



Introduction: Individuals, Societies, and Pragmatic Environmentalism

Why must books on the environment be so gloomy? Chapter after chapter detail what's wrong, followed, if you're lucky, by a chapter or two on what could be done to turn things around. No wonder my students express bewilderment and, in a few cases, something akin to borderline clinical depression when, during the first week of my Global Environmental Issues class, I ask about their thoughts on the ecological state of the world. A quick query using Google Books yields more than 4.4 million books when the term "environmental problems" is typed into the search bar. A search of the term "environmental solutions", conversely, brought up 44,800 books. Sex, apparently, isn't the only thing that sells books. We can add apocalyptic ecological predictions to that list.

I understand why, historically, all this attention has been paid to environmental problems. People are not much interested in reading about solutions until they've been convinced that there's a problem in need of solving. Almost sixty years have passed since the publication of Rachel Carson's *Silent Spring*. Since then we have been exposed to a steady diet of problem talk, with measurable effect. A 2018 Ipsos poll across twenty-eight countries found that 87 percent of the world agrees that the world climate is changing, while 80 percent reported being concerned about the environmental impact of product waste (Ipsos 2018). In 2017, over half of the adult population in the Netherlands were surveyed, replicating a similar survey five years earlier. Fifty-five percent of respondents indicated that air, soil, and water are severely polluted, compared to 40 percent in 2012. Seventy-five percent reported that nature had been damaged seriously, versus 59 percent in 2012. Such awareness, coupled with a degree of environmental anxiety, no doubt helps explain why, in 2017, 34 percent of respondents in the Netherlands said they would be willing to pay higher taxes for the sake of a better environment, against 24 percent in 2012 (Central Bureau of Statistics 2017). As for Americans: more than half (55 percent) ranked the environment a top policy issue that President Trump and Congress ought to tackle, according to a 2017 survey, just behind poverty (56 percent), race relations (56 percent),

and reducing crime (56 percent) (Pew Research Center 2017). (Respondents were asked to list several priorities, which explains why percentages do not add up to 100.) Even friends of mine who would rather lose a limb than be called *environmentalists* acknowledge the problematic ecological conditions that surround us. (Granted, they might still be in denial about climate change, but not much else.) Who is left to convince? Isn't it time to turn the corner and talk about—and even celebrate—instances of positive socio-ecological change?

This book is a bit of both: a bit about problems, a little bit more about solutions. By focusing on ecological solutions—rather than entirely on problems—I am striving to make this book hopeful, recognizing that if we can't at least think and talk about and point to sustainable alternatives, we really are in trouble. But I am a realistic dreamer, as indicated by my evoking the term *pragmatic* in the book's subtitle. Although it never hurts to be imaginative about what could be, we must be realistic about the possibilities. Too often we confuse criticism, to the point of focusing only on what is bad and wrong, with gritty realism. That kind of negative approach is not realism but pessimism.

Pragmatism decries grand narratives—those totalizing theoretical views of the world that claim to explain human mind, body, and society since the beginning of time. As someone who finds social theory interesting, I admit that it is fun to try to “scoop up” the world in one all-encompassing conceptual framework. Grand narratives are like flying at 30,000 feet: they are great for discussing the big picture—things like global capitalism and world political and economic systems. When the time comes to roll up one's sleeves and talk about practical policy solutions, however, I find these approaches less helpful, especially when issues revolve around sustainability. (I realize grand narratives have their solutions too, but they are often unrealistic, nebulous, and even polemical. In a word, they're not pragmatic.) Theoretical grand narratives aside, the nontheoretical sustainability literature is equally rife with overly simplistic, one-size-fits-all solutions. Single-handed praise for such phenomena as rooftop urban agriculture (Orsini et al. 2017), climate engineering (National Research Council 2015), bioenergy and biofuels (Konur 2018), and edible insects (as “the last great hope to save the planet,” Martin 2014) generates considerable interest in and excitement around a topic. As a professional sociologist, however, I cannot help but cringe when the pilots of these tomes spend the majority of their time at cruising altitude. Fine-grain details matter; often they determine whether a solution will work in a particular space. A pragmatic environmentalist enjoys big pictures like anyone else. But he or she also realizes that there is no substitute for having one's feet planted firmly on the ground for establishing what works—and what's sustainable—for any given situation.

