly-destructive method of feeding a growing number of humans (8+ billion) (Andersen

& Kuhn, 2015; Benton et al., 2021; Cassuto, 2010; EAT-Lancet Report, 2019; Kemmerer, 2015; Ketcham, 2019; Mekonnen & Hoekstra, 2012; Oppenlander, 2013). This necessitates a reduction in food waste and a global shift to sustainable plant-based farming/food systems as an ecological requirement (another moral obligation in addition to the issue of animal rights/justice).

Vegan Communication Strategy

Communication is foundational to determining our mental and physical realities—our perceptions and policies—that construct and maintain meaning in cultural practices (Hall, 1997). Critical animal studies scholars propose respectful language can help reframe our views on other animal species, such as by avoiding industry euphemisms that hide the violent dominance (e.g., raising, family farming, breeding, molting, fasting, euthanizing, harvesting, processing, depopulating) and disassociate the individual from the product (e.g., poultry, livestock, meat, pork, dairy, seafood, unit, broilers, and layers) and instead using more accurate terminology for processes (e.g., factory farming, animal agribusiness, animal industrial complex, confining, controlling, objectifying, slaughtering, killing, impregnating, exploiting, using) and affirming terminology for animal individuals (e.g., pigs, cows, chickens, aquatic animals, he/she or they, someone) and their ownership over their own bodies (e.g., their flesh and skins, a hen’s eggs, and a mother cow’s milk) and families (e.g., babies, mothers, fathers). (Adams, 2015; Dunayer, 2001; Freeman & Merskin, 2015; Glenn, 2004; Hannan, 2020).

Our discourses on animals (and ourselves) represent and maintain what Foucault (2000) calls a *regime of truth* that justifies the network of practices, policies, and common-sense beliefs about other animal species and humans’ rightful relationship over or with them (Freeman, 2014; Merskin, 2018). The way we portray and discuss animals who are traditionally farmed or hunted for food can either reinforce or challenge the status quo of objectification and (ab)use. Hannan (2020) uses the term “meatsplaining” to describe animal agribusiness’s propagandistic discourse that distracts, misinforms, and denies their many problems.

Psychologist Melanie Joy (2010) notes that to avoid dissonance and guilt, we humans (and animal agribusiness) mentally excuse the eating of animals by portraying it as “normal, natural, and necessary” (p. 96). This is part of a discourse that makes the captivity, killing, and consumption of certain animal species seem unavoidable, inevitable, and benign. Building upon Joy’s work, psychologist Jared Piazza and colleagues’ research identified “4 Ns” that are used as principal justifications for killing and eating nonhuman animals: “that eating meat is Nice, Normal, Necessary, and Natural” (Piazza, 2021, p. 32). The 4 Ns, and by association the legitimacy of animal product consumption, tend to pass unchallenged (Cole & Stewart, 2021; Piazza et al., 2015). However, deconstruction of these 4 Ns presents a basis on which vegan campaigns and marketing can challenge the authenticity of animal products.

Freeman's (2014) study of major U.S. vegan campaigns by five animal rights organizations revealed they primarily framed animal-meat-eating and farming as industrialized cruelty and suffering, unnecessary killing, and problematic to human health and the environment, which addresses the myth of meat's necessity, and somewhat addresses the normality and naturalness myths. Freeman (2014) recommends vegan advocates problematize animal farming and fishing based on ethical principles of injustice (unnecessary control and killing of sentient beings) and ecological unsustainability (which also emphasizes unnaturalness) and promote animal-free diets based on our kinship with fellow animals; an imperative to support healthy, sustainable food sources; and an ethical desire to foster a human society that is non-discriminatory (non-speciesist) and life-supporting (biocentric rather than anthropocentric).

Vegan Food Marketing Findings

For this chapter's study, in 2016, we started to collect plant-based culinary magazine advertisements in the United Kingdom and United States that featured vegan food product² advertising to examine the framing of their messages from a critical animal studies perspective, particularly in relation to Grayson and Martinec's (2004) indexical (original) vs iconic (replicated) authenticity claims in marketing. We looked at a year's worth of veg food magazines and mainstream food magazines in the United Kingdom and United States in 2016 and again in 2020. These include US magazines *VegNews* and *Vegetarian Times/Vegetarian Today*, and UK magazines *The Vegan Magazine*, *Vegan Food & Living Magazine*, and *Vegan Life*. Plus, as vegan shoppers we also supplemented this with continuous informal observations of current grocery store packaging and advertising in the United States and the United Kingdom through 2022, as well as observing animal industry marketing.

In terms of comparisons, we found that a majority of vegan food marketing claims that plant-based products are *better than* animal-based products, following an indexical authenticity model that implies originality in some sense. For example, an exuberant ad for the brand Gosh Naturally Free From says: "Our burgers, bakes and bites are brimming with confidence and bursting with taste, which is exactly what you'd expect from such a gloriously natural riot of veg, pulses, herbs & spices." The Vegan Egg by Follow Your Heart is "incredible" and "new," and your breakfast and baked foods will "never be the same," since this is better than eggs. In support of the primacy of plant-based meat, Lightlife brand says we should "Eat Meat not Animals" and proudly declares that "No animals are required" to enjoy meat. Sweet Earth's Awesome Burger is "plant-based protein," with an ad showing a young

²We stuck with examining ads for primary vegan replacements to animal-based foods (like cheeses, burgers, nuggets, sandwich slices, yogurts, ice creams, milks, mayos, and eggs) as well as whole foods like avocados and almonds (although, produce is not often advertised), and excluded supplement protein powders, candy, pasta/grains, and salad dressings.

woman enjoying one, bragging that “This is what awesome looks like.” Making themselves seem like culinary specialists (not imitators), Kite Hill declares themselves “Plant-based artisans,” who, rather than just making or producing food, describes themselves as “*crafting* delicious dairy-free foods.” Forager Project advertising also uses the verb *craft*, additionally saying their milk products “taste exceptional and are kind to our planet.” Emphasizing novelty in terms of innovation, Beyond Meat’s Beyond Burger is a “new breed of burger” and “the future of protein.” Hampton Creek also appeals to this innovation angle, stating, “this is what it looks like to start over in our food system,” promoting their JustMayo product with the phrase “Start loving your mayo” (implying that hen-egg-based mayo is unlovable and in need of improvement). Sometimes even the names of the vegan manufacturers convey superiority: Impossible Foods, More Than Meat, and Beyond Meat. And some whole plant foods also tout their unique strength, with ads for potatoes saying they are the “9th wonder of the world,” avocados saying they are a “superfood,” and chia seeds declaring themselves a “natural superhero.”

Additionally, Silk has a “tastes like better” campaign that emphasizes it is better than dairy (in taste and in some vitamins). Advertising for Silk milks over the years highlight strength, power, and protein (“plant-powered” protein), as that is what cow’s milk marketers always touted—strong bones, health, athleticism—helping kids grow up strong (think of the milk-mustache campaigns). So Silk is mimicking that traditional supposed health benefit of cow’s milk, but now you gain strength with *plant-powered* protein that is heart healthy.

A minority of vegan food marketing claims their products are equivalent to animal-based products (in taste and functionality), following an iconic authenticity model. This is especially true for food manufacturers who make vegan versions of products they also sell with animal-based ingredients, like an ad for the new Country Crock Plant Butter, that is said to “cook, bake, and taste like butter” and features a woman with blue ribbons for her pies (but does not explain any problems with cow’s milk butter nor claim to be better). But vegan companies also like to confirm the familiarity of their products. For example, Hampton Creek’s Just Cookie Dough declares you can enjoy “that same homemade flavor we all remember,” so they are alluding to tradition here, with vegan versions mimicking the cookies our (grand) parents made us as kids. Making a similar appeal to being as good as traditional homemade cookies, Fat Badger’s “ravenously vegan” cookies have an ad that says, “Take the year off grandmas. We got this.” Koko coconut milk “yogurt alternative” declares it is “as good” in taste, and you won’t know the difference based on its “smooth yogurt-ness.” This iconic/replica authenticity appeal may be used in conjunction with a superiority claim, such as Koko featuring a testimonial saying, “Tastes like regular yoghurt, but yummiier.”

In terms of replicating animal meat/flesh, an ad for Native Sons’ canned jackfruit says it is a “Meat alternative—no soy, no wheat. All the texture for pulled pork, chick’n salads and more!” And Beyond Meat’s Beyond Burger says it is “The world’s first plant-based burger that looks, cooks, and tastes like fresh ground beef,” declaring “it’s juicy, meaty, & delicious.” On the Impossible Foods website, they say it is a “natural recreation of meat.” For their Impossible Sausage Made From

Plants product, their website says it is “a delicious way to enjoy the mouthwatering taste of sausage.” Their science tab explains they discovered that “Heme is what makes meat taste like meat. It’s an essential molecule found in every living plant and animal,” and they produce plant-based heme by fermenting yeast. While the Impossible Foods website and ads don’t say heme makes their plant-based meat “bloody,” this is the word that often gets used by reporters in describing its red juiciness, as it was widely reported on as a unique veggie burger upon its launch, with many consumers not being able to taste the difference in taste tests with cow-based burgers (Hope, 2017; Moskin, 2019; Rusli, 2014).

Like most food advertising, vegan foods affirm their goodness, citing benefits in a positive framing. In this case, goodness is determined by flavor, ethical business practices, and plant-based nutrition/purity. They may show labels for a vegan or organic or fair-trade certification. Heidi Ho plant-based cheese often uses the phrase “plant-based goodness,” and Tofurky holiday roast declares it is “Good for our animal friends, good for the planet, and good for a sandwich the next day.” One way to affirm their goodness is for vegan food marketing to deny badness, by claiming to be free-from what’s harmful. In this case, that is ingredients that are artificial/unnatural, unhealthy or allergenic, inhumane, or unsustainable. You may see labels that certify the product is Non-GMO, Gluten-Free, Cholesterol-Free, Palm-Oil-Free, Dairy-Free, or Soy-Free, or assures you it has “No artificial flavors or colors,” and is “Meatless,” “Meat-free,” or “Not made from animals” (“cruelty-free” was not a term seen much on vegan food products).

Vegan foods sometimes mention nonhuman animal species, but they do not tend to show animal imagery on their packaging, presumably to avoid any misconceptions that animal-based ingredients are in the product. But there is a company, Notco, that sells a “plant-based milk alternative” called Not Milk that features a prominent icon of a cow’s body on the package with a big line going diagonally across her, which is boldly implying that consumers of this product do not want to take milk from cows. Their website has the slogan “It’s the food you love, but better. Made of 100% plant goodness, that helps protect the planet with every delicious mouthful.” Notco mixes indexical and iconic authenticity approaches as they use the word *replicate* on their website and compare their products as similar to animal products, but they also proudly declare they are from 100% plants, stating this is better for us, the planet, and environment. Even though Notco is showing animal imagery, they do not make animal rights/welfare appeals. Some vegan companies that make animal-friendly appeals will show some animal imagery; for example, Miyoko’s Creamery has a cheese ad with the headline “Milk Plants. Hug Cows.” It shows a little girl hugging a cow stuffed animal and giving a thumb’s up in front of her grilled cheese sandwich, with a YouTube link to testimonials from “real kids” who like to learn about how Miyoko’s cultured vegan cheddar cheese is “kinder to cows” and expresses “real compassion.”

Discussion

While we might have expected most vegan marketing to show how these vegan products are a great alternative to familiar animal-based products, based on being a replacement (replica) that has similar taste and functionality (but none of the harms), most marketers do not take that approach. They go for bolder claims of being better than conventional and problematic animal products, portraying themselves more as an original rather than merely a simulation. This helps to challenge the hegemony of animal-based products.

Because plant-based meat and dairy replacements are based on familiar animal-based products, but are also marketed as new and different, they may fit Derek Thompson's (2017) notion of the "familiar surprise" (45). In his book *Hitmakers*, Thompson posits that the products that become most popular (whether they be music, movies, or food) are often derivative—they satisfy our curiosity for novelty while building on our love for what we already know we like: "audiences are hungry for meaning, and their preferences are guided by an interplay between the complex and the simple, the stimulation of new things and a deep comfort with the familiar" (p.15). In this case, when it comes to design and creativity "familiarity is not the end. It's just the beginning" (p. 45). If so, then we assert that highlighting that a vegan product is analogous to but newer/better than the conventional animal products, could be a *benefit* and not a liability for vegan replacements to animal-based products. While this approach does not apply to popularizing common whole foods like cashews, it does apply to popularizing a new cashew-based cheese on the market. By building on familiarity mixed with newness/difference, marketers can avoid having to offer products that are identical in taste and texture as products taken from animals. If vegan replacements to animal products are judged merely on being an identical replica, they may fail to meet authenticity requirements of consumers and would always be seen as a knock-off of the "original." But if they continue to emphasize how they are a better/tastier and even a more modern version of something you enjoy, there is enough wiggle room to allow for a taste and texture that feels familiar but is also original to that product and reflects the ethical values of this cultural era. This ethics-based appeal was recommended in an IPSOS Knowledge Centre (2018) report, where Emma Clifford, a Senior Food and Drink Analyst with Mintel suggested:

Meat-free brands should be more vocal about exactly why they are a good choice in terms of animal ethics and the environment, as well as emphasizing their nutritional credentials. These messages can make consumers feel holistically virtuous in their choice, helping to build a feel-good factor. (p. 11)

In terms of how the framing of vegan foods as authentic can fit with Jones' (2010) idea that in the alienating modern world, we seek (food) objects that represent relationships and a cultural connection, marketers want to show that vegan foods are a meaningful part of affirming one's identity. Plant-based meat and dairy replacements help us preserve our relationship with culturally familiar foods we enjoy (e.g., Just Foods tells us to "eat what you love") but allow us to have a better/

improved relationship with animals and the natural world many of us proclaim to care about, benefiting our physical and mental health by helping us live our values every day. Most vegan product messages convey that the food system is broken and we need to replace what is unhealthy, unsustainable, indigestible, inhumane, and/or unjust with something just as or even more pleasurable but also more productive for us and the planet—all (or more) of the flavor but none of the flaws.

In creating meaningful relationships, some vegan marketers connect your choice to buy their products with you being revolutionary and a heroic part of a social movement for progressive change (typically referring to the environmental movement but sometimes the animal protection movement). For example, when you click on the mission tab on the Impossible Foods website, it shows a nature scene and says “Join the Movement. Save the Planet. Welcome to the Future of Sustainable Food” with phrases like “Big flavor. Tiny footprint” located near their carbon footprint calculator. And Beyond Meat declares that “together, we can truly bring exciting change to the plate—and Beyond” because “our plant-based meats allow you and your family to eat more, not less, of the traditional dishes you love, while feeling great about the health, sustainability, and animal welfare benefits of plant protein.” Alluding to a peaceful uprising, an ad for Milkadamia brand coffee creamers features the headline “a quiet revolution is brewing” and uses the tagline “Moo is Moot” to imply there is no more need for cows to make our creamers, and in fact, it is unsustainable to do so; Milkadamia aligns itself with the environmental movement (although not necessarily with the animal protection movement), mentioning regenerative farming and declaring “we’re here to stir things up” and “we believe this ritual (awakening with coffee) can also enlighten us to the benevolent role of plants and trees, to absorb rising carbon levels and bring us back into balance.” And Miyoko’s has a tagline “Revolutionizing dairy with plants” that not only touts culinary innovation but also alludes to revolutionary activism.

Taylor’s (1991) argument for self-transcendence resonates in turn with the initial discursive construction of veganism as a self-conscious social movement, in the writings of vegan pioneers such as Donald Watson in the UK Vegan Society (2022b) (founded in 1944). As Cole argues (2014), those writings constructed veganism as holding out the hope not only for transformed vegan selves, liberated from dependence on harming others, but also for a social transformation toward more just and compassionate relationships between humans and other species. Veganism was therefore conceived as authentic in Taylor’s sense of self-transcendence rather than self-indulgence.

Recommendations for Vegan Marketers and/or Vegan Activists

Based on our study findings and scholarly insights, we offer recommendations to help vegan food marketers as well as vegan activists (likely working at NGOs in the animal protection and environmental movements) collectively deconstruct the 4 Ns

and instead normalize plant-based consumption and establish cultural authenticity. Discussed in the sections below, these recommendations include: using terminology that is strategic and transparent in taking equivalent ownership of food categories; affirming the superiority of plant-based foods to animal-based foods; revealing the deception in animal-based food marketing and sharing the harsh truth of animal food production; flipping concerns about “processed” foods, reconstructing the violent and unsustainable processes inherent to animal agribusiness; and embracing the cultural histories and traditions around plant-based foods.

Be Transparent and Take Ownership of Terminology

It would be advantageous to lobby to take ownership over previously animal-based categories like meat, milk, and egg, so that the general public comes to expect clarification as to whether the food item is animal-based or plant-based in origin. Therefore, a label of “meat” or “milk” or “egg” would no longer be assumed to come from animals, with only vegan products needing a qualifier; instead, each product would be understood as coming from either an animal or a plant-based source, with the manufacturer being responsible for accurate labeling.³ For example, manufacturers would qualify each type of food based on whether it is originating from a plant or animal species, and then for added transparency and description on the front of the packaging, clarify which species or ingredient it contains, to alleviate any mystery (if multiple species, go with the primary whole “ingredients,” leaving out water, sweeteners/sauces). And to express authenticity in vegan replacements for animal products, state what the replacement contains rather than just declaring it *faux* or *mock* chicken, egg, beef, etc. Examples of this equitably transparent phrasing are included in the following table:

Plant-Based Food Terminology	Animal-Based Food Terminology
Almond milk or oat milk or soy milk	Cow’s milk or goat’s milk
Plant-based egg made of mung beans	Chicken’s egg
Cashew cheddar cheese; or plant-based mozzarella cheese made of cashews, coconuts, and peas.	Cow’s milk cheddar cheese; goat’s milk mozzarella cheese.
Avocado oil mayo	Mayo from soybean oil and chicken’s eggs
Veggie or plant-based meat made of beans, soy, quinoa, pea, coconut, etc.; soy bacon; wheat-based chicken wings; jackfruit BBQ sandwich meat; soy tuna filet	Animal meat from cows, pigs, birds, or fishes; cow’s meat; pig’s bacon; wings of chickens (or a chicken’s wings); BBQ sandwich meat from pigs; filet of cod, tuna, etc.

³We recognize that policies in the US and UK vary and lawsuits abound related to who has the right to use the term milk, meat, egg, mayo, etc., which often requires vegan food manufacturers to use creative work-arounds (Oggs instead of eggs, for example). Plant-based advocates must continue to lobby for the right to own the terminology on packaging. But in persuasive speech, we are often free to verbally describe anyone’s products in our own way.

Similarly, qualify a protein source by saying *plant protein* or *animal protein* to remind people that protein can come from either. The term “plant-powered” or “plant-strong” is another way to convey that plant-based foods fuel us and energize us and that humans do not need to consume the muscle of another animal to build muscle and strength. We like how Lightlife has started proclaiming their products are “meat, just not from an animal” and “made directly from plants and not the animals who eat them.”

When vegan activists are describing products taken from animals, they could use a possessive apostrophe or other terminology to demonstrate ownership by individual animals over their own bodies, milk, and eggs (e.g., a hen’s egg; a chicken’s wing; a cow’s milk; milk for a baby calf; meat or flesh taken from a pig; a pig’s ribs; a former turkey’s leg). This blunt reframing can deconstruct the assumed naturalness of farmer/human ownership of these “products” to begin to convey these items as they really are the natural body parts of a current or killed individual who did not give them voluntarily (the verb “taken from” also conveys this in terms of theft or violence).

When discussing vegan/plant-based versions of animal-based products, the word *replacement* is stronger than *alternative* because alternative implies a benign bevy of consumer choices, while replacement implies that something new is superior to the older version, which should now be dispensed with. But the phrase “vegan replacement” by itself may send the opposite message intended, so it is best clarified that it is a (*vegan/plant-based*) *replacement for animal-based products*.

Unequivocally Affirm Vegan Products as Superior to Animal-Based Products

Be affirmational in declaring what these vegan products are in familiar terms to convey they are *better versions* than the animal-based foods that people enjoy eating or currently identify with (since the plant-based versions offer improvements in ethics, sustainability, nutrition, taste, functionality, and/or safety). This follows Thompson’s (2017) advice about consumers flocking toward a “familiar surprise” (something new and interesting but not too weird). Avoid apologizing, equivocating, or joking about the taste or ingredients in vegan products, merely settling for being similar to or an imitation of an animal-based “original.” Instead, vegan marketers should boldly position their products as superior to animal-based versions, relegating animal-based products to a lesser status, such that they are reconstructed in the inverse of the 4Ns: *abnormal*, *unnecessary*, *unnatural*, and *not* nice to eat.

As part of the rationale for animal-products needing to be superseded by plant-based versions, vegan activists in particular should emphasize ethical principles of justice, compassion, sustainability, and responsibility, mentioning how animals and the environment are benefited (and exploitation is lessened or avoided) by switching to plant-based foods. These altruistic and self-transcendent values affirm the

importance of other species and challenge the hegemony of anthropocentric rationales, so we normalize consideration of the interests of all living beings in decision-making (Freeman, 2020).

Reveal Deceptions in Animal-Based Food Marketing to Reconstruct the Unappetizing Truth of Agribusiness and Fishing

What is particularly inauthentic about land-based animal products is that they market themselves as wholesome (implying clean, benign, and gentle production methods), emphasizing a naturalness angle in their farming practices. The reality is that feeding over 8 billion humans hundreds of billions of other animals annually requires confined animal feeding operations that are cruel, dirty, and dangerous. Most animal products come from industrial operations that do not fit the idyllic farming images often used in marketing (Fiber-Ostrow & Lovell, 2016; Pachirat, 2011). The animal rights movement messaging often showcases the inherent violence and cruelty of factory farming practices to expose the deceptive marketing around animal agribusiness (e.g., concrete, metal bars, and artificial lighting are more common than organic elements like grass, wood, and sunshine). And to combat free-range and so-called “humane-farming” product claims, activists should demonstrate that any farming of individual sentient beings for food, even on a smaller scale, still involves suffering and exploitation (Cole, 2011; Freeman, 2014). As David Nibert (2013) has compellingly argued, what has been euphemistically glossed as a benign process of the “domestication” of farmed animals should more accurately be described as “domesecration”: the systematic practice of violence in which social animals are enslaved and biologically manipulated, resulting in their objectification, subordination and oppression” (p. 12).

