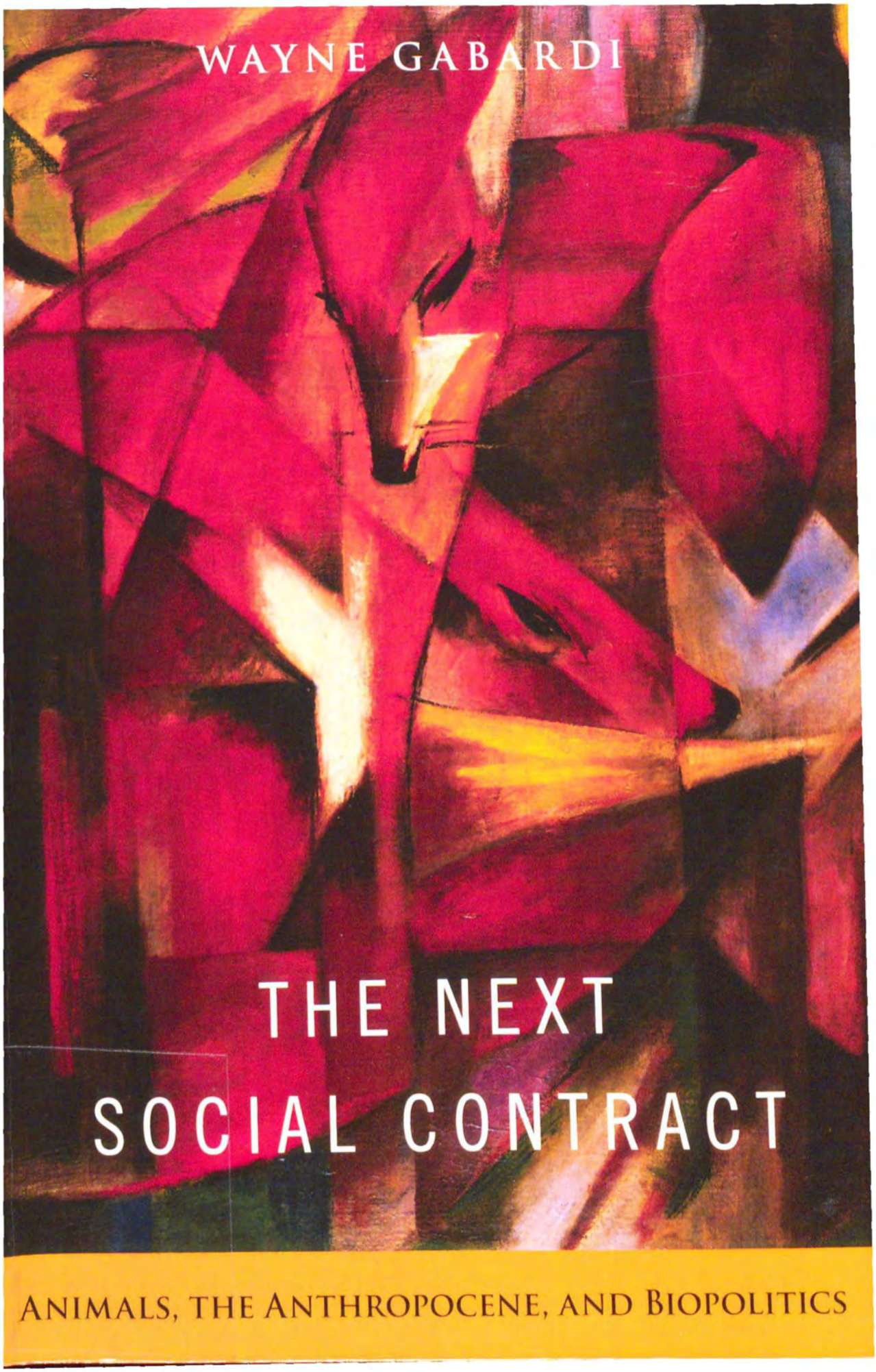
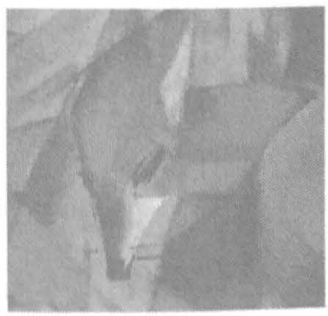

WAYNE GABARDI
THE NEXT
SOCIAL CONTRACT
ANIMALS, THE ANTHROPOCENE, AND BIOPOLITICS

WAYNE GABARDI

THE NEXT SOCIAL CONTRACT



ANIMALS, THE ANTHROPOCENE, AND BIOPOLITICS

TEMPLE UNIVERSITY PRESS
Philadelphia • Rome • Tokyo

TEMPLE UNIVERSITY PRESS
Philadelphia, Pennsylvania 19122
www.temple.edu/tempress

Published 2017

Page iii photograph: Franz Marc, The Fox *(1913). (Public domain image.)*

Library of Congress Cataloging-in-Publication Data

Names: Gabardi, Wayne, 1955– author.
Title: The next social contract : animals, the Anthropocene, and biopolitics / Wayne Gabardi.
Description: Philadelphia : Temple University Press, 2017. | Includes bibliographical references and index.
Identifiers: LCCN 2016049913 (print) | LCCN 2017011430 (ebook) | ISBN 9781439914113 (cloth : alk. paper) | ISBN 9781439914120 (pbk. : alk. paper) | ISBN 9781439914137 (E-Book)
Subjects: LCSH: Animals and civilization. | Animals—Effect of human beings on. | Bioethics. | Biopolitics.
Classification: LCC QL85 .G27 2017 (print) | LCC QL85 (ebook) | DDC 591.5—dc23
LC record available at https://lccn.loc.gov/2016049913

The paper used in this publication meets the requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1992

Printed in the United States of America

9 8 7 6 5 4 3 2 1

For Jamie

and

Little Big Man

CONTENTS

CONCLUSION

ANIMALS, THE ANTHROPOCENE, AND BIOPOLITICS

A Labor of Sisyphus

> Life in the Anthropocene is too strange to be human and afforded rights. It is too social and multiple to be objectified and given a price. And it is too feral to be pure or risky to be liberated in the wilderness.
>
> —Jamie Lorimer, *Wildlife in the Anthropocene*

Biopolitics in the Twenty-First Century

In the narrative of evolution, every "age" is the age of a dominant life-form. The current Anthropocene is a small blip on the evolutionary radar screen. The age of the dinosaurs was a much greater story. They dominated the planet for more than 150 million years, and just as the plant and animal remains of their time are now fuel for our modern civilization, our future remains will likely be a resource for the next dominant species. We could not have done it without the help of other animals and plants. Since the Great Domestication, we have depended on a small but essential number of species. We have also hastened the extinction of numerous other species. Planetary evolution is indifferent to a looming mass extinction largely of our own making. The planet will heat up and eventually go into another Ice Age. Existing species will vanish, and new species will come into being.

Just as "sustainability" was the mantra of late twentieth-century environmentalism, "resiliency" is the buzzword of twenty-first-century climate change. As global warming heats the planet, animals and plants have read the news and are moving to more hospitable habitats. The vacuum is being filled by new invasive species moving into these destabilized habitats. Life everywhere is on the move, seeking better environs. Humans are also thinking more seriously about the viability of their own civilization. If human evolution—perhaps all of evolution—experiences critical thresholds of optimal adaptation only when

on the brink, when on the precipice of a crisis, then this is our moment, this is our century.

In *The Fate of Species* (2012), Fred Guterl identifies six major threats facing humans in the twenty-first century: (1) superviruses, (2) species extinction, (3) climate change, (4) ecosystemic collapse, (5) synthetic biology, and (6) artificial intelligence (AI). Four of these challenges are playing out currently—superviruses, species extinction, climate change, and ecosystemic disruption. Biotech Frankenstein monsters, malignant designer diseases, and fully autonomous AI and robots are no longer the stuff of science fiction. Robots and synthetic life-forms will be mainstream by the twenty-first century's end. Guterl is a "techno-optimist," a believer in human high-tech ingenuity.[1] He rejects what he regards as the twin extremes of megatechnological geoengineering and environmentalist calls for a return to a simpler life.[2] He recommends carbon sequestration, changing farming methods, more genetically modified foods, shifting from annual to perennial crops, bioengineering synthetic meats from stem cells, and "reengineering wild animals that can live in the world as we've changed it."[3] He concludes: "Humanity is a bold assertion, a derisive snort at nature. We've beaten the odds so far. To continue beating them will take every good idea."[4]

As I have maintained throughout this book, I remain skeptical of the ability of our late-modern civilization to meet the challenges of the Anthropocene. The fact that "humanity is a bold assertion" and has defined its identity in terms of "a derisive snort at nature" is precisely the problem. I believe that techno-liberalism will not be enough to save us. Yet the key to this statement lies in the "us." Who are the "we" likely to beat the odds? For most anthropocentric liberals, it is civilized humanity. Yet for posthumanists, the "we" is the biosphere and its living inhabitants. From the perspective of animal life, the odds are not that good. Humans will adapt and survive, but at what cost to other species?

Jedediah Purdy shares Guterl's liberal optimism when it comes to the Anthropocene, yet his source of hope and inspiration is not humanity's technological cleverness but rather the American "environmental imagination" and our ability throughout our history to translate this into an effective politics and progressive legislation. Of course, this ability has not been without great struggle, but each major era of American history has resulted in not only a new democratic politics of nature but also a new paradigm of environmental law that has served the country well. In *After Nature: A Politics for the Anthropocene* (2015), Purdy reconstructs four historical versions of the American environmental imagination in the buildup to a fifth vision we need to forge today in response to the challenge of our time, the Anthropocene.

Purdy's conception of politics, historiography, and the environment revolves around his idea of imaginative lawmaking:

> From the beginning, as noted in the Prologue, there has been a link between how Americans have acted toward the natural world and how they have imagined it—as a wilderness designed by God to become a garden, as a piece of symbolic art with the power to bring spiritual insight, as a storehouse of essential resources for national wealth.[5]

> Law is a circuit between imagination and the material world. Laws choreograph human action in a thousand ways[.][6]

> Laws play out the logic of competing versions of environmental imagination.[7]

> Law is the warp and weft that bind the two, shaping the material landscape, guiding human action on it, by translating ideal images of people and nature into concrete regimes of power.[8]

What then should be the next environmental imagination and legal regime for the Anthropocene? To sum up Purdy's vision in one sentence, we need a "democratic Anthropocene" capable of reining in the "neoliberal Anthropocene" and addressing the "paradigmatic problems" of "food, the treatment of animals, and climate change."[9] This vision requires establishing a new farming and food system; addressing "the unsettling perception that we do not know, maybe cannot know, the ethical status, meaning, or experience of another living thing that stands in front of us"; and developing "new standards of success" with respect to climate change.[10]

Three issues addressed by Purdy speak directly to the concerns of this book: (1) the treatment of animals, (2) posthumanism, and (3) democracy in the Anthropocene. He acknowledges the animal welfare/rights divide. Both sides care deeply about animals, develop reasonable arguments, and cannot resolve their differences. He also is unable, or unwilling, to reconcile this impasse. However, he believes that both sides share an overconfidence in claiming to "know" animals and what they want. They underestimate "the difficulty of interpreting animal experience."[11] For Purdy, "not knowing another's consciousness" leaves us in a condition of "uncanniness" and "offers an ethics of uncertainty, a pause before judgment."[12] We "simply do not know what is behind another pair of eyes, and what is projection from behind our

own."[13] We are in the infancy of animal studies and need more data, more legal discovery.

One attempt at illuminating the lifeworld of animals is posthumanism, which calls for, among other things, "leveling the hierarchical divide between human and nonhuman by blurring the boundary."[14] The basis of value is shifted from the prevailing norm of anthropocentric humanism to biocentric "autopoesis." We are a more complex emergent order of self-organizing matter "among other emergent orders."[15] Humans are not the only agents in the world. It is more accurate to view the world not in terms of agents and nonagents but in terms of "actants" (borrowing Jane Bennett's term).[16] Humans, animals, plants, biotic entities, and ecological processes all act on each other in complex cause-and-effect networks. This "new animism" extends the principle of equality of valuation to all life-forms. Purdy believes that posthumanism has the potential to initiate "a Copernican revolution in ethical imagination."[17]

The chief threat to our future is neoliberalism, with its corporate-centered view of the planet as a quantifiable standing reserve of consumable resources, its strategies of globalization, and free-market and megatechnological solutions to all problems, including global warming and biodiversity. Purdy regards this model of planetary management as antipolitical and antidemocratic. Since he believes that our current crisis is ultimately political, politics must lead us out of this neoliberal dead end. Yet what kind of politics? Purdy advocates a new vision of democracy capable of providing the underpinnings and structure for a new environmental imagination and era of environmental lawmaking. A democracy "open to post-human encounters with the living world would be more likely to find ways to restrain its demands and stop short of exhausting the planet."[18]

Purdy's vision of posthumanist democracy and a new environmentalism is grandiose, noble, and presented in eloquent, inspirational, poetic prose. His optimism is a reaffirmation of American liberal environmentalism. I agree with his characterization of the Anthropocene as a powerful framing concept for understanding our time; critiquing neoliberal globalization; and identifying our food system, the plight of animals, and climate change as our great challenges. Yet I find his vision of a new Anthropocene politics unconvincing. Purdy's conception of politics is liberal, legalistic, and idealistic. He acknowledges that "the public language and legal forms of modern liberalism is a poor sort of knowledge" and "palpably artificial."[19] We need a more imaginative dimension to mainstream liberalism. Yet in the end it is law that defines politics, an idealistic view of law as the cause rather than the effect of change, as the connective tissue between the ideal images of people and institutional reality rather than as the handmaiden of powerful material interests, and in

the more Platonic sense of an ideal form that shapes reality rather than in the Weberian sense of the routinization and legitimation of power.

This conception of politics informs his idea of Anthropocene democracy, which is painted in very speculative and broad brushstrokes. Purdy admits that democracy in the world "has not been doing well." I would contend that it has been effectively outflanked by neoliberal globalization and technocracy. Democracy in the Anthropocene is dedicated to equality; is highly discursive and driven by active citizens (your voice and vote count); is "exemplary, or prophetic"; "less beholden to money"; "capable of self-restraint"; and posthumanist.[20] How all of these key features come together as a working model is unknown. For Purdy, democracy in the Anthropocene is largely a set of attitudes, an ethos capable of generating a new environmental imagination. How this new democratic imaginary is translated into environmental law that is able to effectively rein in our neoliberal Anthropocene is not developed.

As for the promise of posthumanism as a candidate for a new environmental imagination, following his position on the animal welfare/rights debate, Purdy resists making "the choice between the post-human position and the humanist riposte, and instead adopt(s) both." Let's "learn from both," he says.[21] In the end, he is a modern liberal humanist who believes that humans are qualitatively different from all other forms of life. We are not assemblages of matter like other life-forms. We are distinctive *zoon politikon*. Posthumanism is "just another name for an enriched humanism."[22] We should be open to posthumanist experiences, but posthumanism cannot translate into anything other than an intuition and feeling for the nonhuman world. While in principle we may believe in interspecies equality, in "liberal society and legalistic culture," it is impossible to implement this ethical ideal into a politics and laws, because we fundamentally cannot "know" animals, and therefore they cannot be represented in human councils.[23] We should admit that "we don't know what an animal's life means, to it or to us."[24] The best we can do is to approximate their lifeworld through anthropomorphic projection.

I take issue with this rather superficial view of animals. The case I make for posthumanism as a coevolutionary, biocentric, lifeworld-based ethics refutes this. We can know animals if we make them central to our lives as members of our community. One can turn Purdy's view of animals toward humans. Do we really "know" human beings in some deep existential, embodied sense? Has advanced liberal capitalism not rendered most of our experiences and knowledge of our fellow human beings superficial and instrumental? Furthermore, for Purdy, the question of animals is essentially a stand-in for "the larger issue of how to see nature."[25] The challenges facing animals in the Anthropocene are enormous, complex, ethical, and biopolitical questions of

life and death. His response to the question of animals in the Anthropocene is essentially a new version of the old animal welfarism.

As this century literally heats up and Anthropocene trends intensify, our species will redouble its efforts to protect its civilization from an ever-increasing set of challenges and resiliency tests. The list is long and growing longer—extreme weather incidents, coastal deterioration, habitat loss and fragmentation, ecosystem disruption, infrastructure disintegration and breakdowns, population pressures, mega-urbanization, overconsumption, displaced populations, refugee migrations, pandemic breakouts, resource production and allocation bottlenecks, cascade effects, system-capacity overloads, and technological overreach. The human race will become even more human-centered as it pulls out all the stops to ensure not its survival, which is not in critical jeopardy, but rather its current standard of living. This goal will come at the expense of the majority of life on planet Earth—the world's poorest human populations, the world's animals, and the biosphere.

The institutional logic of advanced modernity is weighed heavily toward policy responses that leverage "big modernity"—a plethora of global initiatives and international agreements, mega-engineering projects, and technocracy. The same mind-set that inaugurated the Anthropocene will be called on to tame and control it. This policy orientation represents an even stronger tightening of the ideology of anthropocentrism. Civilization will circle the wagons under the banner of "resilience"—human resiliency, or, more precisely, the resiliency of its power elites and their propertied resources.

Where Earth is headed geologically and biologically beyond this century is not fully known to us. What we do know is that the planet will continue to warm up, altering land, sea, and air environments and thus the conditions within which evolution takes place. We will have a much better sense of our planet's future at the end of this century. If trends continue, we will be much farther down the road toward triggering a mass sixth extinction. Environmentally, the Anthropocene will begin to replicate conditions that existed on Earth during the early Eocene epoch fifty-six million to forty-nine million years ago. The Eocene began ten million years after the last mass extinction wiped out most of the dinosaurs and ended the great age of large reptiles. This cleaned the evolutionary slate for the rise of mammals. Eocene translates as "dawn of new fauna" (i.e., mammals). The genesis of this new epoch was a major global-warming event that played out over several thousand years and kept Earth in warm greenhouse conditions for seven million years—the Paleocene-Eocene Thermal Maximum (PETM).