Individualism: Too Much and Not Enough

The pragmatic value of many environmental books is further limited by the problem of individualism. That is, they place either too much or not enough emphasis on individual action. In the former case we're reduced to selfish, autonomous actors—for instance, sovereign consumers—while in the latter case human behavior isn't even factored into the equation. Both of these extremes miss the *collective* nature of social life. As for ascribing too much weight to individual action, the standard argument goes something like this: saving the environment starts with each of us “doing our part”—so go plant a tree, buy

organic food, ride a bike, install solar panels on your house, recycle, and so on. You don't have to be a sociologist to know that our actions, every one of them, are shaped by a whole host of factors. Evidence of this is all around. Most people, for example, already have a good basic understanding of how they can reduce their ecological footprint—who hasn't heard of the "three Rs" of reduce, reuse, recycle, for example? Yet people's actions seemingly belie this knowledge. I see this all the time in my students: they recognize the negative ecological impacts of many of their actions yet still do them. (I am certainly just as guilty of this.) While we act in ways that reflect our wants and interests, those very wants and interests are heavily shaped by existing structures—cultural, technological, infrastructural, political, organizational, legal, and so forth. It is not that individual action has no value when it comes to creating meaningful socioecological change. But individual action devoid of collective mobilization—think shopping—will never produce the same level of change as, for example, a well-organized social movement.

Too much focus on the individual can also create dangerous blind spots that risk making circumstances worse for some people. We see this occasionally in the "sacrifice talk" that abounds in the environmental literature—downshift, buy less, give up your car, stop shopping, and so forth. For one thing, I have found this sacrifice talk to be somewhat demoralizing among people genuinely concerned about the environment. Focusing on what one can't do, rather than on what one can, contributes to the malaise described by many of my students. Moreover, not everyone can afford to sacrifice. To give up something requires you to have something to give up. But not everyone wants to sacrifice, or they are willing to sacrifice only so much for the environment. And in some cases, even wanting to sacrifice may still not be enough to elicit a particular behavior—I know someone, for example, who despises driving his car, yet when the temperature drops below freezing, he makes the choice to drive his child to day care to avoid exposure to the elements. This is why environmental education, as a strategy to change behaviors, can take us only so far: because behaviors do not occur in a vacuum. In order for people to make a "greener" choice, they must have viable greener choices to choose from. And to have those choices often requires collective (not just individual) action.

I think I can speak for all sociologists when I encourage readers to resist the temptation to inject individualist thinking into causal explanations of inequality. To put things plainly, don't blame individuals for a systemic problem. As you'll soon see, rising rates of inequality cannot be chalked up to the failings of specific individuals. Inequality is a *socio-logical* phenomenon. You will also be hard-pressed to find a greater risk factor for suffering from environmental problems than being poor, which is why issues of global environmental justice are increasingly being discussed in classrooms, courtrooms, and political arenas the world over. Poor people are the least responsible for our environmental ills and yet most affected by them. How is that fair? If we hope to ever make things right, we have to grasp the roots of poverty, which means we have to get over blaming poor people for their lot in life and begin thinking sociologically about how and why we have organized society in such a way that allocates "goods" and "bads" so inefficiently and unjustly. And then we must ask how we can do better, while being clear about what "better" means. The pages that follow are intended to spur on that conversation.

Then there's the other extreme: the world-without-people perspective. I encounter this often in material written by specialists who obviously know a lot more about technoscientific matters than they do about human behavior and social change. These are the books,

essays, and research papers that tout impressive technological solutions to a variety of our social and ecological ills, like the one declaring the need for a “rooftop revolution” and promising to explain to readers “how solar power can save our economy—and our planet—from dirty energy,” to quote directly from the book’s subtitle (Kennedy 2012). Don’t misunderstand my critique; I enjoy reading these materials. Moreover, they contain just the type of outside-the-box thinking that we need. Nor do I doubt the technological feasibility of many of the solutions proposed; indeed, the authors usually go to great lengths to convince us of their long-term practicality. Yet just because something is technologically *possible* does not automatically mean it is socially, economically, politically, and organizationally *probable*. Too often the two are conflated, leaving the reader guessing as to how to take something that works in a lab or on paper and scale it up to the level of city, state, nation, or entire world.

The Contribution of the Social Sciences

One explanation for why books with an environmental focus tend to concentrate on problems, and superficially on what ought to be done to change things, is the nature of how expertise has historically been attached to the subject. They are called *environmental* problems, after all. The discussion is therefore dominated by natural or environmental scientists and engineers. All are very competent to tell us *what* the state of things is (though even so-called objective facts, as is made clear in later chapters, are mediated and conditioned by social variables and are often premised on the making of subtle value judgments). Yet by nature of their training, they lack a strong grasp of *why* we got ourselves into this mess and *how* we might be able to get ourselves out of it. These “why” and “how” questions inevitably require a firm working knowledge of social, political, economic, and cultural variables, which makes these questions better suited for social scientists. Feelings of doom and gloom arise when too much focus is placed on the “what” and not enough on the “why” and “how.” To be fair, the social sciences share some blame in this. They spent a good part of the twentieth century turning away from the material world, preferring instead to focus almost exclusively on phenomena such as language, nonmaterial culture, and, later, **social constructivism**, an approach that focuses entirely on the sociologically dependent knowledge of a phenomenon rather than on any inherent qualities that the thing possesses (Carolan 2005a, 2005b; Catton and Dunlap 1978). For much of the last century the “worlds” studied by the social and natural sciences had been distinct—indeed, to some degree, even mutually exclusive.