Another part of the “naturalness” rationale that animal-meat-eaters use to morally excuse the killing and eating of other animals is that this predation occurs naturally in the wild as practiced by many other animal species. Vegan activists can convey that while it may be natural for carnivorous animals and omnivorous animals (homo sapiens included) to hunt and eat other animals for their immediate sustenance, the human practice of *farming* and captive rearing and accumulation of “prey” is not practiced by other species in nature, thus complicating the argument used to justify *animal farming* as “natural” (Freeman, 2014; Mason, 1997). Additionally, it is also unnatural for adults to drink milk meant for infants, especially from mothers of other species—a point often made by vegan activists, such as by illustrating how odd it looks for a human man to suckle off a cow’s teat.

A related, albeit complex, angle for vegan activists to deconstruct regarding “naturalness” or “normality” arguments, is the scale and process by which the UK and US procures animal products these days in comparison to our ancestors, particularly ancient ancestors. As great apes, the longer natural history of homo sapiens is

vegetarian, and thus we retain the ability to be healthy herbivores. But it is true that homo sapiens can be omnivorous and that many human societies have incorporated some other animal species into their diets for tens of thousands of years (more recently through farming and longer through hunting) to help us adapt to living in all types of ecosystems across all continents (Harari, 2015; Nibert, 2013; Singer & Mason, 2006); yet the way we practice hunting or predation in modern times and at this scale is unprecedented (abnormal or unnatural). For example, the industrial hunting of sea animals in commercial fishing is unnaturally gluttonous and broadly destructive of all types of sea life, especially when compared to how some human ancestors historically fished for community sustenance or how aquatic animals hunt for their own sustenance (Freeman, 2014; Mason, 1997).

To help establish the necessity of societal shifts to plant-based eating, activists and vegan marketers should convey that animal-based foods are notably more unsustainable and destructive to produce than (organic) crops grown directly for human consumption. As the human population grows, we have a moral obligation to feed everyone and support planetary life, and this is only possible by shifting to a primarily plant-based food system. Animal product marketing does not reveal its current taxpayer-subsidized model where its vast ecological and public health externalities are paid by society not industry, especially people of color and people with fewer financial resources (Ball-Blakely, 2017; Oppenlander, 2013; Simon, 2013). The consumption of animal products has been normalized and prices kept artificially affordable in the United States and United Kingdom for many decades, through concerted efforts on the part of the state and agribusiness (Nibert, 2013; Molloy, 2011). This has resulted in farming sectors trapped into complicity with the animal-industrial complex. Therefore, it is incumbent on vegan advocates to formulate and promote policies that enable animal farmers to transition to sustainable plant-based agriculture, or alternative land uses that avoid the perpetuation of domesecration.

Address and Reverse the Processed Food Arguments

Some of the attacks by animal-based industries against new vegan competitors are that their products are highly processed and not simple, whole, “real” foods in their authentic state. Highly processed foods are generally considered less nutritious than whole foods; this is true in the vegan nutrition community, where studies show the whole food plant-based diets are the primary path to disease prevention and longevity (Fuhrman, 2020; Greger, 2015; Pulde & Lederman, 2017) as opposed to eating a diet mainly consisting of vegan cookies, chips, ice creams, pancakes, and veggie cheese burgers on white buns. Vegan activists should accurately convey what nutrition experts verify as the healthiest vegan meal plans and recipes, and hopefully vegan food marketers can optimize the nutritional value of many of their products, building them around whole foods and reducing processing where possible (for example, Elmhurst, formerly a cow’s milk company, now creates plant-based milks

with just two ingredients—water and some kind of nut or oat). But because many of the animal products that the vegan products are substituting are not necessarily health foods, even the vegan versions (e.g., Beyond Sausages, JustMayo, Chao Cheese, Ben & Jerry’s almond milk ice creams) should probably be seen more as treats (or used sparingly for flavor enhancement) rather than as staples to eat daily. Conversely, many animal-based foods contain additives (e.g., flavorings, colorings, and preservatives) and some, such as animal-based sausages or cheeses, are produced by multiple stages of processing. Additionally, certain animal products require processes of homogenization and radiation to make them less of a safety risk for food-borne illnesses.

Vegan activists can reframe the notion of what constitutes unhealthy “processing” and simple foods to showcase how ubiquitous and complex the process of *producing* products out of individual animals is. Turning farmed animals into meat via feeding them plants is a more intensive process than turning plants directly into vegan meats. The former often involves growing feed crops (which is often implicated in deforestation, chemical-based pollution, and the killing or displacement of free-living/wild animals) to feed farmed animals; artificially inseminating females used as repeated breeders, then taking away their babies each time; modifying animals genetically and physically to maximize profits and efficiency; giving animals vaccines, antibiotics, and sometimes growth hormones; and transporting and slaughtering live individuals. Slaughterhouses are literally called *processing* plants, where the hidden process involves killing, bleeding out, burning off hair/feathers; skinning, disemboweling, chopping, sanitizing, blood and remnant waste removal, and packaging (Imhoff, 2010; Pachirat, 2011). The mass slaughtering of animals and their conversion into “products” in the animal-industrial complex is *the* industrial process par excellence, but with added violence that plant-based food processing lacks.

Retell and Reclaim the Cultural Histories of Plant Foods

While animal-based foods are popular in some UK and US culinary traditions of recent centuries, cultural authenticity also exists for many plant foods consumed for hundreds or thousands of years in the Americas or in Europe. Vegan activists and marketers in the United Kingdom and United States can create a sense of place and cultural tradition around vegetables, grains, beans, nuts, seeds, and fruits indigenous to our regions or common in traditional dishes. For example, maize (corn), squash, and beans are indigenous to North America and cultivated by people pre-dating the European colonists, and if you expand out to people indigenous to Central and South America, you can include potatoes, tomatoes, peppers, and cacao (Laws, 2014; Roos, 2021). And while certain animal foods are seen as a central part of “soul food” commonly associated with the American South during the period of enslavement, Jasmine and Kenny Leyva (2019) highlight that African Americans can also choose to trace their culinary history farther back to include many

plant-based staples from African homelands, such as root vegetables and legumes (as outlined in their documentary on African American vegan culture, *The Invisible Vegan*). Because the United States and United Kingdom are also multicultural nations, activists and vegan food marketers can continue to celebrate plant-based dishes that represent the culinary influence of immigrant ancestry, such as from the African continent, the Caribbean, East Asia, South Asia, and Central & South America.

In studies on societies in “blue zone” regions where certain communities have the greatest longevity/life span, researchers note their diets are often largely if not all plant-based (the only blue zone community in North America is the Seventh Day Adventists, who have been vegetarian for decades) (Buettner, 2023). This offers an opportunity to showcase the nutritional power of plants as central to human sustenance, which challenges the notion of animal-based meat as necessary. Vegan activists and marketers can focus on some key plants that are superfoods in these blue zones, or just are nutritionally dense and fiber rich (such as sweet potatoes, chickpeas, seeds, lentils, soy, whole grains, and greens), and share recipes that combine them (Buettner, 2023).

Conclusion

Animal activists often counter the myths of animal foods being normal, natural, and necessary (Joy, 2010) in order to unravel their ethical and normative rationales. Studies by Piazza et al. (2015) added an extra “N” (nice) to this list, finding that participants often described animal meat as nice to eat (meaning tasty and satisfying). Vegan food marketers especially tackle this latter claim by affirming how nice their food products taste as replacements (meaning you can have all the flavor and more, without the flaws). The table below summarizes our ideas, largely discussed in the previous recommendations, showcasing how vegan activists and/or marketers could deconstruct the 4 Ns and flip them to become principles underpinning the superiority and authenticity of plant-based diets—showcasing them as normal, natural, necessary, and nice.

The 4 Ns	Rationales for affirming the authenticity of vegan foods in United States and United Kingdom
Normal	Key part of national and native food traditions and culinary histories Can replace commonly eaten cultural-favorite foods today that contain animal products Becoming more widely available and popular (and thus easier) It is for everyone (not just vegans), as often free from taboo ingredients Need to qualify whether any meat, milk, or egg product/protein is from a plant or animal origin, including the species/ingredient for transparency

The 4 Ns	Rationales for affirming the authenticity of vegan foods in United States and United Kingdom
Natural	<p>Plant-based diets are fiber and protein rich and nutritionally complete and can promote longevity, as proven by millions of healthy vegans and vegetarians</p> <p>Most of us would rather pet innocent animals (like chickens, cows, and pigs) than attack, kill, and dismember them</p> <p>We Homo sapiens are primates who can thrive on a herbivorous diet</p> <p>Drinking the milk of another species as adults is unnatural and unnecessary (and thus odder than combining crushed nuts, soybeans, or grains with water to make milk, or drinking coconut milk)</p> <p>Farming animals is unnatural in terms of not being practiced by other animal species in nature for their sustenance</p> <p>Farming food from plants through animals also makes animal-products a more highly processed and complicated food than simply eating plants directly or processing plants into animal food replacements</p> <p>The scale of our accumulation of animals is unprecedented in human evolution and when compared to predation by free-living animals in nature</p>
Necessary	<p>When plant-based foods and proteins are available to consume, killing other animals is unnecessarily violent, destructive, and resource-intensive</p> <p>We cannot sustain an animal-based diet to feed a world with billions of humans and limited agricultural land and freshwater (plant crops are a more efficient use of precious natural resources)</p> <p>In an era of climate crisis, we urgently need to reduce greenhouse gas emissions (conserve forests and reduce methane from ruminants like cows)</p> <p>In an era of mass extinction, we urgently need to make space for free-living animals in nature and protect habitats (grow food most efficiently and with less pollution)</p>
Nice	<p>A wide variety of ingredients and flavors to choose from. Plant-based foods can and always have diversified our eating experiences</p> <p>Tastes great. Pleasurable and satisfying flavor that is free from the flaws of animal-based foods, yet function in a similar or superior way. New vegan products are a familiar surprise</p> <p>Great way to care for ourselves and others by sharing delicious, non-violent, affordable foods with our families, friends, and wider communities</p>

In UK and US cultures where animal-based foods are ubiquitous, something that can “normalize” vegan foods is emphasizing that they are for everyone. This opens up the same meal to more people, making it more inclusive because they are “free from” many of the things that some people avoid (for health, ethical, or religious reasons). It isn’t just meant for vegans but for everyone. For example, Daiya’s pizzas that are gluten-dairy- and soy-free, advertise “finally, a pizza for everyone.” Sweet Earth has a website emphasizing inclusiveness: awesomeforall.com. And the Yorica frozen yogurts and ice creams in the UK won “Free From” awards for being so accessible to so many people’s dietary limitations. While these companies promote the benefits of plant-based foods, they don’t critique meat-eaters or herald vegans because they want to include everyone as a potential consumer/adherent. For example, the Impossible Foods’ product page says it is for “people who love meat, plants, and everything in between” while reminding us that their nutritious plant-based food is “better for the planet” (presuming we all care about nutrition, taste, and environmental responsibility).

The democratic and cultural inclusiveness of most plant-based foods presents an opportunity to support a “Default Veg” program where institutions and organizations in our multicultural society could make plant-based foods the default meals served, and if anyone insists on having animal products, they must make a special request (greenerbydefault.com). If a Default Veg program was adopted across institutions, it would go a long way to normalizing plant-based meals as central, culturally familiar, satisfying, and expected (as well as greatly reducing the animals killed, pollution produced, and natural resources used).

In terms of strategy, the Impossible Foods founder Patrick Brown contends that most people won’t change their ideology on eating animals, so he will give them the meat they love to eat but just make it from something sustainable and humane (plants) (Hope, 2017). As plant-based eating become more widely adopted, we hope that activist appeals to “go vegan” (or to acknowledge the myriad problems with animal agribusiness and fishing) may be more psychologically acceptable to those who have already replaced many animal products (reducitarians or flexitarians). While a portion of vegan food marketers may be more apt to practice what they construct as “measured,” “pragmatic,” or health-based persuasive appeals in the consumer marketplace, other marketers as well as animal and eco-activists can simultaneously work in the public sphere to pose ethical critiques that foster ideological shifts toward less speciesist and anthropocentric worldviews and policies—ones that change hearts and minds to transform our unnatural relationship with the natural world. Vegan food marketers primarily concerned with establishing the authenticity of their own products as a familiar surprise that is normal, natural, necessary, and nice, do not preclude animal and eco-activists primarily attacking the false authenticity of animal product advertising and animal farming in general to reveal it as abnormal, unnatural, unnecessary, and unjust.

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Chapter 33

Cellular Agriculture



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On August 5, 2013, the Dutch cellular agriculture start-up Mosa Meat held a televised event in London at which they cooked and served a hamburger made not from animals, but from muscle tissue grown in a lab from cow stem cells. As intended, the event drew widespread media attention, much of it marked by amazement at the science-fiction-come-to-life effect of the entire affair. Taste testers agreed that, while it was a remarkable technological feat, the burger, which lacked fat and consisted exclusively of muscle tissue, tasted like a poor imitation of the real thing. After the event, the potential of cellular agriculture to change the food system touted by its innovators was drowned out by questions about whether the lab-grown burger actually constituted “real” meat and about the experiment’s astronomical cost. At over \$300,000 for a single patty, the project—rooted in research conducted at the University of Maastricht with a grant from the Dutch government but funded in large part by Google co-founder Sergey Brin—seemed more Silicon Valley flight of fancy than the future of food.

But cell-cultured meat¹ is fast turning into more than a curio. In 2020, Singapore became the first country in the world to allow commercial sale of cultivated chicken developed by the San Francisco-based company GOOD Meat. In 2023, the United

¹A note on nomenclature: Since the inception of cellular agriculture, the nomenclature used to describe the meat produced has been highly debated and contested, not least within the industry itself. Terms including “cell-based meat,” “clean meat,” “cultured meat,” and “cultivated meat,” among others, have all been used in industry, scholarly, and public writing. The recent regulatory approval for commercial sale of the product in the United States uses the term “cell-cultivated.” The use of “cell-cultured” here is the author’s personal preference and is used mostly for continuity within the author’s own writing on the subject.

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States followed, giving food safety clearance for commercial sale to GOOD Meat and another San Francisco-based company, Upside Foods. While in both cases the product is sold in very small quantities in high-end restaurants, and even then at a loss, cell-cultured meat has nonetheless gone from prototype to dinner plate in less than a decade. Research by dozens of companies around the world, funded by over \$2.8 billion USD in investment, is promising to lower costs and treat global diners to beef, seafood, and maybe even mammoth grown in bioreactors (GFI, 2022).

Meat without animals, in other words, is moving from hypothetical to consumable. There is, however, nothing certain about what will happen next. Questions mark hang over cellular agriculture's economic feasibility, consumer response, and broader political-economic and dietary impact. Less discussed, however, are the important questions that the technology raises for vegans and animal rights advocates, including semantic and philosophical ones about the meaning of the terms "meat" and "vegan," strategic ones about how best to promote justice for animals, and political-ecological ones about the effects on humans and animals of novel food technology far removed from agriculture as we know it.

This chapter considers cellular agriculture specifically from the perspective of its relationship to vegans and veganism.

The Antecedents of a Possibility

The premise of cellular agriculture technology is simple: replace meat from animals raised and slaughtered for food with meat grown from stem-cells. The idea, as commentators never tire of pointing out, seems to be the stuff of science fiction: the vat-grown meat imagined in William Gibson's *Neuromancer*. Many of cellular agriculture's proponents, however, tend to stress not its sci-fi connotations, but the technological inevitability of finding a more efficient and humane manner of producing meat than relying on conventional agriculture. Often mentioned is Winston Churchill's now shockingly prescient suggestion, made in 1932, that technology will allow humans to "escape the absurdity of growing a whole chicken in order to eat the breast or wing by growing these parts separately under a suitable medium" (Eschner, 2017). Others point to the half-century-long quest by Willem van Eelen, who imagined the possibility of cellular agriculture long before any of the constituent technologies existed, and eventually, in 1999, was granted a patent for the Industrial Production of Meat Using Cell Culture Methods. It was van Eelen who lobbied the Dutch government to fund the research that eventually led to the development Mosa Meat's paradigm-shifting burger (Gleiser, 2011).

But cellular agriculture is less a techno-scientific or entrepreneurial or ethical inevitability than it is the product of the distinctly contemporary and historically contextual confluence of four forces: modern medical and biotechnological science, the industrialized mass-production of food, the rise of venture capital in driving the political economy of the development of new scientific projects and consumer goods, and the success of contemporary animal rights and environmental

movements in changing mainstream discourse about animal production and consumption.

What makes cellular agriculture not just imaginable but actually possible is the rapid development of biotechnology and medical science over the past half century. Stem cells were not identified until the 1960s, growing *in vitro* muscle tissue was not possible until the 1970s, and *acellular* bacteria-based (rather than animal-derived) insulin was not discovered until 1978. The process of *cellular* production involves using living cells extracted from a human or animal through a biopsy, then fed a growth formula in a lab setting that mimics the biological environment inside a living body, allowing the cells to multiply and develop into muscle (or fat) tissue. While the idea of growing meat *in vitro* had occurred to a number of people such as the Dutch futurist Willem van Ellen and the Russian cell biologist Vladimir Mironov, it was not until after the turn of the millennium that research capital from federal governments (through NASA and the National Science Foundation in the United States and the now-defunct SenterNovem economic development agency in The Netherlands), private sources (like funding from Sergei Brin for Mosa Meats), and, to a limited extent, from non-profits (like New Harvest, founded in 2004, and the Good Food Institute, founded in 2016) became available to undertake this research in earnest. The first peer-reviewed research on the very *possibility* of *in vitro* meat production was not published until 2005. All this is to say that the technological feasibility and physical infrastructure for making meat without animals is under 20 years old, meaning that little is certain about the technology's development or trajectory. (Incidentally, this also means that critics of cellular agriculture who make assertions along the lines of "we have been hearing about this technology for decades and it has yet to emerge" show a distinct inability to differentiate between Churchill's or Gibson's musings and the real technological and scientific work being done to bring animal-free meat to fruition.)

More generally, the emergence of recent breakthroughs in the life sciences and biology has been coupled with a general trend away from government-funded to public-private partnerships and privately-funded science. In this "bioeconomy," the field of science becomes open to speculative investment in novel technologies by investors seeking to help develop and gain control of intellectual property like patents and profit from the sale of novel products, especially in the health sciences. (Sunder Rajan, 2006). This includes purely profit-driven investors and so-called "philanthrocapitalists" who seek to use their investment in innovation and market-based mechanisms to solve global challenges (Bishop & Green, 2009). The bulk of funding for cellular agriculture has thus far come from such "impact-minded" investors (Dutkiewicz & Broad, 2023; see also Mouat et al., 2019), although incumbent conventional meat and agriculture companies have also invested in cellular agriculture start-ups (Broad, 2020).

But what, exactly, is cellular agriculture meant to replace? The easy answer, of course, is meat. But the more concrete answer is that the technology's promise is that it can replace the mass-produced, standardized, readily available meat like burgers and chicken nuggets and filets that are a central part of the habits and tastes of an ever-growing number of consumers around the world. Meat consumption

globally is at an all-time high and its growth shows no signs of abating. The global production of meat is approximately 330 million tons per year, with Asia, Europe, and North America the three largest producers. This demand is not, however, simply the result of an inherent human appetite for meat. Rather, it is the result of a distinctly modern approach to animal production and consumption.

Around the turn of the twentieth century, proto-industrial technology allowed for the centralization and industrialization of animal slaughter, allowing massive volumes of standardized meat to be produced for mass consumption. This process, as numerous historians have shown, not only worked to sever traditional human relations to the animals they ate, but served to turn meat into a commodity like any other, distancing consumers from the acts of animal husbandry and slaughter (Cronon, 1992; Specht, 2019). Economies-of-scale production lowered costs and the meat merchants worked to boost demand through advertising and other forms of promotion. The advent of concentrated animal feeding operations (CAFOs or factory farms) in the latter half of the twentieth century brought these logics to farming, meaning that not only animal death, but animal birth and life were all organized on an industrial model predicated on high volume and high efficiency. Consumers, facing more supply and low prices, were trained to consume ever-more meat: a trend that continues, with meat consumption tracking economic development and GDP growth, and factory farming fast becoming the predominant mode of animal production in the world. It is not just shrink-wrapped bacon slices and fast-food burgers that are a product on the modern meat industry; it is the modern meat consumer as well.

The emergence of factory farming, in turn, galvanized the modern animal rights movement and gave rise to a broader critique of contemporary animal agriculture's impact on the environment, labor, and food supply. While opposition to animal exploitation has a long, global history, modern animal agriculture necessitated a production process that proved abhorrent to many commentators not traditionally concerned with the plight of animals. *The Jungle*, American journalist Upton Sinclair's 1906 classic, was a scathing indictment of then-novel industrialized slaughterhouses in Chicago, the so-called "hog butcher to the world," and prompted the passage of the Federal Meat Inspection Act among other attempts to regulate the industry. Similarly, the popularization of factory farming in the United Kingdom prompted Ruth Harrison to write *Animal Machines*, her scathing indictment of the de-animalizing and de-humanizing effects of modern agriculture, which helped usher in the European Convention for the Protection of Animals Kept for Farming Purposes.

While it is not its only focus, the contemporary animal rights movement has been united by a focus on revealing the conditions of animal production—especially in industrialized conditions—to the public, confronting consumers with the violence in which most of them are complicit on a daily basis, and using industrial animal agriculture as a foil in their argument for veganism. From classical works of philosophy like Peter Singer's *Animal Liberation* and Tom Regan's *The Case for Animal Rights* through to campaigns by groups like People for the Ethical Treatment of Animals (PETA) against fast food chains like McDonald's and Burger King, the

common thread of contemporary animal activism has been to link revelation of animal mistreatment to normative ethical arguments for animal rights to the call for individual consumers to abstain from consuming meat and other animal products. It bears underscoring here that unlike many other social justice movements, the animal rights movement has an inherent consumer element, calling on individuals to abstain from specific forms of consumption or to consume differently. This also makes it one of the only social justice movements where individuals can immediately act upon their ethical convictions and where the creation of new food products and options stems from movement strategy. Consider, to take just one example, the definition of veganism offered by The Vegan Society: “a philosophy and way of living which seeks to exclude—as far as is possible and practicable—all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose; *and by extension, promotes the development and use of animal-free alternatives for the benefit of humans, animals and the environment*” (The Vegan Society, n.d., italics mine).