If the Anthropocene re-creates Eocene-like conditions on Earth over the next two to three centuries, then what will the biosphere look like? In general,

we can expect major mass migrations of life from old to new ecosystems, which will send both into disequilibrium. Ecologically, the planet will become more homogenized, and biologically more and more species will become invasive. The result will be simple ecosystems, which translates into less biodiversity. There will likely be fewer species within a habitat, but they will be more dominant, predatory, and spread throughout the general population. In short, expect more turbulent habitats and more competition within and between species. Expect a more visible and pronounced struggle for existence.

A warmer planet is likely to be beneficial to many plant species, since carbon-dioxide levels and temperatures will be higher, creating better conditions for photosynthesis. As for the oceans, expect the disappearance of many coral reefs; fewer fish and sea mammals; rising extinction rates; and more mass migrations, infestations, and deaths. Expect much higher levels of algae, which will compromise and kill off even more marine species. Our blue planet will become blue-green. Expect a golden age of jellyfish. Expect a global surge in insect populations and larger insects. Expect environments dominated by swarms of larger and more aggressive mosquitoes. Infectious diseases take hold and spread in warmer, more humid environments. Thus, expect malaria, dengue, and Zika virus belts to expand. Expect more and larger reptiles, especially snakes. Overall, expect a world with fewer mammals, birds, amphibians, and fish; less ocean life; and more plants, insects, and simpler life-forms. Therefore, expect more bacteria, spores, fungi, parasites, moss, millipedes, ants, termites, spiders, lizards, snakes, and, of course, humans. Over the next few centuries, what we will likely witness is the devolution of "higher," more complex life-forms combined with the punctuated evolution of simpler life-forms.

A Labor of Sisyphus

In *The Myth of Sisyphus* (1942), Albert Camus defines the human condition as "absurd." We confront a universe largely unfathomable and indifferent to our existence, yet it is in our nature to find a purpose or reason for our place in the world. The search for meaning is fundamental to our existence. It is the consequence of having a large, complex brain that produces surplus consciousness. We are overly conscious busybodies. For Camus, the world itself is not absurd; rather, our efforts to understand it are. Two predominant types of answers have been given to us by the world's great thinkers and salvationists—religion and reason. Yet the metaphysical hope provided by traditional religion and the systems of logical empiricism developed by modern philosophy and science are insufficient. Religion, philosophy, and science come up short.[26]

Camus maintains that the fundamental contradictions of life must be lived and worked through in the realm of action. The experience of life cultivates in us a tragic awareness of the human condition. There is no escape or exit from our fate, yet rather than give ourselves over to despair, resignation, nihilism, or false utopias, we should adopt the perspective of conscious revolt.[27] This rebellion is not ontological. It is not a revolt against existence itself. It is a revolt against the concrete injustices of this world. In *The Rebel* (1951), Camus utters his famous reversal of Descartes—"I revolt, therefore we exist."[28] It is through our commitment to action, not in the abstract but to specific causes, that we find our place in the world and solidarity with others. In the end, Camus leaves us with two models. *The Myth of Sisyphus* represents the model of the individual in revolt. *The Plague* offers us a model of a community in revolt.

For Camus, the ancient Greek myth of Sisyphus exemplifies his response to the human condition. Sisyphus's fame comes not from his exploits among his fellow humans but from his defiance of the gods, not once but twice. Condemned to Hades by Zeus, Sisyphus outwits Thanatos (death) and imprisons him in his home. Ares, the god of war, frees Thanatos and delivers Sisyphus to Zeus. Before his descent to Hades, Sisyphus subverts the accustomed funeral rituals and appeals to the goddess Persephone that he needs to return to Earth for three days to arrange a proper burial and funeral. She allows him to go home. Once free from Hades, he refuses to return and lives a long life until he dies an old man. For his crimes against the gods and cosmic order, Sisyphus is sentenced by Zeus to roll a huge boulder up a hill only to have it roll back again. It is his labor for all eternity.

Sisyphus is Camus's "absurd hero." He respects his passionate embrace of life in all of its contradictions and identifies with his scorn of the gods. Yet ultimately he valorizes how he accepts his fate, owns it, and transforms it through Stoic rebellion: "His fate belongs to him. His rock is his thing."[29] What most interests Camus is "that pause" as Sisyphus "watches the stone rush down in a few moments toward that lower world whence he will have to push it up again toward the summit":[30]

> I leave Sisyphus at the foot of the mountain. One always finds one's burden again. But Sisyphus teaches the higher fidelity that negates the gods and raises rocks. He too concludes that all is well. This universe henceforth without a master seems to him neither sterile nor futile. Each atom of that stone, each mineral flake of that night-filled mountain, in itself forms a world. The struggle itself toward the heights is enough to fill a man's heart. One must imagine Sisyphus happy.[31]

In *The Plague* (1947), a fictional account of the response of the inhabitants of Oran, Algeria, to the onset of bubonic plague, Camus works out his model of a community in revolt. The plague appears mysteriously, is indifferent to human suffering and death, and disappears as mysteriously as it appears. All the main characters represent different types of what existentialists refer to as authentic and inauthentic ways of life. Father Paneloux, the doctrinaire Catholic priest, explains the plague as divine punishment for our sins. Jean Tarrou, the son of a public prosecutor, has come to Oran to heal his troubled conscience and seek moral redemption. He views the world as being in the grip of rational murderers. Disgusted with the machinery of modern justice, he aspires to be an "innocent murderer." Raymond Rambert, a journalist on assignment from Paris, regards the plague as not his problem and does all he can to convince local bureaucrats to allow him to go home to his happy bourgeois world. Grand, a lonely civil servant, lives in a bipolar world of mundane routines and grandiose fantasies. Dr. Bernard Rieux, a doctor and Camus's Sisyphean hero, fights the plague day by day with Stoic dedication.

In dealing with the plague, Camus's characters overcome their personal estrangements through action and solidarity. Through his characters, Camus expresses his personal, philosophical, and artistic beliefs and commitments. Father Panaleoux's first sermon exemplifies all that Camus despises in official religion. However, his arrogant faith in God's cosmic justice is shaken by the agonizing death of Judge Othon's child, and his second sermon expresses a more humane humility.[32] Through Tarrou, Camus communicates his belief that moral purity is impossible. We all have blood on our hands.[33] As for Dr. Rieux, he embodies Camus's ideal of being-in-the-world. He is world-weary but resilient. He befriends all the main characters and listens to their stories in a nonjudgmental way. He is lacking in moral self-righteousness but is firmly dedicated to fighting cruelty and relieving suffering. Fighting the plague is an act of common decency, not heroism. He confesses to Tarrou that he feels "more fellowship with the defeated than with saints. Heroism and sanctity don't really appeal to me, I imagine. What interests me is being a man."[34] And as the plague subsides, he realizes that "plague," a metaphor for all the concrete social evils of the world, never really dies but is reborn in a new and different form with each new generation.[35]

The labor of Sisyphus and the community in revolt against injustice are compelling models of being-in-the-world. One discovers clarity of purpose in one's commitment to a course of action carried out with Stoic determination. One takes up a cause knowing full well that one's preferred or expected outcome is neither guaranteed nor likely. The historical context of Camus's

thinking, writing, and politics was World War II and the Holocaust. Our time is one of climate change and the holocaust facing animals. The Anthropocene is our "plague." Camus's challenge was the human condition. Our challenge is the posthumanist condition. In my own mind, adopting an evolutionary worldview renders the world meaningful. Life evolves, adapts, and coevolves. The first two processes are facts of life, occurring regardless of whether we are fully conscious of them. The third piece of the puzzle, coevolution, allows for conscious agency in a limited sense.

Carrie Packwood Freeman characterizes humans "as social animals who are uniquely prone to excess, explaining the biological need for humanity's complex ethical systems."[36] I agree that humans are prone to excess, but they are not unique in this regard. All animals—indeed, all living things—have an evolutionary drive toward excess displayed in different ways to ensure survival by optimizing adaptability. An optimal survival strategy is to proliferate and dominate. The difference is that most nonhuman animal excess is checked by environmental pressures. Most living organisms and populations live within the boundaries of larger ecological forces. What is unique about human excess is our ability to overcome environmental checks and balances. We are good at manufacturing excessive excess.

Modernity today is a juggernaut that has shifted into radical hyperdrive. As the human race becomes more fully modern, animals become more critically endangered. The odds are stacked against many animals. The human desire for animal meat is increasing as the world's middle class mushrooms. The world's oceans are overfished. CAFOs are growing globally. Climate change is radically altering habitats, and human terraforming continues to eliminate and fragment animal habitats. Many charismatic megafauna as well as the smallest of species will be gone if not ecologically extinct by century's end. Shelters, zoos, and sanctuaries cannot accommodate all the abandoned, abused, and surplus animals.

The task is so formidable and daunting that our interventions become Sisyphean labors. In most circumstances, the plight of animals today can be reasonably comprehended and acted on only by adopting a calibrated form of triage biopolitics.

One can, however, be fortified by the knowledge that all evolution is local. The basis of macroevolution is microevolution. So it is with coevolution. It is here that we can cultivate a modest Sisyphean optimism. The next social contract will be shaped by the efforts of a diverse array of inhabitants of the posthumanist archipelago. I hope they will be equipped with an awareness and knowledge of the challenges facing nonhuman animals and humans

in the Anthropocene, with a critical citizen's eye on the legitimacy deficits of late-modern civilization, and with a posthumanist ethics and sense of justice.

Posthumanism is about up-close, real-world engagement with nonhuman animals as coevolutionary coinhabitants. On a personal level, I recommend that you do some serious homework. Be patient. Know the risks, the dangers, and your limitations. See the nobility in what are often mundane labors. Be prepared for adversity, frustration, defeat, and loss. Reach out to others. Since you are a culturally productive learning animal, if you take the time, you will find that your fellow animals are much smarter, reasonable, sophisticated, adaptable, and intuitive than you think. You can learn a lot from them. Go to where animals are and build communities around them. Making common cause with the plight of animals is a worthy calling. In doing so, you will discover that the lives of animals make life worth living.

NOTES

CHAPTER 1

1. Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *Global Change Newsletter* 41 (2000): 17–18; Paul J. Crutzen, "Geology of Mankind," *Nature* 415 (2002): 23.

2. Jan Zalasiewicz, Mark Williams, Will Steffen, and Paul Crutzen, "The New World of the Anthropocene," *Environmental Science and Technology* 44, no. 7 (2010): 2228–2231. Also see Jan Zalasiewicz and Mark Williams, *The Goldilocks Planet: The Four Billion Year Story of Earth's Climate* (Oxford, UK: Oxford University Press, 2012), chap. 9, "Birth and Death of the Holocene," 199–227, and chap. 10, "The Anthropocene Begins," 229–267.

3. For an excellent summary of the geological debate to date on the Anthropocene, see Simon L. Lewis and Mark A. Maslin, "Defining the Anthropocene," *Nature* 519 (2015): 171–180.

4. See Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (New York: Holt, 2014), chap. 5, "Welcome to the Anthropocene," 92–110. Also see the collection of essays in *Thinking about Animals in the Age of the Anthropocene*, ed. Morten Tonnessen, Kristin Armstrong Oma, and Silver Rattasepp (Lanham, MD: Lexington Books, 2016). Three scientific journals also deal directly with the Anthropocene—*The Anthropocene*, *Anthropocene Review*, and *Elementa*.

5. Lewis and Maslin, "Defining the Anthropocene."

6. Adrian Franklin, "Ecosystem and Landscape: Strategies for the Anthropocene," in *Animals in the Anthropocene: Critical Perspectives on Non-human Futures*, ed. Human Animal Research Network Editorial Collective (Sydney, Australia: Sydney University Press, 2015), 65.

7. Niles Eldredge, *Dominion* (Berkeley: University of California Press, 1997), xiv.

8. Jedediah Purdy, *After Nature: A Politics for the Anthropocene* (Cambridge, MA: Harvard University Press, 2015), "Introduction," 17–21.

9. Ibid., chap. 7, "Environmental Law in the Anthropocene," 228–255.

10. Jamie Lorimer, *Wildlife in the Anthropocene: Conservation after Nature* (Minneapolis: University of Minnesota Press, 2015), "Introduction," 1–18.

11. Richie Nimmo, "Apiculture in the Anthropocene: Between Posthumanism and Critical Animal Studies," in *Animals in the Anthropocene*, 195.

12. See Patrick Gerland et al., "World Population Stabilization Unlikely in This Century," *Science* 346, no. 6206 (2014): 234–237.

13. Jack A. Goldstone, "The New Population Bomb: Four Megatrends that Will Change the World," *Foreign Affairs*, January/February 2010, 31–43.

14. See John Bongaarts, "Human Population Growth and the Demographic Transition," *Philosophical Transactions of the Royal Society: Biological Sciences* 364 (2009): 2985–2990.

15. Goldstone, "The New Population Bomb," 32–33.

16. See Laurence C. Smith, *The World in 2050: Four Forces Shaping Civilization's Northern Future* (New York: Dutton, 2010), chap. 2, "A Tale of Teeming Cities," 29–50.

17. See Mike Davis, *Planet of Slums* (London: Verso, 2006); Tommy Firman, "Post-suburban Elements in Asian Extended Metropolitan Region: The Case of Jabodetabek (Jakarta Metropolitan Area)," in *International Perspectives on Suburbanization: A Post-Suburban World*, ed. N. A. Phelps and F. Wu (New York: Palgrave Macmillan), 195–209; Benjamin Marx, Thomas Stoker, and Tavnett Suri, "The Economics of Slums in the Developing World," *Journal of Economic Perspectives* 27, no. 4 (2013): 187–210.

18. In the United States, the Regional Plan Association has put forth "America 2050," which has identified eleven megaregions and a proposal to link them by high-speed rail. They are the Northeast, Great Lakes, Piedmont Atlantic, Florida, Gulf Coast, Texas Triangle, Front Range, Arizona Sun Corridor, Southern California, Northern California, and Cascadia. See www.america2050.org/megaregions.html.

19. See the World Bank Data Catalog 2012 GDP ranking table, available at http://data.worldbank.org/data-catalog/GDP-ranking-table. Also see "Sober Look: Goldman's World GDP Projections for 2050," available at http://soberlook.com/2012/11/goldmans-gdp-projection-for-2050.html.

20. See the 2013 United Nations Human Development Report, "The Rise of the South: Human Progress in a Diverse World," available at http://hdr.undp.org/en/content/human-development-report-2013.

21. See Global Footprint Network at www.footprintnetwork.org.

22. See the International Energy Association (IEA) World Energy Outlook at www.worldenergyoutlook.org; U.S. Energy Information Administration at www.eia.gov.today inenergy; "Prediction of Energy Consumption World-wide" at http://timeforhcange.org/preduction-of-energy-consumption; Smith, *The World in 2050*, chap. 3, "Iron, Oil, and Wind," 51–81; and Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World* (New York: Penguin Press, 2011).

23. See Larua Paskus, "A Place in the Sun," photographs by Dave Lauridsen, *Nature Conservancy*, October/November 2014, 30–41.

24. See Marianne Lavelle, "Fracking for Methane," photographs by Mark Thiessen, *National Geographic*, December 2012, 90–109; Edwin Dobb, "The New Oil Landscape," photographs by Eugene Richards, *National Geographic*, March 2013, 29–59; and "5 NEW ENERGY BOOMS Every Investor Should See Right Now," available at www.popularresistance.org/oil-industry-not-done-raping-the-plane.

25. Erle C. Ellis et al., "Anthropogenic Transformation of the Biomes, 1700 to 2000," *Global Ecology and Biogeography* 19 (2010): 589–606.

26. Michael L. Rosenzweig, "The Four Questions: What Does the Introduction of Exotic Species Do to Diversity?" *Evolutionary Ecology Research* 3 (2001): 361–367.

27. George Newcombe and Frank M. Dugan, "Fungal Pathogens of Plants in the Homogocene," in *Molecular Identification of Fungi*, ed. Y. Ghervawy and K. Voight (Berlin: Springer-Verlag, 2010), 3–34.

28. The Mauna Loa Observatory registered 400 parts per million (PPM) of atmospheric carbon-dioxide concentration in May 2013. The monthly average in January 2013 was 395.54, and in January 2014 it was 397.80. See Justin Gillis, "Heat-Trapping Gas Passes Milestone, Raising Fears," *New York Times*, May 10, 2013, available at www.nytimes.com/2013/05/11/science/earth/carbon-dioxide-level-passes-long-feared-milestone.html; Earth System Research Laboratory, "Trends in Atmospheric Carbon Dioxide," www.esrl.noaa.gov/gmd/ccgg/trends; and Bruce Melton, "Climate Change 2013: Where We Are Now—Not What You Think," *Popular Resistance*, December 27, 2013, www.popularresistance.org/climate-change-2013.

29. The Intergovernmental Panel on Climate Change (IPCC) released the first part of its Fifth Assessment Report (AR5) compiled by Working Group 1, "Climate Change 2013: The Physical Science Basis," in September 2013. It was followed by other reports in 2014—"Impacts," "Adaptation and Vulnerability," "Mitigation of Climate Change," and "Synthesis Report." See www.ipcc.ch/report/ar5/wg1.

30. "Carbon Dioxide: Projected Emissions and Concentrations," IPCC Data Distribution Centre, www.ipcc-data.org.

31. See NRC Climate Stabilization Targets, "Future of Climate Change," www.epa.gov/climate-change-science.

32. See Robert Kunzig, "World without Ice," photographs by Ira Block, *National Geographic*, October 2011, 90–109.

33. Eric Rignot et al., "Widespread, Rapid Grounding Line Retreat of Pine Island, Thwaites, Smith and Kohler Glaciers, West Antarctica, from 1992 to 2011," *Geophysical Research Letters* 4, no. 10 (2014): 3502–3509.

34. On the effects of climate change on global sea levels, see Peter Ward, *The Flooded Earth: Our Future in a World without Ice Caps* (New York: Basic Books, 2010). Ward projects into the future estimated global atmospheric carbon-dioxide levels and posits likely scenarios from 2030 (420 ppm) to 2135 (800 ppm) to 2214 (1,300 ppm).

35. See Benjamin I. Cook, Toby R. Ault, and Jason E. Smerdon, "Unprecedented 21st-Century Drought Risk in the American Southwest and Central Plains," *Science Advances* 1, no. e1400082 (2015): 1–7.

36. "Policy Implications of Warming Permafrost," United Nations Environment Programme 2012, www.unep.org/pdf/permafrost/pdf. Also see Michael D. Lemonick, "Nearing a Tipping Point on Melting Permafrost?" *Climate Central*, February 21, 2013, www.climatecentral.org/news/nearing-a-tipping-point-on-melting-permafrost-15636.