Of my various professional identities, one is “environmental sociologist.” Although I am proud to identify myself with this subfield of sociology, I admit to being tired of answering the question, “What does sociology have to do with the environment?” Much of this, I realize, stems from a general misunderstanding of how the so-called social and natural worlds interact. The very fact that we separate the social from the natural sciences at universities underscores the pervasiveness of this misunderstanding. Yet the longer I study the world, the blurrier this division becomes for me. What does sociology have to do with the environment? More than most realize.

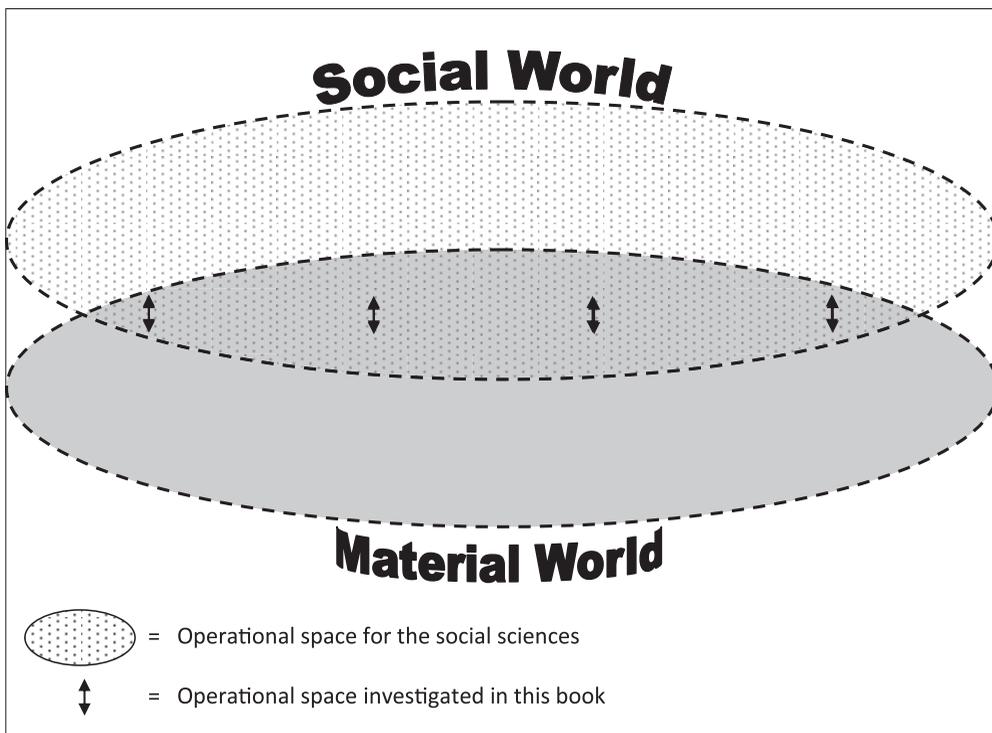
Sociology has a long history of sidestepping environmental variables, phenomena historically understood as under the purview of the natural sciences. It is important to remember that early social thought was developed, at least in part, as a reaction to social

Darwinism, which sought to explain much of social life by way of biology. To avoid a repeat of this dark chapter in sociology's history, social thinkers found safer territory studying phenomena they took to be largely decoupled from the natural world. The problem with environmental issues, however, is that they make a terrible mess of this historically rooted division of labor between the "social" and the "natural" sciences. I do not want to say much more about this now, as the remainder of the book details ways that the social sciences can contribute to discussions about today's most pressing environmental issues. I will, however, add this: I cannot think of a single environmental problem today that does not touch, in some way, human society. All environmental controversies are the result of social action, and none can be resolved without social action.

Figure 1.1 shows us a way to visualize this interrelationship while marking the terrain that is comfortably within the realm of what social scientists study. As the figure illustrates, environmental sociologists are *equally* interested in material (or ecological) and social variables. Although acknowledging the fallibility of all knowledge claims, the "emphasis [among environmental sociologists] tends to be on analyzing linkages between the symbolic, social-structural and material realms" (Dunlap 2010, 23).

One could argue that the **sociological imagination**—a way of thinking that involves making connections over time and across scales between the particular and the general—knows no limits, as evidenced by the fact that sociologists have studied such seemingly "natural" phenomena as quarks (Pickering 1999), genes (Carolan 2010), and carbon (Stuart et al. 2019). I will leave it to someone else to determine exactly where the boundaries of the

FIGURE 1.1 Operational Space for the Social Sciences



Source: Author.

sociological imagination lie. That said, for students wondering if something falls within what the figure refers to as the “operational space for the social sciences,” they need only ask themselves: Has human society ever been of consequence to the phenomenon’s existence?