Critiques rooted in concern for animals have since been joined by a host of scientific work that demonstrate the significant impacts industrial animal agriculture has on a range of ecological issues. Factory farming is known to be a contributor to anthropogenic climate change, a cause of fresh- and salt-water contamination leading to the die-off and poisoning of marine species, and, given its reliance on monocrop agriculture, a contributor to deforestation and the displacement of species from their native habitats. Tony Weis succinctly terms this animal agriculture’s “ecological hoofprint” (Weis, 2013). The world’s most important scientific bodies, including the United Nations Food and Agriculture Organization (FAO) and the Intergovernmental Panel on Climate Change (IPCC), as well as working groups at some of the world’s most prestigious universities, including Oxford and Johns Hopkins, have recommended a move away from factory farming and dietary shifts to a primarily plant-based diet.

These critiques have added up over the past few decades, making animal welfare and animal rights part of the mainstream conversation. Opinion polls regularly show that a majority of consumers in the United States care about animal welfare. The twofold problem, however, is that consumers’ claims to care about animal welfare neither reflect an understanding of agricultural practices (Fonseca & Sanchez-Sabate, 2022) nor is this concern reflected in most consumers’ buying habits, as global demand for meat has risen *alongside* the mainstreaming of animal welfare discourse and scientific analysis (Alonso et al., 2020). Put simply: we cannot keep eating meat, but most consumers, due to habit, cultural factors, or the availability of cheap meat and lack of availability of alternative products or cheap plants-based foods, cannot stop eating meat.

Cellular agriculture emerges at the intersection of these factors: a direct response to the type of food and the type of consumer that factory farming has produced, designed to breach the impasse between ethical concern and ethical practice for large portions of the population not (yet) swayed by arguments for veganism. It is technology as a moral and political solution.

Cellular Agriculture and Veganism

While seemingly there is much alignment between veganism and cellular agriculture, including the direct historical antecedents discussed in the previous section, the connection between the two is a complex and often paradoxical one. Despite seeming elective affinities, cellular agriculture and veganism run into a number of potentially irreconcilable tensions around philosophy, dietary practice, and movement strategy

It bears noting here that the definition of veganism is far from settled, hinging on two poles of debate: first, whether the term is conduct-descriptive, referring to the practice of abstaining from consuming animal-derived products, or ideological, referring to a set of political or ethical commitments beyond simply non-consumption; second, whether veganism implies acting toward popularizing veganism or an animal rights strategy, or not (c.f. Dutkiewicz & Dickstein, 2021).

The first and most obvious question is: Is meat produced through the process of cellular agriculture vegan? To produce cell-cultured meat, a cell taken via biopsy from an animal is placed in a medium wherein it replicates, eventually becoming meat or fat that can then be consumed. This process is at the core of the question.

It bears noting outright that to the extent that the growth medium used contains products directly sourced from animal slaughter like fetal bovine serum (FBS), the resulting product is clearly not vegan. Given that many companies are already using or developing FBS-free growth media and that removing animal-slaughter-based ingredients from the value chain has been identified as an industry-wide mission (Holmes et al., 2022), we will proceed on the assumption that the crux of the question hinges on the use of base animal cells.

For vegans who eschew any animal-derived products in their food, the answer may be a categorical no. But, while the aim of this chapter is not to make a normative claim one way or another on this question, this answer itself bears interrogating. Does eschewing animal products as a vegan mean avoiding all products with any animal provenance in their development or production process or only those products directly derived from animals? This is a fine distinction, but one that hinges on the directness of the harm involved. Critics of veganism and vegetarianism have argued, for instance, that crop production for plant-based meals involves direct and indirect harms to wildlife, including harms to animals in food planting and harvesting and displacement of animals for planting crops (Davis, 2003; Budolfson, 2015; Hampton et al., 2021). In other words, that pasta is not cruelty-free to animals. The response to these claims is either that plant-based diets cause less harm in the aggregate or that the crux of the question is direct, intentional harm caused to animals specifically to produce an animal-derived product (Fischer & Lamey, 2018). In other words, pasta made from wheat is vegan because wheat is not itself an animal-derived product even if animals may have been harmed in the production of that wheat. A hamburger, meanwhile, is not vegan because it is directly derived from a cow and the killing of that cow.

The case of cellular agriculture is similar but not quite analogous. Cells from animals are clearly required as the basis for cellular agriculture, but animals need not be killed for cell extraction and, in the case of immortalized cells, one biopsy may allow meat production long after a given animal has died. Cell-cultured meat is not derived from animals, but from extracted cells. There is animal use, albeit not necessarily fatal animal use, in cell extraction. Cell extraction, in other words, causes less harm to animals than crop production. More wheat than hamburger, in this sense. But, on the other hand, the meat grown from base cell is, biologically speaking, meat, and not a plant. Actually hamburger, not pasta, in the literal sense.

This tension plays itself out in responses to studies measuring the willingness of potential consumers to eat cell-cultured meat. While vegans (and vegetarians) have been found to generally approve of the technology and even find it more “natural” than conventionally farmed meat (Wilks & Phillips, 2017), surveys conducted with consumers in the United States and Brazil show that vegans are nonetheless significantly less likely to want to actually eat cell-cultured meat than omnivores (Bryant et al., 2019; Valente et al., 2019; Wilks & Phillips, 2017). It may be that at issue is the product itself and not its process of production: ethics aside, many vegans may simply be uninterested in eating meat. Meat itself, in other words, might be considered by some to not be vegan, regardless of how it was produced. Or it may be the case that the vegans surveyed consider the product an improvement over conventional meat for meat-eaters, but not itself vegan.

Of course, vegans are not the target audience for cell-cultured meat. The promise of cellular agriculture is precisely that omnivores will opt for it because it gives them an easy analog for the meat they already consume, with no changes in culinary or dietary habits. This reduction of switching costs to near zero has long been the foundational argument for cellular agriculture as a potential solution to the wicked problem of meat reduction, potentially succeeding where ethical, health-based, environmental, and emotive arguments for dietary change have failed. As the ethicists Patrick Hopkins and Austin Dacey argued 5 years before the debut of Mosa Meat’s burger, when it comes to reducing conventional meat consumption, “what would work best would be something that allowed people to eat meat without contributing to animal suffering or animal death. [...] something that allowed people to eat real meat without killing animals at all” (2008, p. 589).

This, incidentally, is what some proponents of the technology have been calling it virtually since its inception: “animal products without animals” (Datar et al., 2016). Indeed, cellular agriculture troubles settled ontologies of food (Jönsson et al., 2019), severing meat from its conventional form of production. It also thereby troubles ethical arguments about whether or not vegans should eat it. Some ethicists have argued that it constitutes an object of ethical compromise, even for committed vegans (Alvaro, 2020, p. 482); a category of foods that might be objected to on moral grounds by vegans even as “it is not clear that they violate animals’ rights” (Milburn, 2021). From this perspective, cell-cultured meat might be considered unvirtuous but not unacceptable.

And, perhaps, given the ontology-shifting and liminal nature of cell-cultured meat, the questions “is it vegan?” and “should vegans eat it?” might miss the point

altogether. As one vegan scholar who tried cell-cultured meat writes, she was convinced that it was “vegan enough” for her to eat: “undeniable animal inputs remain, but you’re not directly consuming the animal sourced parts.” (Ruder et al., 2023) This sort of logic might not convince some vegans, but it might well create a new category eater: a person who is “vegan but for the products of cellular agriculture” (Milburn, 2021). This is, for instance, how Josh Tetrick, the CEO of GOOD Meat, a cellular agriculture company, describes his own diet, calling it exclusively plant-based except for his own company’s cell-cultured meat.

The second major question raised by cellular agriculture is whether or not vegans should support it. Put differently, regardless of whether one consider it vegan or not, does developing and promoting cellular agriculture serve the ends of a veganism committed to anti-speciesism or abolitionism. This question hinges on both strategic question of the feasibility of replacing meat with cell-cultured meat and one’s position on whether veganism and reducing harm to animals is a question of dietary change or broader systemic change.

Many in the vegan and animal rights communities have long been supportive of the technology. Ingrid Newkirk, the founder of PETA, called the technology a “no-brainer” as early as 2011, arguing that “If people are unwilling to stop eating animals by the billions, then what a joy to be able to give them animal flesh that comes without the horror of the slaughterhouse, the transport truck, and the mutilations, pain, and suffering of factory farming.” PETA was the first animal rights group to embrace the idea of cellular agriculture, offering a one million USD reward to any company that could find a way to produce cell-cultured chicken at a commercial scale. Among the venture capital funds investing in cellular agriculture, some are explicitly vegan, supporting the technology as part of efforts to drive the development of a slate of alternative proteins meant to challenge conventional meat in the market.

From the surveys of vegans and the ethical arguments for replacing meat with cellular agriculture noted earlier, we can see a pragmatic position that holds that giving meat-eaters another option to reduce conventional meat consumption is desirable, especially if such replacement can be scaled to the point that the business model of conventional animal agriculture can be challenged. This is also, unsurprisingly, the argument made by many in the cellular agriculture industry. Some commentators in the mainstream press have echoed this idea, arguing that vegans need to both champion the idea and be actively involved in the pragmatics of the development and roll-out of cell-cultured meat (Whiley, 2023). But this premise bears interrogating.

The most obvious concern is the viability of producing cell-cultured meat at a scale large enough and at price low enough to compete with conventional meat in the market, and then the likelihood of consumers switching to cell-cultured meat from conventional meat en masse. The technological and social feasibility of this being achieved has been questioned by a range of commentators (c.f. Dolgin, 2020). Given this uncertainty and broader moral concerns, some critics have raised red flags about the strategic desirability of vegans promoting cellular agriculture as a solution to the problems of meat consumption, as opposed to continuing to pursue

efforts to achieve a large-scale shift to plant-based diets (Alvaro, 2019). Simultaneously, given the limited resources available to groups championing the promotion of veganism and other animal rights issues, a focus of donor money and human capital on the development and promotion of cell-cultured meat may restrict other efforts at dietary change or reducing harm to animals. Given the influence of the effective altruism movement and efforts rooted in utilitarian philosophy to quantify the effectiveness of charitable donations in the animal rights space, it is possible that misplaced confidence in cellular agriculture may actively steer resources away from other initiatives (Dutkiewicz & Broad, 2023).

Feasibility aside, to many vegans who have made the decision to abstain from meat-eating and perhaps campaign against meat-eating, it may be challenging to participate in promoting meat. Some may also see the technology as attempting to address meat-eating itself rather than speciesism or the social, political, and moral causal factors of meat-eating. In this sense, it addresses symptoms rather than causes (Bramble, 2017; Elder, 2019). Some critics have gone further, arguing that normalizing *any* meat consumption may actually blunt critiques of conventional meat consumption in that this helps normalize and fetishize a meat-centric “carniculture” rather than challenging it (Miller, 2012). At a more systemic level, and taking into consideration the antecedents of the technology discussed in the previous section, critics have argued that the development of cellular agriculture aligns with (and even obfuscates) the interests of large-scale capital is shaping food production and consumption (Howard, 2022; Metcalf, 2013; Miller, 2012; Stephens, 2013). On this reading, cellular agriculture is a reinscription of systems of domination, both physical and conceptual, including those that cause harm to animals (Poirier, 2022).

Regardless of their position on the technology, vegans would do well to note that critics of the technology affiliated with the conventional farming industry already construe cellular agriculture as a “vegan activist” project, assumed to be seen by vegans as “a welcome strategy to eliminate meat from the food system” (Wood et al., 2023). As the technology develops further, it is likely that it will often be conflated in public and scholarly discourse with veganism, regardless of how different individual vegans or vegan organizations engage with it.

Conclusion

Cellular agriculture is, in many senses, a techno-utopian, eco-modernist project *par excellence*. Like many other proposed technological fixes to entrenched ethical and ecological problems—like “clean” energy, geoengineering, and some forms of artificial intelligence (AI)—it is premised on the idea that humans can continue for the most part living as they do, but that technology can massively reduce their impact. Rather than seeing social change as being driven primarily by behavioral or structural change, cellular agriculture’s proponents believe it can be achieved through technological innovation. In the case of meat, this means asking the public not to

abstain from meat consumption, but to switch between two different ways of producing the exact same thing.

Cellular agriculture promises two major advantages over conventionally produced meat: the removal of animals (and therefore of violence against animals) from the value chain and a massive improvement on the ecological impact of production. Both of these claims seem correct. Current prototypes use virtually no animal ingredients and early life cycle analyses (LCA) show that cellular agriculture products use exponentially less land and water and create less waste than conventional animal production systems. Its emissions remain a point of contention, and will likely depend on the specifics of production processes and whether or not production facilities are powered by renewable energy. Moreover, a number of challenges stand in the way of this technology delivering on its promise. These can be roughly classified as technical, social, economic, and ethical.

The technology needed to produce cell-cultured meat at scale and price parity with conventional meat is still, relatively speaking, in its infancy and faces challenges that it will need to address before it can compete. First, animal inputs except cells should be removed to align the technology's production process with its ostensible mission of replacing conventional meat (Holmes et al., 2022), and the treatment of any animals used for cells needs to be seriously considered (Dutkiewicz & Abrell, 2021) The second is engineering large-scale, sustainable production facilities that can produce a safe, sterile product while keeping energy use and waste to a minimum. Tissue engineering has never been attempted at an industrial scale, so an entirely new mode of manufacturing needs to be devised that will take "lab-grown meat" out of labs and into factories. Third, current technology only allows for the replication of the most basic types of meat. Creating analogs for cuts of meat that have a fixed structure that combines fat and muscle and even bone like steaks, hams, or fish filets requires a level of bioengineering that does not yet exist and will require substantial investment over the long term.

These challenges are directly tied to economic ones. First and foremost, there is no stable, long-term source of funding for cellular agriculture research or development. Despite some federal funding in North America, Europe, and Asia, for the most part, the industry is funded by venture capital and investments from major players in agriculture and the pharmaceutical field. As such, it is unclear if current funding structures will remain stable enough to bring the technology and all its necessary innovation to fruition, or if investors will pull out if the technology fails to deliver returns quickly. And, given current funding structures, if the technology does deliver on its promises, it may well be owned by financial actors or incumbent food industry actors who exacerbate inequality in the food system (Howard, 2022). Moreover, this technology's success would force society to reckon with the displacement of workers from conventional agriculture and economic damage to currently animal-producing rural areas. (Newton & Blaustein-Rejto, 2021) These impacts will either have to be accepted as a cost of a transition to post-animal meat production or be addressed through policy.

All of this, in turn, is predicated on consumers actually buying cellular agriculture products. While ethicists and the industry's advocates often assume people will make the easy, rational switch to cellular meat if it is identical—or superior

to—conventional meat in taste and price, what will actually happen is an empirical question. Consumers are fickle and the public has proven to be unpredictable in either embracing or rejecting new foods. Much like genetically modified foods faced severe consumer pushback, so too are some critics already dubbing lab-grown meat “Frankenfood.” Consumers’ predilection for “natural” food might have to be overcome with education showing that cellular agriculture simply mimics natural processes. Similarly, cultural traditions relation to meat production and consumption (eating ribs, grilling entire animals, eating entrails and viscera) that may be difficult to replicate in vitro will also have to be addressed, as will potential religious objections, such as the question of whether meat without animals can be considered kosher or halal.

In short, even though the technology is already commercially available, much about it remains speculative and promissory. If it fails to scale or lower costs, it may enter the periphery of the food system without changing it. In the meantime, it continues to occupy a liminal space between theoretical futurism and the real world as a seemingly perpetual promise. Nonetheless, its existence presents a number of challenges for thinking about veganism. This chapter has explored the two biggest such challenges, laying out the debates over whether cell-cultured meat is vegan and whether vegans should support it.

But by way of concluding, it seems fitting to, for a speculative, futuristic technology, to muse briefly on some different futures it may open up, for vegans and non-vegans alike.

Cellular agriculture, more than any other food technology, can open up entirely new possibilities of flavor and culinary experience for those meat-eaters who make the switch and those vegans who decide that cellular meat fits within their ethical and personal purview. As *The In Vitro Meat Cookbook*, an art project-cum-speculative exercise, suggests, being able to engineer meat in a lab setting will allow for the development of flavors and meats that are currently imply not possible, ranging from a plant-flesh hybrid “meat fruit” to live-cooked, electrical-current-charged in-vitro fish. There is much to be said for exploring cellular meat as not simply a technical solution to a pressing problem, but a horizon for indulgence and innovation, where “meat” is cut off from its cruel, violent, and destructive connotations and attached to both its older definition as a food like any other, but also novel definitions as a food less hampered by biological limits.

At the same time, if meat production is cleft from animal production, where farmed animals disappear an opening may present itself for replacing them with wild animals. If the plants currently grown to feed animals and the grazing lands currently used by ruminants like cows and sheep stop being productive, they could at least in part be reclaimed for rewilding projects. Rewilding involves returning wild lands to their primordial states and reintroducing wild animals, or allowing displaced wild animals to return to habitats and migration routes that have been taken away from them. If we do away with cows, buffalo could return to take their place and roam freely. If we do away with much monocrop animal feed production, we could rebuild wetlands and forests cleared to feed factory-farmed animals, which, without fertilizers and insecticides poisoning the environment, could once again be home to rich communities of insects, birds, amphibians, and mammals.

The age of food animal obsolescence could actually open the door to an age of wild animal flourishing.

Neither of the above are explicitly vegan concerns, but from the perspective of both animal and human flourishing, they offer the possibility to think bigger than binary concerns over the technology's relationship to veganism.

Then again, none of this may come to pass. Any of the challenges discussed in this chapter could sink cellular agriculture, relegating it to the list of promising technologies that never bore fruit. In either case, there is much in the idea of cell-cultured meat that vegans must reckon with in terms of ethics, policy, strategy, personal practice, and imagination, including what it might mean for something or someone to be “vegan enough.”

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Chapter 34

The Ethics of Plant-Based Pet Food



Josh Milburn

Pet food hasn't attracted much discussion among ethicists. I'm not sure why. It can't be because it's unimportant. Many of us engage in pet feeding (at least!) daily, and the global pet food industry is worth billions of dollars. Nor can it be because it's uninteresting. On the contrary, pet food raises ethical issues distinct from those raised by human food. And it can't be because *no one* is paying attention. In fact, the 'vegetarian's dilemma' (Rothgerber, 2013) confronts many—not just vegetarians!—who ask whether they should feed meat to companions. On the one hand, they want to do right by their companions; on the other, they are reluctant to support the meat industry.

This chapter addresses the ethical question of feeding meat to companion animals. The focus will be on dogs and cats, but we could also ask about the feeding of (for example) carnivorous and omnivorous fish, reptiles, and birds. There are also questions about the ethics of feeding animals that stretch beyond the ethics of pet food—we could ask about garden birds, wild animals in need, or animals in sanctuaries (Milburn, 2022). And this is before we get to the big questions about feeding farmed animals. For present purposes, I put these aside.

To start, a note on terminology. I favour the egalitarian *guardian* and *companion* over the hierarchical *owner* and *pet*, though retain the familiar *pet food*. I refer to companions as *plant-based* rather than *vegan*, as some reserve *vegan* for those with certain political commitments, which companions lack. I contrast plant-based pet food to *slaughter-based* pet food (i.e. food produced via the slaughter of vertebrates, including fish), *invertebrate-based* pet food (i.e. food made with the bodies of invertebrate animals, like insects), and *cultivated* pet food (i.e. food made with cultivated meat).

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First, I offer some background on pet food. Next, I outline the case against slaughter-based pet food. I then introduce plant-based pet food, before exploring ethical challenges to it. Next, I ask if there might be a third way, looking to cultivated and invertebrate-based pet food.

What Is Pet Food?

According to the industry magazine *Feed and Additive*, the 2021 global pet food market was \$97.47 billion (Yıldız, 2021). Pet food is a diverse industry. Producers—from subsidiaries of global corporations to home makers selling at fairs—make wet food, dry food, medicinal food, treats, supplements, chews, and more for dogs, cats, fish, rabbits, reptiles, and other companion animals. Producers advertise their products heavily and sell them directly or through supermarkets, specialist shops, vet's offices, and more.

Despite its size, the pet food industry is decidedly modern. Humans have lived with dogs and cats for thousands of years. But throughout most of this history, guardians fed dogs and cats on table scraps or left them to hunt or scavenge for themselves. This persists in many places worldwide.

Recipes for *working* animals go back to antiquity. Varro's first-century BCE *De Re Rustica* (1934, Book 2, §9) details the proper feeding of dogs for guarding sheep. Books discussing *companions'* diets, including recipes, had appeared by the eighteenth century (Sandøe et al., 2016, p. 16). Home cooking continues to be a choice taken up by some guardians today, despite risks of nutritional incompleteness, sometimes due to dissatisfaction with commercially available pet foods (Remillard, 2008).

But when does the pet food industry start? Some commentators trace it to the American James Spratt, who patented (methods for improving) dog and cat biscuits in England in 1861, subsequently launching a successful pet food business. However, there were adverts for dog biscuits in eighteenth century publications. Spratt was merely capitalising on an already thriving sector (Nestle & Nesheim, 2010, pp. 33–36). By the start of the twentieth century, dry foods looked much as they do today, and contained similar ingredients—though formulated vitamin and mineral mixes have increased in prevalence (Nestle & Nesheim, 2010, p. 36).

Canned, wet pet food also arrived in the early twentieth century. Industrialists developed these products to 'find something to do with the waste left over from meatpacking and feed milling operations' (Nestle & Nesheim, 2010, p. 37). With a few exceptions—there's now little horse meat in pet food, for instance—the wet slaughter-based pet foods of today resemble those of the twentieth century (Nestle & Nesheim, 2010, p. 40). Consequently, they contain many ingredients unattractive to human consumers, such as parts of animals' bodies that humans don't like to eat or the flesh of animals dead on arrival at slaughterhouses.

