

## Note to the Colloquium

The attached paper is a draft chapter from a book in progress, tentatively entitled, *Reason in a Dark Time: Ethics and Politics in a Greenhouse World*. I think of the book as a kind of intellectual autopsy, analyzing why we have failed to successfully address the problems of climate change, what we should learn from our mistakes, and how we can live with the consequences. Chapter 1 sketches the history and nature of the problem, and Chapter 2 discusses some of the reasons we have failed to act. Given the sort of problem that climate change is, economics and ethics would seem to provide the most powerful motivators for moving us towards solutions. Chapter 3 shows that the resources of economics are quite limited with respect to this problem since, like natural science, economics gains its most expansive motivational power by tacitly relying on ethical assumptions. Chapter 4 addresses the ethics of climate change, and shows that the problems we face go beyond the core commitments of common sense morality. Our challenge is to revise our morality in order to encompass this and related problems, or to understand why we should remain morally complacent in the face of them. Chapter 5 discusses how we can live meaningful lives in the face of climate change and Chapter 6 recommends some policy prescriptions that may be achievable even in this lapsarian world.

I am grateful for any comments that you may have, but please do not circulate or cite without my permission.

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## Chapter 4

### The Frontiers of Ethics

#### 4.1 Morality and Motivation

I have argued that climate change presents us with problems of utmost complexity. Considerations ranging from our biological nature to facts about our political institutions all bear on the explanation of why we have failed to act. In the face of such problems, two broad families of considerations are sometimes effective in motivating action. Economics can sometimes succeed in showing that particular solutions appeal to our interests. Ethics can sometimes show that particular responses accord with our moral ideals. In Chapter 3 I showed that climate economics is severely limited in demonstrating that aggressive responses to climate change are in our economic interests. I identified several reasons for this limitation. The most important one concerns the fact that at key moments in the analysis, climate economics relies on ethical considerations. Our hope for motivating action on climate change must therefore to a great extent turn on ethical concerns.<sup>1</sup> In this chapter I explain why this hope largely has been disappointed. Just as the problems of climate change overwhelm our cognitive and affective systems, and our ability to do reliable economic calculations, so they also swamp the machinery of morality, at least as it currently manifests in our moral consciousness. In this chapter I explain why. I begin with a broad overview of the range of issues in the domain of the ethics of climate change.

#### 4.2 The Domain of Concern

Since the signing of the Framework Convention on Climate Change (FCCC) at the Rio Earth Summit in 1992, abating greenhouse gas (GHG) emissions has been regarded

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<sup>1</sup> Indeed, there is evidence that those who see climate change as an ethical issue are more highly motivated to engage in climate-friendly actions. See E.M. Markowitz, "Is Climate Change an Ethical Issue? Exploring Young Adults Beliefs About Climate and Morality," under review.

as an urgent global responsibility.<sup>2</sup> GHGs linger in the atmosphere for decades, centuries and even longer. When this is coupled with the fact that their impacts are mediated through various complex systems, the result is that climate change is practically irreversible on time scales that most of us care about.<sup>3</sup> Abatement matters, however, because the absolute levels of atmospheric concentrations of GHGs as well as the rate of their increase affect the rapidity and extent of climate change, which in turn affect the nature and severity of the impacts. Since abating greenhouse gas emissions imposes costs on emitters, the question of how to allocate these costs fairly has been at the center of climate ethics. Questions about the fairness of various abatement strategies are complicated by the fact that land use changes such as deforestation can also dramatically affect atmospheric concentrations of GHGs, both by directly affecting emissions and by affecting the biosphere's ability to sequester carbon; and, unfortunately, these processes are difficult to characterize and measure.

As it has become increasingly clear that we are in the early stages of a climate change that is likely to continue for centuries, even if we pursue aggressive abatement policies, questions about the fair distribution of the costs of adaptation have also begun to receive attention.<sup>4</sup> Since the resources that can be brought to bear on adaptation are limited, questions about setting priorities are also becoming increasingly important. How do we decide what to save and what to give up when we cannot protect everything?