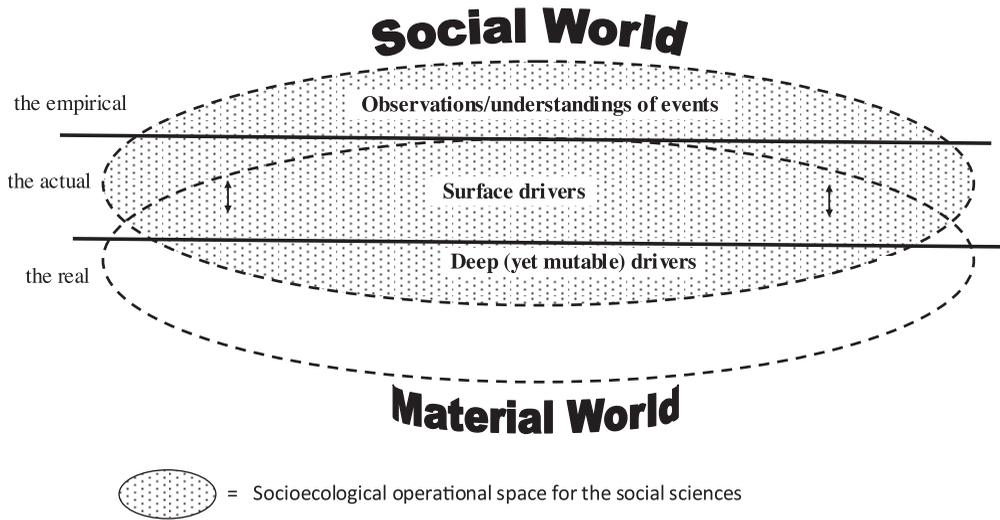
Let’s take, for example, the sun. Whereas our *understanding* of the sun is an entirely relevant subject for sociological analysis, I would argue that the sun *itself* is not (since the existence of human society has been of no consequence to the sun’s life cycle). While we are shaped by the sun daily, there is no evidence that the relationship is symmetrical. So-called natural ecological processes and phenomena, on the other hand, are very much shaped by our presence as we are by them, making them prime candidates for a thorough sociological treatment. Thus, as Richard York (2006) has astutely noted, sociologists who, for example, study environmental controversies or the framing or discursive construction of environmental problems—rather than the interactions between the social and material worlds—might best be described as practicing “sociology of environmental issues.”

The double-headed arrows in Figure 1.1 are a key component of the diagram. Although on paper they may appear insignificant, they represent the figure’s conceptual heart. If you want to understand—*really* understand—environmental problems, with the hope of devising practical solutions, then you have to understand how these two realms interact with each other. And I am not just talking about understanding how society affects ecological conditions (which implies a unidirectional arrow). We are shaped as much by the material world as the material world is shaped by us. Shying away from this basic fact will only distract us from what’s really going on.

Along with my colleague Diana Stuart, I have, more recently, elaborated upon this figure (Carolan and Stuart 2016). Today, a growing number of social scientists are openly talking and writing as if nature, from an analytical, conceptual, and causal standpoint, matters. And yet, while the social sciences seem to be coming around to the fact that the biophysical matters, we still have some way to go in forcefully articulating how sociological variables equally matter—that they too can have force much like so-called laws of ecology and therefore constitute “real” events in the causally efficacious sense. I hear this critique all too often about the social sciences: that the phenomena we interrogate and the processes we hold up as being consequential are not really real—not, that is, like the phenomena the natural sciences encounter.

The specifics of this argument get fairly theoretical, bordering on the metatheoretical. This is not the place to delve into such a discussion. Cutting right to the chase: Stuart and I overlaid my original figure with a three-part framework that allows us to talk about deep sociological drivers in realist terms, as illustrated in Figure 1.2. The importance of this framework lies in how it further legitimizes the social sciences—and social theory—by pointing to the unique insights these disciplines provide into *all* of the issues that grip us today, from climate change to consumerism, inequality, and hunger and malnutrition. The revised figure now points to three levels: empirical, actual, and real. We use the example of climate change to flesh these levels out. Generally speaking, most of the social scientific literature on the subject can be located within at least one of these analytic boxes: the empirical, those looking at attitudes and knowledge claims toward climate change; the actual, those looking at surface-level drivers contributing to it (for example, food waste, population, transportation, over-consumption); and the real, those looking at deep drivers, where the root causes of it lie (this is where social theory comes into play). Social theories, especially those we take as espousing grand narratives, are trying to point

FIGURE 1.2 Socioecological Operational Space for the Social Sciences



Source: Adapted from Carolan (2005a).

to real things that cannot be easily pointed to. (You cannot point to, for example, the treadmill of production the way you can point to a polluted river; see ECOConnection 1.1.) I try to convey in this book, especially in the later chapters, the nature of those deep drivers: the sociological forces underlying today's environmental ills—drivers that also must be addressed as we envision more sustainable, just futures. As the book progresses, I drill further down in an attempt to better grasp the really real—the phenomena driving these debates.