As pet food is big business, there are any number of exceptions to these mainstream products. 'Human-grade' pet food contains meat (supposedly) suitable for

human consumption. ‘Ancestral’ pet food (supposedly) replicates the diets of our companions’ wild ancestors. ‘Raw’ pet food has undergone minimal processing.

Manufacturers also make pet foods with ingredients other than slaughter by-products. More expensive pet foods (including, but not limited to, many fish-based and invertebrate-based pet foods) may contain animals killed especially for pet food. On the other hand, producers of cheaper slaughter-based pet foods replace some of its meat content with cheaper plant-based proteins. (Premium slaughter-based pet foods often use their high meat content as a selling point.) Plant-based pet foods, meanwhile, don’t contain slaughter by-products at all. And cultivated pet food is an emerging industry with potential to produce meat-based pet food that is not slaughter-based.

The Case Against Slaughter-Based Pet Food

Arguments against meat-eating among humans are familiar. We might thus think that the case against meat-eating for companions is straightforward. But human diets and companion diets raise different ethical questions.

For example, cats are carnivorous, unlike humans. We might think, then, that it’s easier to justify feeding meat to cats than to ourselves. On the other hand, humans might value meat consumption for reasons that animals don’t. Meat might have, for example, cultural significance for us, but not for our companions. Even if these reasons justify *our* consumption of slaughter-based meat, we might have to question slaughter-based pet food.

The Basic Case

The basic case against meat-based diets for companions mirrors the basic case against meat-based diets for humans. It comes from several directions. First, farmers confine animals, mutilate them, and kill them at a fraction of their natural lifespan. This is a problem from many ethical perspectives—including, but not limited to, animal rights approaches. Second, environmental problems attributable to animal agriculture include carbon emissions, pollution, deforestation, and negative impacts on biodiversity. And, third, animal agriculture has negative public health impacts. In addition to those associated with pollution and carbon emissions, antibiotic use and zoonoses are worth mentioning. (Note that these public health impacts are distinct from any health concerns raised by a meat-containing diet.)

I won’t expand on these threats here, as they’re likely both familiar and addressed elsewhere in this volume. My point is that the impacts are regrettable whether attributable to pet food production or human-food production (Milburn, 2017, 2022).

An Objection Readers may want to push back against my claims. Slaughter-based pet food frequently comprises slaughter by-products, meaning farmers don't raise animals for pet food. A critic might thus argue that purchasing slaughter-based pet food doesn't contribute to the aforementioned harms. For example, the nutritionists Guido Bosch and Kelly S. Swanson (2021, p. 795) have argued that the low environmental impact of non-slaughter-based alternatives to meat 'is not relevant in the context of pet foods that are largely based on animal co-products with a low environmental impact'.

But this is hasty, for three reasons. First—something implicitly acknowledged—this argument does not extend to those pet foods that are *not* 'largely based on animal co-products'.

Second, what if we stop producing these co-products? The question of how we'd feed companions is a real one when envisaging an animal-rights-respecting future (Milburn, 2017). But even if meat consumption among humans continues to rise, demand for pet food could rise faster. A recent unpublished study, presented at an Agricultural & Applied Economics Association meeting, found that American demand for pet food is rising faster than the rate of animals killed. And 'if these growth rates continue there will be a point where there are no longer enough animal protein-based ingredients to meet the needs of pet food production' (Hill et al., 2022, p. 22).

Third, whether producers make pet food from 'waste' products or not, the pet food industry represents an important income stream for the slaughter-based meat industry, making the industry's harmful practices economically viable (Ward et al., 2020, p. 6). The wrong in purchasing meat—whether for human or animal consumption—may be in offering support to a harmful industry, rather than in direct responsibility for harm. (Pursuing this point will bring us to the production/consumption gap, a thorny issue in food ethics. Conversations quickly become technical, so I won't review them here.)

The Health Case

Though it remains a minority position among veterinary professionals, recent empirical findings offer a health-based case against slaughter-based pet food. A study of over 2500 dogs (relying on owner-reported indicators of health) found that both dogs on raw-meat-based diets and dogs on plant-based diets seemed to be, overall, healthier than those on 'conventional' diets (Knight et al., 2022).

We could explain away the apparent success of raw meat diets, the study's authors claimed, by the fact that (among other factors) the dogs fed raw diets in the study were younger, meaning better health outcomes were unsurprising (Knight et al., 2022). Previous studies have raised concerns about pathogens in raw meat diets (Davies et al., 2019).

Indeed, studies have raised health concerns about slaughter-based diets in general. Much meat in slaughter-based pet food is unwanted by humans. It may be from

animals disabled, diseased, dying, or dead on arrival at abattoirs, or from expired human food (Knight & Leitsberger, 2016, n.p.). Contamination is also relatively common, with major incidents far from unknown. For example, a high-profile case of pet food becoming contaminated with melamine (a chemical compound used in the manufacture of plastics, including, ironically, plastics used to make dog and cat bowls) in 2007 resulted in thousands of pet deaths, the largest consumer product recall to date, and even the execution of Chinese officials deemed responsible (Nestle, 2008).

It also saw contaminated meat entering the human food chain. The unfortunate companions were, for the food studies scholar Marion Nestle (2008), like the canaries in the coal mine. Their deaths signalled imminent danger to humans.

Andrew Knight and Madelaine Leitsberger (2016, n.p.) have argued that, though critics oppose plant-based pet food for a variety of reasons, criticism likely stems ‘from ignorance about the hazardous ingredients found within commercial meat-based diets, and about the potential of nutritionally sound vegetarian diets to safeguard health’. A health-based case for plant-based pet food thus represents an important area for further research.

Plant-Based Pet Food

A range of plant-based pet foods is commercially available. Some companies have produced balanced and complete plant-based foods—foods providing companions with all the nutrition they need—for many years. V-Dog (established 1980) is a British company whose products include nutritionally complete dog food made with wheat, barley, corn, and soya, fortified with vitamins and minerals. Another British company, Benevo (founded 2005), has products including dry cat food containing soya, wheat, corn, rice, vitamins, minerals, and flavourings.

Also available—from V-Dog, Benevo, or other companies—are wet plant-based foods; plant-based foods designed for old, young, or ill companions; plant-based foods with less familiar ingredients; plant-based treats and chews; and more.

Additionally, some guardians prepare home-cooked plant-based pet foods. This comes with the challenge of ensuring that the food is complete and balanced. The veterinary nutritionist Rebecca Remillard (2008) notes three concerns with home-made diets:

- (1) Is the nutrient profile appropriate; (2) Does the [guardian] make the recipe according to instructions; and (3) Does the [guardian] deviate from the recipe over time? Each of these problems has been reported to cause malnutrition in pets. (2008, p. 140)

However, preparing appropriate homemade diets need not be *too* difficult. Marion Nestle and Malden Nesheim—who aren’t advocates of plant-based pet foods (2010, pp. 229–232)—write that ‘[a]lthough both of us are Ph.D-trained nutritionists, we hardly believe you need a Ph.D to cook for ... your pet’ (2010, p. 253), advising on home-cooked vegetarian foods (2010, p. 258).

To assess the case against plant-based feeding, it's important to disentangle objections that, often, come as one. We can then respond to these in turn.

It's Unnatural!

A 2019 study found that, among guardians, around 70% of meat-eaters, 63% of pescatarians, 72% of vegetarians, and 38% of vegans were concerned about plant-based pet foods because they're 'unnatural' (Dodd et al., 2019, p. 7). Concerns about the putative 'unnaturalness' of foods are emotive. But they don't carry much rational weight.

The critic of plant-based pet food needs to offer a conceptual explanation of what's *unnatural* about plant-based pet food, and what's *natural* about a proposed alternative. They must also (importantly) offer a normative explanation of why unnaturalness is a bad thing (Milburn, 2017, pp. 193–194).

Granted, cats and dogs wouldn't 'naturally' eat much soy. But they wouldn't 'naturally' eat much beef, chicken, or tuna, either. Nor would they 'naturally' eat food from supermarkets, wear collars, or travel in cars. Indeed, they wouldn't 'naturally' exist—Labradors and Maine Coons aren't 'natural'. And insofar as companions don't live 'natural' lives (e.g. insofar as our dogs don't run miles to hunt down prey), 'natural' diets may not be apt anyway. Consequently, there is no 'natural' diet for companions—what matters is that the diets are healthy, are enjoyable, and don't unfairly impact others (Donaldson & Kymlicka, 2011, pp. 149–150).

This illustrates the depth of the challenge involved in explaining the bad of unnaturalness. Many good things are unnatural (universities, medicine, companions, etc.) while many bad things are natural (disease, suffering, death, etc.). Even if, dubiously, plant-based pet food *is* unnatural and some alternative *is* natural, it's not clear why this matters.

Stop Forcing Your Views!

Another critique of plant-based feeding is that it involves guardians forcing their views onto companions. Of course, plant-based feeding doesn't force 'views'—it simply means offering one food rather than another. It does mean that guardians decide on animals' behalf. But the objection can't be that it's wrong to make decisions for companions. All guardians do this. If we feed companions *anything*, we have decided for them.

The objection must be that it's wrong to make *this* decision for companions. Why? Well, the critic could appeal to naturalness (discussed above) or health (discussed below). But the rhetorical strength behind an objection to 'forcing' companions to eat in a certain way rests, I think, on the belief that companions *themselves* would choose differently, if they could.

It's in these terms that the philosopher Jessica Pierce has defended feeding her dogs meat. In addition to worries about health (discussed below), she 'must admit' that 'the pleasure my animals take in their meals' was a factor. 'I suffered many looks of disappointment and approbation when their bowls were presented to them at meal times' (2016, pp. 79–80).

The challenge that companions would choose otherwise assumes they'd prefer slaughter-based pet food. However, this isn't clear. A study drawing upon observations of mealtime behaviour made by 4060 dog and cat guardians found minimal apparent differences in palatability between slaughter-based, raw, and plant-based pet foods (Knight & Satchell, 2021). It just isn't clear that dogs and cats *do* prefer slaughter-based pet food to plant-based pet food.

Pierce might respond that *her* dogs prefer slaughter-based pet food. Dogs are individuals, with their own likes and dislikes. But we can ask whether she deployed strategies to make the food appealing to her dogs—as anyone may need to when changing a dog's food. And we can ask whether she tried multiple plant-based foods. Any dog may be initially sceptical of new food, and a dog not liking *this* plant-based food isn't proof that they don't like *any* plant-based foods.

Second, a companion's choice over food cannot be decisive. We recognise this when it comes to animals making choices obviously contrary to their own health. Many dogs readily lunge for dropped chocolate, but, given chocolate's toxicity to dogs, we should prevent them from eating it. Less vividly, but no less importantly, companion obesity is a health threat. Guardians should prevent dogs and cats from eating when doing so will make them obese, even if the companions might otherwise *choose* to eat treat after treat after treat.

We also recognise the limits of companion choice when talking about harm to others. Guardians should generally prevent companions from eating when doing so will harm others. Our dogs can't raid a stranger's picnic or maul a lamb in a field.

The cases against slaughter-based pet food are importantly analogous to these cases. Feeding slaughter-based pet food to companions is (according to the arguments offered above) bad for them or others. Even if it's good to respect companion choice, we must weigh this against harm resulting from the 'wrong' choice. Often, restricting choice will be appropriate. But this needn't mean removing *all* choice. There's still room for choice *between* plant-based options.

It's Unhealthy!

The earlier-mentioned 2019 study found that, among guardians, around 52% of meat-eaters, 61% of pescetarians, 62% of vegetarians, and 41% of vegans considered plant-based pet food unhealthy. And around 75%, 76%, 79%, and 59% of these respective groups considered plant-based pet food 'incomplete' (Dodd et al., 2019, p. 7).

Though there is, as explored, a health-based case for plant-based pet food, the health-based case *against* it is worth taking seriously. Simply put, humans, dogs,

and cats are biologically distinct. Plant-based diets are suitable for us, but they may not be for companions.

What I've called the 'problem of carnivory' (Milburn, 2022, chap. 2) is significant. While we can frequently attribute human non-veganism to ideologies—ideologies that present humans as superior to animals, animals as edible, the killing of animals as morally unproblematic, or similar—we must frequently trace meat-eating among animals to their biologies. Philosophers can challenge ideologies. But they're not well placed to challenge biologies. Ideologies change; biologies, typically, don't.

Dogs, like us, are omnivores, meaning they've evolved to acquire nutrients from both plants and animals. Cats are carnivores. Indeed, they're obligate carnivores. In nature—insofar as the idea makes sense—they'd eat an almost entirely meat-based diet. As we've seen, the argument that we should reject plant-based pet foods because they're 'unnatural' isn't compelling. But cats' carnivory may indicate that they won't flourish on plant-based pet foods.

For instance, Knight and Leitsberger recommend monitoring plant-based cats' urine alkalinity (Knight & Leitsberger, 2016, n.p.). Plant-based diets, meanwhile, supposedly lack taurine. This is an amino acid found naturally in meat that is important for, among other things, eye health. (Humans and dogs can usually create their own taurine. Cats cannot.) However, artificial taurine exists and is typically added to commercial plant-based cat foods. Ironically, producers supplement slaughter-based cat foods with artificial taurine anyway (Ward et al., 2020, pp. 169–171).

I'm not a veterinary nutritionist, so cannot offer a full response to questions about the healthfulness of plant-based pet food. But I can identify several routes to an answer.

Scientific Disagreement

We could challenge the idea that cats cannot flourish on a plant-based diet. Animals

require specific nutrients, rather than specific ingredients. There is—at least in theory—no reason why diets comprised entirely of plants, minerals, and synthetically-based ingredients (i.e. vegan diets) cannot meet the necessary palatability, bioavailability, and nutritional requirements for [them]. (Knight & Leitsberger, 2016, n.p.)

Plant-based diets for cats are infrequent. Dodd et al.'s, 2019 study found that only 0.7% (11/1545) of cat guardians fed their cats a plant-based diet. These guardians were all themselves vegan, but made up only a small proportion of vegan guardians of cats. Nonetheless, there are plant-based cat foods and cats flourishing on them. There are also studies supporting the healthfulness of plant-based diets for cats—though these have been small scale (e.g. Wakefield et al., 2006), or else reliant upon guardian-reported indicators of health (e.g. Dodd et al., 2021). No doubt more work will be forthcoming.

Perhaps future work will uncover errors in current studies, concluding that plant-based diets aren't suitable for cats. I don't think that likely—though, again, I'm not

a nutritionist—but allow that future studies may conclude that plant-based diets are unsuitable for *some* cats (or other companions). And, meanwhile, some guardians—even guardians sympathetic to plant-based pet food—may be uncomfortable switching cats' diets.

Health Isn't the Only Issue

Companion health isn't the only issue that should influence our decisions about feeding practices. Imagine if (for some reason) the optimally healthy diet for a companion contained human flesh. We wouldn't take that to prove that it's permissible for us to kill humans for pet food. Instead, we'd say that we shouldn't keep that companion, or that we're obliged to feed her something that isn't optimal for her health.

These might sound like surprising outcomes. But they shouldn't. We already acknowledge some cases in which we shouldn't keep companions because it would lead to harm. It's wrong to keep a tiger in a communal flat—and not just for the tiger's sake. And we all recognise that it may be permissible (even laudatory) to feed companions diets that aren't optimal for their health. We surely all accept that it's OK to give companions an occasional treat—even though treats are junk food, so unlikely to be beneficial for companions' physical health. (Admittedly, they may play a part in companions' broader welfare.)

Tragic Conflict

If—*if*—a fully plant-based diet for cats is ultimately unhealthful, perhaps we find ourselves in a tragic conflict. There's no way, it may seem, for us to respect all involved. This, I think, is how the philosopher Cheryl Abbate sees the feeding of cats. She has claimed that we may sometimes benefit the welfare of our companion animals at the expense of other animals. Pertinently, she has argued, if we *must* become complicit in killing animals to feed our companions an 'adequate' diet, it's permissible to do so (2023, p. 1248).

In her discussion, Abbate claims that said complicity is necessary if we are to feed obligate carnivores (including cats) an 'adequate' diet (2023, p. 1248). (I think she is wrong about this, as there are ways we could feed plant-based or even animal-based foods without becoming complicit in killing.) But, Abbate argues, we aren't 'justified in feeding cats *any* kind of meat'. Why? 'We should do our best to procure animal flesh that was produced with minimal suffering', perhaps by 'refus[ing] to purchase factory farmed meat for our carnivorous companions' (2023, fn. 18).

There are a few ways we could follow Abbate's advice. One is that, as indicated, we could favour more putatively humane sources of slaughter-based meat. (This, though, may result in more slaughter.) Alternatively, or additionally, we could minimise the meat that we feed to companions. Maybe, for example, we could feed cats a mixed plant-based-and-slaughter-based diet. Or maybe we could source meat in ways that avoid complicity, such as by gathering roadkill to feed to cats—something

Abbate explicitly defends elsewhere (2019). Another option is that we turn to the diets I explore below.

Collective Responses

Perhaps it's a mistake to think about feeding companion animals as solely a question for individual guardians. The considerations favouring plant-based pet food—animal welfare/rights, environmental impacts, public health—are properly political concerns. And, to be candid, I do believe that the practices needed to produce slaughter-based pet food would be outlawed in a state in which animals receive the protections they're owed. Consequently, there would be no slaughter-based pet food available.

But even now, I think, we can push for collective solutions to these problems. We can push for greater recognition of the problems with slaughter-based pet food (among pet food manufacturers, guardians, veterinarians, the public, and so on) and we can push for efforts to resolve these problems. This will include more research on the safety of plant-based pet food and more efforts to develop respectful non-plant-based alternatives. None of this means that guardians today are 'off the hook', as it were. But it does mean that even if we find ourselves in situations of tragic conflict *today*, we can aim to dissolve these conflicts *for the future*.

Alternative Pet Foods

There are at least two other non-plant-based alternatives to slaughter-based pet food worth considering. These are invertebrate-based pet food and cultivated pet food.

Invertebrate-Based Pet Food

Farming insects, according to its advocates, is more efficient than farming large vertebrates: it needs less land and water, produces less carbon and pollution, and more efficiently converts feed into protein. Though often touted as the future of food for humans—and though hundreds of insect species feature in cuisines worldwide—a major barrier to the uptake of insects as human food is the 'yuck factor'. Simply put, many humans don't *want* to eat insects.

Invertebrate-based pet food doesn't face this challenge. If the sensory qualities (taste, smell, texture) are 'right', dogs and cats don't care about protein sources. They'll as readily eat insects as soy or beef. Unsurprisingly, then, many companies produce insect-based pet foods.

Yora (founded 2015), for instance, is a British manufacturer of insect-based dog and cat foods. Their dry small-breed adult dog food contains 42.5% insects, along with familiar plant-based ingredients (e.g. potatoes and oats) and additives (e.g.

vitamins and glucosamine). Yora's dry adult cat food contains similar ingredients; 62.5% insect protein, plus familiar plant-based ingredients, plus assorted additives geared towards the needs of cats.

Yora's protein comes from black soldier fly larvae. This is an economically important insect, partly because farmers feed it to farmed animals. The larvae are edible to humans, too. Incidentally, Purina, owned by Nestle, also makes a pet food with black soldier fly larvae—but Purina's product also contains chicken.

What ethical objections might there be to invertebrate-based pet food? It may face similar challenges to plant-based pet food—there may be, for instance, worries about naturalness, companion choice, or health. These conversations will play out differently with invertebrate-based and plant-based pet foods.

For instance, consider naturalness. Though we can, as above, query the strength of a moral argument based on naturalness, insects are present in small quantities in wolf diets (perhaps indicative of 'natural' dog diets) and in higher quantities in cat diets: 'In contrast to dogs, it seems that for some cats it is natural to consume some insects, but they should not be considered as insectivores that nutritionally depend on insects and are adapted to an insect-based diet' (Bosch & Swanson, 2021, p. 797). But I put these issues aside.

From an animal ethics perspective, invertebrate agriculture is complicated. It *may* be an improvement on vertebrate agriculture. Why? This might depend on our understanding of 'welfare'. For some people, invertebrates' relatively simple psychologies will reduce welfare concerns. For others, the fact that invertebrate agriculture conflicts less with the 'natural' behaviour of the farmed animals may be significant. (We must be careful not to conflate different invertebrates—octopus farming, for instance, raises many welfare concerns.)

We may want to go further. Some forms of invertebrate farming may not raise welfare concerns *at all*, because the invertebrates in question—like plants—lack sentience.

If black soldier flies are non-sentient, then producing black soldier fly larvae may be relevantly like producing soy. We don't owe anything to soy plants or black soldier flies themselves. But if black soldier flies *are* sentient, then we could argue that black soldier fly farming is not only worse than producing soy, but worse than producing *beef*.

Why? Size matters. One cow produces as much protein as hundreds of thousands of black soldier fly larvae. And this problem is particularly acute with pet food. Around 65% of a living cow's weight is 'meat'—but pet food contains more cow parts than just 'meat'. (Put bluntly: There's more potential pet food in a cow's body than there is potential meat.)

But what if—my view, incidentally—it's just not clear whether a black soldier fly larvae are sentient? Then we'd need a moral principle for dealing with uncertainties. Consider two candidates.

The first is a precautionary principle. This says if we aren't sure whether black soldier fly larvae are sentient, we should treat them as if they are. As above, this is going to leave the farming of black soldier fly larvae looking very ethically troubling.

The second is more complicated. ‘Expected utility’ or ‘expected value’ accounts asks us to multiply the harm we would cause if black soldier fly were sentient by the likelihood that they are sentient. The result is how bad we should consider their farming. For instance—these numbers are wholly hypothetical—imagine the utility impact of farming on an individual black soldier fly larvae would be negative 10 if they were sentient (0 if they weren’t sentient), and there’s a 1% chance of their being sentient. To acquire 100 kg of protein, we need to farm a million insects. So, the expected utility of producing 100 kg of protein using black soldier fly is 1000,000, multiplied by negative 10, multiplied by 0.01, for a total of negative 100,000.

We can compare this number to equivalents for other forms of protein production. For example, if it takes 75 chickens to produce 100 kg of protein, chickens are sentient, and farming a chicken produces negative 1000 welfare, then producing 100 kg of protein with chickens results in negative 75,000 expected utility. All else equal, given these solely illustrative numbers, expected value reasoning favours producing pet food with chickens over black soldier flies.