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<sup>2</sup> Abatement is usually called "mitigation" in the climate change literature. See 6.2 for discussion of why 'abatement' is a better term.

<sup>3</sup> See a pair of recent papers by Susan Solomon and colleagues: "Persistence of Climate Changes Due to a Range of Greenhouse Gases," *PNAS* 2010 (107):18354-18359; and "Irreversible Climate Change Due to Carbon Dioxide Emissions," *PNAS* 2009 (106):1704-1709.

<sup>4</sup> See papers by Jamieson and Baer reprinted in Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (eds.), *Climate Ethics: Essential Readings* (New York: Oxford University Press, 2010); and also W.N. Adger, J. Paavola, S. Huq, and M. Mace, M. J. (eds), *Fairness in Adaptation to Climate Change* (Cambridge MA: The MIT Press 2006. The Intergovernmental Panel on Climate change (IPCC) defines 'adaptation' as "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (M. Parry et. al, *Climate Change 2007: Impacts, Adaptation and Vulnerability* (Cambridge: Cambridge University Press, 2007), p. 27. I have more to say about adaptation in 6.4.

Adaptation is motivated by a concern to avoid damages. However, climate change damages have already occurred and will continue, though it is difficult to tell exactly what damages can be attributed to climate change and to assess their extent. Research in this area is ongoing, and especially active regarding climate change impacts on human health. The World Health Organization estimates that climate change is already causing more than 150,000 deaths per year. This estimate is controversial, but there is no doubt that climate change will cause millions of deaths, or even orders of magnitude more.<sup>5</sup> Compensating for loss of life raises special problems (as we discussed in 3.2), but there is a range of other climate change damages (e.g., property losses) that are straightforwardly compensable. This raises questions about whether compensation should be paid and, if so, who should pay it to whom and how the required compensation should be determined and delivered.<sup>6</sup>

There are also difficult and neglected questions of participatory justice and how it interacts with distributive concerns. Climate change will remake the world in which we live and bequeath to our descendents. Generally, the impacts will be greater on those who contribute little to the problem than on those who contribute a lot. The 42 members of the Alliance of Small Island States (AOSIS) emit about ½ % of global GHG emissions and on a per capita basis emit 1/4<sup>th</sup> as much carbon dioxide as the global average. Yet many of them will disappear under rising seas.<sup>7</sup> Sub-Saharan Africans emit about 1/12<sup>th</sup> as much carbon per capita as Europeans, who in turn emit about ½ as much carbon as North Americans, yet Sub-Saharan Africans will suffer disproportionately from climate change and have less capacity to adapt than Americans

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<sup>5</sup> See the policy brief available at <http://www.who.int/heli/risks/climate/climatechange/en/>. For a taste of the controversies in this area, visit <http://dotearth.blogs.nytimes.com/2009/05/29/warming-and-death/>.

<sup>6</sup> For discussion see Catriona McKinnon, *Climate Change and Future Justice* (Routledge, 2011). While compensation is discussed in the academic and NGO community, and increasingly by the leaders of some African countries, it is not central to the current diplomatic discourse.

<sup>7</sup> Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), *The Impact of Climate Change on the Development Prospects of the Least Developed Countries and Small Island Developing States*, 2009, available on the web at <http://www.un.org/ohrlls/>

or Europeans.<sup>8</sup> While 194 nations are parties to the FCCC and their diplomats fly around the world in a seemingly endless series of talkathons, most of these nations have very little power over the forces that actually affect the world's climate, and billions of their citizens have even less voice.<sup>9</sup> 80% of global carbon emissions come from only ten countries. Their leaders, along with the executives of the world's most powerful corporations have disproportionate influence on the decisions that affect emissions and the resources available for adaptation.<sup>10</sup> While this disparity in the ability of various nations and their peoples to effectively participate in climate change negotiations is decried by some academics and NGOs, American academics and policy-makers increasingly seem to want less inclusive regimes.<sup>11</sup>