Material Things Have Momentum

Environmental controversies are never just about any one thing. The above discussion ought to have made this clear. Context matters.

It is important to remember, however, that this context also changes over time, a point that is particularly salient when discussion turns to behavioral, and ultimately socioecological, change. Structures—social, economic, political, legal, and even technological—can gather what could be thought of as *sociological momentum* over time. I am drawing here on the term *technological momentum*, which was coined and developed by the famed historian of technology, Thomas Hughes (1969).

According to Hughes, society has the greatest control over a technology when it is first introduced. As a technology matures, however, and becomes embedded within society—and society becomes further intertwined with the technology—it becomes increasingly difficult to change paths. Today's gas-powered automobile, for example, would be of considerably less effect were it not for oil, roads, automotive engineers, gas stations, car companies, government taxes on fuel, pro-automobile cultural imperatives, and the like. The now classic movie *Back to the Future, Part III* (1990) illustrates this perfectly. Marty McFly (played by Michael J. Fox) finds himself in 1885 with a gasoline-powered DeLorean, and his “futuristic” vehicle is worthless: cars are nothing more than processed

raw materials when abstracted from the system out of which they emerged. Even understandings of *fuel* are conditioned by these contextual conditions. Nothing is inherently fuel. *Fuel* is simply a term for a carrier of energy. A system must be in place that utilizes a particular carrier of energy if said carrier is to be called fuel. Even oil. Before society organized around it, thereby giving it the designation of *fuel*, oil was once viewed “with indifference or annoyance” (Bolles 1878, 772).

When thought of in abstract isolation, technological artifacts—indeed, all “things”—appear innocuous and open to change. In reality, however, as contexts change, and as society organizes itself around particular ways of doing things, these artifacts can gather momentum. What I like about the metaphor *momentum* is that it keeps us from reducing these discussions to a focus on unembedded things.

I frequently come across comparisons between the truly impressive public transportation systems in Western Europe and Japan and the truly abysmal system found in the United States. Pointing to the widespread use of mass and individual (e.g., biking) transit in parts of Europe, a number of people have told me, “There’s no reason we can’t duplicate that system here.” True enough; there is no reason we can’t duplicate that system in the United States. But there are a lot of reasons we have not.

Before World War II, US cities arguably had the best public transportation systems in the world. Following the war, the nation found itself at a crossroads: should those systems be rebuilt and updated (as was being done throughout Europe), or should another transportation model be adopted, namely, the car? We all know the outcome of that decision. And since then, over the course of more than a half century, the country as a whole has slowly organized itself around the automobile. In doing this, the United States has sunk literally trillions of dollars of capital into this transportation model, virtually guaranteeing that the car will remain a central fixture in our lives for decades to come. Here are some examples of how we have stacked the deck in favor of the “choice” to drive a car over other methods of transportation: building parking lots and making space for cars to park on taxpayer-funded streets; government funding of an extensive infrastructure of roads and bridges that in many cases can be used only by automobiles; restaurants like Starbucks and McDonald’s incorporating the automobile into their architectural plans by offering drive-through lanes; and the proliferation of urban sprawl, which simultaneously was made possible because of the car while further making ownership of one a necessity. This level of organization—this *momentum*—makes using the car quite attractive. On the other hand, policy decisions make public transportation, the bike, and walking less convenient and therefore less attractive. This is especially apparent when comparing the United States to other countries, where the decision was made long ago to structurally organize around multiple modes of transportation. This explains why in the Netherlands 27 percent of all trips are by bike (and where the average resident owns 1.3 bikes), versus less than 1 percent in the United States (and where each resident owns 0.3 bikes) (Bicycle Dutch 2018).

Sociological structures, however, refer to more than bricks, concrete, and rails. Another reason why the Dutch use their bikes more than Americans is because the former are less pressed for time. A study out of University of California, Los Angeles, highlights three important differences between the two countries that produce these asymmetries in available time (Smart et al. 2014). First, family-friendly labor policies like flex time and paternity leave allow Dutch families to divide childcare responsibilities more evenly than



ECOnnection 1.1

Some of Those Deep Sociological Drivers



The literature is full of frameworks designed to help us grasp why institutions, groups, and cultures treat the environment in the manner they do. Three such approaches, among many, include the treadmill of production, metabolic rift, and the privileging worldview.