But the case for producing invertebrate-based pet food becomes more complicated still, once we remember that producers use ‘waste’ animal products for many slaughter-based pet foods. (But recall the earlier caveats to this observation.) Even if invertebrate agriculture is preferable to slaughter-based agriculture, perhaps the question is *not* about replacing the worse option with the better, but with *adding* the better option *on top of* the worse. (After all, if slaughter-based pet food is made with by-products, we will be slaughtering the animals *whether or not* we use their bodies to make pet food.) Consequently, favouring invertebrates may be worse than nothing.

Relatedly, support for invertebrate agriculture might *bolster* support for slaughter-based agriculture, as a key purchaser of farmed insects is the slaughter-based meat industry, which uses insects as feed (Sebo & Schukraft, 2021). This worry may be particularly apt when it comes to support for invertebrate-based pet food.

The conclusion we’ve reached is that the case for invertebrate-based pet food isn’t straightforward. Even if invertebrate-based agriculture has advantages over slaughter-based agriculture, it *may* raise serious concerns from an animal rights/animal welfare perspective, and the advantages in *production* may not offer clear arguments in favour of changing *consumption* habits.

Again, it’s worth thinking about pet food at a more systematic, political level. Though we must confront questions about invertebrate sentience—and these may undermine *any* case for invertebrate-based pet food—a *societal* shift away from slaughter-based pet food and toward invertebrate-based pet food may be a good thing (Milburn, 2016). This is especially so if combined with a more general shift away from slaughter-based agriculture.

Cultivated Pet Food

A second alternative to both plant-based and slaughter-based pet food is, at present, theoretical. Scientists can produce ‘cultivated meat’: meat that was never an animal’s body. Cells taken from a living animal (or cell line) can proliferate in a bioreactor, producing cells replicating those in meat. Cultivated meat has been available in small quantities for human consumption in Singapore since 2020, and several companies—including Because Animals, Pristine Pet Food, and Wild Earth in the United States; Appleton Meats in Canada; Good Dog Food in the UK; and Five Letter Foods in Finland (Oven et al., 2022)—are exploring cultivated pet food. The technology of cultivated meat is still developing, and thus questions remain about its viability at scale and its ability to cheaply produce large quantities of meat.

Advocates of cultivated meat promise safe, healthy, tasty meat that is environmentally friendly and respectful of animals. And while pet food is currently only a small part of the industry, it could prove a gateway product (Oven et al., 2022). Companion animals are less fussy about their food. They won’t have, for instance, neophobic and aesthetic objections; they may be happy with cultivated versions of (to us) less desirable but more accessible meats (e.g. mouse); and they’re less likely to object if (say) cultivated meat’s texture doesn’t fully replicate that of slaughter-based meat.

Potential purchasers of cultivated pet food raise now-familiar questions about naturalness and healthfulness (Oven et al., 2022). But it is also worth acknowledging ethical questions specific to cultivated meat that may apply to cultivated pet food. (On the ethics of cultivated meat generally, see Milburn, 2023, chaps. 3–5.)

First, some critics of cultivated meat (e.g. Sinclair, 2016) contend that it serves to reaffirm the importance of meat in our diets, lifestyles, and societies—plus the edibility of animals—when we should challenge these things. But whatever the merits of this objection to producing cultivated meat for human consumption, it fails when it comes to producing cultivated pet food. For these animals—at least, for carnivores—meat *is* food (Milburn, 2022, chap. 2).

Second, some critics of cultivated meat (e.g. Miller, 2012) contend that this industry will consolidate power over the food system in the hands of a few. As such, it’s not something we should be supporting—for human food or pet food. To counter this worry, however, advocates of cultivated meat have called for—and argued that there is reason to hope for—‘food tech justice’ (Broad, 2019). We could decentralise or democratise cultivated meat’s production.

Third, critics of cultivated meat might contend that the technology requires harm to animals. Thus, cultivated pet food is unable to overcome the challenges offered by slaughter-based pet food in the first place. Two concerns are worth noting.

The first is that cellular agriculturalists have developed cultivated meat using foetal bovine serum (FBS), a (gruesome) slaughter by-product. Simply put, if cells are cultivated meat’s ‘seeds’, FBS has been (part of) the ‘soil’. But if cultivated meat continues to depend on FBS—thus slaughter—many of its purported advantages come to nothing. The simple answer is that the industry recognises this problem,

acknowledging the need for (effective, affordable) animal-free media prior to the widespread commercialisation of cultivated meat. Scientists have made important steps in that direction (Stout et al., 2022).

The second is that cultivated meat still requires animal cells. The worry is that a cultivated meat industry may still harm ‘donor’ animals (or animal agriculture’s negative environmental and other impacts will remain). The first thing to say is that a cultivated meat industry may replace living animals with immortal cell lines in some or all cases. And even if they don’t, perhaps the industry could treat ‘donor’ animals in a respectful way. Jan Dutkiewicz and Elan Abrell (2021) have explored using animals living in sanctuaries as the source of cells, while I (2023, chap. 5) have argued we could protect ‘donor’ animals with workers’ rights.

Cultivated pet food could prove an ethical alternative to slaughter-based pet food. But we need further technological (and sociopolitical) developments before cultivated pet food can get off the ground. Again, we can explore our obligations as political actors and political communities. Perhaps we should collectively act to realise cultivated pet food. This could be important. If, as some critics worry, plant-based pet food is unsuitable for some companions, then the possibility of an ethically viable system of companionship might depend on this collective action.

Conclusion

The ethics of feeding meat to our companion animals deserves consideration. Regrettably, academics have, for the most part, overlooked this issue. Questions about pet food sometimes mirror, but sometimes diverge from, those raised by the ethics of the human diet. Plant-based pet food is a viable alternative to standard slaughter-based pet food in (at least) some cases, but it remains controversial, especially for obligate carnivores, like cats. Invertebrate-based and cultivated pet foods may provide a ‘third way’, but questions remain.

A collective approach to the problem—thinking about pet food as a political question, and not simply something for individual guardians to worry about—may, in time, allow us to resolve these problems decisively. Given that the concerns speaking against slaughter-based pet food (including animal suffering, environmental damage, and public health) are deeply pressing, we should all hope that such decisive resolution is forthcoming.

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Chapter 35

Edible Insects and Entoveganism



MacKenzie Wade

Introduction

Looming over one of the largest industrial insect farms for food and feed is a mural of a darkling beetle, the adult stage of the edible mealworm larvae (*Tenebrio molitor*), farmed *en masse* within the walls of the facility (Ardif, 2021). In the mural, the beetle is bisected. Half is in whole form with a textured black wing; the other half is a machine with its internal workings depicted as a system of gears. Elsewhere, on edible insect packages and websites, insects are represented instead as charismatic farm animals, with large eyes and cowbells hung from plump necks, often accompanied by pastoral scenes and idyllic red barns.

Visual representations of insects as food are indicative of emergent perceptions of insects in industrial contexts prompting questions of insects' place within agro-industrial food systems and diets. Insects often inhabit a liminal space in which they are "doubly other," both from humans and from animals (Loo & Sellbach, 2013; Wilkie, 2018). They are often perceived as inherently killable and positioned so low on constructed hierarchies of animality as to be nearly separate from them. These qualities place insects on a conceptual plane outside the bounds of moral obligation. By depicting insects-as-machines, as non-animals, both producers and consumers construct conceptual space for insects' ethical production and consumption. Other stakeholders, however, uphold a contrasting representation of the insect as distinctly animal and, thus, as "acceptable" to eat (Wright, 2015; Sexton et al., 2022).

Behind both contrasting images is an effort by stakeholders to construct a particular idea of ethical insect production and consumption as the industry gains traction. Edible insect industries have grown considerably in recent years, with a total market value expected to reach \$9.6 billion in 2030 (Business Wire, 2022). Since

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2013, over 130 edible insect companies and production sites have emerged in Europe and North America, policy makers have passed legislation approving insects as food, and peer-reviewed publications have increased over 2600% (IPIFF, 2022; NACIA, 2021; Web of Science). Most industry growth, however, has occurred within the insects-as-animal feed sector, which remains conceptually and financially linked to the insects-as-food sector despite potential ethical conflicts and power inequities. The insects-as-animal feed sector, for example, holds considerably more power to direct the efforts of insect research consortiums and trade organizations that claim to represent both sectors. This is in large part due to the sector's dependency on conventional animal livestock industries, the antihero in many narratives that promote insects-as-food (IFW, 2022).

This rapid growth of interest in edible insects intersects with broader vegetarian and vegan consumption trends and has led to reconsiderations of consumer dietary philosophies (McCarthy & Dekoster, 2020; Tan et al., 2021). Entoveganism, a new dietary philosophy whose practitioners supplement a conventional plant-based diet with edible insects, has emerged more prominently in Euro-American contexts. In 2014, the author and popular vegan advocate, James McWilliams, declared entoveganism, or what he calls “the insectivore revolution,” a fundamental threat to vegan identity (van Huis et al., 2013; McWilliams, 2014). His op-ed, “If Vegans Replaced Plants With Insects, They’d Harm Fewer Animals,” prompted deeper consideration into the potential for an ethical insect consumption as professed by advocates (2014). He and other scholars (e.g., Fischer, 2016; Meyers, 2013) have suggested, alongside entovegan practitioners, that eating insects has the potential to substantially minimize rates of suffering enough to justify the exploitation of insects as food.

Entoveganism relies on dominant assumptions about insects to justify their ethical consumption, including insects' non- (or less-) sentience, nutrient density, and potential for sustainable production. Though these assumptions are contested and dependent upon important cultural and technological factors, advocates assert that insect consumption may decrease suffering on three levels: (a) the suffering of definitely sentient animals implicated in agro-industrial food systems, (b) the suffering of humans impacted by malnutrition and food insecurity, and (c) the future suffering of all life due to the effects of climate change. By engaging with entoveganism as an exploratory concept, we may ask: is there potential for ethical insect consumption within industrial contexts?; How may entoveganism serve as a framework for considering insect-human relationships, food system futures, and the social construction of “good” food, “good” eaters, and “good” producers?

What Is Entoveganism?

The term entoveganism was first used in 2017 by Josh Galt, a blogger and advocate for insect consumption, to define the inclusion of insects in an otherwise plant-based diet (2022). Galt self-identified as the “original entovegan” and creator of the

movement, though others may also follow and promote a similar niche diet (2022). Though motivations for following an entovegan diet are diverse, multifaceted, and contested, the philosophy's impetus is toward morality, nutrition, and sustainability, with the former as a foundation for what may then be defined as nutritious and sustainable. In general, practitioners of entoveganism aim to "do the least harm possible" (Galt, 2022, p. 3) and to "maximize sustainability, nutrition, and taste, while simultaneously eliminating meat consumption" (Galt, 2022, p. 11).

Entoveganism can be understood as a lifestyle community wherein knowledge, support, and identity are shared and created among practitioners, most often within online spaces (Monterrosa et al., 2020). Similar to religious movements, practitioners within niche dietary communities often perceive their diet as a moral framework, proselytize consumption patterns, and uphold charismatic leaders (Gressier, 2022). These movements also tend to construct agents of "evil," mapped onto distrust of governments, medical systems, scientific communities, corporations, and/or "the elite" (Bitar, 2018; Gressier, 2022). In some cases, dietary communities may call for "serious political and cultural reform," citing harms such as regulation failures, control, and greed (Gressier, 2022; Jain, 2013). Like other online alternative health-and-wellness leaders, for example, some practitioners of an entovegan diet publicly rejected the COVID-19 vaccine and claimed that "natural immunity" could be obtained through a healthy diet that included insects (Baker, 2022; Galt, 2022).

Though the integration of edible insects into Euro-American markets is relatively new, many of the ideas promoted within entoveganism are not (e.g. Bodenheimer, 1951; Holt, 1885). In 1885, for example, Vincent Holt published *Why not Eat Insects?* in which he made many similar arguments about the ethics of insect consumption and issues of carnism. Insects, he argues, are a "cleaner" and more "wholesome" source of food than conventional livestock because they feed on plants (p. 6, 23). He notes the hypocrisy of nobles readily consuming "foul feeding" animals like lobster, eel, and pig at dinner parties, while even "the hardiest of the guests" would refuse a "well-cooked dish of clean-feeding slugs" (p. 12).

Insects as food are also not novel. Insects are a culinary staple for an estimated two billion people today, most prominently in parts of Southeast Asia, Latin America, and Africa (i.e., Thailand, Mexico, and Cameroon) and they have been an important food source throughout human and pre-human history. The diets of our early hominin ancestors, and likely some human communities, would have had a near-entirely entovegan diet (Andrews & Martin, 1991; Milton, 1999; Watts, 2008). In response to the popularity of the Paleo Diet in the 2010s, a fad diet that promotes "authentic" eating consistent with hunter and gatherer lifestyles (Cambeses-Franco et al., 2021; Gressier, 2022), the entovegan community argued that a true Paleo diet would include substantial amounts of insect protein over conventional livestock meat.

As vegan scholarship argues, however, the longevity of a dietary trend does not constitute its acceptability as an ethical food source. Though consuming animal meat, including insects, may have been "good" for some early human ancestors, much of the world's population inhabits a particular environmental, social, and economic context in which meat is the product of mass factory farming and is not

essential to meeting dietary needs (Frank et al., 2021). It is within this context that animal, and thus insect, consumption is presented as a moral question, alongside other alternative proteins (e.g. plant-based, cellular, fungal-derived mycoprotein) (Carrington, 2018; Sexton et al., 2019).

Insects are classified as animals and are, therefore, not a vegan food source. Though the definition and practice of veganism is contested, a conventional vegan diet rejects the consumption and use of all animals and animal products, including honey produced by bees and silk produced by silkworms, both of which are popular edible insects (Greenebaum, 2012). Thus, those who follow an entovegan diet do not often identify simply as vegans who eat insects and they must carefully evade the value-laden terminology of food choice and eating practices (Galt, 2022). Entoveganism is, instead, positioned by practitioners as an entirely new dietary framework. This careful specification arose from criticism of entoveganism within online spaces, often most strongly from the vegan community. In attempt to further define entoveganism as a dietary framework, practitioners specify that not all insects are equally acceptable for death and consumption, and that the lives and deaths of edible insects should be considered. Galt, for example, argues that any insect consumed must be “sustainably and humanely raised and killed,” which could include freezing to induce a hibernation state before death, production powered by renewable energy, and farming practices that allow for natural behavior expression (2022). However, boundaries of sustainability and ethics defined by entoveganism blur, as do the boundaries of animality and edibility. Insects, for example, are arthropods like lobster, crab, and shrimp, which are more culturally defined as animals and as food. Though Galt focuses almost exclusively on insects, he contends that crab and shrimp are also “acceptable” to eat, further divulging from conventional veganism (2022).

These debates and efforts to carve out moral terrain for an ethical entoveganism are emerging within a context of pronounced neoliberalism defined by increased privatization, market competition, deregulation, and individuality as a moral virtue (Hall & Stephens, 2021; Peck, 2010). In the food system, these trends present, for example, in the consolidation of agribusinesses and food retail companies, agricultural privatization of public lands, and increased commodification of individual food choice within mainstream markets (Alkon, 2014; Jakobsen, 2021; White, 2018). Sexton et al. (2022) draws from the term “Big Veganism,” from Stuckler and Nestle’s “Big Food” (2012), to describe the mainstreamification and corporatization of vegan food by the largest food industry stakeholders. Euro-American entoveganism similarly exists within the social, political, and ecological landscape of a neoliberalizing food system, with “radical” consumers working to reject corporatized consumption trends, while simultaneously aligning themselves with the dietary boundaries corporations create, market, and sell.

Similarly, edible insect producers increasingly market to vegan, vegetarian, and flexitarian consumers. Those who are more likely to eat insects are often also those who report concern with animal and environmental welfare and are more likely to substitute meat for alternative proteins (Elorinne et al., 2019; Fischer, 2016; Gere

et al., 2017; Hartmann et al., 2015; Verbeke, 2015). Ento-based companies, even more than “Big Veganism” stakeholders, must continuously promote the value and “good”ness of their products due to consumer unfamiliarity with (or in many cases, revulsion toward) edible insects. In many cases, these pressures drive companies to lean on over-essentialized narratives about the environmental, health, and moral benefits of eating insects. Many companies, for example, “greenwash” the environmental benefits of their products despite often unreported metrics or commitments to sustainability. However, studies show that a consumer’s likelihood to continue to eat insects is tied more to prosaic factors like price rather than noble motivations and requires more than marketing narratives to influence full adoption (House, 2016).

In this context, entoveganism may be understood as more than a dietary trend but, instead, as a community and moral framework through which to consider insects as food and their potential place within food systems. The ways in which entovegan advocates reconceptualize harm and justify insect consumption, therefore, illuminate new ethical terrains and future potentials at the core of an entovegan philosophy.

Ethical Constructions and Implications of Entoveganism

Ethical implications of insect production and consumption have only recently come into question (e.g. House, 2018; Pali-Schöll et al., 2019; Delvendahl et al., 2022). Entoveganism as a constructed niche philosophy provides an important framework for considering ethical consumption and probing the boundaries of acceptability, edibility, and animality. Potential for an ethical entoveganism relies on three prominent assumptions:

1. Ethical: Insects are not sentient and do not experience pain. Therefore, insect consumption is more ethical than both carnist and vegan diets that rely on direct or indirect vertebrate suffering.
2. Nutritional: Because edible insects are animals and have robust nutritional profiles, they minimize human malnutrition and replace conventional carnism, thus decreasing rates of human and other vertebrate suffering.
3. Environmental: Edible insect production is more sustainable than conventional livestock farming and ultimately minimizes the effects of climate change, thus decreasing the suffering of all current and future life.

The first assumption relies on debated perceptions of insect sentience (i.e., capacity for subjective experience of pain) and compares the moral standing of insects and definitely-sentient animals implicated in food systems. The second assumption takes an anthropocentric approach to consider the positive effects of insect consumption on human interests, in particular, decreased human malnutrition and improved food security. The third assumption examines the role insect agriculture may play in alleviating the impact of climate change on all future life.

However, each prerequisite for an ethical entoveganism is dependent on several technical and cultural factors.¹ In order for the three assumptions to hold, there would need to be a near-complete replacement of conventional animal agriculture with insect agriculture, optimum carbon-neutral rearing practices (i.e., renewable energy sources, integration into circular food systems), and wide cultural acceptance of insects as food to support scale and accessibility. Despite these concerns, entoveganism as a concept supports critical exploration of ethical consumption potential. At the individual level, the perceived “radical” consumption of insects may still have a substantial influence on change toward a more ethical food system.

Assumption 1: Ethical Benefits of Entoveganism

The first proposition for an ethical entoveganism positions insects as non-sentient animals without capacity to suffer. In this framing, insect consumption decreases rates of direct and indirect suffering inflicted on sentient animals. Though insect sentience and their associated moral standing is widely contested, scientific consensus has supported this position that insects are not sentient (i.e. Eisemann et al., 1984; Elwood, 2016) (Gamborg et al., 2018).

Whether or not an animal has capacity to suffer is tied to their experience of pain (Eisemann et al., 1984). This is determined by two general factors, (1) nociception, or “the ability of an animal to detect and react to noxious stimuli by moving itself or the affected part of its body rapidly away from the stimulus” (differentiated from pure reflex response) (Pali-Schöll et al., 2019, pp. 2760–2771), and (2) consciousness, or the animal’s “emotional and subjective interpretation of the nociceptive experience” (Pali-Schöll et al., 2019, pp. 2760–2771) (Eisemann et al., 1984; Pluhar, 1995; Santaoja & Niva, 2019). Based on these factors, a 2014 study on insect neurobiology found little evidence to suggest insects experience pain (Sneddon et al., 2014). By these standards of sentience, it is relatively valid to position insects as at least “less sentient” than vertebrate species (Hampton et al., 2021).

Other scholars, however, are unconvinced that insects lack the ability to suffer and may therefore be ethically killed for consumption (i.e. Elwood, 2022; Santaoja & Niva, 2019; Sherwin, 2001). In regard to the two determining factors for sentience, Lockwood states that the former is relatively certain; insects do sense, move

¹“Insect” is not a homogeneous category. There are over 2000 different edible insect species, each with different welfare needs (Jongema, 2017; Adámková et al., 2017), nutritional profiles, and sustainable production potential (de Goede et al., 2013; Santaoja & Niva, 2019). If entoveganism is to be understood as an ethical consumption practice, more species-specific research is needed to determine how best to define, standardize, and meet insects’ particular welfare needs, including species-specific rearing conditions (i.e., temperatures, population sizes, feed types) and humane killing procedures.

toward, and away from stimuli, but it is much more difficult to determine the boundaries between insects' "stimulus-response system" (reflexes) and experiences of subjectivity (Lockwood, 1987; Carpendale, 2013). Many have also criticized the equation of sentience and human-centric measures of subjectivity with the right to life or wellbeing (Delvendahl et al., 2022). How similar an animal is to a human is a clear indicator of whether scientific opinion declares it sentient, which positions insects as decidedly "other" (Delvendahl et al., 2022; Gamborg et al., 2018). According to Andrew Linzey, when sentience is so uncertain, we should "give animals the benefit of the doubt" (House, 2018; Linzey, 2013).

While the moral equation between carnism and entoveganism is relatively simple by dominant standards of suffering capacity, how may rates of suffering compare between conventional veganism and entoveganism? As some scholars argue, veganism is not free from harm and is complicit (albeit indirectly) in the deaths of definitely sentient animals. As the argument contends, many vegan diets rely on monoculture crop production that creates habitable places for sentient life then killed *en masse* by pesticides and agricultural machinery (Fraser & MacRae, 2011; Fischer & Lamey, 2018; Hampton et al., 2021). Monoculture crop production is also the leading cause of global biodiversity loss (Tarigan, 2019). Advocates for entoveganism, therefore, argue that insect consumption may be more effective than many vegan diets at preventing harm. As McWilliams argues, an entovegan diet may be "an essential way to achieve the ultimate vegan goal of reducing the suffering of animals who we know can suffer" (2014; Fischer, 2016). This, he states, is "the vegan's dilemma," the moral equation between the death of sentient animals implicated in vegan foodways, and insects who may suffer minimally or not at all (McWilliams, 2014).