37. See Paul D. Taylor, ed., *Extinctions in the History of Life* (Cambridge, UK: Cambridge University Press, 2004); Fred Guterl, *The Fate of Species: Why the Human Race May Cause Its Own Extinction and How We Can Stop It* (New York: Bloomsbury, 2012), chap. 2, "Extinction," 28–49; and Kolbert, *The Sixth Extinction*.

38. See John Alroy, "Accurate and Precise Estimates of Origination and Extinction Rates," *Paleobiology* 40, no. 3 (2014): 374–397.

39. See Stuart Pimm, "The Extinction Puzzle," www.project-syndicated.org/commentary/the-extinction-puzzle; Jeremy B. C. Jackson, "Ecological Extinction and Evolution in the Brave New Ocean," *Proceedings of the National Academy of Sciences* 105 (2008): 11458–

11465; and Luke Gibson et al., "Near-Complete Extinction of Native Small Mammal Fauna 25 Years after Forest Fragmentation," *Science* 341 (2013): 1508–1510.

40. See Carl Zimmer, "How Many Species? A Study Says 8.7 Million, but It's Tricky," *New York Times*, August 23, 2011, available at www.nytimes.com/2011/08/30/science/30species.html.

41. For a more detailed account of the extinction risk of known species, consult the International Union for Conservation of Nature (IUCN) Red List. More than seventy-one thousand species have been assessed and classified as extinct, extinct in the wild, critically endangered, endangered, vulnerable, near threatened, least concern, data deficient, and not evaluated; see www.iucn.org. Also see Richard Monastersky, "Life—A Status Report," *Nature* 516 (2014): 159–161.

42. William J. Ripple et al., "Collapse of the World's Largest Herbivores," *Science Advances* 1, no. e1400103 (2015): 1–12.

43. Monastersky, "Life—A Status Report," 161.

44. See Corey J. A. Bradshaw and Barry W. Brook, "Human Population Reduction Is Not a Quick Fix for Environmental Problems," *Proceedings of the National Academy of Sciences* 111, no. 46 (2014): 16610–16615.

45. See David Harvey, *A Brief History of Neoliberalism* (Oxford, UK: Oxford University Press, 2005).

46. See Freeman J. Dyson, "Warm-Blooded Plants and Freeze-Dried Fish," *Atlantic*, November 1997, available at www.theatlantic.com/past/docs/issues/97nov/space.htm.

47. See Paul J. Crutzen, "Albedo Enhancement by Stratospheric Sulfur Injections: A Contribution to Resolve a Policy Dilemma," *Climate Change* 77 (2006): 211–219.

48. See Leslie Paul Thiele, *Indra's Net and the Midas Touch: Living Sustainably in a Connected World* (Cambridge, UK: Massachusetts Institute of Technology Press, 2011).

49. Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (Oxford, UK: Oxford University Press, 2005).

CHAPTER 2

1. See Annalee Newitz, *Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction* (New York: Doubleday, 2013), pt. 1, "A History of Mass Extinctions," 13–60.

2. Anthony D. Barnosky et al., "Has the Earth's Sixth Mass Extinction Already Arrived?" *Nature* 471 (2011): 51–57.

3. Anthony D. Barnosky et al., "Assessing the Causes of Late Pleistocene Extinctions on the Continents," *Science* 306, no. 5693 (2004): 70–75.

4. For a summary of the main theories of the late Pleistocene megafauna extinctions, see Todd A. Surovell, "Extinctions of Big Game," *Encyclopedia of Archaeology* 2 (2008): 1365–1374.

5. See Ted Goebel, Michael R. Waters, and Dennis H. O'Rourke, "The Late Pleistocene Dispersal of Modern Humans in the Americas," *Science* 319 (2008): 1497–1502; Michael Marshall, "Was America First Colonized by Two Cultures at Once?" *New Scientist*, July 12, 2012; and Jennifer Viegas, "First Americans Were Not Alone," *Discovery News*, November 27, 2012.

6. See Richard Firestone, Allen West, and Simon Warwick-Smith, *The Cycle of Cosmic Catastrophes: How a Stone-Age Comet Changed the Course of World Culture* (Rochester, VT: Bear, 2006); Richard Firestone et al., "Evidence for an Extraterrestrial Impact 12,900 Years Ago that Contributed to the Megafaunal Extinctions and the Younger Dryas Cooling,"

Proceedings of the National Academy of Sciences 104, no. 41 (2007): 16016–16021; and D. J. Kennett et al., "Nanodiamonds in the Younger Dryas Boundary Sediment Layer," *Science* 323, no. 5910 (2009): 94.

7. Barnosky et al., "Assessing the Causes of Late Pleistocene Extinctions on the Continents," fig. 1, tab. 1.

8. See Tim Flannery, *The Future Eaters: An Ecological History of the Australasian Lands and Peoples* (New York: Grove Press, 2002).

9. Barnosky et al., "Assessing the Causes of Late Pleistocene Extinctions on the Continents," fig. 1, tab.1.

10. Ibid.

11. Morten Erick Allentoft et al., "Extinct New Zealand Megafauna Were Not in Decline before Human Colonization," *Proceedings of the National Academy of Sciences* 111, no. 13 (2014): 4922–4927.

12. See Joel Greenberg, *A Feathered River across the Sky: The Passenger Pigeon's Flight to Extinction* (London: Bloomsbury, 2014).

13. See Peter Gwin, "Rhino Wars," photographs by Brent Stirton, *National Geographic*, March 2012, 106–123.

14. See Caroline Alexander, "A Cry for the Tiger," photographs by Steve Winter, *National Geographic*, December 2011, 62–87; and George B. Schaller, "Politics Is Killing the Big Cats," *National Geographic*, December 2011, 88–91. On the growing practice of tiger farming in China to produce tiger parts and products for its wealthy bourgeois elites, see J. A. Mills, *Blood of the Tiger: A Story of Conspiracy, Greed, and the Battle to Save a Magnificent Species* (Boston: Beacon Press, 2015).

15. P. J. Bishop et al., "The Amphibian Extinction Crisis—What Will It Take to Put the Action into the Amphibian Conservation Action Plan?" *S.A.P.I.E.N.S.* 5, no. 2 (1012): 97–111.

16. Ibid., sec. 2, "What Is Causing Amphibian Declines," 100–102.

17. See Cheryl J. Briggs, Roland A. Knapp, and Vance T. Vredenburg, "Enzootic and Epizootic Dynamics of the Chytrid Fungal Pathogen of Amphibians," *Proceedings of the National Academy of Sciences* 107 (2010): 9695–9700.

18. See Douglas J. McCauley et al., "Marine Defaunation: Animal Loss in the Global Ocean," *Science* 347, no. 6219 (2015): 641–647.

19. Ibid.

20. See Charles Sheppard, Simon K. Davy, and Graham M. Pilling, *The Biology of Coral Reefs* (Oxford, UK: Oxford University Press, 2009); Kent E. Carpenter et al., "One-Third of Reef-Building Corals Face Elevated Extinction Risk from Climate Change and Local Impacts," *Science* 321 (2008): 560–563; and J. E. N. Veron, "Is the End in Sight for the World's Coral Reefs?" *e360 Online*, December 6, 2010.

21. As Elizabeth Kolbert explains in *The Sixth Extinction*, chap. 6, "The Sea around Us," 114, "Like the Richter scale, the pH scale is logarithmic, so even such a small numerical difference represents a very large real-world change. A decline of .1 means that the oceans are now thirty percent more acidic than they were in 1800."

22. See Ralph F. Keeling, Arne Kortzinger, and Nicholas Gruber, "Ocean Deoxygenation in a Warming World," *Annual Review of Marine Science* 2 (2010): 199–229.

23. The State of World Fisheries and Aquaculture 2014 (SOFIA), Food and Agriculture Organization of the United Nations, www.fao.org/fishery/sofia.

24. See Charles J. Moore, "Choking the Oceans with Plastic," *New York Times*, August 25, 2014.

25. See Joel K. Bourne Jr., "How to Farm a Better Fish," photographs by Brian Skerry, *National Geographic*, June 2014, 93–111.

26. Victoria Braithwaite, *Do Fish Feel Pain?* (Oxford, UK: Oxford University Press, 2010), 180–183.

27. See Bryan Walsh, "The Pacific Bluefin Tuna Is Going, Going . . . ," *Time*, January 11, 2013.

28. See "How Many Sharks Are Actually Killed Each Year?" *SHARKPROJECT*, www.sharkproject.org/haiothek/index_e.php?site=gefahr_10.

29. Bret A. Muter et al., "Australian and U.S. News Portrayal of Sharks and Their Conservation," *Conservation Biology* 27, no. 1 (2012): 187–196.

30. See "Information about Sea Turtles: Why Care?" *Sea Turtle Conservancy*, www.conserveturtles.org/seaturtleinformation.php?page=whycareaboutseaturtles.

31. Lisa-ann Gershwin, *Stung! On Jellyfish Blooms and the Future of the Ocean* (Chicago: University of Chicago Press, 2013), chap. 4, "Jellyfish: The Basics," 80–83.

32. Ibid., chap. 15, "The Rise of Slime," 343.

33. Ibid., chap. 5, "Overview of Ecosystem Perturbations," 106.

34. See Tom Philpott, "Obama's 5 Biggest Sellouts to the Meat Industry," *Mother Jones*, November 5, 2013.

35. See Frances M. Ufkes, "Building a Better Pig: Fat Profits in Lean Meat," in *Animal Geographies: Place, Politics, and Identity in the Nature-Culture Borderlands*, ed. Jennifer Wolch and Jody Emel (London: Verso, 1998), 241–255.

36. These estimates were compiled from referencing "Farm Animal Statistics: Slaughter Totals," Humane Society of the United States (HSUS), www.humanesociety.org; "Animal Death Statistics," Farm Animal Rights Movement (FARM), http://farmusa.org/statistics11.html; and "The Animal Kill Counter," Animals Deserve Absolute Protection Today and Tomorrow (ADAPTT), www.adaptt.org/killcounter.html.

37. More than three hundred million acres of federal and state lands are leased for livestock grazing well below private-market rates through permits that have been bought up and monopolized by large corporate entities, to the detriment of an overgrazed and damaged environment, exterminated animals, and small ranchers. See George Wuerthner and Mollie Matteson, eds., *Welfare Ranching: The Subsidized Destruction of the American West* (Washington, DC: Island Press, 2002).

38. See Erik Marcus, *Meat Market: Animals, Ethics, and Money* (Boston: Brio Press, 2005), chap. 2, "Farmed Animal Lives," 34–48.

39. See Hal Herzog, *Some We Love, Some We Hate, Some We Eat: Why It's So Hard to Think Straight about Animals* (New York: HarperCollins, 2010), chap. 6, "In the Eyes of the Beholder: The Comparative Cruelty of Cockfights and Happy Meals," 167–170; Mark Hawthorne, *Bleating Hearts: The Hidden World of Animal Suffering* (Winchester, UK: Changemakers Books, 2013), chap. 1, "Bleating Hearts: Animals Use for Food," 5–22.

40. Marcus, *Meat Market*, chap. 2, "Farmed Animal Lives," 27–34.

41. See Cynthia F. Hodges, "Detailed Discussion of the Humane Methods of Slaughter Act," Michigan State University College of Law, Animal Legal and Historical Center, 2010, Summary, www.animallaw.info/article/detailed-discussion-humane-methods-slaughter-act#id-1.

42. Ibid., sec. 3, "Acceptable Methods of Slaughter."

43. Ibid., sec. 5, "Limitations of the HMSA," under "B. Ritual Slaughter Exemption."

44. Ibid., sec. 2, "Animals Covered under HMSA."

45. Ibid., sec. 5, "Limitations of the HMSA," under "A. Exclusion of Certain Species."

46. Ibid.

47. Ibid., sec. 4, "Provisions for Nonambulatory Livestock."

48. See David J. Wolfson and Mariann Sullivan, "Foxes in the Hen House: Animals, Agribusiness, and the Law: A Modern American Fable," in *Animal Rights: Current Debates and New Directions*, ed. Cass R. Sunstein and Martha Nussbaum (Oxford, UK: Oxford University Press, 2004), 205–233.

49. See Karen Davis, "The Need for Legislation and Elimination of Electrical Immobilization," *United Poultry Concerns*, www.upc-online.org/slaughter/report.html.

50. See "McDonald's: Animal Health and Welfare—How Do We Know If We're Doing Better?" *McDonalds.com*, www.aboutmcdonalds.com/mcd/sustainability/sourcing/animal-health-and-welfare.html.

51. See North American Meat Institute, www.animalhandling.org.

52. See Temple Grandin, "Livestock Handling Systems, Cattle Corrals, Stockyards, and Races," http://grandin.com/design/design.html; Temple Grandin, "Recommended Stunning Practices," http://grandin.com/humane/rec.slaughter.html; Grandin Livestock Handling Systems, Inc., www.grandinlivestockhanldingsystems.com; and Temple Grandin and Mark Dessing, *Humane Livestock Handling: Understanding Livestock Behavior and Building Facilities for Healthier Animals* (North Adams, MA: Storey Publishers, 2008).

53. Temple Grandin, "Animal Welfare Audits for Cattle, Pigs, and Chickens that Use the HACCP Principles of Critical Control Points with Animal Based Outcome Measures (Updated July 2013)," www.grandin.com/welfare.audit.using.haccp.html.

54. See James McWilliams, "Why the Meat Industry Loves Temple Grandin," *Daily Pitchfork*, January 30, 2015, http://dailypitchfork.org/?p=536.

55. Timothy Pachirat, *Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight* (New Haven, CT: Yale University Press, 2011), chap. 1, "Hidden in Plain Sight," 4.

56. Ibid.

57. Ibid., 17–18.

58. Ibid., chap. 2, "The Place Where Blood Flows," 20–37.

59. Ibid., chap. 3, "Kill Floor," 38–84, and chap. 6, "Killing at Close Range," 140–161.

60. Ibid., chap. 1, nn2–3.

61. Ibid.

62. Marcus, *Meat Market*, chap. 6, "Creating a Dismantlement Movement," 79.

63. Ibid., chap. 9, "The Militancy Question," 109–110.

64. Ibid., chap. 6, 84.

65. Gary Francione identifies what I regard as the "new welfarism" in *Rain without Thunder: The Ideology of the Animal Rights Movement* (Philadelphia: Temple University Press, 1996).

66. See the Gary Francione–Erik Markus debate, which took place on February 25, 2007, www.gary-francione.com/francione-markus-debate.html.

67. See Anna L. Peterson, *Being Animal: Beasts and Boundaries in Nature Ethics* (New York: Columbia University Press, 2013), chap. 8, "Being Animal," 161–172.

68. John M. Marzluff, *Welcome to Subirdia: Sharing Our Neighborhoods with Wrens, Robins, Woodpeckers, and Other Wildlife* (New Haven, CT: Yale University Press, 2014), chap. 2, "Finding Subirdia," 15–17.

69. Ibid., chap. 3, "A Child's Question," 31–41.

70. Ibid., chap. 5, "The Fragile Nature of Subirdia," 85.

71. Ibid., chap. 8, "Beyond Birds," 156–161.

72. Ibid., 174.

73. Ibid., chap. 9, "Good Neighbors," 182–188.

74. Ibid., 189.

75. Ibid., 191–194.

76. Ibid., 194–204.

77. See Jonathan Franzen, "Emptying the Skies," *New Yorker*, July 26, 2010; and "Last Song," photographs by David Guttenfelder, *National Geographic*, July 2013, 60–89.

78. Jim Sterba, *Nature Wars: The Incredible Story of How Wildlife Comebacks Turned Backyards into Battlegrounds* (New York: Crown Publishers, 2012), pt. 1, "Forest People," 1–4.

79. Ibid., chap. 2, "An Epidemic of Trees," 19–45, and chap. 3, "Sprawl," 46–52.

80. Ibid., chap. 4, "The Fifty-Pound Rodent," 75.

81. Ibid., chap. 5, "The Elegant Ungulate," 87.

82. Ibid., 117.

83. Ibid., "Epilogue," 275–293.

84. Ibid., chap. 11, "Feathered Friends," 233.

85. Ibid., chap. 8, "Teddies," 161–165.

86. See Stephen S. Ditchkoff et al., "Wounding Rates of White-Tailed Deer with Traditional Archery Equipment," *Proceedings of the Annual Conference of the Southeast Association of Fish and Wildlife Agencies* 52 (1998): 244–248; Rocco Murano, "Reducing Wounding Losses," *South Dakota Game, Fish, and Parts*, https://gfp.sd.gov/hunting/waterfowl/wounding-losses.aspx.

87. Sterba, *Nature Wars*, chap. 12, "Feral Felines," 260.

88. Ibid., 256–263.

89. Clare Palmer, *Animal Ethics in Context* (New York: Columbia University Press, 2010), 66.

90. Sue Donaldson and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights* (Oxford, UK: Oxford University Press, 2011), chap. 7, "Liminal Animal Denizens," 211.

91. Palmer, *Animal Ethics in Context*, chap. 3, "Capacities, Context, and Relations," 44–62.

92. Ibid., 54–57.

93. Ibid., 48.

94. Ibid., chap. 4, "Wildness, Domestication, and the Laissez-faire Intuition," 63–76.

95. Ibid., 66–67.

96. Donaldson and Kymlicka, *Zoopolis*, chap. 7, 216–226.

97. Ibid., 239–250.

98. Kelsi Nagy and Phillip David Johnson II, *Trash Animals: How We Live with Nature's Filthy, Feral, Invasive, and Unwanted Species* (Minneapolis: University of Minnesota Press, 2103), "Introduction," 1–27.

99. Palmer, *Animal Ethics in Context*, chap. 6, "Past Harms and Special Obligations," 102–106.

100. Ibid., 104.

101. Ibid., 105.

102. Ibid., 103.

103. Ibid., 104.

104. Ibid., 105.

105. Ibid., chap. 8, "Puzzling through Some Cases," 152–158.

106. Ibid., 154.

107. Ibid., 155–156.

108. Ibid., 157–158.
109. Ibid., 158.

CHAPTER 3

1. See Cary Wolfe, *What Is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), "Introduction: What Is Posthumanism?" xi–xxxiv.

2. See Keith Ansell Pearson, *Viroid Life: Perspectives on Nietzsche and the Transhuman Condition* (London: Routledge, 1997); and Joel Garreau, *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human* (New York: Random House, 2005).