TREADMILL OF PRODUCTION (SEE ALSO CHAPTER 10):

Modern capitalistic societies are driven by a never-ending commitment to growth—a treadmill. With the support of government and a complicit public, industrial production is allowed to expand, and this in turn places still further demands on nature while creating growing amounts of waste (which in turn overload waste sinks, like the Earth's ability to absorb carbon dioxide). The process contains the following paradox: economic growth is privileged, yet the environmental destruction that follows disrupts and severely threatens the system's ability to ensure long-term economic expansion (Schnaiberg 1980).

METABOLIC RIFT (SEE ALSO CHAPTER 10):

A metabolic rift exists in the exchange between social systems and natural systems, which is hypothesized to lead to ecological crisis (Foster 1999). The origins of the concept lie in the writings of Karl Marx, and referred to the crisis in soil fertility generated by urbanization—nutrients from the soil were exported to cities in the form of agricultural products but not returned to the land, causing a disruption in the aforementioned exchange. Over time the process created an ecological crisis, namely, in the case of London, a human waste filled River Thames and depleted soil in the countryside. Similar rifts have been

shown to exist in the Earth's carbon cycle (Foster et al. 2010) and the oceans' fisheries (Longo and Clark 2016).

PRIVILEGING WORLDVIEW (SEE ALSO CHAPTER 13):

This is an especially diverse literature, encompassing how philosophers since the time of Plato separated nature from society (and mind from body) as well as the historical tendency to feminize nature and the hypermasculine language tied to civilization's need to dominate and tame "her." One especially influential tradition has its roots in a 1967 article by Lynn White Jr. published in the magazine *Science*. The essay, "The Historical Roots of Our Ecologic Crisis," argues that in order to understand environmental problems we must first examine and critique our attitudes toward nature. According to White, prevailing attitudes toward nature are rooted in religious beliefs. As White wrote, "What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny—that is, by religion" (White 1967, 1206). White focused his analysis on Western Christianity (both Protestantism and Roman Catholicism). He asserted that Western Christianity is "the most anthropocentric religion the world has seen" (White 1967, 1205) and that it encourages and legitimizes a dangerous indifference to the integrity of ecological systems. White argued that within Christian theology, "nature has no reason for existence save to serve" (1967, 1207) humanity and thus "bears a huge burden of guilt" (1967, 1206) for the environmental mess we are in.

IMAGE 1.1 Human-Power Mobility on Display in the Netherlands



Source: “Bikes, Amsterdam,” by jadcab ([flickr.com/photos/jadecab](https://www.flickr.com/photos/jadecab/)) is licensed copyright © 2015 under CC BY-ND 2.0.

American families. Second, workweeks in the Netherlands are shorter. Lastly, Dutch parents do less chauffeuring of children than American parents. Walkable neighborhoods and a high-quality bike infrastructure in the Netherlands make it easy and safe for children to walk or bike to school (see Image 1.1).

In short, the automobile, as the dominant mode of transportation in the United States, has a significant amount of momentum behind it. This is not to suggest that our hands are tied, that we cannot move away from the car and replicate a transportation system more like what’s found in, say, the Netherlands. Rather, it is an acknowledgment that change of such magnitude comes with significant transaction costs. The question is: Are we willing to pay them? And a related question: Should all members of society pay these costs equally?

The Messy Relationship between Behaviors and Attitudes

In the small rural Iowa town where I grew up, my parents carefully separate their recyclables from the other rubbish that ends up in the garbage truck. They also have to dutifully study every plastic container and verify its number (only certain numbers, and very few numbers at that, can be recycled). Finally, they have to haul their recycle bins to the nearest pickup site, which, fortunately for them because they live in town, is only about three-quarters of a mile away. It would be so much easier if my parents just threw everything away. But they don’t. They put up with the “cost” of recycling. I know many in my hometown, and especially those living in the surrounding countryside, however, who do not. For them, all household waste ends up in either the landfill or the burn pile.

Once, one of my more ecologically passionate friends, after hearing this story, looked at me with disbelief, unable to accept that people choose not to recycle. He asked me,

“Why do they do this? Don’t they care about the environment?” I think his questions missed the mark. These divergent behaviors seem not to reflect vast differences in attitudes. For example, one individual from my hometown who does not recycle, a lifelong friend, has been a card-carrying member of the Sierra Club for as long as I can remember. He has a hard time walking, lives far from town, and prefers not to drive, which makes the practice of recycling very difficult. Similarly, I know some people in the town where I now live, Fort Collins, Colorado, who admit to having very little interest in reducing their impact on the environment but still diligently recycle.

Fort Collins has a mixed recycling program. In other words, if it is recyclable—and, unlike in my parents’ town, every piece of plastic is recyclable—it goes into a massive blue bin that is wheeled out with the trash to be picked up. That’s it. Easy. Moreover, unlike my parents, whose garbage fee allows them to set out as many trash bags as they wish, there is an economic incentive in Fort Collins to divert waste into the recycle stream; namely, you pay more for larger trash cans. To put it in cost-and-benefit terms: whereas it costs my parents to recycle—in terms of time, hassle, and braving the elements (Iowa winters can be brutal)—it costs residents of Fort Collins *not* to.