Finally, there are impacts on non-human nature. The 2007 IPCC report documented that climate change has already shifted the geographic ranges of plants, animals, and biomes around the world.<sup>12</sup> Climate change is occurring against a background in which human activities have diminished populations and fragmented landscapes in ways that will reduce dispersal rates and block range shifts for many species, and these human activities show little sign of diminishing. The ability of many species to migrate, even if dispersal corridors are available, will be slow relative to the pace of future climate change. Moreover, since many species engage in mutualistic interactions, the dispersal dynamics of multiple species can affect the viability of any

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[http://earthtrends.wri.org/searchable\\_db/index.php?step=countries&ccID\[\]=5&theme=3&variable\\_ID=466&action=select\\_years](http://earthtrends.wri.org/searchable_db/index.php?step=countries&ccID[]=5&theme=3&variable_ID=466&action=select_years)

<sup>9</sup> To get a feel for what it was like for developing world representatives in Copenhagen in 2009, visit <http://www.iied.org/climate-change/media/climate-game-and-worlds-poor-documentary-film-inside-cop15-climate-change-summi>.

<sup>10</sup> <http://www.npr.org/templates/story/story.php?storyId=121240453>

<sup>11</sup> There is of course reason to be frustrated by the FCCC process. I discuss FCCC reform in 6.7.

<sup>12</sup> See C. Parmesan and G. Yohe, "A Globally Coherent Fingerprint of Climate Change Impacts Across Natural Systems," *Nature* 421 (2003):37-42; P. Gonzalez, R. P. Neilson, J. M. Lenihan, and R. J. Drapek, "Global Patterns in the Vulnerability of Ecosystems to Vegetation Shifts due to Climate Change," *Global Ecology and Biogeography* 19 (2010):755-768; E.J., Young, C. D. Rosenzweig, M. Karoly, P. Vicarelli, Q. Neofotis, Q. Wu, G. Casassa, A. Menzel, T. L. Root, N. Estrella, B. Seguin, P. Tryjanowski, C. Liu, S. Rawlins, and A. Imeson, "Attributing Physical and Biological Impacts to Anthropogenic Climate Change," *Nature* 453 (2008):353-357.

single species.<sup>13</sup> Conservation biologists generally agree that climate change will raise extinction rates.<sup>14</sup> The polar bear has already become the popular symbol of climate change caused extinction.

Climate change poses many different kinds of problems and some of them can be seen as familiar moral problems. Powerful countries and wealthy people are plundering global commons in various ways, not just by emitting carbon. Millions of people die each year from preventable diseases, without the assistance of climate change. Each year in Africa alone nearly two million people die from AIDs and one million from malaria.<sup>15</sup> International institutions have largely frozen the post-World War II order in place, effectively depriving billions of people and their governments from effective participation in much of the international system. The first human caused extinctions may have occurred 50,000 years ago in Australia, Southeast Asia, and perhaps Africa.<sup>16</sup>

The contribution of climate change to many of these problems will challenge our existing moral commitments only at the margins if at all. For example, hurricanes will become more frequent as a result of climate change, and our attitudes may shift if they also become more intense and we come to see them as at least partly anthropogenic. However, we already have attitudes and dispositions regarding the victims of hurricanes, and while it is easy to imagine that we might become a little more or a little less responsive, it seems unlikely that these attitudes would change dramatically.

However, there are questions relating to climate change about which it is reasonable to think that our everyday morality is flummoxed, silent, or incorrect. In this chapter I want to focus on what I think are some of the deeper challenges to

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<sup>13</sup> I. B. Baums, "A Restoration Genetics Guide for Coral Reef Conservation. *Molecular Ecology* 17 (2008): 2796-2811.