3. Gary Snyder, "The Rediscovery of Turtle Island," in *A Place in Space: Ethics, Aesthetics, and Watersheds* (Berkeley: Counterpoint, 1995), 236.

4. John Searle maintains that humans create institutional reality through collective intentionality and social agreements (i.e., social contracts). Linguistic declarations (speech acts) create and sustain social reality. Institutional reality and social facts, however, are grounded in the ontologically objective reality of the brute facts of the physical world. Human social constructs have an ontological and epistemological status dependent on the real world of physical reality, which is ontologically objective, and the sociolinguistic world of intersubjective understanding, which lays claim to epistemological objectivity through collective intentionality. Searle distinguishes his social constructionist theory from postmodernism, which he argues conceives of social reality as radically relativistic ontologically and epistemologically. See John R. Searle, *The Construction of Social Reality* (New York: Free Press, 1995), chap. 1, "The Building Blocks of Social Reality," chap. 2, "Creating Institutional Facts," chap. 3, "Language and Social Reality," 1–78; *Freedom and Neurobiology: Reflections on Free Will, Language, and Political Power* (New York: Columbia University Press, 2007), chap. 2, "Social Ontology and Political Power," 79–109; and *Making the Social World: The Structure of Human Civilization* (Oxford, UK: Oxford University Press, 2010), chap. 5, "The General Theory of Institution and Institutional Facts: Language and Social Reality," 90–122.

5. See Wayne Gabardi, *Negotiating Postmodernism* (Minneapolis: University of Minnesota Press, 2001), 87.

6. Hal Herzog, *Some We Love, Some We Hate, Some We Eat: Why It's So Hard to Think Straight about Animals* (New York: Harper Perennial, 2010), "Introduction," 11.

7. Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871), in *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: Norton, 2006), chap. 3, "Comparison of the Mental Powers of Man and the Lower Animals—Continued," 823.

8. Ibid., 837.

9. Ibid., chap. 2, "Comparison of the Mental Powers of Man and the Lower Animals," 802–816.

10. Ibid., chap. 3, 819–825.

11. Ibid., 818.

12. Ibid., 826–830.

13. Ibid., 834–835.

14. Ibid., 818. Also see Denis L. Krebs, *The Origins of Morality: An Evolutionary Account* (Oxford, UK: Oxford University Press, 2011), chap. 4, "Darwin's Theory of the Origin of Morality," 40–56.

15. Darwin discusses group selection in his tribal scenario in *The Descent of Man*, chap. 5, "On the Development of the Intellectual and Moral Faculties during Primeval and Civilized Times," in *From So Simple a Beginning*, 868–872.

16. See Stuart A. West, Ashleigh S. Griffin, and Andy Gardner, "Social Semantics: How Useful Has Group Selection Been?" *Journal of Evolutionary Biology* 21 (2008): 374–385.

17. See David Sloan Wilson and Elliot Sober, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge, MA: Harvard University Press, 1998); and David Sloan Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (Chicago: University of Chicago Press, 2002).

18. William D. Hamilton, "The Evolution of Social Behavior," *Journal of Theoretical Biology* 7 (1964): 1–52.

19. Robert L. Trivers, "The Evolution of Reciprocal Altruism," *Quarterly Review of Biology* 46 (1971): 35–57.

20. See Denis L. Krebs, *The Origins of Morality*, chap. 11, "The Evolution of Cooperation," 124–142; and Kim Sterelny et al., eds., *Cooperation and Its Evolution* (Cambridge, MA: MIT Press, 2013).

21. Patricia S. Churchland, *Braintrust: What Neuroscience Tells Us about Morality* (Princeton, NJ: Princeton University Press, 2001), chap. 2, "Brain-Based Values," 12–26.

22. Ibid., chap. 3, "Caring and Caring For," 27–62.

23. Ibid., 28–29.

24. Ibid., 33–46.

25. Ibid., 48–53.

26. Ibid., 46–48.

27. Ibid., chap. 4, "Cooperating and Trusting," 71–81.

28. Frans de Waal critically contrasts his Darwinian view of evolutionary ethics with the view of morality as a cultural overlay or veneer in the writings of Thomas Hobbes and Thomas Huxley in Frans de Waal et al., *Primates and Philosophers: How Morality Evolved*, ed. Stephen Macedo and Josiah Ober (Princeton, NJ: Princeton University Press, 2006), pt. 1, "Morally Evolved: Primate Social Instincts, Human Morality, and the Rise and Fall of Veneer Theory," 1–22. On the evolutionary origin and function of morality, see Frans de Waal, *The Bonobo and the Atheist: In Search of Humanism among Primates* (New York: Norton, 2013), chap. 8, "Bottom-Up Morality," 223–240.

29. De Waal, *Primates and Philosophers*, pt. 1, 42–49.

30. Ibid., 21–42; Frans de Waal, *The Age of Empathy: Nature's Lessons for a Kinder Society* (New York: Harmony Books, 2009), chap. 3, "Bodies Talking to Bodies," 78–83.

31. Frans de Waal, *The Ape and the Sushi Master: Cultural Reflections by a Primatologist* (New York: Basic Books, 2001). Also see William C. McGrew, "The Nature of Culture: Prospects and Pitfalls of Cultural Primatology," in *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution*, ed. Frans B. M. de Waal (Cambridge, MA: Harvard University Press, 2001), 229–254; and Kevin N. Laland and Bennett G. Galef, eds., *The Question of Animal Culture* (Cambridge, MA: Harvard University Press, 2009).

32. Frans B. M. de Waal and Peter L. Tyack, eds., *Animal Social Complexity: Intelligence, Culture, and Individualized Societies* (Cambridge, MA: Harvard University Press, 2004), "Preface," ix–x.

33. De Waal, *Primates and Philosophers*, "The Tower of Morality," 161–181.

34. De Waal, *The Bonobo and the Atheist*, chap. 8, 232–235.

35. Dale Peterson, *The Moral Lives of Animals* (New York: Bloomsbury Press, 2011), chap. 4, "Structures," 62–83.

36. Ibid., chap. 1, "Words," 18.

37. Ibid., 20.

38. Mark Rowlands, *Can Animals Be Moral?* (Oxford, UK: Oxford University Press, 2012), chap. 1, "Animals, Emotions, and Moral Behavior," 32–35, and chap. 3, "Moral Agents, Patients, and Subjects," 71–98.

39. Ibid., chap. 4, "The Reflection Condition: Aristotle and Kant," 99–123.

40. Ibid., chap. 8, "Moral Reasons and Practice," 191–123.

41. See Sarah El Mcfarland and Ryan Hediger, eds., *Animals and Agency: An Interdisciplinary Exploration* (Leiden, Netherlands: Brill, 2009); and Virginia Morell, *Animal Wise: The Thoughts and Emotions of Our Fellow Creatures* (New York: Crown Publishers, 2013).

42. The famous "is-ought" passage appears in *A Treatise of Human Nature*, bk. 3, "Of Morals," pt. 1, "Of Virtue and Vice in General," sec. 1, "Moral Distinctions Not Derived from Reason," para. 27. See David Hume, *A Treatise of Human Nature*, ed. David Fate Norton and Mary J. Norton (Oxford, UK: Oxford University Press, 2000), 302. Also see H. O. Mounce, *Hume's Naturalism* (London: Routledge, 1999), chap. 7, "Reason and Morality," 77–98; and David Fate Norton, "The Foundations of Morality in Hume's Treatise," in *The Cambridge Companion to Hume*, 2nd ed., ed. David Fate Norton and Jacqueline Taylor (Cambridge, UK: Cambridge University Press, 2009), 270–310.

43. On the influence of Hume on animal studies, see Tom L. Beauchamp, "Hume on the Nonhuman Animal," *Journal of Medicine and Philosophy* 24 (1998): 322–335; Gary Steiner, *Animals and the Moral Community: Mental Life, Moral Status, and Kinship* (New York: Columbia University Press, 2008), chap. 3, "An Associationist Model of Animal Cognition," 57–88; Julia Driver, "A Humean Account of the Status and Character of Animals," in *The Oxford Handbook of Animal Ethics*, ed. Tom L. Beauchamp and R. G. Frey (Oxford, UK: Oxford University Press, 2011), 144–171; and Angela Coventry and Avram Hiller, "Hume on Animals the Rest of Nature," in *Animal Ethics and Philosophy: Questioning the Orthodoxy*, ed. Elisa Aaltola and John Hadley (London: Rowman and Littlefield, 2015), 165–184.

44. David Hume, *A Treatise of Human Nature*, bk. 1, "Of the Understanding," pt. 1, "Of Ideas, Their Origin, Composition, Connection, Abstraction, Etc.," sec. 4, "Of the Connection or Association of Ideas," 12–14. Also see David Owen, "Hume and the Mechanics of Mind: Impressions, Ideas, and Association," in *The Cambridge Companion to Hume*, 70–104.

45. David Hume, *An Enquiry Concerning Human Understanding: A Critical Edition*, ed. Tom L. Beauchamp (Oxford, UK: Clarendon Press, 2000), sec. 9, "Of the Reason of Animals," 79.

46. Ibid., 80.

47. Ibid., 81.

48. On natural and artificial virtues, see David Hume, *A Treatise of Human Nature*, bk. 3, "Of Morals," pt. 2, "Of Justice and Injustice," sec. 1, "Justice, Whether a Natural or Artificial Virtue?" 307–311; pt. 3, "Of Other Virtues and Vices," sec. 1, "Of the Origin of the Natural Virtues and Vices," 367–378.

49. David N. Stamos, *Evolution and the Big Questions: Sex, Race, Religion, and Other Matters* (Oxford, UK: Blackwell Publishing, 2008), chap. 1, "Evolution and Knowledge," 21–22, and chap. 7, "Evolution and Ethics," 156–158; and Michael Ruse, *Evolutionary Naturalism: Selected Essays* (London: Routledge, 1995), chap. 8, "Evolution and Ethics: The Sociobiological Approach," 256.

50. Ruse, *Evolutionary Naturalism*, chap. 8, "Evolution and Ethics: The Sociobiological Approach," 254.

51. Stamos, *Evolution and the Big Questions*, chap. 7, 155–175.

52. On the biological theory of coevolution, see Paul R. Ehrlich and Peter Raven, "Butterflies and Plants: A Study in Coevolution," *Evolution* 18 (1965): 586–608.

53. On the chimpanzee-human last common ancestor (CHLCA) theory, see Nick Patterson et al., "Genetic Evidence for Complex Speciation of Humans and Chimpanzees," *Nature* 441 (2006): 1103–1108.

54. See Tim D. White et al., "Ardipithecus Ramidus and the Paleobiology of Early Hominids," *Science* 326, no. 5949 (2009): 75–85; and Jamie Shreeve, "The Evolutionary Road," *National Geographic*, July 2010, 34–67.

55. Primatologist Richard Wrangham has developed the "cooking hypothesis" that the control of fire and the advent of cooking raw meat were major revolutions in human evolution. Cooking provided more metabolic energy to early hominids and led to physiological changes, resulting in a smaller digestive system, jaw, and teeth and a more flexible skull, all of which allowed for greater brain growth and rudimentary speech. See Richard Wrangham, *Catching Fire: How Cooking Made Us Human* (New York: Basic Books, 2009).

56. There are two theories regarding the takeoff of sustained human cultural evolution. The "human revolution" view places a more "sudden" flourishing of "modern" human traits fifty thousand to forty thousand years ago. The gradualist view locates the onset of cultural evolution as far back as one hundred thousand to seventy thousand years ago. See Richard G. Klein, "Anatomy, Behavior, and Modern Human Origins," *Journal of World Prehistory* 9, no. 2 (1995): 167–198; and Sally McBrearty and Alison S. Brooks, "The Revolution that Wasn't: A New Interpretation of the Origin of Modern Human Behavior," *Journal of Human Evolution* 39, no. 5 (2000): 453–463.

57. The old narrative of Neanderthals as simple brutes who could not successfully compete with more sophisticated *Homo sapiens* who arrived in Europe forty-six thousand years ago has been significantly revised. They were in many respects as "modern" as our species. See Annalee Newitz, *Scatter, Adapt, and Remember*, chap. 7, "Meet the Neanderthals," 77–88; and Dimitra Papagianni and Michael A. Morse, *The Neanderthals Rediscovered: How Modern Science Is Rewriting Their Story* (London: Thames and Hudson, 2013).

58. See Joseph Henrich and Richard McElreath, "The Evolution of Cultural Evolution," *Evolutionary Anthropology* 12 (2003): 123–135. Robert Boyd and Peter J. Richerson summarize their gene-culture coevolution research program in *The Origin and Evolution of Cultures* (Oxford, UK: Oxford University Press, 2005), "Introduction," 1–11. See also Boyd and Richerson, *Not by Genes Alone: How Culture Transformed Human Evolution* (Chicago: University of Chicago Press, 2005), chap. 1, "Culture Is Essential," 1–17.

59. The theory of the human mind as operating with a modular architecture and functionality is first developed by Jerry Fodor in *The Modularity of Mind: An Essay on Faculty Psychology* (Cambridge, MA: MIT Press, 1983).

60. Richard Dawkins introduces the idea of the meme in *The Selfish Gene* (Oxford, UK: Oxford University Press, 1976).

61. Kim Sterelny, *Thought in a Hostile World: The Evolution of Human Cognition* (Oxford, UK: Blackwell Publishing, 2003), chap. 9, "Heterogeneous Environments and Variable Response," 162–173, and chap. 10, "The Massive Modularity Hypothesis," 177–210.

62. Boyd and Richerson, *The Origin and Evolution of Cultures*, chap. 1, "Social Learning as an Adaptation," 19–34; Boyd and Richerson, *Not by Genes Alone*, chap. 4, "Culture Is an Adaptation," 108–126; Kim Sterelny, "The Evolution and Evolvability of Culture," *Mind and Language* 21, no. 2 (2006): 137–165; Sterelny, *The Evolved Apprentice: How Evolution Made Humans Unique* (Cambridge, MA: MIT Press, 2012); and Sterelny, "The Evolved Apprentice Model: Scope and Limits," *Biological Theory* 8 (2013): 37–43.

63. See Kim Sterelny, *Thought in a Hostile World*, chap. 7, "The Cooperation Explosion," 123–145.

64. Ibid., chap. 8, "The Self-Made Species," 146–161.

65. Heidegger's idea of dwelling is one of the key modalities of *Dasein*, human being-in-the-world. In the essay "Building Dwelling Thinking," he makes the case that dwelling and building are closely connected ontologically and linguistically. In classic Heidegger fashion, he takes the reader on a genealogical journey, revealing the "primal nature" of words that have fallen into "oblivion" and whose "true meaning" has been lost. Dwelling and building come from the old English *bauen* and German *baun*, which means to inhabit an abode and cultivate a space of habitation. Building is not the art or technique of physical construction per se but a way of being-in-the-world that creates a space where humans can dwell. Building is about "locations in space," determining where we should live and why. More than this, it connects and integrates the "fourfold" primal forces of Being—Earth, sky, divinities, and mortals. Dwelling and building bring "the fourfold" into presence. They therefore are fundamental ethical practices dedicated to the preservation of an abode of dwelling. Dwelling is finding one's home in the world, a world Heidegger believes under conditions of modernity is one of existential homelessness. See Martin Heidegger, *Poetry, Language, Thought*, trans. Albert Hoftstadter (New York: Harper, Colophon Books, 1971), "Building Dwelling Thinking," 143–161. Also see Leslie Paul Thiele, *Timely Meditations: Martin Heidegger and Postmodern Politics* (Princeton, NJ: Princeton University Press, 1995), chap. 7, "Saving the Earth: The Plight of Homelessness," 171–191.

66. The ancient Greek word "*phronesis*" translates as "practical wisdom." In book six of the *Nicomachean Ethics*, Aristotle classifies, defines, and analyzes the intellectual virtues of the soul—scientific knowledge (*episteme*); art, technical skill, and craftsmanship (*techne*); practical reason (*phronesis*); intelligence (*nous*); theoretical wisdom (*sophia*); understanding (*sunesis*); and judgment (*gnome*). Practical reasoning deals with the realm of action and conduct (*praxis*). It involves deliberation and judgment with regard to changing circumstances, applying knowledge and experience to things that are variable by nature. Practical wisdom concerns itself with particulars as well as universals. But knowledge of particulars can be attained only through experience, not through theoretical wisdom. Thus *phronesis* is a practical value-rationality that involves the application of principles and deliberative reasoning to context-dependent action-oriented situations to arrive at prudent decisions. It informs and guides how we act in particular situations. See *The Ethics of Aristotle*, trans. J. A. K. Thomson, rev. ed. (New York: Penguin Books, 1976), bk. 6, "Intellectual Virtues," 209–210.

67. Niche differentiation is one theory that has been developed to explain not only species coexistence and coevolution but also the fact that there are many similar species in nature. Other scientific theories that help explain coexistence and coevolution are the "neutral theory of biodiversity," which focuses on the rough equivalence of species in a habitat that do not outcompete each other, the idea of "self-organized similarity" among species within a niche, and the rate of new species introduction. See Martin Scheffer and Egbert H. van Nes, "Self-Organized Similarity: The Evolutionary Emergence of Groups of Similar Species," *Proceedings of the National Academy of Sciences* 103, no. 16 (2006): 6230–6235; and Tommaso Zillio and Richard Condit, "The Impact of Neutrality, Niche Differentiation, and Species Input on Diversity and Abundance Distributions," *Oikos* 116 (2007): 931–940.

68. On the different approaches of environmental and animal ethics and the idea of biocentric ethics as a way of reconciling both of these outlooks, see Anna L. Peterson, *Being Animal: Beasts and Boundaries in Nature Ethics* (New York: Columbia University Press, 2013),

69. Paul W. Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton, NJ: Princeton University Press, 1986), chap. 3, "The Biocentric Outlook on Nature," 101–116.

70. Ibid., 116–119.

71. Ibid., 118.

72. Ibid.

73. Ibid., 119–129.

74. Ibid., 120.

75. Ibid., 121.

76. Ibid., 120.

77. Ibid., 121.

78. Ibid., 119.

79. Ibid., 122.

80. Ibid.

81. Ibid., 123.

82. Ibid., 124.

83. Ibid., 129–135.

84. Ibid., 135–152.

85. Ibid., 129.

86. Ibid., 131.

87. Ibid., 155; emphasis original.

88. Ibid., 121n7.

89. Ibid., 123.

90. See Wayne Williams, "Enchanted Worlds and Animal Others," in Aaltola and Hadley, eds., *Animal Ethics and Philosophy*, 83–98.