This goes back to a point I made earlier about the need to contextualize social behavior. I supervised a visiting student from Russia for six months who wanted to learn more about the field of environmental sociology. One of the things that interested her was how attitudes toward the environment in the United States differed from those in Russia. Coming across a statistic about the amount of solid waste that Colorado State University—my employer—recycles (something like 56 percent at the time), she assumed this behavior was evidence of deep attitudinal affinities toward the environment. After noting how comparatively little her Russian university recycles, she asked, “What do they do here to develop these green attitudes?” Holding up a ubiquitous recycle bin and pointing to the words *mixed recycling*, I proceeded to tell her about how socio-organizational changes now make recycling as easy as throwing things away (if not easier, as rubbish bins are notoriously difficult to find in certain university buildings).

The moral of these two stories: structural changes go a long way toward changing behavior. And many times, these changes go further than attitudinal changes alone. As my nonrecycling but otherwise environmentally minded friend from my hometown reminds us, having the “right” attitudes does not do anyone (or the environment) any good if society fails to provide cost-effective ways to act on those beliefs.

I realize that the idea of changing behaviors *prior to* attitudes is somewhat counterintuitive. Yet, for some people at least, perhaps that is what we ought to be shooting for. Just to be clear: I am not talking about making people do something that they don’t want to do. In fact, I am saying just the opposite. Recognizing that sacrifice is not for everyone, we should strive to reorganize society in such a way that individuals choose a more sustainable path—like those I know who recoil at the thought of being labeled an “environmentalist” but still diligently recycle. Sacrifice is a rather uninspired solution, and my experience has been that the message tends to turn people off, especially those with exceedingly large ecological footprints. How can we have people want to *act* like an environmentalist even if they don’t want to be called it?

I lay no claim to having the answers about what ought to be done. That is a question best left for us all, collectively, to decide. But I do know we will never be able to answer it comprehensively until we have a grasp of the level of complexity involved. The road ahead

is not going to be easy, but, as the following chapters explain, there are viable ways forward.

The Journey Ahead

Some readers (and colleagues) might wonder why, as a professionally trained environmental sociologist, I did not include the term *environmental sociology* in the book's title. You might say it was a pragmatic move to select a title that does not tie me to any one disciplinary narrative. Citing my own earlier plea (see Carolan 2005b) to social scientists to expand their sociological imaginations and see the explanatory power of nontraditional sociological variables, Riley Dunlap calls for the "*pragmatic* employment of environmental indicators in empirical research investigating linkages between social and biophysical phenomena" (2010, 23; emphasis added). This book takes this pragmatic call to heart. The conceptual and analytic approaches discussed in the forthcoming chapters come from many disciplines: sociology, to be sure, but also anthropology, geography, political science, science and technology studies, and economics, among others. As I tell my students, there are many ways to make sense of today's ecological state. Undoubtedly, there will be those who find fault with how I go about discussing a particular environmental issue, thinking I should have used "theory X" or "analytic device Y." I accept such criticism. I make no claims that the analyses that follow are the only ways—or even the best ways—to make sense of the environmental issues discussed. Space constraints limit the amount of detail that can be conveyed about any particular topic. But that's okay. The chapters are meant to *start* discussions, not stifle them by claiming to be the last word on any given subject. I urge you to critique, elaborate, and refine the theories and arguments in this book.

The following chapters are problem *and* solution focused. In addition to describing what is wrong (and why), they also discuss alternative institutional, cultural, technological, ethical, and political forms that seek to facilitate more sustainable outcomes. Each chapter follows a similar organizational structure: a brief overview on the current state of the issue, an overview of some of the ways social scientists have explored it, followed by a sociological (and thus still critical) discussion of solutions.

Although each chapter is written to stand alone, the full pragmatic force of the text is best felt when it is read cover to cover. The reason for this is simple: the most sustainable solutions (in other words, the *real* solutions) rarely apply to just one problem. In fact, if we dug deep enough, we would discover that many of today's environmental problems have related causes. Having already cautioned readers to thinking only in terms of grand narratives, it should not come as a surprise that I reject the view that environmental problems are the result of any one thing. Yet I do not symmetrically assign fault, either. The problems we face may not be entirely the product of any one thing, but some things certainly deserve their fair share of the blame. Thus, as the book progresses from "Living in a Material World" (Part I) to "At the Intersection of Ecology and Society" (Part II) to "Organizing a Sustainable Society" (Part III) and, finally, to "Shifting the Focus to Results" (Part IV), critiques sharpen, and proposed solutions become more complete, as the discussion moves closer to those notably culpable sociological artifacts, which I zero in on in the later chapters. As noted earlier, with each section I attempt to drill further down to uncover the really real social dynamics on which considerable blame can be laid and which, once changed, point to opportunities for true sustainability.