<sup>14</sup> C.D., Thomas, A. Cameron, R. E. Green, M. Bakkenes, L. J. Beaumont, Y. C. Collingham, B. F. N. Erasmus, M. F. de Siqueira, A. Grainger, L. Hannah, L. Hughes, B. Huntley, A. S. van Jaarsveld, G. F. Midgley, L. Miles, M. A. Ortega-Huerta, A. T. Peterson, O. L. Phillips, and S. E. Williams, "Extinction Risk From Climate Change," *Nature* 427 (2004.): 145-148.

<sup>15</sup> <http://www.who.int/features/factfiles/malaria/en/index.html>;  
<http://www.avert.org/worldstats.htm>

<sup>16</sup> <http://darwin.bio.uci.edu/~sustain/bio65/lec04/b65lec04.htm>

common sense morality that climate change presents. I will focus on responsibility for individual actions that in some way may contribute to climate change.

First a word about “common sense morality.”<sup>17</sup> This is not an entirely happy expression for several reasons. There is no single precisely characterized entity that it names. Nor is common sense morality well-defined over everything that we might think is open to moral evaluation. Finally, rather than being a fixed set of commitments, common sense morality is a dynamic system of interrelated beliefs, ideals, attitudes, emotions, dispositions and more besides. Nevertheless, I will assume that there is a phenomenon that we can usefully discuss under this rubric. We may disagree around the edges, but most of us know at least roughly what we are talking about.

### **4.3 Responsibility and Harm**

The climate change issue can be seen at its core as centering on rich people appropriating more than their share of a global public good and, as a result, harming poor people by causally contributing to extreme climatic events such as droughts, hurricanes and heat waves, which in turn can ramify, causing disease outbreaks, economic dislocations, and political instability. Much of this behavior is unnecessary, even for maintaining the profligate lifestyles of the rich.

There are five distinguishable claims here. First, some people appropriate a disproportionate share of a global public good. Second, the disproportionate appropriation harms other people. Third, it is rich people who are doing the disproportionate appropriation. Fourth, it is poor people who are disproportionately harmed. Finally, the rich could appropriate less of the global public good and still maintain their lifestyles.<sup>18</sup>

Each of these claims can be challenged and all of them require more careful formulation. What interests me here, however, is how these claims can be explained

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<sup>17</sup> I am not sure where this expression comes from, but for a relatively early characterization and defense, see Lawrence Haworth, “Common Sense Morality, *Ethics*, 65, 4 (Jul., 1955): 250-260

<sup>18</sup> These claims are made by various contributors to *Climate Ethics*. See also Steve Gardiner, *A Perfect Moral Storm* (Oxford: Oxford University Press, 2010).

and justified by our prevailing notions of moral responsibility. In my opinion it is a rough fit, as I will now try to explain.

Most of the time we do not subject what people do to moral evaluation.<sup>19</sup> This may be because we consider most of what people do to be “their business,” belonging to a private sphere that is beyond the reach of morality. Or it may be because we regard most of what people do to be permissible. Generally our moral thinking only consciously engages when something strikes us as not quite right. There are also acts that come to our attention because they are morally exemplary or “beyond the call of duty,” but these occur less frequently than the feeling that something is fishy. Various moral theories would like to dislodge this way of seeing things, but nevertheless this is more or less how most of us see things most of the time. When it comes to acts, the most fundamental distinction in our prevailing moral consciousness is between those that are morally suspect and those that are not, and we see most of what people do as in some way, for some reason, outside the domain of moral evaluation.

A paradigm of an act that is morally suspect is one that has the following structure: An individual acting intentionally harms another individual; both the individuals and the harm are identifiable; and the individuals and the harm are closely related in time and space.

Consider an example.<sup>20</sup> Suppose that Jill has parked her bicycle on the porch of her house and then gone inside to make dinner. Jack, who has been looking for a bicycle to steal, sees Jill’s bicycle on the porch, cuts the lock, and rides off on it. The following is an apt characterization of this case:

1. Jack intentionally steals Jill’s bicycle.

In this case Jack intentionally acts in such a way as to knowingly harm another

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<sup>19</sup> Celebrities and politicians may be the exceptions.