91. Taylor, *Respect for Nature*, chap. 1, "Environmental Ethics and Human Ethics," sec. 3, "Formal Conditions for Valid Moral Principles," 27–33.

92. Ibid., chap. 3, 161–168.

93. Ibid., chap. 4, "The Ethical System," 169–218.

94. Ibid., 172–173. Taylor makes clear that the rule of nonmaleficence applies to only human moral agents. It does not apply "to the behavior of a nonhuman animal or the activity of a plant that might bring harm to another living thing or cause its death" (172).

95. Ibid., 174–175.

96. Ibid., 179–186.

97. Ibid., 187. Taylor acknowledges that "the detailed facts of each situation" would influence "what restitutive acts are called for," but we "can nevertheless formulate some middle-range principles of justice" that can help guide our decisions with regard to the three rules of nonmaleficence, noninterference, and fidelity." For example, with regard to doing no harm, the situation would be different if an organism were harmed and not killed, if a species-population was harmed or on the verge of extinction, or if an entire biotic community was harmed or destroyed by humans.

98. Ibid., chap. 6, "Competing Claims and Priority Principles," 263.

99. Ibid., 264–265.

100. Ibid., 270.

101. Ibid., 272.

102. Ibid., 280–291.

103. Ibid., 291–304.

104. Ibid., 304–306.

105. Ibid., chap. 1, sec. 7, "A Note on the Ethics of the Bioculture," 53–58.

106. Roberto Esposito, *Bios: Biopolitics and Philosophy*, trans. Timothy Campbell (Minneapolis: University of Minnesota Press, 2008), chap. 1, "The Enigma of Biopolitics," 13, and chap. 2, "The Paradigm of Immunization," 45–77.

107. Ibid., chap. 5, "The Philosophy of *Bios*," 191–194.

108. Ibid., 186.

109. Ibid., 186–187.

110. On Heidegger's philosophy of *Dasein* (being-in-the-world), see Thiele, *Timely Meditations*, chap. 2, "Heidegger's Vision: Being-in-the-World," 42–57; and Dana R. Villa, *Arendt and Heidegger: The Fate of the Political* (Princeton, NJ: Princeton University Press, 1996), chap. 4, "The Heideggerian Roots of Arendt's Political Theory," 113–143.

111. On Heidegger's postmetaphysical anthropocentrism, see Gary Steiner, *Anthropocentrism and Its Discontents: The Moral Status of Animals in the History of Western Philosophy* (Pittsburgh, PA: University of Pittsburgh Press, 2005), chap. 9, "Postmodern Conceptions of the Human-Animal Boundary," 204–214; and Matthew Calarco, *Zoographies: The Question of the Animal from Heidegger to Derrida* (New York: Columbia University Press, 2008), chap. 1, "Metaphysical Anthropocentrism: Heidegger," 15–53.

112. See Jonathan D. Singer, "The Flesh of My Flesh: Animality, Difference, and 'Radical Community' in Merleau-Ponty's Philosophy," in Aaltola and Hadley, eds., *Animal Ethics and Philosophy*, 99–116. Also see Maurice-Merleau Ponty, *Phenomenology of Perception*, trans. Colin Smith (New York: Routledge, 1989); and Maurice-Merleau Ponty, *The Visible and the Invisible*, ed. Claude Lefort and trans. Alphonso Lingis (Evanston, IL: Northwestern University Press, 1968).

113. Thomas Nagel, "What Is It Like to Be a Bat?" *Philosophical Review* 83 (1974): 435–450.

114. J. M. Coetzee, *The Lives of Animals* (Princeton, NJ: Princeton University Press, 1999), "The Poets and the Animals," 50–54.

115. See Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans: With a Theory of Meaning*, trans. Joseph D. O'Neilo (Minneapolis: University of Minnesota Press, 2010); Jesper Hoffmeyer, *Biosemiotics: An Examination into the Signs of Life and the Life of Signs* (Scranton, PA: University of Scranton Press, 2008); and Donald Favareau, *Essential Readings in Biosemiotics* (Dordrecht, Netherlands: Springer, 2010).

116. See Morten Tonnessen and Jonathan Beever, "Beyond Sentience: Biosemiotics as Foundation for Animal and Environmental Ethics," in Aaltola and Hadley, eds., *Animal Ethics and Philosophy*, 47–62.

117. See Adolf Portmann, *New Paths in Biology* (New York: Harper and Row, 1964); Neil Evernden, *The Natural Alien: Humankind and Environment* (Toronto: University of Toronto Press, 1993); Kenneth Shapiro, "A Phenomenological Approach to the Study of Nonhuman Animals," in *Anthropomorphism, Anecdotes, and Animals*, ed. R. W. Mitchell, N. S. Thompson, and H. L. Miles (Albany: State University of New York Press, 1997), 277–295; Elizabeth Behnke, "Ghost Gestures: Phenomenological Investigations of Bodily Micro-movements and Their Intercorporeal Implications," *Human Studies* 20 (1997): 181–201; Traci Warkentin, "Interspecies Etiquette: An Ethics of Paying Attention to Animals," *Ethics and the Environment* 15, no. 1 (2010): 101–121; and Julie A. Smith and Robert W. Mitchell, eds., *Experiencing Animal Minds: An Anthology of Animal-Human Encounters* (New York: Columbia University Press, 2012).

118. See Traci Warkentin, "Thinking Like a Whale: Interdisciplinary Methods for the Study of Human-Animal Interactions," in Smith and Mitchell, eds., *Experiencing Animal Minds*, 129–141.

119. See Gala Argent, "Toward a Privileging of the Nonverbal: Communication, Corporeal Synchrony, and Transcendence in Humans and Horses," in Smith and Mitchell, eds., *Experiencing Animal Minds*, 114–115.

120. Ibid., 114.

121. See Partha S. Bhagavatula et al., "Optic Flow Cues Guide Flight in Birds," *Current Biology* 21, no. 21 (2011): 1794–1799.

122. Charles Darwin, *The Formation of Vegetable Mould, through the Action of Worms: With Observations on Their Habits* (London: J. Murray, 1882), Nineteenth Century Collections Online (NCCO): Science, Technology, and Medicine: 1780–1925. Also see Oliver Sacks, "The Mental Life of Plants and Worms, among Others," *New York Review of Books*, April 29, 2014, 4–8.

123. Ralph R. Acampora, *Corporal Compassion: Animal Ethics and Philosophy of Body* (Pittsburgh, PA: University of Pittsburgh Press, 2006), "Introduction: Somaesthetics and Animal Ethics," xiii–ix.

124. Ibid., chap. 1, "Interspecies Ethics and Phenomenology of Body: Precursors and Pathways," 23, and chap. 4, "Ethos and Leib: Symphysics of Transpecific Morality," 72–94.

125. Ibid., chap. 2, "Flesh-and-Blood Being-in-a-World: Toward a Transpecific Ontology of Somatic Society," 25–47.

126. Jean-Jacques Rousseau associates this feeling with *amour de soi* and our natural inclination toward goodness and compassion, all of which are innate impulses and dispositions that exist prior to reasoning. See N.J.H. Dent, *A Rousseau Dictionary* (Oxford, UK: Blackwell Publishers, 1992), 89.

127. Acampora, *Corporal Compassion*, chap. 3, "Appreciation of Animal Nature under the Aspect of Bodiment," 57–71.

128. Jean-Jacques Rousseau, "Discourse on the Origin and Foundations of Inequality among Men," in *Classics of Moral and Political Theory*, ed. Michael L. Morgan (Indianapolis, IN: Hackett Publishing, 2001), pt. 1, 727.

129. Cynthia Willett, *Interspecies Ethics* (New York: Columbia University Press, 2014), chap. 1, "Can the Animal Subaltern Laugh? Neoliberal Inversions, Cross-species Solidarities, and Other Challenges to Human Exceptionalism," 43–38.

130. Ibid., 48–59.

131. Ibid., 33–42, and chap. 3, "Affect Attunement: Discourse Ethics across Species," 80–81.

132. Ibid., chap. 5, "Reflections: A Model and a Vision of Ethical Life," 135.

133. Ibid., chap. 3, "Affect Attunement: Discourse Ethics across Species," 81–88.

134. Ibid., "Introduction," 10, 17–21.

135. Ibid., 18.

136. Coetzee, *The Lives of Animals*, "The Philosophers and the Animals," 23.

137. Ibid., "The Poets and the Animals," 52.

138. Ibid., 50–53.

139. Ibid., 53.

140. Ibid., 52.

141. Gary Snyder, *A Place in Space: Ethics, Aesthetics, and Watersheds* (Berkeley: Counterpoint, 1995), "Unnatural Writing," 169.

142. Ibid.

143. Ibid., 170.

144. Peter Singer summarizes his ethical outlook in *Practical Ethics*, 3rd ed. (Cambridge, UK: Cambridge University Press, 2011), chap. 1, "About Ethics," 1–15.

145. See Peter Singer, *Animal Liberation*, 2nd ed. (New York: Random House, 1990), chap. 1, "All Animals Are Equal . . . ," 1–23.

146. Singer, *Practical Ethics*, chap. 3, "Equality for Animals?" 53.

147. Ibid., chap. 5, "Taking Life: Animals," 101.

148. Ibid., 94–104.

149. Ibid., 104–122. Also see Singer's response to Coetzee in *The Lives of Animals*, 85–91.

150. Singer, *Practical Ethics*, chap. 3, 53–58.

151. Gary L. Francione, *Animals as Persons: Essays on the Abolition of Animal Exploitation* (New York: Columbia University Press, 2008), chap. 3, "Taking Sentience Seriously," 129–147.

152. Ibid., chap. 2, "Reflections on *Animals, Property, and the Law* and *Rain without Thunder*," 67–128.

153. See Steven M. Wise, "Animal Rights, One Step at a Time," in *Animal Rights: Current Debates and New Directions*, ed. Cass R. Sunstein and Martha C. Nussbaum (Oxford, UK: Oxford University Press, 2004), 19–50.

154. Gary Steiner, *Animals and the Moral Community: Mental Life, Moral Status, and Kinship* (New York: Columbia University Press, 2008), chap. 5, "The Idea of Cosmic Holism," 117–142, and chap. 6, "Cosmo-politics: Grounding Liberal Individualism in Cosmic Holism," 143–163.

155. Ibid., chap. 5, 132–142.

156. Ibid., chap. 6, 156–163.

157. Ibid., chap. 5, 121–125, 132–142.

158. Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (Oxford, UK: Oxford University Press, 2012), chap. 1, "Introduction," 3–12.

159. Ibid., chap. 2, "Antireductionism and the Natural Order," 16–17.

160. Ibid., chap. 4, "Cognition," 92.

161. Ibid., chap. 2, "Antireductionism and the Natural Order," 17.

162. Ibid., chap. 4, 85.

163. Ibid., 85–86.

164. Ibid., chap. 5, "Value," 97–126.

165. Matthew Calarco, *Thinking through Animals: Identity, Difference, Indistinction* (Stanford, CA: Stanford University Press, 2015), 24.

166. Jacques Derrida, *The Animal that Therefore I Am*, ed. Marie-Louise Mallet and trans. David Wills (New York: Fordham University Press, 2008); "'Eating Well,' or the Calculation of the Subject: An Interview with Jacques Derrida," in *Who Comes after the Subject?* ed. Eduardo Cadava, Peter Connor, and Jean-Luc Nancy and trans. Peter Connor and Avital Ronnell (New York: Routledge, 1991), 96–119; "Force of Law: The 'Mystical Foundation of Authority,'" *Cardozo Law Review* 2 (1989–1990): 920–1045; "Before the Law," trans. Avigtal Ronnell, in *Acts of Literature*, ed. Derek Attridge (New York: Routledge, 1992), 181–220; *Rogues: Two Essays on Reason*, trans. Pascale-Anne Brault and Michael Naas (Stanford, CA: Stanford University Press, 2005); and *The Beast and the Sovereign*, vol. 1, ed. Michel Lisse, Marie-Louise Mallet, and Ginette Michaud and trans. Geoffrey Bennington (Chicago: University of Chicago Press, 2009).

167. Wolfe, *What Is Posthumanism?* "Introduction," xxv.

168. Ibid., xxv–xxvi, and chap. 2, "Flesh and Finitude," 49–98.

169. Ibid., chap. 2, 74. Here Wolfe quotes Cora Diamond from her 2001 essay "Injustice and Animals," in *Slow Cures and Bad Philosophers: Essays on Wittgenstein, Medicine, and Bioethics*, ed. Carl Elliott (Durham, NC: Duke University Press, 2001), 118–148.

170. Matthew Calarco, "Toward an Agnostic Animal Ethics," in *The Death of the Animal*, ed. Paola Cavalieri (New York: Columbia University Press, 2009), 73–84.

171. See Gabardi, *Negotiating Postmodernism*, chap. 6, "Postmodern Strategies and Democratic Politics," 122–143.

172. Matthew Calarco, *Zoographies*, chap. 2, "Facing the Other Animal: Levinas," 55–77.

173. Gary Steiner, *Animals and the Limits of Postmodernism* (New York: Columbia University Press, 2013), chap. 3, "Later Here Signifies Never: Derrida on Animals," 77–131.

174. Gabardi, *Negotiating Postmodernism*, chap. 1, "The Modern-Postmodern Debate and Its Legacy," 3–16, and chap. 3, "The Idea of Critical Postmodernism," 43–65.

175. See Chloe Taylor, "Foucault and Critical Animal Studies: Genealogies of Agricultural Power," *Philosophy Compass* 8, no. 6 (2013): 539–551.

176. Cary Wolfe, *Before the Law: Humans and Other Animals in a Biopolitical Frame* (Chicago: University of Chicago Press, 2013), chap 2, 17–18.

177. Ibid., chap. 1, 3–10.

178. Ibid., chap8,, 103; emphasis original.

179. Ibid., 90.

180. Ibid., 94.

181. See Carol J. Adams, *Neither Man nor Beast: Feminism and the Defense of Animals* (New York: Continuum, 1994); Adams, *The Sexual Politics of Meat: A Feminist-Vegetarian Critical Theory*, 20th anniv. ed. (New York: Bloomsbury, 2010); Carol J. Adams and Josephine Donovan, eds., *Animals and Women: Feminist Theoretical Explorations* (Durham, NC: Duke University Press, 1995); Josephine Donovan and Carol J. Adams, eds., *The Feminist Care Tradition in Animal Ethics* (New York: Columbia University Press, 2007); Lori Gruen, *Ethics and Animals: An Introduction* (Cambridge, UK: Cambridge University Press, 2011); Gruen, *Entangled Empathy: An Alternative Ethic for Our Relationships with Animals* (New York: Lantern Books, 2014); Gruen, *Sister Species: Women, Animals, and Social Justice*, ed. Lisa Kemmerer (Champaign: University of Illinois Press, 2011); and Kari Weil, *Thinking Animals: Why Animal Studies Now?* (New York: Columbia University Press, 2012).

182. Kathy Rudy, *Loving Animals: Toward a New Animal Advocacy* (Minneapolis: University of Minnesota Press, 2011), chap. 1, "What's behind Animal Advocacy?" 26.

183. Ibid., 25.

184. Ibid., 2–8.

185. Ibid., 9–12.

186. Ibid., 22.

187. Ibid., chap. 2, "The Love of a Dog: Of Pets and Puppy Mills, Mixed Breeds and Shelters," 29–72.

188. Ibid., chap. 3, "The Animal on Your Plate: Farmers, Vegans, and Locavores," 73–110.

189. Ibid., chap. 4, "Where the Wild Things Ought to Be: Sanctuaries, Zoos, and Exotic Pets," 122–127.

190. See Marc Bekoff, *Why Dogs Hump and Bees Get Depressed: The Fascinating Science of Animal Intelligence, Emotions, Friendship, and Conservation* (Novato, CA: New World Library, 2013), pt. 8, "The Lives of Captive Creatures: Why Are They Even There?" 211–222; and Barbara J. King, *How Animals Grieve* (Chicago: University of Chicago Press, 2013), chap. 5, "Elephant Bones," 52–63.

191. Rudy, *Loving Animals*, chap. 4, 127–142.

192. Ibid., 142–152.

193. See Lauren Slater, "Wild Obsession: The Perilous Attraction of Owning Exotic Pets," photographs by Vincent J. Musi, *National Geographic*, April 2014, 96–119.

194. Rudy, *Loving Animals*, chap. 5, "From Object to Subject: Animals in Scientific Research," 169–185.

195. See Hal Herzog, *Some We Love, Some We Hate, Some We Eat: Why It's So Hard to Think Straight about Animals*, chap. 8, "The Moral Status of Mice: The Use of Animals in Science," 205–235.

196. Gary Steiner, "Kathy Rudy's Feel-Good Ethics," *Humanimalia: A Journal of Human/Animal Interface Studies* 3, no. 2 (2012): 130–135.

197. Rudy, *Loving Animals*, chap. 6, "Clothing Ourselves in Stories of Love," 193–201.

198. Steiner, *Animals and the Moral Community*, chap. 5, "The Ideal of Cosmic Holism," 129.

199. Calarco, *Thinking through Animals*, 39.

CHAPTER 4

1. See Linda Kalof, *Looking at Animals in Human History* (London: Reaktion Books, 2007), chap. 1, "Prehistory, before 5000 BC," 1–10; Jim Mason, "Animals: From Souls and the Sacred in Prehistoric Times to Symbols and Slaves in Antiquity," in *A Cultural History of Animals in Antiquity*, vol. 1, ed. Linda Kalof (Oxford, UK: Berg, 2007), 24–25.

2. Susan Foster McCarter, *Neolithic* (New York: Routledge, 2007), chap. 5, "Animal Domestication," 73–74.

3. See Jeffrey Moussaieff Masson, *The Dog Who Couldn't Stop Loving: How Dogs Have Captured Our Hearts for Thousands of Years* (New York: Harper Collings, 2010).

4. Ibid., 74–75.

5. See Patrick F. Houlihan, *The Animal World of the Pharaohs* (London: Thames and Hudson, 1996), chap. 8, "The Royal Menagerie," 195–208.