This argument, however, is contested by some scholars who state that rates of direct vertebrate death due to crop production are likely exaggerated and who specify the importance of the intent and directness of inflicted suffering. For example, from this perspective, a consumer is less morally responsible for the life of a mammal that may or may not be killed by a combine harvester in a soy field than they would be for insects killed for direct consumption. From this angle, the scale of industrial insect production could provide an extreme moral quandary, with billions of lives suffering in perpetuity. To declare insect consumption at the individual level "more ethical" may also be to also declare industrial insect production on a mass scale equally so. In a bio-centric approach to ethics, all life is deserving of direct moral consideration and, whether or not insects are sentient according to the dominant definition, they may still have the right to freedom from exploitation (Gamborg et al., 2018). This position is being increasingly upheld by scholars who call for more satisfactory research into insects' suffering capacity before denying them sentience and accepting their mass rearing for consumption (Gamborg et al., 2018; Pali-Schöll et al., 2019; Santaoja & Niva, 2019).

Standardized Practices and Regulatory Frameworks for an Ethical Insect Consumption

Though humans' moral responsibility to insects remains contested, edible insect industries and regulatory agencies are working to standardize and implement ethical rearing practices to mitigate ethics concerns. Producers have widely adopted freezing as the most humane killing practice over other methods (like boiling) because freezing simulates seasonal temperature change the insect would experience in natural environments (Adámková et al., 2017; Hampton et al., 2021; Santaoja & Niva, 2019). However, acceptability of this method may vary depending on species type and growth stage. For example, crickets are killed at the end of their lifecycle, after mating and laying eggs, but this is not the case for mealworms and other larvae killed and consumed in their first stages of life (Hunts et al., 2020).

Some governing bodies have codified these humane rearing practices, led in large part by European regulatory frameworks (de Goede et al., 2013). A Scientific Opinion released by the European Food Safety Authority, for example, determined that "general animal (vertebrate) health and welfare regulations should also apply for insects" (Santaoja & Niva, 2019). Dutch law now categorizes some insect species as production animals with a right to general well-being. Dutch producers must rear insects according to Brambell's Five Freedoms, including freedom from thirst, hunger, stress, and certain limitations on natural behavior (Santaoja & Niva, 2019; de Goede et al., 2013).

The inclusion of insects within regulatory standards, however, remains the exception to the norm. For most governing bodies, insects are determined not "sentient enough" to receive the legal protections granted to mammals, or their welfare needs are deemed simply "out of scope" (Gamborg et al., 2018). This presents an interesting paradox if it is assumed that industry growth will lead to increased rates of insect suffering. Denying insects animality also denies them rights to welfare standards. At first glance, this lack of standards would seem to increase rates of potential insect suffering. Yet, the lack of standards may also act as a legal barrier to the growth of industrial insect farms, potentially decreasing the net exploitation of insects for use as food and feed. In other words, if insects were to gain further legal designation as production animals, they may then be afforded "welfare" standards like other factory farmed livestock, while also suffering increased scales of exploitation. Paradoxically, denying the legal animality of insects may actually constrain the industry's growth, thereby reducing rates of suffering if insects are, in fact, deemed worthy of moral responsibility.

These ethical considerations move beyond the confines of individual morality, expanding to encompass broader patterns of suffering embedded within food systems. Insect sentience and well-being is a foundation for considering an ethical entoveganism but, on the systemic level, what the life of an insect is worth must be placed in relation to other food system factors with capacity to reduce rates of suffering beyond what is experienced by conventional livestock animals. In addition to possible harm reduction of definitely sentient animals, entovegan advocates argue

that the edible insects can help alleviate global malnutrition and minimize rates of human suffering (Gamborg et al., 2018).

Assumption 2: Nutritional Benefits of Entoveganism

The second argument for ethical entoveganism relies on insects' nutritional profiles to propose that insect consumption minimizes human malnutrition and food insecurity, thus decreasing greater rates of suffering. This assumption takes an anthropocentric approach to consider the positive effects of insect consumption on human interests, placing potential insect welfare loss in relation to human welfare gains (Gamborg et al., 2018).

According to the UN Food and Agriculture Organization (FAO), some 800 million people suffer from malnutrition globally, and this rate is likely to increase alongside population growth (2021). When the FAO released the foundational publication, "Edible Insects: Future Prospects for Food and Feed Security" in 2013, insects entered mainstream conversation as a potential nutrient-dense food source for a rapidly increasing population expected to exceed 9 billion in 2050 (Arora, 2018; Govorushko, 2019; Vantomme, 2015).

In many ways, the narrative of insects as a nutritious food source for a growing population reflects problematic assumptions about insects as food and those who consume them. Despite attempts by scholars, educators, and industry stakeholders to normalize edible insects outside areas where they are already regarded as food, a dominant perception persists that insects are simply a starvation food for the "other" (Khalil et al., 2021). Likewise, the search for a new food source as a solution to the suite of socio-environmental issues often obscures the fact that food insecurity is due in large part to uneven distribution of food and the exploitation of resources through ongoing processes of colonial, neocolonial, and neoliberal systems (Earle, 2010). Relying on the Malthusian, nutrition-based narrative may perpetuate savior models for improving global health and food security and actually inhibit the adoption of insects as a food source completely, rendering all potential human benefits doubtful. Despite these cultural barriers, however, food perceptions may change alongside efforts to destigmatize the food source and insects may still prove an effective food system integration toward improving global nutrition and decreasing dependence on conventional livestock industries.

Because insects are animals, they have comparable nutritional profiles to conventional livestock and provide essential nutrients unavailable or difficult to receive through plant-based proteins (Geiker et al., 2021). Though each of the over 2000 edible insect species have different nutritional compositions which vary alongside development stage and feed type, insects are generally high in micronutrients such as calcium, biotin, magnesium, copper, potassium, riboflavin, vitamin A, vitamin B12, zinc, and iron (Dossey et al., 2016; Rumpold & Schlüter, 2013). Edible insects contain high amounts of bioavailable protein, between 40% and 75% by dry weight, and many are rich in calcium and Omega-3 fats (Kornher et al., 2019; Stull et al.,

2018). Insects with a chitinous exoskeleton like crickets are high in fiber and are proven to improve gut health (Kornher et al., 2019; Stull et al., 2018). According to Stull et al. (2018), the high levels of zinc and iron make insects a particularly viable food source to reduce global malnutrition.

Importantly, insects may provide supplemental nutrients that advocates perceive to be essential to conventional vegan diets (Geiker et al., 2021). Insects are a good source of vitamin B12 and complete protein with all nine essential amino acids, which may be difficult for strict vegans to obtain without careful food pairings and supplementation (Zielińska et al., 2015). In comparison to other alternative proteins like cellular meat and some meat substitutes, insects also provide a naturally occurring or non-processed source of nutrition. However, there are currently few insect-based meat alternatives on the market. Due to consumer hesitancy, most available insect foods are processed snack products (i.e., chips, protein bars, and cookie mixes) though this is changing. Even as Euro-American industries struggle to position insects as a viable protein alternative, in areas where insects are already consumed, the ability to receive the essential nutrients afforded by insects with little processing and with localized rearing potential may lessen human suffering on the global scale.

Increased reliance on insect agriculture over conventional livestock may also lead to other safeguards for human health that effectively decrease human suffering. As the COVID-19 pandemic demonstrated, conventional livestock animals are vectors for zoonotic disease with potential to greatly harm human lives and livelihoods (Holmes, 2022; Jones et al., 2008). Outbreaks caused by human–animal interface within food production are increasingly inevitable and remain a serious threat (Fagre et al., 2022; Holmes, 2022). Unlike conventional livestock animals, however, insects are phylogenetically distant from humans, meaning there is very low risk of cross-species zoonotic disease transmission from insect rearing (though, of course, the bites of some insects like mosquitoes do transmit diseases) (van Huis et al., 2013; Dicke et al., 2020; Doi et al., 2021). Though there may be potential risk for insect contamination from feed, limiting animal-based feed sources and adhering to standard processing practices (i.e., boiling, dehydrating) minimize this risk substantially (EFSA, 2015).

Insects as a food are framed as a potential source of essential nutrients to decrease malnutrition and help buffer human–animal disease transmission, effectively decreasing rates of human suffering on the global level. However, the existence of a “novel” nutritious food source does not necessarily improve the systems of inequality by which people become food insecure and malnourished. Though insects as food may provide essential nutrients, their potential for localized rearing at the community and household level may be a more compelling argument for a wider adoption of entovegan diets. Insect agriculture has low barriers to entry compared to conventional livestock and provides an option for rural communities to increase their own food security, enhance incomes, and produce culturally appropriate food, rather than rely on external intervention (Akhtar & Isman, 2018). In the Kwango District in the Democratic Republic of Congo, for example, insects already make up nearly a third of residents’ animal protein (MIGHTi, 2019). Multiple working

projects focus on supporting localized insect farming efforts to improve malnutrition. Taste, of course, is also an important factor often disregarded in solution-based narratives of insect consumption. There are over 2000 different edible insect species and, depending on species and preparation method, flavor profiles range from dried crickets that taste like sunflower seeds to fattier, charred bacon-like mopane worms (Wade, 2021).

Entovegans and edible insect advocates envision a future in which insects are a viable food choice, effectively decreasing food insecurity, malnutrition, and rates of human suffering in the present and into the future. If we have moral responsibility to future human generations impacted by food insecurity, moral responsibility may also be extended to all future lives.

Assumption 3: Environmental Benefits of Entoveganism

Within an entovegan dietary philosophy, insects raised for food may be regarded (albeit contentiously) as a non-sentient food source with substantial nutritional profiles to replace carnism, supplement conventional veganism, and alleviate global malnutrition, thereby substantially decreasing rates of suffering. However, accepting the further growth of an industrial insect industry in which billions of insects will be killed for consumption requires a reckoning with the food system's role in exacerbating climate change. If insects are to be positioned as a food source that effectively minimizes suffering on multiple scales, it is essential that their production is fully sustainable (Sala et al., 2017; Wade & Hoelle, 2020; Wheeler & von Braun, 2013).

Edible insects' sustainability potential is a dominant premise of all narratives that promote the production and consumption of insects as food, resulting in substantial increases in research, grant funding, international policy reports, media attention, and industry growth. The assumption holds that entoveganism minimizes the environmental impact of our food systems, ultimately decreasing suffering of lives implicated in agro-industrial food systems and all future lives who may ultimately suffer due to the effects of climate change (Oonincx et al., 2010; van Huis et al., 2013). Yet, the sustainable potential of edible insects within a global industrial food system remains an open question; can edible insect production alleviate the environmental impact of conventional food systems, or will the industry operate within the same status quo mechanisms of agro-industrial production it aims to be a solution to?

Agro-industrial food systems have contributed substantially to climate change (Tilman & Clark, 2014; Halpern et al., 2022). Currently, agriculture is responsible for 50% of habitable land use and over 70% of available freshwater use (Crippa et al., 2021; Rosegrant et al., 2009), and it contributes to 23–34% of global greenhouse gasses (Halpern et al., 2022; Tubiello et al., 2015). Moreover, as populations approach 10 billion and continue to rise, food production will need to increase by over 60% (FAO, 2012). Without considerable and immediate change, these systems

will continue to contribute to the disastrous global effects of climate change, which are distributed and experienced unequally by peoples, communities, and species (Tilman & Clark, 2014; Halpern et al., 2022).

Within these agro-industrial food systems, animal agriculture is a leading contributor to environmental degradation due to deforestation, water use, inefficient feed conversion, greenhouse gas emissions, contamination, and other factors (Gamborg et al., 2018; Gerber et al., 2013; Makkar et al., 2014; Rööß et al., 2017). As populations rise, so too will demand for conventional livestock meat and, by 2050, reliance on conventional livestock is predicted to double (Steinfeld et al., 2006, Davis & D'Odorico, 2015; Godfray et al., 2018). Due to their similar nutritional profiles, entovegan advocates present insects as an alternative to this increased reliance on conventional livestock. Life cycle assessments conducted for rearable species (i.e. crickets, mealworms, black soldier fly larvae) demonstrate that insect production leads to a fraction of the environmental impact, especially when compared to beef (Halloran et al., 2016; Oonincx & de Boer, 2012; Elorinne et al., 2019). Moreover, insects may also be easily integrated into circular food systems based on the closed-loop recycling of resources (Derler et al., 2021; Shafer et al., 2022; Surendra et al., 2016). Insects require relatively no water and produce a small fraction of the greenhouse gasses emitted by conventional livestock (Oonincx et al., 2010). Insect production also requires much less land, and they can be easily reared in both urban and rural environments, as well as at the home level which may improve community food sovereignty (Dunkel & Payne, 2016; Stull et al., 2018). If insects can, indeed, be reared sustainably, they may feasibly decrease climate-caused suffering in the near and distant future.

Like conventional livestock, feed sources are a main determinant of sustainable production. Insects can be reared on food waste and organic by-product and, due to their very low feed conversion ratios (FCRs), they are able to efficiently transform waste into digestible and nutritious food. Studies have also shown that some commonly reared edible insects (i.e., *Tenebrio molitor*) are even able to easily digest nonorganic waste material like Styrofoam (Yang et al., 2015; Zielińska et al. 2021). Insects fed on Styrofoam have been deemed safe for human consumption, with some exhibiting higher protein contents than those fed on conventional feed (Zielińska et al. 2021). Moreover, unlike all other livestock animals, every part of the insect can be consumed (Orsi et al., 2019) and insects' frass (excrement), the only by-product of insect production, is a highly valued natural fertilizer with potential to decrease reliance on chemical fertilizers (Basri et al., 2022; Schmitt & de Vries, 2020).

While consumer rejection of conventional meat in favor of insect protein could potentially lessen environmental degradation and decrease rates of suffering in definitely sentient animals, insects may also provide a sustainable protein source to conventional vegan diets. Though food choice and availability vary, many conventional vegan diets are heavily reliant on monocultured plant-based protein sources like soy. Monoculture production often relies on intensive chemical pesticide and fertilizer use, leading to soil degradation, biodiversity loss, and harm to people and other animals due to bioaccumulation (Dagevos & Voordouw, 2013; Filson, 2005;

Tarigan, 2019; Xiang et al., 2020). Many alternative protein products are also highly processed and shipped long distances, increasing consumers' greenhouse gas footprint (Wood & Tavan, 2022; WHO, 2021). Despite these concerns, some plant-based proteins are more sustainable than insect protein and may remain so unless measures are taken to ensure insect production is carbon-neutral (Sadhukhan et al., 2020; Smetana et al., 2016).

While the environmental argument for an entovegan diet is strong, it hinges on essential factors that, as the industry grows, come increasingly into question (Deroy et al., 2015; House, 2018; Wilkie, 2018). Though insect rearing may have a negligible environmental impact compared to conventional livestock, insect production currently requires large amounts of energy to heat, ventilate, kill, and process insect livestock (Deroy et al., 2015; Ooninx et al., 2010). Though insects could offer a near-completely carbon-neutral food source and be fully integrated into circular systems, this scenario remains hypothetical, as it would require that production facilities are run on renewable energy and insects are fed completely on organic waste and byproducts. Currently, insect feed must often be supplemented with a protein source such as fishmeal or, occasionally, livestock by-product like porkmeal (Hampton et al., 2021). Feed type is essential to the environmental assessment of insect production and, if conventional feed sources are used, the environmental impact may be no different than that of chicken (Ooninx et al., 2010). However, if reared on organic (or inorganic) waste, insects could contribute directly to waste reduction within a circular system, and meet environmental expectations (Santaoja & Niva, 2019). The environmental benefits of edible insects and their contributions to reduce the experienced effects of climate change hinge on how they are integrated into our food systems, if at all.

Conclusion

At a dinner with industry stakeholders at the 2022 Insects to Feed the World Conference, attendees spread black ant butter onto bread and cut into filets of beef sprinkled with mealworms. One insect farmer keeps a hefty can of chicken in their car for a quick meal on the way to the farm and proudly claims to start the day with a breakfast of "a pound of meat." Motivations for involvement in the edible insect industry are seemingly contradictory but are diverse and complex, reflective of the relationship between industrially raised insects and broader food systems ecologies. Similarly, while entoveganism as an insect-vegan dietary philosophy is filled with contradictions, contested assumptions, and contingent futures, it allows for expansive broadening of the binaries between "good" and "bad" food, and "good" and "bad" eaters and producers.

As global edible insect industries continue to grow, the prerequisites for an ethical entoveganism are, at this moment, being actively constructed, negotiated, and implemented. Within this nexus of creating economic and ethical value from insect lives, consumer communities play an important role in constructing ideas of food

system futures and insects' place within them. Entovegans, those who reject the consumption and exploitation of non-insect animals, are an important point of focus for understanding how food-based values may be actively constructed around discourses of suffering.

The purported benefits of insect consumption and production, however, remain contested and the prospect for an ethical entoveganism may go unrealized as the industry gains traction and billions of insect lives become implicated in industrial production. This concern calls for increased research, standardization, and species-specific ethical practices, as well as the integration of insects into vegan knowledge production. Moreover, consideration of insects as food also requires careful examination of the subversive, solution-based narratives put forth by companies and consumer communities. As Sexton warns, the industry may arise from the same "economic and political mechanisms of power" it claims to be a solution to (Sexton, 2018). From a vegan perspective, as Peter Singer argues, launching a "campaign for insect rights" may also detract from more important concerns, namely obligations to vertebrate animals "about whose capacity for suffering there is much less doubt" (2016; Wilkie, 2018).

Insects have been often disregarded as influential actors within overlapping relationships between environments and human bodies. Whether they are depicted as non-sentient machines or as charismatic livestock, the lives of billions of insects within mass-rearing facilities are being primed for direct killing in perpetuity for human and animal consumption. This is a pivotal time in which to consider the insect as more-than-other and to weigh moral considerations of insect consumption and production. However, the same cultural mechanisms of perception that keep insects from ethical consideration, branding them as "other" and as "lower" on constructed hierarchies of value, also dismisses their serious consideration as a valid food source. Paradoxically, the project to re-examine the insect as an object of moral consideration also requires serious examination of the insect as a viable food source with potential to reduce harm. Serious consideration of insects as a possible integration into dominant food systems may also support the perception of the insect as an influential and complex agent to whom we may have moral responsibility. Entoveganism serves as an important conceptual framework for understanding insects' role within industrialized food systems, the social construction of food-based values, and the potential for more ethical food systems futures.

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Chapter 36

Pescatarians Should Give Up Eating Fish but Not Give Up Entirely



Becca Franks and Jennifer Jacquet

Of the trillions upon trillions of animals killed for human consumption each year, fish and aquatic invertebrates make up the vast majority of individual animals killed for consumption (Franks et al., 2021; Mood et al., 2023). However, while the United Nations Food and Agriculture Organization (FAO) provides data on the number of terrestrial animals killed annually, the FAO provides only the tonnage for the aquatic animals killed in fisheries and aquaculture, not the number of individual animals (FAO, 2022). Similarly, the Humane Society of the United States reported the numbers of individual terrestrial animals killed in the United States, but reported nothing on aquatic animals. The first edition of *Animal Liberation* in 1975 focused on the effects of an industrial model of production on mammals and birds and less on industrial fishing or the farming of aquatic animals (industrial aquaculture was still in its infancy; Singer, 1975). In other words, the number of individual animal lives affected (and how) by global fisheries and aquaculture has been previously overlooked.

A similar blindspot for fish and aquatic invertebrates is evident in pescatarianism—a diet that excludes the consumption of animal flesh, but makes an exception for seafood or freshwater fish and invertebrates. What accounts for this loophole? Here we look at the common arguments made for continuing to eat seafood—fish and aquatic invertebrates—and note how few of them hold water. We also provide

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reasons for not giving up when it comes to the hard choices about what to eat, but continuing to be considerate of the effects of our individual diets. We believe the average pescetarian—motivated as they are by health, environmental, and animal-related concerns—might be open to changing and moving toward a vegan diet. Finally, for those who perceive giving up eating aquatic animals as impossible, we present a logical alternative: bivalvetarianism.

What Is Seafood?

Seafood, as it turns out, is a very disparate and illogical group that includes organisms from both marine and freshwater, as well as wild-caught and farmed species. It is more accurate to refer to fish and aquatic invertebrates, even though the term “fish” is also problematic since it is not a true class of animals (Miller, 2020; Yoon, 2009).

Globally, we catch trillions of wild animals representing thousands of species—more than 100,00 tons annually—about 75% of which is caught by industrial fishing boats supported by large government subsidies—as opposed to small-scale or subsistence fisheries. Around 20 percent of the global catch is turned into fishmeal and fish oil feed to other animals, namely farmed fish (<http://searoundus.org>).

Aquaculture, or farming, produces another 87.5 tons of farmed animals made up of more than 400 species, and most of the volume is farmed in inland, freshwater (FAO, 2022). The aquaculture industry promised it would help reduce pressure on overfished wild species, but the evidence suggests otherwise. The growth of the farmed salmon industry appears to have led to a decline in the price for salmon, including wild salmon, and fishing for wild salmon increased (Knapp et al., 2007). Longo et al. (2019) analyzed the global seafood production as a whole and global aquaculture production did not appear to displace capture fisheries. It could be that displacement did not occur in part because aquaculture production has been reliant on capture fisheries for feed (e.g., Naylor et al., 2009).

The three most popular seafoods in the United States are tuna, shrimp, and salmon. Tunas are caught almost entirely by industrial fisheries with gear types (e.g., purse seines and longlines) that lead to high amounts of bycatch (animals caught incidentally), including marine mammals, seabirds, sharks, and turtles. Wild shrimps are caught with carbon-intensive, highly destructive, and indiscriminate bottom trawlers, or they are from farms in the tropics. Salmon are either wild caught or farmed typically in offshore net pens that lead to high ecological impacts.

In any case, to eat seafood in the West is, more likely than not, to support an industrial food system. In addition, it is difficult to know whether seafood is farmed or wild-caught, particularly in the United States where there is rampant mislabeling (Jacquet & Pauly, 2008). About half the seafood consumed in the United States is wild-caught, while the other half originated on farms (Jacquet & Pauly, 2008).