<sup>20</sup> I introduced these cases in “The Moral and Political Challenges of Climate Change,” in S. Moser and L. Dilling (eds.), *Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change* (New York: Cambridge University Press, 2007): 475-482; they were inspired by an example in J. Glover, “It Makes no Difference Whether or Not I Do It,” *Proceedings of the Aristotelian Society, Supplementary Volumes* 49, (1975), pp. 171-209

individual.<sup>21</sup> Both the perpetrator and victim (Jack and Jill) are clearly identifiable, and they are closely related in time and space. This case is a clear candidate for moral evaluation, and most of us would resoundingly say that what Jack did was wrong.

Consider, however, what happens when we alter the case along various dimensions. We may still see the case as a candidate for moral evaluation but its claim to be a paradigm weakens. Consider the following examples:

2. Jack is part of an unacquainted group of strangers, each of which, acting independently, takes one part of Jill's bicycle, resulting in the bicycle's disappearance.
3. Jack takes one part from each of a large number of bicycles, one of which belongs to Jill.
4. Jack and Jill live on different continents, and the loss of Jill's bicycle is the consequence of a causal chain that begins with Jack ordering a used bicycle at a shop
5. Jack lives many centuries before Jill, and consumes materials that are essential to bicycle manufacturing; as a result, it will not be possible for Jill to have a bicycle.

In 2 we transform the agent who harms Jill into an unstructured collective. In 3 we reduce the amount of harm that Jack causes to a minimum. In 4 we disrupt the spatial contiguity between Jack and Jill and cancel Jack's *mens rea*. In 5 we also cancel Jack's *mens rea* and in this case disrupt the temporal contiguity between Jack and Jill. Each case, I claim, is less of a paradigm for moral evaluation than Case 1. Indeed, many people would not think that there is anything morally questionable about Jack's actions in 4 and 5. 2 and 3 may still be seen as candidates for moral evaluation, but less obviously so than in 1. People who see Jack's action as wrong in 2 and 3 are likely to see it as less wrong than in 1.

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<sup>21</sup> There are some ambiguities about intentional action so let me stipulate the following. When I say that an agent intentionally phis, I will mean that the agent acted intentionally and that phing would be a reasonable description of the act from the agent's point of view whether or not the agent acted under that description.

Now consider Example 6 which incorporates all of the changes serially considered in examples 2-5.

6. Acting independently, Jack and a large number of unacquainted people set in motion a chain of events that causes a large number of future people who will live in another part of the world from ever having bicycles.

For many people this is just an abstract description of normal, everyday behavior. There is nothing suspect about it at all. For other people the perception persists that there is something morally questionable about this case. This is because what some people take to be at the center of a moral problem persists: some people have acted in a way that harms other people. However, most of what typically accompanies this core has disappeared, and this is why some people do not see this case as presenting a moral problem. Even for those who do see this case as presenting a moral problem, the wrongness of the acts and the culpability of the agents are greatly diminished by comparison to Example 1. In Example 6 it is difficult to identify the agents, the victims, and the causal nexus. Nor does it appear that anyone has intentionally deprived future people who will live in another part of the world from ever having bicycles. The fact that they will not have bicycles is just a consequence of Jack and others getting on with their lives. In these circumstances it is difficult for the network of moral concepts that involve responsibility and harm to gain traction. In my opinion it is Example 6 that bears the greatest resemblance to the climate change case. If I am right about this then it is not surprising that many people do not see climate change, at least with respect to individual responsibility, as presenting a moral problem.<sup>22</sup>

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<sup>22</sup> Peter Singer has claimed that 6\* is closer to the climate change case than 6:

For many years, Jack and a large number of unacquainted people have been acting in a way that is probably already causing harm to some present people who live in another part of the world, and will in future very probably cause much more harm to a larger number of future people, also mostly living in another part of the world. The benefits that Jack et al gain from acting in these ways are much less than the harms they are probably causing, and very probably will cause, to others, most of whom are already far worse off than Jack et al are. Jack and many of these other people have been informed, by the relevant experts, that the way they act is likely to be causing this harm, and is