6. Ibid., chap. 1, "The Divine Bestiary," 1–9.

7. Ibid., chap. 4, "The Pleasure of Pets," 80–90.

8. See Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge, MA: Harvard University Press, 1936, 1964). Lovejoy traces the history of this metaphysical conception of existence from its origins in Plato to its height in late antiquity and the Middle Ages in the thought of Plotinus, Augustine, and Pseudo-Dionysus the Areopagite and Church doctrine to its modern reinvention during the eighteenth-century Enlightenment.

9. See John Marenbon and D. E. Luscombe, "Two Medieval Ideas: Eternity and Hierarchy," in *The Cambridge Companion to Medieval Philosophy*, ed. A. S. McGrade (Cambridge, UK: Cambridge University Press, 2003), 51–72.

10. See Joyce E. Salisbury, *The Beast Within: Animals in the Middle Ages* (New York: Routledge, 2nd ed., 2011), chap. 1, "Animals as Property," 10–33; Linda Kalof, *Looking at Animals in Human History*, chap. 3, "The Middle Ages, 500–1400," 40–45, 49, 52–56.

11. Joyce E. Salisbury, *The Beast Within*, "Introduction: What Is an Animal?" 1–9.

12. Ibid., chap. 4, "Animals as Human Exemplars," 81–107.

13. Ibid., chap. 6, "Humans as Animals," 122–124.

14. Ibid., 131.

15. Ibid., chap. 5, "Animals as Humans," 108–115.

16. Ibid., chap. 6, "Humans as Animals," 140–145. Also see Aleksander Pluskowski, *Wolves and Wilderness in the Middle Ages* (Suffolk, UK: Boydell and Brower, 2006); Mat-

thew Beresford, *The White Devil: The Werewolf in European Culture* (London: Reaktion Books, 2013).

17. See W. M. Denevan, *The Native Population of the Americas in 1492*, 2nd ed. (Madison: University of Wisconsin Press, 1992); A. W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492*, 30-year ed. (Westpoint, CT: Praeger, 2003); C. C. Mann, *1491: New Revelations of the Americas before Columbus* (New York: Vintage, 2005); and Kent G. Lightfoot et al., "European Colonialism and the Anthropocene," *Anthropocene* 4 (December 2013): 101–115.

18. On the extermination of wolves, coyotes, and other competitor species in the colonization of North America as a cultural practice and not simply an economic policy, see Jody Emel, "Are You Man Enough, Big and Bad Enough? Wolf Eradication in the US," in *Animal Geographies: Place, Politics, and Identity in the Nature-Culture Borderlands*, ed. Jennifer Wolch and Jody Emel (London: Verso, 1998), 91–116. Also see Keith Miller, "The West: Buffalo Hunting and the Great Plains: Promoting One Society While Supplanting Another," http://historynewsnetwork.org/article/531; Linda Kalof, *Looking at Animals in Human History*, chap. 6, "Modernity, 1800–2000," 148–153; Carol Cartaino, *Myths and Truths about Coyotes: What You Need to Know about America's Most Misunderstood Predator* (Birmingham: Menasha Ridge Press, 2010).

19. See Michael Allen Gillespie, *The Theological Origins of Modernity* (Chicago: University of Chicago Press, 2008).

20. See Stephen Toulmin, *Cosmopolis: The Hidden Agenda of Modernity* (New York: Free Press, 1990).

21. See Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, vol. 1, ed. Guenther Roth and Claus Wittick (Berkeley: University of California Press, 1978), chap. 1, "Basic Sociological Terms," 3–62, and chap. 2, "Sociological Categories of Economic Action," 63–221; *The Protestant Ethic and the Spirit of Capitalism*, trans. Stephen Kalberg (Chicago: Fitzroy Publishers, 2001). Also see Anthony Giddens, *Capitalism and Modern Social Theory: An Analysis of the Writings of Marx, Durkheim, and Max Weber* (Cambridge, UK: Cambridge University Press, 1971), chap. 9, "Max Weber: Protestantism and Capitalism," 119–132, and chap. 12, "Rationalisation, the World Religions, and Western Capitalism," 169–184; Alex Callinicos, *Social Theory: A Historical Introduction* (New York: New York University Press, 1999), chap. 7, "Weber," 146–178; Alan Sica, "Rationalization and Culture," in *The Cambridge Companion to Weber*, ed. Stephen Turner (Cambridge, UK: Cambridge University Press, 2000); William H. Swatos Jr. and Lutz Kaelber, *The Protestant Ethic Turns 100: Essays on the Centenary of the Weber Thesis* (Boulder, CO: Paradigm Publishers, 2005); Gianfranco Poggi, *Weber: A Short Introduction* (Cambridge, UK: Polity Press, 2006), chap. 4, "The Protestant Ethic and the Spirit of Capitalism," 59–74; Stephen Kalberg, *Max Weber's Comparative-Historical Sociology Today: Major Themes, Mode of Causal Analysis, and Applications* (Burlington, VT: Ashgate, 2002), chap. 1, "Max Weber's Types of Rationality: Cornerstones for the Analysis of Rationalization Processes in History," 13–42.

22. Ryan Gunderson, "The First-Generation Frankfurt School on the Animal Question: Foundations for a Normative Sociological Animal Studies," *Sociological Perspectives* 57, no. 3 (2014): 285–300.

23. Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment*, trans. John Cumming (New York: Seabury Press, 1972), chap. 1, "The Concept of Enlightenment," 3–5. Also see David Held, *Introduction to Critical Theory: Horkheimer to Habermas* (Berkeley: University of California Press, 1980), chap. 5, "The Critique of Instrumental Reason: Critical Theory and Philosophy of History," 148–174, and "Appendix: The Odyssey," 401–407.

24. Horkheimer and Adorno, *Dialectic of Enlightenment*, 3.

25. Ibid., 16.

26. Ibid., 28.

27. Ulrich Beck, *Risk Society: Toward a New Modernity* (London: Sage, 1992); *Ecological Politics in an Age of Risk* (Cambridge, UK: Polity Press, 1994); Ulrich Beck, Anthony Giddens, and Scott Lash, *Reflexive Modernization: Politics, Tradition, and Aesthetics in the Modern Social Order* (Stanford, CA: Stanford University Press, 1994).

28. Thomas Hobbes, *Leviathan*, ed. Richard Tuck (Cambridge, UK: Cambridge University Press, 1991), pt. 1, "Of Man," chap. 13, "Of the Natural Condition of Mankind, as Concerning Their Felicity and Misery," 89.

29. Ibid., chap. 14, "Of the First and Second Natural Laws, and of Contracts," 91–94.

30. David Hume, "Of the Original Contract," in *Social Contract: Essays by Locke, Hume, and Rousseau* (Oxford, UK: Oxford University Press, 1969), 151.

31. Ibid., 154.

32. Friedrich Nietzsche, *On the Genealogy of Morality*, ed. Keith Ansell-Pearson and trans. Carol Diethe (Cambridge, UK: Cambridge University Press, 1994), chap. 2, "'Guilt,' 'Bad Conscience,' and Related Matters," 38.

33. Ibid., 39–40.

34. Ibid., 40.

35. Ibid, secs. 201 and 202, "Supplementary Material on *On the Genealogy of Morality*," 158–162.

36. Martha Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: Belknap Press of Harvard University Press, 2006), chap. 1, "Social Contracts and Three Unsolved Problems of Justice," 14–22.

37. Mark Rowlands, *Animal Rights: A Philosophical Defence* (New York: St. Martin's Press, 1998), chap. 6, "Contractarianism and Animal Rights," 135–145.

38. Martha Nussbaum, *Frontiers of Justice*, chap. 1, "Social Contracts and Three Unsolved Problems of Justice," 9–95, and chap. 6, "Beyond Compassion and Humanity: Justice for Nonhuman Animals," 325–407.

39. See Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958); Melvyn A. Hill, ed., *Hannah Arendt: The Recovery of the Public World* (New York: St. Martin's Press, 1979); Dana R. Villa, *Arendt and Heidegger*, pt. 1, "Arendt's Theory of Political Action," 15–109; Martin J. Matustik, *Postnational Identity: Critical Theory and Existential Philosophy in Habermas, Kierkegaard, and Havel* (New York: Guilford Press, 1993); Chantal Mouffe, *The Return of the Political* (London: Verso, 1993).

40. Jürgen Habermas, *Legitimation Crisis*, trans. Thomas McCarthy (Boston: Beacon Press, 1975), pt. 1, "A Social-Scientific Concept of Crisis," 1–31.

41. Ibid., pt. 2, "Crisis Tendencies in Advanced Capitalism," 33–94.

42. Ibid., pt. 3, "On the Logic of Legitimation Problems," 95–143. On Habermas's theory of discourse ethics as the philosophical and ethical foundation of his model of deliberative or "discursive" democracy, see Jürgen Habermas, *Justification and Application: Remarks on Discourse Ethics*, trans. Ciarin P. Cronin (Cambridge, MA: MIT Press, 1994). On the application of discourse ethics to democratic and legal theory, see Jürgen Habermas, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*, trans. William Rehg (Cambridge, MA: MIT Press, 1996). Also see David Ingram, *Habermas: Introduction and Analysis* (Ithaca, NY: Cornell University Press, 2010), chap. 5, "Discourse Ethics," 115–151, and chaps. 6–9, "Law and Democracy," pts. 1–5, 153–265.

43. See Thomas Piketty, *Capital in the Twenty-First Century*, trans. Arthur Goldhammer (Cambridge, MA: Belknap Press of Harvard University Press, 2014.

44. See the *2013 Report Card for America's Infrastructure*, American Society of Civil Engineers, www.infrastrastructurereportcard.org.

45. Michel Foucault, *Discipline and Punish: The Birth of the Modern Prison*, trans. Alan Sheridan (New York: Pantheon Books, 1997).

46. See Thomas L. Dumm, *Michel Foucault and the Politics of Freedom* (Thousand Oaks, CA: SAGE Publications, 1996), chap. 3, "Freedom and Disciplinary Society," 69–122; John S. Ransom, *Foucault's Discipline: The Politics of Subjectivity* (Durham, NC: Duke University Press, 1997), chap. 3, "Disciplines and the Individual," 26–58.

47. See Stewart R. Clegg, *Frameworks of Power*, chap. 7, "Post-Structuralism, Sovereign Power, and Disciplinary Power," 149–178.

48. Michel Foucault introduced his concepts of biopower and biopolitics in *The History of Sexuality, Volume I: An Introduction*, trans. Robert Hurley (New York: Vintage Books, 1980), pt. 5, "Right of Death and Power over Life," 135–145.

49. Michel Foucault, "Truth and Power," in *Power/Knowledge: Selected Interviews and Other Writings, 1972–1977*, ed. Colin Gordon and trans. Colin Gordon, Leo Marshall, John Mepham, and Kate Soper (New York: Pantheon Books, 1980), 121.

50. See Max Weber, *Economy and Society*, vol. 1, chap. 3, "The Types of Legitimate Domination," 212–307.

51. On the idea of resistance and its relationship to power, see Michel Foucault, *The History of Sexuality, Volume I: An Introduction*, 92–96; "The Subject and Power," in Hubert L. Dreyfus and Paul Rabinow, *Michel Foucault: Beyond Structuralism and Hermeneutics* (Chicago: University of Chicago Press, 1983), 211–213. Also see Gabardi, *Negotiating Post-modernism*, chap. 4, "Foucault's Presence," 69–79.

52. Albert O. Hirschman, *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (Cambridge, MA: Harvard University Press, 1970).

53. On Michel Foucault's concept of modern biopolitics, see *"Society Must Be Defended" Lectures at the College de France, 1975–76*, ed. Mauro Bertani and Alessandro Fontana and trans. David Macey (New York: Picador,2003), chap. 11, "17 March 1976," 239–264, and "Course Summary," 265–272.

54. de Waal, *The Bonobo and the Atheist*, chap. 8, "Bottom-up Morality," 226–235.

55. Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals* (Chicago: University of Chicago Press, 2009), chap. 1, "Morality in Animal Societies: An Embarrassment of Riches," 7.

56. Ibid., 8.

57. Ibid., 13.

58. Ibid., 19–21.

59. Marc Bekoff, *The Emotional Lives of Animals* (Novato, CA: New World Library, 2007), chap. 4, "Wild Justice, Empathy, and Fair Play: Finding Honor among Beasts," 88–89.

60. Ibid., chap. 1, "The Case for Animal Emotions and Why They Matter," 1–28.

61. Ibid., chap. 2, "Cognitive Ethology: Studying Animal Minds and Hearts," 28–41; Bekoff and Pierce, *Wild Justice*, chap. 2, "Foundations for Justice: What Animals Do and What It Means," 24–54.

62. Bekoff, *The Emotional Lives of Animals*, chap. 4, 89–90; Bekoff and Pierce, *Wild Justice*, chap. 5, "Justice: Honor and Fair Play among Beasts," 110–115.

63. Bekoff and Pierce, *Wild Justice*, chap. 5, 120–130.

64. Ibid., 121.

65. Ibid., 115.

66. Ibid., 131–135.

67. Ibid., chap. 2, "Foundations for Justice: What Animals Do and What It Means," 40–43.

68. Martha C. Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: Belknap Press of Harvard University Press, 2006), "Introduction," 1–8, and chap. 1, "Social Contracts and Three Unsolved Problems of Justice," 9–95.

69. See Martha C. Nussbaum, "Beyond Compassion and Humanity: Justice for Nonhuman Animals," in Sunstein and Nussbaum, *Animal Rights: Current Debates and New Directions*, 299–320.

70. Richard Sorabji, *Animal Minds and Human Morals: The Origins of the Western Debate* (Ithaca, NY: Cornell University Press, 1993), chap. 1, "The Crisis: The Denial of Reason to Animals," 7–16.

71. Gary Steiner, *Anthropocentrism and Its Discontents: The Moral Status of Animals in the History of Western Philosophy* (Pittsburgh, PA: University of Pittsburgh Press, 2005), chap. 3, "Aristotle and the Stoics: The Evolution of a Cosmic Principle," 76.

72. Catherine Osborne, *Dumb Beasts and Dead Philosophers: Humanity and the Humane in Ancient Philosophy and Literatures* (Oxford, UK: Clarendon Press, 2007), chap. 4, "On Language, Concepts, and Automata: Rational and Irrational Animals in Aristotle and Descartes," 64.

73. Ibid., 79–97.

74. Larry Arnhart, "The Darwinian Biology of Aristotle's Political Animals," *American Journal of Political Science* 38, no. 2 (May 1994): 465.

75. Ibid.

76. Ibid., 466.

77. Thomas Hobbes, *Leviathan*, ed. Richard Tuck (Cambridge, UK: Cambridge University Press, 1991), pt. 2, "Of Commonwealth," chap. 17, "Of the Causes, Generation, and Definition of a Common-wealth," 119–120.

78. Nussbaum, *Frontiers of Justice*, chap. 6, "Beyond 'Compassion and Humanity': Justice for Nonhuman Animals," 346–352.

79. Ibid., 325–327.

80. Ibid., chap. 1, "Social Contracts and Three Unsolved Problems of Justice," 92–95.

81. Ibid., chap. 6, 366–372.

82. Ibid., 357–366.

83. Ibid., 372–380.

84. Ibid., 352–356.

85. Cary Wolfe, *What Is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), 61–68; Gary Steiner, *Animals and the Limits of Postmodernism* (New York: Columbia University Press, 2013), 183–186; Sue Donaldson and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights* (Oxford, UK: Oxford University Press, 2011), 95–99; Dinesh Joseph Wadiwel, *The War against Animals* (Leiden, Netherlands: Brill Rodopi, 2015), chap. 7, "Capability," 229–234.

86. Nussbaum's list of the ten central human capabilities are life, bodily health, bodily integrity, senses, imagination, and thought, emotions, practical reason, affiliation, other species, play, and control over one's environment. She admits it is "open-ended" and "no doubt will undergo further modification in the light of criticism." See Nussbaum, *Frontiers of Justice*, 76–78.

87. Ibid., chap. 6, "Beyond "Compassion and Humanity": Justice for Nonhuman Animals," 392–401.

88. Ibid., 380–384.

89. See Alex J. Bellamy, *Global Politics and the Responsibility to Protect: From Words to Deeds* (London: Routledge, 2011); Ramesh Thakur and William Malley, eds., *Theorizing the Responsibility to Protect* (Cambridge, UK: Cambridge University Press, 2015).

90. Guidance Note of the Secretary-General: United Nations Approach to Transitional Justice, March 2010, www.unrol.org.files/TJ_Guidance_Note_March_2010FINAL.pdf.

91. Donaldson and Kymlicka, *Zoopolis*, chap. 2, "Universal Basic Rights for Animals," 19–49.

92. Ibid., chap. 3, "Extending Animal Rights via Citizenship Theory," 50–69.

93. Ibid., chap. 5, "Domesticated Animal Citizens," 103–108.

94. Ibid., 108–122.

95. Ibid., 123–125.

96. Ibid., 126–132.

97. Ibid., 132–134.

98. Ibid., 134–139.

99. Ibid., 139–142.

100. Ibid., 142–144.

101. Ibid., 144–149.

102. Ibid., 149–153.

103. Ibid., 153–154.

104. Ibid., chap. 6, "Wild Animal Sovereignty," 157.

105. Ibid., 170–171.

106. Ibid., 172–174.

107. Ibid., 174.

108. Ibid., 174–178.

109. Ibid., 172.

110. Ibid., 192–193.

111. Ibid., 195–196.

112. Ibid., 193–195.

113. Ibid., 179–187.

114. Ibid., 191.

115. Ibid., 198.

116. Ibid., chap. 5, 152.

117. Clare Palmer, "Companion Cats as Co-citizens? Comments on Sue Donaldson's and Will Kymlicka's *Zoopolis*," *Dialogue* 52, no. 4 (December 2013): 759–767; emphasis original.

118. Donaldson and Kymlicka, *Zoopolis*, chap. 5, 149.

119. Palmer, "Companion Cats as Co-citizens?" 765.

120. Ibid., 766.

121. Donaldson and Kymlicka, *Zoopolis*, chap. 5, 149.

122. This is the position of Francione and Steiner. Donaldson and Kymlicka (*Zoopolis*) disagree and reject the "abolitionist/extinctionist" approach. They regard domestication, as I do, as a coevolutionary adaptive social strategy prevalent in many species. Furthermore, ending all relations with domesticated animals would be a "strategic disaster" for the animal advocacy movement. Here I also agree. See chap. 4, "Domesticated Animals within Animal Rights Theory," 77–89.