Thus, if the solutions proposed early in the text seem shallow, they are. This does not lessen their importance: when you're sick, you need to treat the symptoms as much as the cause. Yet the pragmatist in me wants more; after all, pragmatic solutions need to not only be realistic but also to resolve that which ails us.

The first part focuses on issues related to certain environmental phenomena. Specifically, time is taken in this part of the book to examine problems and solutions linked to greenhouse gases (Chapter 2), waste (Chapter 3), biodiversity (Chapter 4), and water (Chapter 5). One of the themes of Part I is that the social sciences have plenty to say about artifacts often assumed to be within the exclusive purview of natural scientists and engineers. Part II adjusts its investigation slightly to discuss phenomena that explicitly weave the “social” and “natural” realms together in complex and fascinating ways. The problems and solutions discussed here revolve around issues relating to population (Chapter 6), transportation (Chapter 7), food (Chapter 8), and energy production (Chapter 9). Part III offers the most pointed response to the question, “What does sociology have to do with today’s environmental problems?” To put it plainly: everything. By highlighting the phenomena driving today’s environmental problems—those phenomena located in the realm of “the real” in Figure 1.2—my wish is to approach the closing chapter on a sincerely hopeful note. Only by naming the root dynamics of today’s environmental ills—from the political economy (Chapter 10) to issues of governance (Chapter 11) and inequality and growth (Chapter 12)—can we expect to have a real chance of naming truly sustainable solutions. Part IV concludes our journey. Whereas a considerable amount of attention is given throughout the book to structural phenomena (like the aforementioned sociological momentum), the book concludes by elaborating on how social change ultimately hinges on people behaving and thinking in particular ways (Chapter 13). Change must start with us. Lest we forget, although social forces act on us as if independent from us, they are products of our making. This fact is perhaps the most hopeful message of all.

The reader will also find a number of features provided in the forthcoming chapters. In addition to many figures, tables, and images, a variety of text boxes are interspersed throughout to add either further detail or an illustrative case study to bolster a point, concept, or theme in the main text. These take four forms: Case Studies, which briefly highlight case studies relevant to points made throughout the text; Ethical Questions, to highlight the value judgments that lurk everywhere when talking about environmental phenomena; ECOnnections, which I use to interject additional information into the text with minimal disruption to the flow of the main narrative; and Movement Matters, which offer vignettes on grassroots movements that have affected legislation. Finally, suggestions for additional readings are provided at the end of every chapter, as are questions to help spur further thought and discussion on the subject matter. Also at the end of each chapter are Important Concepts, Relevant Internet Links, and Suggested Videos (many of the videos are available for free online).

IMPORTANT CONCEPTS

- ecological complexity
- environmental sociology
- sociological drivers

- sociological imagination
- sociological momentum
- technologically possible versus sociologically probable

DISCUSSION QUESTIONS

1. How can sociology inform our understanding of environmental problems and solutions?
2. In your experience do people, books, and professors and instructors seem more interested in talking about environmental problems than solutions? If so, why do you think this is?
3. Do old distinctions between the social and natural sciences still hold when facing today's environmental problems? What about disciplines? Do we still need them? Why or why not?
4. What actions of yours clearly cost the environment? Why do you still do them? What would it take for those behaviors to change?

SUGGESTED ADDITIONAL READINGS

- Bohr, J., and R. Dunlap. 2018. "Key Topics in Environmental Sociology, 1990–2014: Results from a Computational Text Analysis." *Environmental Sociology*, 4(2): 181–195.
- Schor, J. 2018. "Consumption and Social Inequality." In *Core Concepts in Sociology*, edited by J.M. Ryan, pp. 46–49. New York: Wiley.
- Zinda, J., Y. Li, and J. Liu. 2018. "China's Summons for Environmental Sociology." *Current Sociology*, 66(6): 867–885.

RELEVANT INTERNET LINKS

- <http://envirosoc.org>. The Environment Sociology subsection of the American Sociological Association. This is an excellent resource for anyone interested in environmental sociology.

SUGGESTED VIDEOS

- *Disruption* (2014). Shot during the 100 days prior to the People's Climate March held on September 21, 2014 in New York City, the film serves as a cautionary countdown intended to motivate viewers to take action on the issue of climate change.
- *Earth on Fire* (2014). A one-hour, Australian special that focuses on mega fires and fires in general as they relate to forests and the ecosystem.
- *Living the Change* (2018). New Zealand filmmakers explore solutions to the global crisis.
- *Racing Extinction* (2015). Scientists, activists, and others draw attention to humankind's role in the potential loss of at least half of the world's species.
- *Tomorrow* (2015). This two-hour award winning French documentary (English subtitles) takes you around the world to investigate concrete solutions to environmental and social challenges.