Common Reasons Given to Be Pescetarian (and Why They Don't Hold Water)

Environmental Impacts

A common reason cited for pescetarian diets is that eating aquatic animals entails a lower environmental impact compared to eating meat, particularly from cows and pigs—and we note that this view is not simply held in popular conversation but also evident in the research literature (e.g., Clark et al., 2018). However, when we look at production of relatively lower-impact foods like chicken and aquatic fish and invertebrates, there does not appear to be any effect on production of the higher-impact foods of beef and pork (York, 2021). In other words, we are simply eating more of every kind of animal.

In addition, the very notion that seafood has fewer impacts is a worrisome generalization in part due to the wide variation in production methods and their impacts we just described. First, the severity of the impact depends on the environmental issue, as well as the species and production method. When Halpern et al. (2022) considered greenhouse gas emissions, freshwater use, habitat disturbance, and nutrient pollution, they found that shrimp had, overall, higher impacts than beef per kg, but that shrimp's overall impact was less only because of its lower volume of production.

Some pescatarians may also assume that there is no deforestation associated with seafood, as there is with the mass production of land animals. That is true of capture fisheries but not true of aquacultured species (which, again, represents about half of the seafood we consume in the West).

Aquaculture contributes to terrestrial deforestation. In the tropics, shrimp farming has been a primary reason for the loss of 62% of all mangroves globally between 2000 and 2016 (Goldberg et al., 2020). Shrimp farming is also one of several main drivers of proboscis monkey habitat loss in Indonesia (Toulec et al., 2020).

There is also deforestation associated with feed for aquaculture. Many farmed fish and invertebrates, including shrimp, receive soy-based feeds. Indeed, many farmed fish also receive fishmeal and fish oil, which leads to a net loss in protein and a great number of individual animals killed to feed one farmed fish. These inputs lead to outputs—pollution in the forms of nitrogen and phosphorus. Open ocean net pens also spread sea lice and other pathogens to wild animals as they pass by (Costello, 2009).

For capture fisheries, there are other worries, including the loss of biodiversity from direct exploitation and the bycatch and impact on other species. Bottom-trawling, for instance, degrades the bottom habitat by dragging gear and crushing benthic organisms that are home to a range of life in the oceans. Of the thousands of species we catch, there are only 400-some odd stock assessments and those show that fisheries are, in general, not well managed. Of course, there are exceptions—some fish populations are managed. But these are exceptions to the rule, which is overexploitation (Jacquet & Pauly, 2022).

And please note that certified fisheries have not offered a way out of this mess. There is ample evidence that the Marine Stewardship Council (MSC), the largest and most visible certification scheme for capture fisheries in the world, is certifying mainly industrial fishing vessels that are not, in fact, sustainable (Jacquet et al., 2010; Le Manach et al., 2020).

Health Benefits

Another reason people may eat fish is related to health and their belief that by cutting out terrestrial animal products (but not aquatic animal products), they might be able to lower their risk of heart disease (currently the leading cause of death in the United States). In addition, seafood is believed to be high in omega-3 fatty acids, which have attracted a lot of attention for the benefits that they supposedly confer.

We are not nutrition experts, but it appears that these benefits have been overblown and the costs underestimated (e.g., Greenberg, 2018). More broadly, many critics have raised the alarm around “nutritionism” and the obsession with micronutrients: The reductionist view of food (focusing on parts rather than whole foods) is not serving public health generally, and the simplified advice of “eat food, not too much, mostly plants” is sufficient wisdom (Pollan, 2007). Gone are the days of scurvy (and the miracle cure of vitamin C) for the Western audience we are addressing here, and we in the West should be well past the notion of a single ‘miracle’ food or nutrient. There is no compelling evidence that lowering one’s risk of heart disease or an obsession with omega-3 fatty acids could not be achieved with a plant-based approach.

In contrast to the supposed health benefits, there are health *risks* associated with the consumption of accumulated heavy metals in tunas and farmed aquatic predators such as salmon. Likewise, for farmed fish, as with most farmed animals, the rampant and largely unregulated use of antibiotics poses a public health risk by encouraging the acceleration of antibiotic resistance (Cabello, 2006). One study suggests that aquaculture also accounts for the highest use intensity of antibiotics per kilogram of biomass when compared to terrestrial food animals (pigs, chickens, and cows; Schar et al., 2020).

Religion

For religious reasons, some people may be pescatarians. Near the beginning of the eleventh century, the Catholic Church made meatless Fridays compulsory for its members (Bell, 1968). Curiously, “meat” did not include fish, so these religious taboos led to increased demand for fish in Europe and as freshwater fish became scarce from overexploitation, marine fisheries expanded further offshore, and coastal fishes such as herring and cod began to be sent inland (Barrett et al., 2004).

Some people have even attributed the Catholic religion to the commodification of marine fish (Fagan, 2006). This carveout for fish (as well as other semi-aquatic animals, such as geese) is not justifiable in any logical way. For people who may be pescatarians for religious reasons, we suggest they consider substituting bivalves for any other aquatic animals (see below).

Lived a Good Life Relative to Industrial-Farmed Land Animals

Another common reason given for the pescetarian diet is that wild fish live a good life so relatively speaking it's "less bad" to eat them. There is a degree of truth to this claim, but it also misses the point. It is true that at a global scale, only a minuscule proportion of terrestrial animals consumed by humans come from the wild—nearly all of the terrestrial animals in our Western food systems are domesticated and/or raised in captivity. Of the aquatic animals consumed globally, on the other hand, a larger proportion of the individuals come from the wild. And it is true that, regardless of the metric of "a better life," these wild aquatic animals almost certainly lead a better life than terrestrial animals in industrialized agriculture. Nonetheless, eating "seafood" because some proportion of the animals involved lead a relatively good life until the moment of capture is not a good reason to eat aquatic animals in general. First, farmed fish and invertebrates make up more than half of the fish consumed in the United States comes from aquaculture, which is just another form of factory farming. So many aquatic animals that are consumed are not, in fact, wild. And it's difficult to be certain of wild or farmed origins (Jacquet & Pauly, 2008).

It is clear we do not even know how to give farmed aquatic animals a good life and clear that we have not begun to do it. For farmed aquatic species, we know next to nothing about their welfare. Science related to animal welfare is available for 84 of the 408 species known to be farmed, and the remaining 324 species, which represent an estimated 70% of the tonnage produced, have either no welfare publications or the species is not known (Franks et al., 2021).

Second, the capture of wild aquatic animals is harmful to the individuals involved (e.g., extended suffering on long lines or decompression and crushing through seine nets), as well as animals caught incidentally ('bycatch'), and can hurt the ecosystems and individuals left behind (e.g., whales are now in some cases seen as 'competitors' with industrial fishing boats). Global fish production, even in the wild, requires capture methods that destabilize community social systems and leave long-term destruction in its wake (e.g., trawling), from which it can take decades to recover.

Third, and relatedly, there are significantly fewer aquatic animals left in the wild. Since the advent of industrialized fishing, the size and number of top predators have plummeted. Does it really make moral and logical sense to promote the continuation of intensive extraction practices targeted at the few wild individuals who remain? Surely another way is possible.

Which leads us to our fourth point: while it might be “less bad” in some sense to eat a happy wild fish than a factory-farmed chicken, is that a useful and valid comparison point to begin with? A factory-farmed chicken leads an undeniably terrible life (and one that is bad for the planet and the future of humanity), so saying something is better than that is not claiming much of anything at all. A more productive comparison point would be to invoke a diet that we know to be likely better for our health, the planet, and animal welfare, i.e., one consisting mostly of plants.

Inferiority

At the root of many of these concerns is the entrenched notion that aquatic animals—fish and aquatic invertebrates specifically—are inferior or lesser types of animals. It seems that many pescatarians may believe that these aquatic animals are less sophisticated and more primitive forms of life compared to terrestrial animals—especially mammals and birds. And, following from that inferiority, comes the lower moral cost to eating them. In other words, some pescatarians may believe that fish are low on the “Great Chain of Being”.

Seeing fish and aquatic invertebrates as primitive misconstrues our evolutionary relationship. Modern fish are not—in *any way*—primitive to humans (Franks et al., [in press](#)). In fact, “fish” is not a biologically meaningful group, thus the comparison is off to a bad start from the get-go. Take, for example, the Coelacanth. Coelacanths are an order of fishes that are closely related to humans—so closely in fact, that they are more closely related to humans than they are to many other species of fishes. Thus, if we want to call Coelacanth fishes and be scientifically consistent, we would also call humans (dogs and cats and giraffes and ostriches) fishes.

“Fish” is a paraphyletic set, which means that from an evolutionary perspective, it arbitrarily includes some species and excludes others. The word “fish” covers such a huge array of biologically unrelated animals that any statements about fish—e.g., who they are, what they are capable of, or what their evolutionary heritage is—are rendered essentially meaningless. Trying to rectify this solution by cleaning up the word fish to become more grounded in biology is futile—it would require excluding some animals who are currently called “fishes” (e.g., Coelacanths, sharks, and hagfish) or including all the tetrapods (e.g., humans, mice, and turtles).

Instead of attempting to save the word fish with unlikely definitional contortions or ignoring the problem altogether, a more measured solution is to realize that perceptions of or claims about “fish in general” are fundamentally and irreconcilably flawed because they are based on false premises. Specificity and species-level attention is necessary to have anything like a meaningful conversation about “fish”.

With this observation in mind, it is still possible for the pescetarian to claim that they were specifically referring to the inferiority of the ray-finned fishes, the Actinopterygii. The Actinopterygii are a sound evolutionary grouping and more distantly related to humans than the Coelacanths. Perhaps the Actinopterygii are indeed inferior to humans (and thus to be eaten with moral abandon)? Unfortunately for the

pescetarian, even this claim does hold. While it is true that as a species, we are more distantly related to Actinopterygii, this fact does not confer the inferiority of Actinopterygii.

Our last common ancestor with Actinopterygii lived over 500 million years ago. In the interim, our human lineage has changed a lot: we crawled out of the sea, developed five digits, began climbing around on newly forming plant structures (aka, trees), then came down out of the trees, radiated around the globe, and now are confronting existential destruction of our own creation.

In the same period of time—500 million years!—the Actinopterygii lineage underwent similarly profound changes. That last common ancestor between humans and the Actinopterygii was not an Actinopterygii—it was a singular, unrecognizable, truly ancient species swimming in Paleozoic seas on a very different planet with all the (lifeless) continents in the southern hemisphere. That one species has now radiated into roughly 80,000 different species: about 40,000 of which are aquatic Actinopterygii (e.g., coho salmon, rainbow trouts, hatchet fish, and halibut) and 40,000 of which are terrestrial tetrapods and, of which, human beings are only one. Thus, in the space of a chapter (or paragraph), it is impossible to convey the full breadth of change and diversity that is encompassed by the Actinopterygii; it would be like trying to convey the full breadth of change and diversity that is encompassed by tetrapods.

Since the Actinopterygii are too diverse to consider here, let us instead focus on just one family, the pufferfish (commonly consumed in Japan and Japanese restaurants). There are several hundred species of pufferfish, each species (and each individual, for that matter) with their own unique story—roughly similar to the diversity within the primate order. Without picking any species of pufferfish in particular, their story goes like this: 500 years ago, there was a paleozoic creature swimming the seas of the earth (also our ancestor). Since then, the pufferfish lineage diverged from that ancient being by developing: a swim bladder (which allowed them to maintain their position within the water column, in other words, to float around in space on demand), radiant fins (which allowed them for fine-grain navigation through liquid), and lateral lines (which gave them perceptive abilities of the fluid dynamics that is their world). They developed unique defense mechanisms, courting rituals, and esthetics. Pufferfish then spread around the waters of the world and developed species specific and local practices. In a word, they became unique and, we must acknowledge, not at all primitive to us.

So yes, fishes and other aquatic organisms are distant relatives—500 million years distant—but a distant relative is not an ancestor, which would be like confusing your cousin for your great-great-grandparent. Modern fishes are our cousins, not our great-great-grandparents. As such, there is no reason to think that they are less attuned, sensitive, or engaged with their world than we are with ours. It is factually and ethically wrong to conflate relational distance for inferiority.

Beliefs About Pain

Many pescatarians may justify their behavior through a belief that fish do not feel pain. Despite scientific evidence that fish can and do feel pain, there remains some lingering public misunderstanding and (potentially insoluble) scientific debate about experimental evidence for pain in general and pain in fish specifically. Looking at the history of fish pain debate, it is clear that fish pain has been politicized, originally due to concerns about recreational angling. Fish pain was first politicized in the 1960s in South Africa in response to animal rights groups who were opposed to angling. For more than half a century, anglers, the angling community, and the angling industry have published, distributed, and financed essays discussing various lines of evidence for fish pain. These review articles have tended to conclude that fish cannot feel pain (Vettese et al., 2020). In contrast, experimental research (not linked to anglers or angling societies) has generally shown that fish behave in ways that are consistent with the experience of pain and have various, unique physiological substrates to support those experiences (Braithwaite & Huntingford, 2004; Sneddon et al., 2003).

Ease

While we don't see this argument cited much, it's easy to see that the food system is stacked against eliminating animals from one's diet and one possible argument for pescetarian diet is ease. Deciding to only eat seafood, of all the animal options, may simply be the result of there being so few alternatives. Statistically speaking, many restaurants and fast-food chains offer zero vegetarian or vegan options. This is, of course, hard to argue with in some places. Much of the Western world is not set up for a plant-based diet. But giving into this structural problem instead of demanding change is only likely to prolong the problem.

Some Concluding Thoughts

Our own view is that this is not about purity. It's about progress. What food is available to you? Do you live in Kiribati? These arguments are not intended for you. Are you on vacation in the Seychelles or at a large family dinner to celebrate some accomplishment at a seafood restaurant? Do what you need to do. But do not *be* a pescetarian. Do not identify as someone who eats only aquatic animals. It is not a logical nor an ethical identity. As Elder (2018) put it: the morally motivated pescetarian appears to be an oxymoron.

Diet Matters for Social Change

When people try to be a vegan or vegetarian or even pescetarian, they often find that the regimen is much harder than what they expected. It is tempting to throw up your hands and say individual choices do not matter. In fact, they might even distract from efforts to change the broader system.

Recently, there has been a lively debate about individual action, such as “nudges” or consumer purchases, compared to systemic change. Putting the responsibility for solving societal problems on individual consumer choices—rather than regulation or taxation—has been promoted by corporate interests across so many issues, including climate change, obesity, retirement savings, and pollution from plastic waste (Chater & Loewenstein, 2022). Repeatedly, these seem to be at the expense of systemic change, such as regulation or taxation. In lab experiments, alerting people about green energy reduced support for a carbon tax (Hagmann et al., 2019). More to the point, in a real-life experiment involving 14,000 households, those that were randomly assigned to report actions they took to reduce energy use became, according to self-reports, less supportive of a carbon tax (Werfel, 2017).

However, when it comes to diet, there is reason to be skeptical about disregarding the notions of individual responsibility, or consumer choices. Unlike some of the other “nudges,” dietary choices may not undermine support for policies of greater impact. The reason we have to most suspect that individual dietary choices are powerful is that the meat and dairy industry has been so defensive when it comes to messaging that consumers should eat less meat. Unlike tobacco companies, or oil and gas companies, who regularly message along the lines of individual choice or responsibility (one recent Esso ad seen in London said: “Want to drive less? We’ll help you!”), meat and dairy companies wage a kind of war against any message that suggests cutting meat out of one’s diet. That body of evidence alone is enough for us to believe dietary choice is a powerful lever for change.

Bivalvetarianism: A More Logical Next Step

While we hope we have demonstrated that there is no clear logic in pescatarians, there might be a logical loophole for eating aquatic animals in small quantities. That loophole is for bivalves—a group of animals that includes oysters, mussels, and clams (Jacquet et al. 2017).

Depending on how they are caught or grown, bivalves are the best option when it comes to eating animals (Jacquet et al. 2017). They appear to minimize (but not eliminate) ecological impacts, they do not require that we feed them, and their capture or production also presents the fewest welfare concerns (although systematic and/or anything approaching comprehensive analysis of their welfare has not been carried out and should be).

For bivalves or, for that matter, plants to contribute ethically to the global food system, it is not enough to add bivalves or plants to your diet. For this approach to contribute to the reduction in demand for meat, it must be a true substitute, rather than an addition.

An Expanding Moral Circle?

Globally, aquatic animals are in trouble and, on balance, that is due to consumption by wealthy consumers. The direct (and indirect) exploitation fish face is mainly because people—or other animals, like aquacultured salmon and shrimp, that are mass produced for people—eat them. Humans are fishing more than ever, and, especially in the United States, the EU, and Japan (the largest seafood importers), they are consuming more seafood than ever. In these markets, the consumption of seafood is not a matter of food security—consumers have a lot of choices about what they eat and many possible alternatives.

Eating fish no longer represents taking the moral high ground (Elder, 2018). *Seaspiracy* was the first feature documentary to suggest we should not eat fish (and unlike some critics, we do not believe the intention was to say *everyone* should not eat fish, but people watching a Netflix documentary should not eat fish). In his article in *Vox* in March 2023, Garrison Lovely explained why his year “as a pescetarian did more harm than good.” The recently updated edition of *Animal Liberation* (published in 2023) now includes coverage of the issues in intensive aquatic animal farming, including slaughter. There are various attempts to consider the number of individual fish and aquatic invertebrates killed each year (Mood and Brooke; Franks et al., 2021; <https://animalclock.org/>). Some optimists might even suggest that there is an expanding moral circle that may grow to include fish and aquatic animals, and we are among them.

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Chapter 37

Animals and Environmental Justice at Sea



Yanoula Athanassakis

In 2023, the Vienna City Council sued Revo Foods, an alternative seafood company, claiming that the labeling on their plant-based salmon product was misleading to consumers (Pritchett, 2024). The main complaint was that the language, “Revo Salmon—100% plant-based with pea protein,” deceives customers into thinking they are buying animal-derived material. While an Austrian court recently dismissed the lawsuit, the current international wave of labeling lawsuits and regulations brought against plant-based food businesses will likely increase. Revo’s CEO, Robin Simsa, pointed out that plant-based companies are forced to follow unrealistic regulations that hamper their ability to compete in the open market (Vegconomist, 2014). Revo Foods noted that the language used by other food companies does not undergo the same level of scrutiny as plant-based ones, “for example, ‘hamburgers’ do not contain ham and ‘hot dogs’ do not contain dog meat” (Bradshaw, 2024).

Lawsuits targeting the language used in plant-based product advertising obscure both underlying fiscal motivations but also an aversion by the meat, dairy, and fish sectors to any intimation that animal-derived food is rendered in cruel or suboptimal ways. The lawsuits are in the same vein as U.S. ag-gag laws that aim to silence whistleblowers who document animal cruelty on farms and in factories (Bittman, 2011). A striking 2019 case involved requirements to remove language and images of positive relationships and affect between human and nonhuman animals. In 2019, the California Department of Food and Agriculture filed a lawsuit against Miyoko’s Creamery for its use of traditional “dairy” language on its packaging and advertising. Miyoko’s Creamery, then 5 years in business, is a California-based company founded by Miyoko Schinner. The most contested terms named in the lawsuit included “butter,” “dairy,” “hormone free,” and “cruelty free” (Wallace, 2021). Additional demands included that Miyoko’s remove an image of a woman hugging

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a cow, featured on the company's website (Starostinetskaya, 2021). The case was dismissed in August 2021, and the US District Court stated that Miyoko's could use the language of dairy and keep the image of a woman hugging a cow.

While there has been a plethora of legal actions relating to the rights to use language on packaging for plant-based food products, alternative seafood has garnered less attention. Cellular and plant-based seafood is a more recent market that urgently exposes the need to increase plant-based alternatives to animal products because of the lack of legal and welfare protection for aquatic animals and because of the accompanying environmental costs of fishing and farming in the oceans (Hessler & Wilson, 2021). The Revo Foods case is the first of its kind for cellular and alternative seafood, a good indicator of obstacles to come for plant-based food companies.

In the case of seafood, there is a greater physical and psychological distance between consumers and aquatic animals as compared to dairy or meat. The exoticization of seascapes and aquatic animals is a double-edged sword that distances human beings from aquatic animals on the one hand, while also reifying aquatic animals as exotic and desirable on the other (Alaimo, 2012). With aquatic animals, there is a double or triple estrangement at work as humans live on land and are not culturally conditioned to imagine fish as friends, so to speak, nor to differentiate between species of fish. As Michael Pollan (2006) writes in *The Omnivore's Dilemma*, the more estranged humans are from the inner workings of how food is made, what it is, who it is, and where it came from, the more distanced they are from their own animality: "Eating puts us in touch with all that we share with the other animals, and all that sets us apart. It defines us" (p. 10). With increased technological advances in food production, human beings have created a chasm between their food (of all origins) and themselves; intensive animal agriculture has generated an even wider void because much of it depends on distancing consumers from the origin animal and all the while concealing the process of the production of meat, dairy, and eggs (Pachirat, 2011).

One of the key shifts in the era of the Anthropocene, of immutable geological change due to anthropogenic actions, is the Industrial Revolution and its impacts on large-scale industrial agriculture (Schlottmann & Sebo, 2019). As an environmental justice scholar who studies the intersection of contemporary U.S. literature and "the environment," I am well-versed in common tropes applied to terrestrial habitats and how this leads to inaccurate language and imaginaries. These tropes include the fantasy of a pastoral existence, the colonial drive of expansion, the entrenched racial and gendered stereotypes of Whiteness and masculinity and how these mediate one's—often harmful—relationship to one's environment (Athanassakis, 2017). Representations of aquaculture (which many people think of as farming in water) and wild-caught seafood, are largely absented from the twentieth-century pastoral imaginary. As much as industrial agriculture on land is something that remains dissonant with how most consumers imagine their food is made, aquaculture and wild-catch fisheries practices are even more outlandish especially when compared with romanticized notions of a fisherman and his boat.