123. Ibid., chap. 6, 209.

124. See Michael Hardt and Antonio Negri, *Empire* (Cambridge, MA: Harvard University Press, 2000).

125. Donaldson and Kymlicka, *Zoopolis*, "Introduction," 2.

126. Wadiwel, *The War against Animals*, chap. 7, "Capability," 246.

127. Ibid., 251.

128. Ibid.

129. Ibid., "Conclusion: Truce," 276–277.

130. Ibid., 278.

131. Ibid., 287–293.

132. Ibid., 296.

133. Michael Mann, *The Sources of Social Power, Volume I: A History of Power from the Beginning to A.D. 1760* (Cambridge, UK: Cambridge University Press, 1986), chap. 1, "Societies as Organized Power Networks," 1.

134. Ibid., 14.

135. Ibid.

136. Ibid., chap. 2, "The End of General Social Evolution: How Prehistoric Peoples Evaded Power," 38.

137. Ibid., 35.

138. Ibid., 38–70.

139. Ibid., chap. 3, "The Emergence of Stratification, States, and Multi-power-actor Civilization in Mesopotamia," 73–104, and chap. 4, "A Comparative Analysis of the Emergence of Stratification, States, and Multi-power-actor Civilizations," 105–129.

140. Ibid., chap. 2, "The End of General Social Evolution: How Prehistoric Peoples Evaded Power," 49.

141. Ibid., 53–63, and chap. 5, "The First Empires of Domination: The Dialectics of Compulsory Cooperation," 130–178.

142. Ibid., chap. 5, "The First Empires of Domination: The Dialectics of Compulsory Cooperation," 166.

143. See Mark Anthony Wenman, "What Is Politics? The Approach of Radical Pluralism," *Politics* 23, no. 1 (2003): 57–65.

144. See John Law and John Hassard, eds., *Actor Network Theory and After* (Oxford, UK: Wiley-Blackwell, 1999); Bruno Latour, *Reassembling the Social—an Introduction to Actor-Network-Theory* (Oxford, UK: Oxford University Press, 2005).

145. Harmut Rosa, *Social Acceleration: A New Theory of Modernity*, trans. Jonathan Trejo-Mathys (New York: Columbia University Press, 2013), "Introduction," 1–13.

146. Ibid., chap. 2, "What Is Social Acceleration?" 71–80.

147. Ibid., 76.

148. Ibid., 83.

149. Ibid., 85–87.

150. Ibid., 86–87.

151. Petr Kropotkin, *Mutual Aid: A Factor of Evolution* (New York: Garland Publishing, 1972), "Preface 1914 Edition."

152. Ibid., chap. 1, "Mutual Aid among Animals," 4.

153. Stephen Jay Gould, "Kropotkin Was No Crackpot," *Natural History* 106 (June 1997): 12–21.

154. Kropotkin, *Mutual Aid*, "Introduction," viii.

155. Ibid., ix.

156. Ibid., chap. 1, "Mutual Aid among Animals," 9–31.

157. Ibid., chap. 2, "Mutual Aid among Animals (Continued)," 38–75.

158. Ibid., chap. 3, "Mutual Aid among Savages," 79.

159. Ibid.

160. Ibid., 80–83.

161. Ibid., 111.

162. Ibid., 112.

163. Ibid., 101–111.

164. Ibid., 114.

165. Kropotkin, *Mutual Aid*, chap. 4, "Mutual Aid among the Barbarians," 115–152; chaps. 5 and 6, "Mutual Aid in the Medieval City," 153–222; and chaps. 7 and 8, "Mutual Aid amongst Ourselves," 223–292.

166. Ibid., "Conclusion," 295.

167. Ibid., 299.

168. Petr Kropotkin, *Fields, Factories, and Workshops or, Industry Combined with Agriculture and Brain Work with Manual Work* (London: Thomas Nelson and Sons, 1912), chap. 2, "The Decentralisation of Industries (Continued)," 78.

169. Ibid., chap. 3, "The Possibilities of Agriculture," 79–83.

170. Ibid., 89–96.

171. Ibid., 151.

172. Ibid., 150–156.

173. Ibid., 107–119.

174. Ibid., 124–130, and chap. 5, "The Possibilities of Agriculture (Continued)," 188–232.

175. Ibid., chap. 5, "The Possibilities of Agriculture (Continued)," 236–240.

176. Ibid., chaps. 6 and 7, "Small Industries and Industrial Villages," 241–362.

177. Ibid., chap. 7, "Small Industries and Industrial Villages," 352–353.

178. Ibid., chap. 8, "Brain Work and Manual Work," 363–370.

179. Ibid., "Preface to the First Edition," ix–x, and chap. 1, "The Decentralization of Industries," 18–25.

180. Gary Snyder, *Earth House Hold* (New York: New Directions Books, 1969), back cover, and chap. 12, "Poetry and the Primitive: Notes on Poetry as an Ecological Survival Technique," 117–130. Also see George Sessions," Gary Snyder: Post-modern Man," in *Gary Snyder: Dimensions of a Life*, ed. Jon Halper (San Francisco: Sierra Club Books, 1991), 365–370.

181. See Gary Snyder, *The Practice of the Wild* (San Francisco: North Point Press, 1990), chap. 1, "The Etiquette of Freedom," 3–24, and chap. 2, "The Place, the Region, and the Commons," 25–47.

182. Gary Snyder, "Reinhabitation," in *A Place in Space: Ethics, Aesthetics, and Watersheds* (Berkeley: Counterpoint Press, 1995), 190, 184–185.

183. Ibid., 185, 191.

184. Snyder, *A Place in Space*, "Coming into Watersheds," 225–231.

185. Ibid., 221–223.

186. Ibid., "The Rediscovery of Turtle Island," 236–251.

187. Ibid., "Coming into Watersheds," 233.

188. Bill McKibben, *Deep Economy: The Wealth of Communities and the Durable Future* (New York: Times Books, 2007), "Introduction," 1–4, and chap. 1, "After Growth," 5–45.

189. Bill McKibben, *Eaarth: Making a Life on a Tough New Planet* (New York: Times Books, 2010), chap. 3, "Backing Off," 103.

190. Ibid., 120.

191. Ibid., 123.

192. Ibid., chap. 1, "A New World," 1–46.

193. Ibid., chap. 4, "Lightly, Carefully, Gracefully," 151–159.

194. Ibid., 166–182.

195. McKibben, *Deep Economy*, chap. 2, "The Year of Eating Locally," 46–94, and chap. 3, "The Wealth of Communities," 129–176.

196. McKibben, *Eaarth*, chap. 4, 187–195.

197. Ibid., 196–204.

198. Sue Donaldson and Will Kymlicka refer to this as "the refuge + advocacy model." See "Farmed Animal Sanctuaries: The Heart of the Movement" A Socio-political Perspective," *Politics and Animals* 1 (Fall 2015): 51.

199. Ibid., 53–55.

200. Ibid., 55–57.

201. Ibid., 57–61.

202. Ibid., 61–63.

203. Ibid., 51–52.

204. Ibid., 63–64.

205. Ibid., 64–65.

206. Ibid., 65–66.

207. See Caroline Fraser, *Rewilding the World: Dispatches from the Conservation Revolution* (New York: Metropolitan Books, 2009).

208. See P. J. Seddon, D. P. Armstrong, and R. F. Maloney, "Developing the Science of Reintroduction Biology," *Conservation Biology* 21, no. 2 (2007): 303–312; Malcom L. Hunter Jr., "Climate Change and Moving Species: Furthering the Debate on Assisted Colonization," *Conservation Biology* 21, no. 5 (2007): 1356–1358.

209. See John Gallagher, *Revolution Detroit: Strategies for Urban Reinvention* (Detroit, MI: Wayne State University Press, 2013).

210. Jamie Lorimer, *Wildlife in the Anthropocene: Conservation after Nature* (Minneapolis: University of Minnesota Press, 2015), "Introduction," 1–3.

211. Ibid., "Conclusion: Cosmopolitics for Wildlife," 179–193; emphasis original.

212. Ibid., "Introduction," 1–18, and chap. 1, "Wildlife: Companion Elephants and New Grounds for Multinational Conservation," 19–34.

213. Ibid., chap. 2, "Nonhuman Charisma: Counting Corncrakes and Learning to Be Affected in Multispecies Worlds," 39.

214. Ibid.

215. Ibid., 51.

216. Ibid., 52–54.

217. Ibid., 48–49.

218. Ibid., 40.

219. Ibid., 42.

220. Ibid., chap. 3, "Biodiversity as Biopolitics: Cutting Up Wildlife and Choreographing Conservation in the United Kingdom," 59–66.

221. Ibid., 67–69.

222. Lorimer illustrates this with respect to the United Kingdom Biodiversity Action Plan (UKBAP). Ibid., 71–73.

223. "Conclusion: Cosmopolitics for Wildlife," 186.

224. See Jamie Lorimer and Clemens Driessen, "Wild Experiments at the Oostvaardersplassen: Rethinking Environmentalism in the Anthropocene," *Transactions of the Insti-*

tute of British Geographers 39 (2014): 169–181; Lorimer, *Wildlife in the Anthropocene*, chap. 5, "Wild Experiments: Rewilding Future Ecologies at the Oostvaardersplassen," 100–105.

225. Lorimer, *Wildlife in the Anthropocene*, chap. 5, 97–100.

226. Ibid., 106–107.

227. Ibid., chap. 8, "Spaces for Wildlife: Alternative Topologies for Life in Novel Ecosystems," 164–170.

CONCLUSION

1. Fred Guterl, *The Fate of Species: Why the Human Race May Cause Its Own Extinction and How We Can Stop It* (New York: Bloomsbury, 2012), "Introduction," 4–5.

2. Ibid., "Ingenuity," 170–176.

3. Ibid., 177–182.

4. Ibid., 186.

5. Jedediah Purdy, *After Nature: A Politics for the Anthropocene* (Cambridge, MA: Harvard University Press, 2015), "Introduction," 22.

6. Ibid.

7. Ibid.

8. Ibid., chap. 7, "Environmental Law in the Anthropocene," 229.

9. Ibid., "Introduction," 48–50, and chap. 7, "Environmental Law in the Anthropocene," 230.

10. Ibid., chap. 7, "Environmental Law in the Anthropocene," 230, 246–249.

11. Ibid., 240.

12. Ibid., 241, 243.

13. Ibid., 244.

14. Ibid., chap. 8, "What Kind of Democracy?" 271.

15. Ibid., 272.

16. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010).

17. Purdy, *After Nature*, chap. 8, "What Kind of Democracy?" 274.

18. Ibid., 278–280.

19. Ibid., 280–281.

20. Ibid., "Introduction," 49–50, and chap. 8, 268.

21. Ibid., chap. 8, 277.

22. Ibid., 288.

23. Ibid., 280.

24. Ibid., chap. 7, 244.

25. Ibid.

26. Albert Camus, *The Myth of Sisyphus and Other Essays*, trans. Justin O'Brien (New York: Knopf, 1964), "The Myth of Sisyphus," 3–65.

27. Ibid., 64. Camus writes, "Having started from an anguished awareness of the inhuman, the meditation on the absurd returns to the end of its itinerary to the very heart of the passionate flames of revolt. Thus I draw from the absurd three consequences, which are my revolt, my freedom, my passion."

28. Albert Camus, *The Rebel: An Essay on Man in Revolt*, trans. Anthony Bower (New York: Vintage Books, 1991), pt. 1, "The Rebel," 22.

29. Camus, *The Myth of Sisyphus and Other Essays*, "The Myth of Sisyphus," 123.

30. Ibid., 121.

31. Ibid., 123.

32. Albert Camus, *The Plague*, trans. Stuart Gilbert (New York: Vintage Books, 1991), 220–228.

33. Ibid., 243–257.

34. Ibid., 255.

35. Ibid., 308.

36. Carrie Packwood Freeman, "Embracing Humanimality: Deconstructing the Human/Animal Dichotomy," in *Arguments about Animal Ethics*, ed. G. Goodale and J. E. Black (Lanham, MD: Lexington Books, 2010), 11–30.

BIBLIOGRAPHY

Aaltola, Elisa, and John Hadley, eds. *Animal Ethics and Philosophy: Questioning the Orthodoxy.* London: Rowman and Littlefield, 2015.

Acampora, Ralph R. *Corporal Compassion: Animal Ethics and Philosophy of Body.* Pittsburgh, PA: University of Pittsburgh Press, 2006.

Aristotle. *History of Animals.* Edited and translated by D. M. Balme. Cambridge, MA: Harvard University Press, 1991.

———. *Nicomachean Ethics.* Translated by J.A.K. Thomson. Rev. ed.. Harmondsworth, UK: Penguin Classics, 1976.

———. *Politics.* Edited and translated by Ernest Barker. Oxford, UK: Oxford University Press, 1958.

Barker, Sir Ernest. *Social Contract: Essays by Locke, Hume, and Rousseau.* Oxford, UK: Oxford University Press, 1969.

Barnosky, Anthony D. *Heatstroke: Nature in an Age of Global Warming.* Washington, DC: Island Press/Shearwater Books, 2009.

Barnosky, Anthony D., Paul L. Koch, Robert S. Feranec, Scott L. Wing, and Alan B. Shabel. "Assessing the Causes of Late Pleistocene Extinctions on the Continents." *Science* 306, no. 5693 (2004): 70–75.

Barnosky, Anthony D., Nicholas Matzke, Susumu Tomiya, Guinevere O. U. Wogan, Brian Swartz, Tiago B. Quental, Charles Marshall, Jenny L. McGuire, Emily L. Lindsey, Kaitlin C. Maguire, Ben Mersey, and Elizabeth A. Ferrer. "Has the Earth's Sixth Mass Extinction Already Arrived?" *Nature* 471 (2011): 51–57.

Beck, Ulrich, Anthony Giddens, and Scott Lash. *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order.* Stanford, CA: Stanford University Press, 1994.

Bekoff, Marc. *The Emotional Lives of Animals.* Novato, CA: New World Library, 2007.

———. *Why Dogs Hump and Bees Get Depressed: The Fascinating Science of Animal Intelligence, Emotions, Friendship, and Conservation.* Novato, CA: New World Library, 2013.

Bekoff, Marc, and Jessica Pierce. *Wild Justice: The Moral Lives of Animals.* Chicago: University of Chicago Press, 2009.

Best, Steven, and Douglas Kellner. *The Postmodern Adventure: Science, Technology, and Cultural Studies at the Third Millennium.* New York: Guilford Press, 2001.

Boyd, Robert, and Peter J. Richerson. *The Origin and Evolution of Cultures.* Oxford, UK: Oxford University Press, 2005.

Braithwaite, Victoria. *Do Fish Feel Pain?* Oxford, UK: Oxford University Press, 2010.

Calarco, Matthew. *Thinking through Animals: Identity, Difference, Indistinction.* Stanford, CA: Stanford University Press, 2015.

———. *Zoographies: The Question of the Animal from Heidegger to Derrida.* New York: Columbia University Press, 2008.

Camus, Albert. *The Myth of Sisyphus and Other Essays.* Translated by Justin O'Brien. New York: Knopf, 1964.

———. *The Plague.* Translated by Stuart Gilbert. New York: Vintage International, 1991.

Castricano, Jodey, ed. *Animal Subjects: An Ethical Reader in a Posthuman World.* Waterloo, Canada: Wilfrid Laurier University Press, 2008.

Cavalieri, Paola. *The Death of the Animal: A Dialogue.* New York: Columbia University Press, 2009.

Churchland, Patricia S. *Braintrust: What Neuroscience Tells Us about Morality.* Princeton, NJ: Princeton University Press, 2011.

Cochrane, Alasdair. *Animal Rights without Liberation.* New York: Columbia University Press, 2012.

———. *An Introduction to Animals and Political Theory.* Basingstoke, UK: Palgrave Macmillan, 2010.

Coetzee, J. M. *The Lives of Animals.* Princeton, NJ: Princeton University Press, 1999.

Connolly, William E. *The Ethos of Pluralization.* Minneapolis: University of Minnesota Press, 1995.

———. *Identity/Difference: Democratic Negotiations of Political Paradox.* Ithaca, NY: Cornell University Press, 1991.

Coyne, Jerry A. *Why Evolution Is True.* New York: Penguin Books, 2009.

Crutzen, Paul Jozef, and Eugene F. Stoermer. "The Anthropocene." *Global Change Newsletter* 41 (2000): 17–18.

Darwin, Charles. *From So Simple a Beginning: The Four Great Books of Charles Darwin.* Edited by Edward O. Wilson. New York: Norton, 2006.

Dawkins, Marian Stamp, and Roland Bonney, eds. *The Future of Animal Farming: Renewing the Ancient Contract.* Oxford, UK: Blackwell Publishing, 2008.

DeKoven, Marianne, and Michael Lundblad, eds. *Species Matters: Humane Advocacy and Cultural Theory.* New York: Columbia University Press, 2012.

DeMello, Margo. *Animals and Society: An Introduction to Human-Animal Studies.* New York: Columbia University Press, 2012.

Derrida, Jacques. *The Animal that Therefore I Am.* Edited by Marie-Louise Mallet. Translated by David Wills. New York: Fordham University Press, 2008.

Diamond, Cora. "The Difficulty of Reality and the Difficulty of Philosophy." In *Philosophy and Animal Life.* Edited by Stanley Cavell, Cora Diamond, John McDowell, Ian Hacking, and Cary Wolfe, 43–89. New York: Columbia University Press, 2008.

———. "Eating Meat and Eating People." In *Animal Rights: Current Debates and New Directions.* Edited by Cass R. Sunstein and Martha C. Nussbaum, 93–107. Oxford, UK: Oxford University Press, 2004.

Donaldson, Sue, and Will Kymlicka. "Farmed Animal Sanctuaries: The Heart of the Movement? A Socio-political Perspective." *Politics and Animals* 1 (2015): 50–74.

———. *Zoopolis: A Political Theory of Animal Rights.* Oxford, UK: Oxford University Press, 2011.

Dumm, Thomas L. *Michel Foucault and the Politics of Freedom.* Thousand Oaks, CA: SAGE Publications, 1996.

Eldredge, Niles. *Dominion.* Berkeley: University of California Press, 1995.

Esposito, Roberto. *Bios: Biopolitics and Philosophy.* Translated by Timothy Campbell. Minneapolis: University of Minnesota Press, 2008.

Flannery, Tim. *Here on Earth: A Natural History of the Planet.* New York: Atlantic Monthly Press, 2010.

Foucault, Michel. *"Society Must Be Defended" Lectures at the College de France, 1975–76.* Edited by Mauro Bertani and Alessandro Fontana. Translated by David Macey. New York: Picador, 2003.

Francione, Gary L. *Animals as Persons: Essays on the Abolition of Animal Exploitation.* New York: Columbia University Press, 2008.

Gabardi, Wayne. *Negotiating Postmodernism.* Minneapolis: University of Minnesota Press, 2001.

Gershwin, Lisa-ann. *Stung! On Jellyfish Blooms and the Future of the Ocean.* Chicago: University of Chicago Press, 2013.

Grandin, Temple, and Catherine Johnson. *Animals Make Us Human: Creating the Best Life for Animals.* New York: Houghton-Mifflin Harcourt, 2009.

Guterl, Fred. *The Fate of Species: Why the Human Race May Cause Its Own Extinction and How We Can Stop It.* New York: Bloomsbury, 2012.

Habermas, Jürgen. *Communication and the Evolution of Society.* Translated by Thomas McCarthy. Boston: Beacon Press, 1979.

———. *Legitimation Crisis.* Translated by Thomas McCarthy. Boston: Beacon Press, 1975.

Haraway, Donna J. *The Companion Species Manifesto: Dogs, People, and Significant Otherness.* Chicago: Prickly Paradigm Press, 2003.

———. *When Species Meet.* Minneapolis: University of Minnesota Press, 2008.

Hardt, Michael, and Antonio Negri. *Empire.* Cambridge, MA: Harvard University Press, 2000.

Harvey, David. *A Brief History of Neoliberalism.* Oxford, UK: Oxford University Press, 2005.

———. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change.* Oxford, UK: Basil Blackwell, 1989.

Hawthorne, Mark. *Bleating Hearts: The Hidden World of Animal Suffering.* Winchester, UK: Changemakers Books, 2013.

———. *Striking at the Roots: A Practical Guide to Animal Activism.* Winchester, UK: O-Books, 2010.

Heidegger, Martin. *Basic Writings.* Translated by David Farrell Krell. New York: Harper and Row, 1977.

———. *Poetry, Language, Thought.* Translated by Albert Hofstadter. New York: Harper Colophon Books, 1975.

———. *The Question Concerning Technology and Other Essays.* Translated by William Lovitt. New York: Harper Torchbooks, 1977.

Herzog, Hal. *Some We Love, Some We Hate, Some We Eat: Why It's So Hard to Think Straight about Animals.* New York: Harper Perennial, 2010.

Hirschman, Albert O. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States.* Cambridge, MA: Harvard University Press, 1970.

Homans, John. *What's a Dog For? The Surprising History, Science, Philosophy, and Politics of Man's Best Friend.* New York: Penguin Press, 2012.

Horkheimer, Max, and Theodor Adorno. *Dialectic of Enlightenment.* Translated by John Cumming. New York: Seabury Press, 1972.

Houlihan, Patrick F. *The Animal World of the Pharaohs.* London: Thames and Hudson, 1996.

Hoy, David Couzens, ed. *Foucault: A Critical Reader.* Oxford, UK: Blackwell Publishing, 1986.

Human Animal Research Network Editorial Collective. *Animals in the Anthropocene: Critical Perspectives on Non-human Futures.* Sydney, Australia: Sydney University Press, 2015.

Hume, David. *An Enquiry Concerning Human Understanding: A Critical Edition.* Edited by Tom L. Beauchamp. Oxford, UK: Clarendon Press, 2000.

———. *A Treatise of Human Nature.* Edited by David Fate Norton and Mary J. Norton. Oxford, UK: Oxford University Press, 2000.

Kalof, Linda. *Looking at Animals in Human History.* London: Reaktion Books, 2007.

King, Barbara J. *How Animals Grieve.* Chicago: University of Chicago Press, 2013.

Koch, Andrew M., and Amanda Gail Zeddy. *Democracy and Domination: Technologies of Integration and the Rise of Collective Power.* Lanham, MD: Lexington Books, 2009.

Kolbert, Elizabeth. *The Sixth Extinction: An Unnatural History.* New York: Holt, 2014.

Krebs, Denis L. *The Origins of Morality: An Evolutionary Account.* Oxford, UK: Oxford University Press, 2011.

Kropotkin, Petr. *Fields, Factories and Workshops: Or Industry Combined with Agriculture and Brain Work with Manual Work.* London: Thomas Nelson and Sons, 1912.

———. *Mutual Aid: A Factor of Evolution.* New York: Garland Publishing, 1972.

Kurzweil, Ray. *The Singularity Is Near: When Humans Transcend Biology.* Oxford, UK: Oxford University Press, 2005.

Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network Theory.* Oxford, UK: Oxford University Press, 2005.

Linzey, Andrew, and Paul Barry Clarke, eds. *Animal Rights: A Historical Anthology.* New York: Columbia University Press, 2004.

Lorimer, Jamie. *Wildlife in the Anthropocene: Conservation after Nature.* Minneapolis: University of Minnesota Press, 2015.

Lovejoy, Arthur O. *The Great Chain of Being: A Study of the History of an Idea.* Cambridge, MA: Harvard University Press, 1978.

Mann, Michael. *The Sources of Social Power. Volume I: A History of Power from the Beginning to A.D. 1760.* Cambridge, UK: Cambridge University Press, 1986.

Marcus, Erik. *Meat Market: Animals, Ethics, and Money.* Boston: Brio Press, 2005.

Marzluff, John M. *Welcome to Subirdia: Sharing Our Neighborhoods with Wrens, Robins, Woodpeckers, and Other Wildlife.* New Haven, CT: Yale University Press, 2014.

Marzluff, John M., and Tony Angell. *In the Company of Crows and Ravens.* New Haven, CT: Yale University Press, 2005.

McCarter, Susan Foster. *Neolithic.* New York: Routledge, 2007.

McKibben, Bill. *Deep Economy: The Wealth of Communities and the Durable Future.* New York: Times Books, 2007.

———. *Eaarth: Making a Life on a Tough New Planet.* New York: Times Books, 2010.

Merleau-Ponty, Maurice. *Phenomenology of Perception.* Translated by Colin Smith. New York: Routledge, 1989.

———. *The Visible and the Invisible.* Edited by Claude Lefort. Translated by Alphonso Lingis. Evanston, IL: Northwestern University Press, 1968.

Morell, Virginia. *Animal Wise: The Thoughts and Emotions of Our Fellow Creatures.* New York: Crown Publishers, 2014.

Morgan, Michael L., ed. *Classics of Moral and Political Theory.* 3rd ed. Indianapolis, IN: Hackett Publishing, 2001.

Mouffe, Chantal. *The Return of the Political.* London: Verso, 1993.

Nagel, Thomas. *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False.* Oxford, UK: Oxford University Press, 2012.

———. "What Is It like to Be a Bat?" *Philosophical Review* 83 (1974): 435–450.

Nagy, Kelsi, and Phillip David Johnson II, eds. *Trash Animals: How We Live with Nature's Filthy, Feral, Invasive, and Unwanted Species.* Minneapolis: University of Minnesota Press, 2013.

Newitz, Annalee. *Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction.* New York: Doubleday, 2013.

Nibert, David. *Animal Rights/Human Rights: Entanglements of Oppression and Liberation.* Lanham, MD: Rowman and Littlefield Publishers, 2002.

Nietzsche, Friedrich. *The Gay Science.* Translated by Walter Kaufmann. New York: Vintage, 1974.

———. *On the Genealogy of Morality.* Edited by Keith Ansell-Pearson. Translated by Carol Diethe. Cambridge, UK: Cambridge University Press, 1994.

Nussbaum, Martha C. *Frontiers of Justice: Disability, Nationality, Species Membership.* Cambridge, MA: Belknap Press of Harvard University Press, 2006.

Osborne, Catherine. *Dumb Beasts and Dead Philosophers: Humanity and the Humane in Ancient Philosophy and Literature.* Oxford, UK: Clarendon Press, 2007.

Pachirat, Timothy. *Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight.* New Haven, CT: Yale University Press, 2011.

Palmer, Clare. *Animal Ethics in Context.* New York: Columbia University Press, 2010.

Pearson, Keith Ansell. *Viroid Life: Perspectives in Nietzsche and the Transhuman Condition.* London: Routledge, 1997.

Peterson, Anna L. *Being Animal: Beasts and Boundaries in Nature Ethics.* New York: Columbia University Press, 2013.

Peterson, Dale. *The Moral Lives of Animals.* New York: Bloomsbury Press, 2011.

Purdy, Jedediah. *After Nature: A Politics for the Anthropocene.* Cambridge, MA: Harvard University Press, 2015.

Rawls, John. *Collected Papers.* Edited by Samuel Freeman. Cambridge, MA: Harvard University Press, 1999.

———. *Political Liberalism.* Exp. ed. New York: Columbia University Press, 2005.

———. *A Theory of Justice.* Rev. ed. Cambridge, MA: Belknap Press of Harvard University Press, 1999.

Richardson, John. *Nietzsche's New Darwinism.* Oxford, UK: Oxford University Press, 2005.

Richerson, Peter J., and Robert Boyd. *Not by Genes Alone: How Culture Transformed Human Evolution.* Chicago: University of Chicago Press: 2005.

Roman, Joe. *Listed: Dispatches from America's Endangered Species Act.* Cambridge, MA: Harvard University Press, 2011.

Rosa, Hartmut. *Social Acceleration: A New Theory of Modernity.* Translated by Jonathan Trejo-Mathys. New York: Columbia University Press, 2013.

Rousseau, Jean-Jacques. *Rousseau's Political Writings.* Edited by Aland Ritter and Julia Conway Bondanella. New York: Norton, 1988.

Rowlands, Mark. *Animal Rights: A Philosophical Defence.* New York: St. Martin's Press, 1998.

———. *Can Animals Be Moral?* Oxford, UK: Oxford University Press, 2012.

Rudy, Kathy. *Loving Animals: Toward a New Animal Advocacy.* Minneapolis: University of Minnesota Press, 2011.

Ruse, Michael. *Evolutionary Naturalism: Selected Essays.* London: Routledge, 1995.

Salisbury, Joyce E. *The Beast Within: Animals in the Middle Ages.* 2nd ed. London: Routledge, 2011.

Searle, John R. *Making the Social World: The Structure of Human Civilization.* Oxford, UK: Oxford University Press, 2010.

Singer, Peter. *Animal Liberation.* 2nd ed. New York: Random House, 1990.

———. *Practical Ethics.* 3rd ed. Cambridge, UK: Cambridge University Press, 2011.

Smith, Julie A., and Robert W. Mitchell, eds. *Experiencing Animal Minds: An Anthology of Animal-Human Encounters.* New York: Columbia University Press, 2012.

Smith, Laurence C. *The World in 2050: Four Forces Shaping Civilization's Northern Future.* New York: Dutton, 2010.

Snyder, Gary. *Earth Household.* New York: New Directions Books, 1969.

———. *A Place in Space: Ethics, Aesthetics, and Watersheds.* Berkeley: Counterpoint, 1995.

———. *The Practice of the Wild.* San Francisco: North Point Press, 1990.

———. *Turtle Island.* New York: New Directions Books, 1974.

Sorabji, Richard. *Animal Minds and Human Morals: The Origins of the Western Debate.* Ithaca, NY: Cornell University Press, 1993.

Sorenson, John, ed. *Critical Animal Studies: Thinking the Unthinkable.* Toronto: Canadian Scholars' Press, 2014.

Stamos, David N. *Evolution and the Big Questions: Sex, Race, Religion, and Other Matters.* Oxford, UK: Blackwell Publishing, 2008.

Steiner, Gary. *Animals and the Limits of Postmodernism.* New York: Columbia University Press, 2013.

———. *Animals and the Moral Community: Mental Life, Moral Status, and Kinship.* New York: Columbia University Press, 2008.

———. *Anthropocentrism and Its Discontents: The Moral Status of Animals in the History of Western Philosophy.* Pittsburgh, PA: University of Pittsburgh Press, 2005.

———. "Kathy Rudy's Feel-Good Ethics." *Humanimalia: A Journal of Human/Animal Interface Studies* 3, no. 2 (2012): 130–135.

Sterba, Jim. *Nature Wars: The Incredible Story of How Wildlife Comebacks Turned Backyards into Battlegrounds.* New York: Crown Publishers, 2012.

Sterelny, Kim. *Thought in a Hostile World: The Evolution of Human Cognition.* Oxford, UK: Blackwell Publishing, 2003.

Sunstein, Cass R., and Martha C. Nussbaum, eds. *Animal Rights: Current Debates and New Directions.* Oxford, UK: Oxford University Press, 2001.

Taylor, Charles. *Hegel.* Cambridge, UK: Cambridge University Press, 1975.

Taylor, Paul W. *Respect for Nature: A Theory of Environmental Ethics.* Princeton, NJ: Princeton University Press, 1986.

Thiele, Leslie Paul. *Environmentalism for a New Millennium: The Challenge of Coevolution.* Oxford, UK: Oxford University Press, 1999.

———. *Indra's Net and the Midas Touch: Living Sustainably in a Connected World.* Cambridge, MA: MIT Press, 2011.

———. *Timely Meditations: Martin Heidegger and Postmodern Politics.* Princeton, NJ: Princeton University Press, 1995.

Toulmin, Stephen. *Cosmopolis: The Hidden Agenda of Modernity.* New York: Free Press, 1990.

Uexküll, Jakob von. *A Foray into the Worlds of Animals and Humans: With a Theory of Meaning.* Translated by Joseph D. O'Neil. Minneapolis: University of Minnesota Press, 2010.

Villa, Dana R. *Arendt and Heidegger: The Fate of the Political.* Princeton, NJ: Princeton University Press, 1996.

Waal, Frans de. *The Age of Empathy: Nature's Lessons for a Kinder Society.* New York: Harmony Books, 2009.

———. *The Bonobo and the Atheist: In Search of Humanism among the Primates.* New York: Norton, 2013.

———. *Primates and Philosophers: How Morality Evolved.* Edited by Stephen Macedo and Josiah Ober. Princeton, NJ: Princeton University Press, 2006.

———. ed. *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution.* Cambridge, UK: Cambridge University Press, 2001.

Waal, Frans M. B. de, and Peter L. Tyack, eds. *Animal Social Complexity: Intelligence, Culture, and Individualized Societies.* Cambridge, MA: Harvard University Press, 2004.

Wadiwel, Dinesh Joseph. *The War against Animals.* Leiden, Netherlands: Brill Rodopi, 2015.

Ward, Peter. *The Flooded Earth: Our Future in a World without Ice Caps.* New York: Basic Books, 2010.

Willett, Cynthia. *Interspecies Ethics.* New York: Columbia University Press, 2014.

Wilson, Edward O. *Biophilia.* Cambridge, MA: Harvard University Press, 1984.

Wolch, Jennifer, and Jody Emel, eds. *Animal Geographies: Place, Politics, and Identity in the Nature-Culture Borderlands.* London: Verso, 1998.

Wolfe, Cary. *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory.* Chicago: University of Chicago Press, 2003.

———. *Before the Law: Humans and Other Animals in a Biopolitical Frame.* Chicago: University of Chicago Press, 2013.

———. *What Is Posthumanism?* Minneapolis: University of Minnesota Press, 2010.

———. ed. *Zoontologies: The Question of the Animal.* Minneapolis: University of Minnesota Press, 2003.

Zalasiewicz, Jan. *The Earth after Us: What Legacy Will Humans Leave in the Rocks?* Oxford, UK: Oxford University Press, 2008.

Zalasiewicz, Jan, and Mark Williams. *The Goldilocks Planet: The Four Billion Year Story of Earth's Climate.* Oxford, UK: Oxford University Press, 2012.

Zalasiewicz, Jan, Mark Williams, Will Steffen, and Paul Crutzen. "The New World of the Anthropocene." *Environmental Science and Technology* 44, no. 7 (2010): 2228–2231.

INDEX

WAYNE GABARDI is Professor of Political Theory and Honors Program Faculty member at Idaho State University. He is the author of *Negotiating Postmodernism.*

ANIMALS AND SOCIETY / ETHICS / NATURE AND THE ENVIRONMENT

"We are living in an epoch called 'The Age of Humanity.' I prefer to call it 'The Rage of Inhumanity,' and Wayne Gabardi provides numerous good reasons for this re-envisioning of the Anthropocene. In his wide-ranging, interdisciplinary, and forward-looking book, Gabardi considers the fate of nonhuman animals in the twenty-first century, who are wantonly used and abused by the billions daily and globally by humans in all sorts of venues. He convincingly argues for a new ethic—a new social contract—in which nonhumans and humans compete on more even terrain, where the interests of non-humans are not routinely and thoughtlessly trumped, often brutally, in favor of the interests of humans. I only hope that this cultural shift is not too far off, because we simply cannot continue subjecting other animals to unfettered violence 'in the name of humans.' *The Next Social Contract* is a provocative book that deserves a broad and global audience."

—**Marc Bekoff,** author of *Rewilding Our Hearts: Building Pathways of Compassion and Coexistence* and co-author of *The Animals' Agenda: Freedom, Compassion, and Coexistence in the Human Age*

"Wayne Gabardi seeks to expand the scope of animal studies to include a wide variety of problems that are often overlooked. Among the chief merits of *The Next Social Contract* are Gabardi's wise focus on a broad range of human-animal relationships and his efforts to ground ethics in a rich, coevolutionary context. To build his argument, Gabardi marshals an impressive number of thinkers, texts, and traditions—from biology and ecology to analytic and continental philosophy. This synthetic approach represents the very best kind of work in the interdisciplinary field of animal studies. *The Next Social Contract* makes an essential contribution to the discipline."

—**Matthew Calarco,** Professor at California State University, Fullerton, and author of *Thinking Through Animals: Identity, Difference, Indistinction*

WAYNE GABARDI is Professor of Political Theory and Honors Program Faculty member at Idaho State University. He is the author of *Negotiating Postmodernism.*

Cover design: Kate Nichols
Cover illustration: Franz Marc, *The Fox* (1913).
Printed in U.S.A.

ISBN 978-1-4399-1412-0

TEMPLE UNIVERSITY PRESS

Philadelphia, PA 19122
www.temple.edu/tempress