Industrial agriculture at sea causes irreparable environmental and human animal costs, in addition to the outsized aquatic animal issues of suffering and slaughter. Arguably, due to the technology associated with sea-based agriculture and the scale of the impact of industrial-sized vessels, the levels of interspecies violence and unintended suffering are much higher at sea than they are on land. In the oceans, the main forms of industrial “farming” are aquaculture (the farming of aquatic organisms including fish, mollusks, crustaceans, and aquatic plants) and capture fisheries, which generally use large vessels for the “harvesting” of fish. Industrial agriculture at sea is a younger industry than the intensive farming of terrestrial animals (in general limited to pigs, sheep, cows, hens, and chickens). Aquaculture and capture fisheries are being scaled to meet increased demands in part due to the erroneous belief that consuming fish is both more sustainable and more ethical (Elder, 2018). Yet the most omitted fact about seafood is that in order to sustain it, you have to feed fish to make fish at about a 3:1 ratio (Naylor et al., 2000). The fish-in to fish-out ratio, or FIFO, means that on average for all aquaculture, it requires 3+ kilograms of wild-caught fish to feed and grow 1 kilogram of domesticated fish, or farmed seafood. The major difference in terrestrial industrial agriculture is the herbivorous nature of the animals, versus the carnivorous nature of “seafood.” The ethical implications are jarring, and out of sight, but the ecological costs are gaining visibility because they more directly impinge on human health. In addition, other environmental concerns include herbicides, algacides, rampant antibiotic use, interbreeding, nitrogen and phosphorous release from feed and feces, escaped fish changing the genetic pool of other species, and disease transfer (Greenberg, 2014).

The U.S. Food and Drug Administration (FDA) estimates that globally, over 580 aquatic species are currently farmed and that aquaculture provides 50% of the fish for human consumption (Food and Drug Administration, 2023). The Food and Agriculture Association of the United Nations (FAO) estimates that “in 2020, the value of trade in aquatic food products was comparable to the total value of trade in all terrestrial meats” (Food and Agriculture Association of the United Nations, 2022). One of the main issues from an animal rights and an animal welfare perspective is the twinned human and animal rights violations at sea and the inability to survey and enforce policies against human trafficking directly related to forced labor on wild-catch vessels, animal cruelty, and illegal fishing (Urbina, 2019). Issues of climate change (i.e., ocean acidification, habitat depletion, and rising ocean temperatures) will only make businesses more desperate for profit, and concurrently, environmental and social injustice at sea will increase exponentially.

There is a gap in research funding, an absence of visibility in popular culture, and a lack of policy work on aquatic animals as related to ocean or marine justice. Marine justice represents the overlap of environmental justice and social justice movements at sea (Gardiner, 2020; Martin et al., 2019; Widener, 2018). Because of the outsized role that industrial agriculture plays with respect to marine justice and animal rights, it is important to understand the different lenses of environmental justice and where that leaves the question of “the animal.”

Environmental Justice

The history of the environmental justice (EJ) movement in the United States is one of place-based and grassroots organizing, often located in low-income communities of color. Many credit the civil rights movement of the 1960s with serving as a catalyst for later widespread environmental justice activism, particularly in the Midwest and the South (Environmental Protection Agency, 2024). Others point to Rachel Carson's classic bestseller *Silent Spring* (1962) as a foundational text not only for environmental justice but also the formation of the Environmental Protection Agency. Robert Bullard's (1990) most famous work, *Dumping in Dixie*, demonstrates the ties between race and place and illustrates the approach of place-based case studies as the gold standard for environmental justice activism. Something that is often forgotten with the passage of time is that many of the first highly publicized cases of environmental justice protest were due to federal and state policies that targeted black, indigenous, and other communities of color. While the impetus for the environmental justice movement was the Civil Rights movement and organizing by local leaders, it gained proper and some might say global recognition in the 1980s. An important turning point in the United States came in 1991, when President Bill Clinton issued Executive Order 12898, legitimizing environmental justice as a policy issue. In the early 1990s, environmental justice activists, globally, organized against issues of colonialism, racism, extractivism, and the negative environmental impacts of capitalism (Sze, 2020).

The current global environmental justice movement faces both the same challenges of the past and new challenges that are particular to the Anthropocene Epoch: economic inequality, extractive practices (e.g., fracking), the pollution of basic resources needed by humans like water and air, anthropogenic "natural disasters" like hurricanes, flooding, and heat waves. Recent scholarship on intersectional environmental justice has flagged factory farming practices as environmental justice issues that disproportionately affect communities of color (Fox, 2023). The attention drawn to factory farming remains almost entirely focused on the pollution caused by the factories, the geography of the factories, and the detrimental health impacts on both workers and local communities.

Applying environmental justice tenets to seas and oceans challenges some basic principles of environmental justice activism and requires that policy leaders think more deeply about how place-based justice is turned on its head in the oceans. Not only do the properties of water and the effects of weather patterns complicate terrestrial scientific methods of tracing and predicting harm through time and space, but aquatic animals play a central role as they in turn can absorb, pass on (when consumed), and circulate toxicity.

Environmental Justice at Sea

Oceans have only of late received federal attention and policy visibility on par with that of terrestrial habitats. In December 2023, the Biden-Harris administration announced the first U.S. Ocean Justice Strategy, which aims to integrate principles of equity and environmental justice in federal ocean activities and for communities that rely on waterways and oceans (White House, 2023). On a global scale, the recent United Nations high seas treaty represents positive change on various fronts, including increased protection for marine species (United Nations, 2023). Just as with the birth of the environmental justice movement, it is difficult to pinpoint the beginning of ocean justice both in the United States and globally. The 1980s program to aid victims of U.S. nuclear testing from 1946–1958 in the Marshall Islands is one of the earlier examples that point to federal recognition of concurrent colonial and environmental violence (Bordner et al., 2020). Toms River (New Jersey), the site of rampant toxic pollution (beginning in the 1950s) and subsequent intergenerational human disease also highlights the porous boundaries between terrestrial and aqueous pollution. More recent cases in the United States, like the Flint, Michigan water crisis, and the Standing Rock Sioux protest against the construction of the Dakota Access Pipeline, underline the continued colonial, racial, and class injustices in environmental crises and how the properties of water, whether as a drinking source or as a nearby seafront make legible the far-reaching effects of targeted anthropogenic violence (Sze, 2020). Clearly, there needs to be a different methodology for issues of justice when they encounter the properties of water. It is not as simple as applying notions of environmental justice to oceans, in part because environmental justice activism and governance are imperfect and continually adapting to new realities.

A number of researchers, NGOs, and government bodies are working on definitions and laws for governing and managing oceans, with justice and conservation as top priorities. While many of the terms (marine justice, ocean justice, ocean equity, and blue justice) sound similar, they have different goals and origins and a brief overview is important to understanding both their differences and their commonalities. Blue justice is a term that has been used to draw attention to the growth of industrial fisheries and the negative impact on small-scale fishing businesses and coastal communities (Bennett, 2022; Cohen et al., 2019). Like the term blue justice, ocean equity focuses on equity through the prism of economics and sustainability. A 2020 report by the High Level Panel on the Sustainable Ocean Economy, “Towards Ocean Equity,” argues for new policies to more fairly redistribute economic benefits of a “flourishing” ocean economy (Bennett, 2022; Österblom et al., 2020). It is always complicated to employ an anthropocentric lens to anything but even more so when it involves justice movements in the oceans with ripple effects across species. Marine justice and ocean justice (defined below) take into consideration intergenerational injustice for people of color, coupled with environmental degradation, reminiscent of theories of slow and attritional violence (Nixon, 2011).

Climate action plans increasingly include waterways and oceanic spaces as indispensable to social and environmental justice goals.

The terms ocean justice and marine justice closely resemble one another and, arguably, hold the most promise for centering human and nonhuman animal rights and welfare in conversations about intersectional justice. When describing ocean justice, Ayana Johnson, marine biologist and founder and CEO of Ocean Collective (and founder of the Urban Ocean Lab), explains that ocean justice issues result from corporate malfeasance, government neglect, and systemic, generational injustices: “If we think about where is the water the most polluted, who gets impacted by storms, who is most dependent on the ocean and suffers when there’s overfishing, it often is poor communities and communities of color along the coastline” (quoted in Gardiner, 2020). Johnson also points out that considerations of racial and economic equity are evermore central when examining representation in policy decision making. Marine justice employs what David Pellow (2016) terms critical environmental justice to examine issues of sovereignty and equity at sea; it is proposed as a paradigm shift that incorporates the main pillars of environmental justice into marine conservation movements (Bennett, 2022; Martin et al., 2019). In their article on marine justice, an interdisciplinary group of scholars explores it through concepts of space, time, knowledge, participation in decision making, and enforcement (Martin et al., 2019). Rather than summarize here, I build on it and make an argument that in social justice activism, aquatic animals and organisms are framed (or out of frame) in troubling ways.

The mythic and symbolic qualities of the oceans, in some ways, obstruct human beings from taking seriously the perils of its destruction and the interdependence of *homo sapiens* with aquatic life. The study of the oceans and marine systems in terms of more than their actual materiality has long been a central interest of ancient civilizations. In Philip Steinberg’s (2001) *The Social Construction of the Ocean*, he points to the “territorial trap” that has led to oceans being left out of historical discourse and thus, I would add, also left out of a sense of responsibility. From ocean deities to sea monsters and spirits, there is no lack of imaginative and cultural, religious productions of human connection to the seas. Different cultures have different names and symbols for the agency of oceans and waterways. Whether looking to African folklore and art, Maori and Polynesian mythology, ancient Greek mythology, or Inuit or Slavic cultures, the oceans and waterways are, in turn, marvelous and dangerous, beautiful, sinister, life-granting, and always vast. Liz Deloughrey acknowledges the sea as endless frontier and natural resource and states that the lack of attention to its abuse is because of its “myth element” (2017). The mythic qualities of oceanic spaces, the rich symbolism they hold in global religious and spiritual texts, are all topics of thalassology, critical ocean studies, and blue humanities.

Rachel Carson, often most strongly associated with environmental justice on land and with the founding of the EPA, wrote—prolifically—about the oceans in ways that employed its myth element to illustrate scientific challenges and to engage the public in ocean conservation efforts (1941, *Under the Sea-Wind*; 1951, *The Sea Around Us*; 1955, *The Edge of the Sea*). In *The Sea Around Us* (1951), Carson

presciently points to the same major impediments that surface when dealing with environmental or marine justice issues: space and time. Carson, who wrote three books about the sea before penning *Silent Spring*, cautioned readers in 1960 about the limited—not limitless—nature of the seas to absorb radioactive contaminants: “It is a curious situation that the sea, from which life first arose, should now be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat is rather to life itself” (1951, *The Sea Around Us*, p. xxv)(Carson, 1998, 2007, 2018). Carson’s cautionary words in 1960 point to the faulty consideration of the sea as an unlimited dumpsite and the slippery notion of unlimited time. Carson warns that mistakes involving radioactive dumping at sea are “irretrievable” and that the “mistakes that are made now are made for all time” (p. xxv). The ocean covers approximately 71% of Earth’s surface and holds 97% of its water. Its depths are a topic of obsession for many, and “exploration” and “discovery” are terms that are used with equal measure for outer space and for the oceans. The scale of the oceans and its depths and geography are still a mystery to us just as interacting with them is bizarre partly because of the quality of suspension and increased pressure as one descends. But the scale of the oceans alone isn’t an impediment to protecting them, it is also that space operates differently at sea.

Environmental justice has traditionally relied on place-based studies and data (e.g., proximal and downstream exposure to toxins), but the liquid quality of the oceans lends toxins the ability to travel in potentially untraceable and unpredictable ways. Likewise, the elements of submersion and opacity encourage a sense of infinity in terms of space, that toxins simply disappear and regularities of the land do not apply to the seas. Intergenerational harm, how such harm moves across time and across space, is harder to quantify and predict at sea. For example, sea level rise is a direct result of climate change and an issue that already disproportionately affects those who cannot easily move, live near sea walls, or participate in planned retreats and new housing communities. It illustrates the challenges of centuries of time lag and the way in which, as Carson points out, marine spaces are, in fact, finite and not black holes of absorption and disappearance. But in the same breath, Carson drew attention to the issue of how anthropogenic harm (in the form of the dumping of radioactive wastes) weaponizes aquatic life as a threat to humans, and as a threat to itself: “by their movements and migrations, marine creatures further upset the convenient theory that radioactive wastes remain in the area where they are deposited” (p. xxiv).

Marine and ocean justice movements underline how bad actors can exploit the ways that oceanic space and time obscure illegal practices. Recently, marine systems reform is sounding the alarm bells on twinned issues of human and nonhuman animal rights in the seafood industry, in large part catalyzed by the investigative journalism of Ian Urbina (2019) and the environmental journalism of Paul Greenberg (2010). The newer scale of these concerns makes clear that we currently lack both the legal framework and the ability to enforce laws on the high seas. The literal and figurative opaque nature of the seas (for humans) and how corporations operate on them and in them is a major contributing factor to concerns over how laws of human

and nonhuman animal rights and welfare can be enforced. The human rights violations that directly result from the seafood industry (and thus the pet food industry, the illegal animal trade, the wellness industry, etc.) are central to questions of human rights at sea (Kittinger et al., 2017). Urbina's work outlines the complex web of human slavery at sea, its connections to the "overfishing" and resource-stealing from less developed countries, and how many U.S. government programs and corporations "unwittingly" participate in funding slavery at sea, sex trafficking, and the disappearance of individuals, whether through the purchase of pet food ingredients or artisan-washed seafood (Urbina, 2019, 2023).

Seafood, in its final form, is worlds away from its origins. The human rights issues it cloaks along with the animal welfare and rights issues it should theoretically present, are often lost in discussions of either a more palatable origin story ("is this local?" and "where was this caught?"), or a shrug of resignation at a "fish stick" in the shape of, well, a fish. The absencing of interspecies violence is multifaceted, and data is scarce because it is not prioritized. Terrestrial animals used in industrial agriculture are at least accessible as individuals in one's imagination in part because they are counted as such: one can imagine the cow from which one's milk came. With seafood, the animals are not tracked as individuals but as weight and hauls. The United Nations Food and Agriculture Organization (FAO) states terrestrial animal production in tonnage as well as number of individuals, but it reports all "seafood," only as tonnage. Similarly, the U.S. Department of Agriculture (USDA) report on domestic livestock slaughter does not include aquatic animals. Climate justice activism has, to an extent, begun to include issues like species extinction and entangled well-being (human animal and nonhuman animal health as linked); yet, it is often couched as concern about the environmental impacts of animal agriculture, not the ethical concerns about animal cruelty and suffering (Franks et al., 2021; Hessler & Wilson, 2021).

Ocean justice and accompanying movements often decouple the health of marine systems from the health of human beings, instead focusing on fisheries health and food security and safety. Animal rights and welfare have likewise traditionally been a secondary set of concerns for mainstream Western climate justice movements. Marine and ocean justice movements, perhaps less central in people's imaginaries, have an opportunity to put aquatic animal life and wellness on equal footing with human rights and other priorities. The animal rights movement in the United States has historically focused on the issues of terrestrial industrial slaughter and animal experimentation, but in response to industrial fisheries and aquatic zoos, it has more recently begun advocating for aquatic animals.

Aquatic Animals and Justice

Most people associate the birth of "the" animal rights movement in Western civilization with Peter Singer's *Animal Liberation*, published in 1975. While Singer's work has a stronger global presence than that of his contemporary, Tom Regan, it

was Regan's 1983 *The Case of Animal Rights* that arguably solidified ideals of animal liberation using a deontological (moral/ethical imperative) theory of animal rights (Hopster, 2019). The main difference in approach between different factions on the edge of the spectrum of either group is a question of commitment to a "moral" and legal imperative to end animal suffering (deontological theory) or that of a utilitarian approach, a philosophy that aims to maximize the happiness and suffering of the majority sometimes at the cost of a very few. It is worth noting that Peter Singer himself classifies his work as consequentialism, a type of utilitarianism that judges by the outcome of actions; the best consequences inform the "morally right" decision (Singer, 2023). An important backbone of all animal-oriented work is the term, "speciesism," coined in 1970 by psychologist Richard Ryder, which is the belief that species can be ranked hierarchically on their worth or value. Speciesism gained popularity when used by Peter Singer (Hopster, 2019).

While animal welfare (i.e., usually policy-oriented work to improve the conditions for animals in captivity) has often been pitted in opposition to animal rights and animal liberation, activists are increasingly coming together and advocating for improved conditions for animals on a number of grounds, including zoonotic disease. Post-COVID lockdowns, there's more awareness of the threat to human beings caused by increased use of antibiotics in industrial agriculture (including aquaculture) and the links between industrial agriculture, the wildlife trade, and global pandemics (Kennedy & Southern, 2020; Lymbery, 2020; Petrikova et al., 2020).

Contemporary debates about both animal rights and animal welfare mostly focus on terrestrial animals. Aquatic animals, whether living in the wild, bred in captivity, exhibited in aquariums, or considered to be pets or décor (think of the tanks at sushi restaurants and dentist's offices), are by and large left out of the discourse of animal rights. There are legal challenges that make it excessively difficult to consider animal welfare and animal rights for aquatic animals. The U.S. Animal Welfare Act not only purposely excludes certain warm-blooded animals from protection (birds and mice, for example), it fails to mention cold-blooded species in a manner that makes one realize that because of the failure to explicitly exclude them, implicitly, they matter not at all (Hessler & Wilson, 2021). Perhaps most telling is the dearth of literature and policy on aquatic animals compared to terrestrial domesticated animals. While there is extraordinary work being done on aquatic animal welfare and compassion as a valid driver of conservation work, it is the exception to the rule (Franks et al., 2021; Hessler & Wilson, 2021; Jacquet et al., 2019; Ramp & Bekoff, 2015; Xu, 2021). In the last 10 years, films such as *Seaspiracy* (2021), *My Octopus Teacher* (2020), and *Blackfish* (2013) have helped raise public awareness about aquatic animals and their relationship to humans. Commonly held beliefs about aquatic animals, and specifically "fish," involve a lack of empathy often based on the false notion that aquatic animals cannot suffer and have no capacity for emotions and connection to other beings (Balcombe, 2016; Braithwaite, 2010). In academic humanist circles, there has been a great push toward blue humanities, and critical ocean studies, while more widely the focus on climate change has increasingly encompassed aqueous spaces due to sea level rise, changing weather patterns, and environmental justice concerns.

In closely examining how and where environmental justice and marine justice overlap, a striking consistency is the bifurcated attention to issues of industrial agriculture and nonhuman and human animal rights. While linguists and other researchers study how language shapes us and how it creates or conjures things into reality, the consistent theme when it comes to nonhuman animals, terrestrial or not, is the way in which language erases them. In terms of aquatic animals, the state of affairs is far worse. It is even more crucial, then, to think about, as Carol J. Adams might put it, why the absent referent can't be identified (1990, *The Sexual Politics of Meat*) (Adams, 2015). In much of the work done to raise awareness around the cruelty and suffering of nonhuman animals on land, one can generally connect food item to origin animal (pork chop to pig, etc.). When consuming "fish," very few people can identify or accurately imagine the animal from which the food item came. This is the infrastructure of the absent referent at work. How do you even talk about seafood? Would you ever say that you are very concerned about "landfood?" Seafood, like the term "landfood," is a wholly inaccurate way to quantify aquatic animals.

The term "aquatic animals" encompasses crustaceans, amphibians, reptiles, marine mammals, molluscs, aquatic insects, finfish, aquatic birds, corals, and echinoderms, as they are directly and indirectly "harvested" as a part of the seafood industry. Whether through trawling, dredging, bycatch, illegal fishing, or negligent practices, aquatic animals suffer in a more interwoven way than terrestrial animals do. A single haul can include a multitude of species, the method of death has no welfare considerations and is traumatic and cruel, and the average ratio of "catch" to "discard" is unacceptably high. In 1994, the Food and Agriculture Organization of the United Nations estimated an annual loss of between "17.9 and 39.5 million tons" of discards by fisheries (FAO, 1994). This number has increased by millions of tons and billions of lives. The authors of that study acknowledged that they could not get adequate data to accurately estimate the economic loss to fisheries or the biological, ecological, and "cultural impacts of discards." They did, however, note that it would be through outside pressures that practices would shift: "it appears most likely that socio-cultural attitudes towards marine resources will guide international discard policies" (FAO, 1994). And here we are, 30 years later, with shifting attitudes and changing societal norms in part due to the threat of climate change and in part due to advances in knowledge about nonhuman animals and their worlds—our shared world. It is a low bar to hope that we can change policies about discarded aquatic animals, but there are signs that human beings are awakening to the short time they might have to be able to thrive on this planet, and what can be done to lengthen that time.

The key difference between the Revo Foods and Miyoko's Creamery examples reveals a larger divide between how empathy and compassion work differently when it comes to "fish." The foundation of Miyoko's Creamery, in addition to creating delicious products, is its ability to use food as a vehicle for ethical change and for "spreading compassion" (quoted in Schatz, 2020). Like Miyoko's, many plant-based meat and dairy brands feature images of empathy and companionship of human animals with nonhuman animals. Images on food packaging of humans hugging and sharing emotions with aquatic animals, let alone images of animals

themselves emoting, are rarer than those with terrestrial ones. Revo Foods, I should add, has an image of a smiling salmon on its plant-based salmon product, and a revolutionary image on food packaging: a happy aquatic animal. The more human beings can relate to a species, the more they can anthropomorphize it, the higher the probability that they will feel a range of emotions about it, including empathy.

This puts what we refer to as “fish,” in a tricky category. As one study found, the ability to relate to another species also depends on the evolutionary divergence time between *homo sapiens* and that species (Miralles et al., 2019). Species that have more visual, cognitive, or emotional commonalities with humans have a higher chance of evoking positive affect—fish, it appears, are often ignored and misrepresented. As Jonathan Balcombe writes in his book, *What a Fish Knows*, fish are usually defined by two categories, as something to either be eaten or caught (2016, p. 19). Sociocultural attitudes are shaped by things like language, ideas, and social movements. Miyoko Schinner issued a statement after the ruling, pointing to the immense weight of words in the lucrative world of plant-based businesses: “Food is ever-evolving, and so too, should language to reflect how people actually use speech to describe the foods they eat” (Schinner, 2021, as cited in Watson, 2021).

What the language reveals is that there are systemic tools of forced separation between humans and other animals that cloak troubling power dynamics, dynamics that have brought us to the brink of the Anthropocene. What was most disruptive to the California Department of Food and Agriculture—and to industrial animal agriculture writ large—was the truth of interspecies bonds and shared animality. In the Anthropocene epoch social justice movements must center animality (shared or not) and cultivate positive affect through sociocultural changes, ranging from alternative seafood packaging to how one talks about aquatic and terrestrial animals.

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