#### 4.4 Fault Liability

The previous section, it might be said, overstates the relationship between harm causation and moral responsibility. Though harm-causation plays a central role in our conception of moral responsibility, there are many cases in which it is not sufficient.<sup>23</sup> For example, in the following cases I may be causally but not morally responsible:

7. A hurricane picks me up and throws me through your window, shattering the glass;
8. My roommate inadvertently substitutes aspirin for my meds; during the psychotic episode that results I deface your wallpaper;
9. The donut shop that I open drives your donut shop out of business, leading to the impoverishment of your family.

In many cases what is needed for an agent who causes harm to be morally responsible is for the agent to be at fault in some way or other.

An agent can be at fault by violating a duty that is relevant to causing the harm. For example, an agent can intentionally act in a way that produces the harm, as Jack did in Example 1. Or an agent can act recklessly in “conscious disregard of a substantial risk of serious harm.”<sup>24</sup> An agent can also act negligently in failing to take the precautions that a “reasonable person” would take, thereby imposing an unreasonable risk of harm on another person.

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likely to cause more harm in future. Nevertheless they have refused to stop acting in these ways.

Any analogy can be seen as tendentious and I do not want to enter the discussion of which of these analogies is the most tendentious. Singer and I agree that our response to an action that may contribute to climate change is highly sensitive to how it is described and conceptualized. My point is that many such actions are commonly thought of as more analogous to 6 than to 1 (or to 6\* for that matter), and that it is not unreasonable to think of them in this way, at least without much more work being done.

<sup>23</sup> Some think that it is never sufficient while others deny that it is necessary. For discussion, see the papers collected in Chapter 8 of Walter Sinnott-Armstrong (ed.), *Moral Psychology, Volume 2, The Cognitive Science of Morality: Intuition and Diversity* (Cambridge MA: The MIT Press, 2008). A great deal of this territory was covered from a different perspective in H.L.A. Hart and Tony Honoré, *Causation in the Law*, 2nd ed. (Oxford: Clarendon, 1985).

<sup>24</sup> This is the formulation in the Restatement of the Law of Torts. For discussion, see Geoffrey Christopher Rapp, “The Wreckage of Recklessness,” *Wash. U. L. Rev.* 86,1 (2008):111-180.

According to some theorists, we are morally responsible only for those GHG emissions that involve fault on our part. There are various ways of marking the distinction between faultless emissions and those for which the emitter is at fault.

For some it is knowledge that matters.<sup>25</sup> When my grandfather was smoking his pipe, he did not know that he was contributing to climate change by emitting carbon dioxide. He did not behave negligently or recklessly. I, on the other hand, know that the airplane that I am taking to the next climate change conference is emitting climate-changing GHGs. I am, some would say, behaving negligently, recklessly, or in some other morally defective way. Thus, unlike my grandfather, I am at fault for my emissions.<sup>26</sup>

While my grandfather and I may present clear cases, other cases may not be so clear. About a quarter of the people in the world have never heard of global warming, much less know anything about the link between GHG emissions and climate change. Many of these people are from developing countries whose contributions to climate change are minimal but nevertheless are contributions all the same.<sup>27</sup> In many countries, less than half the population believes in anthropogenic climate change.<sup>28</sup> Of course we can say that these people are acting in bad faith; many of them willfully reject the reality of anthropogenic climate change because they do not want to see themselves as acting wrongly or to change their behavior. This, however, is too simple. Many people are not scientifically equipped to understand the rudiments of how driving a car or heating a house can change climate. Some people are confused by the mixed messages that come from the media about whether there is scientific consensus about anthropogenic climate change. Others are unwitting victims of their own ideologies. In any case, the impact on the climate of the emissions of an individual person, even one

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<sup>25</sup> For others it is the extent of an individual's emissions that matter. I discuss this proposal in 4.5.

<sup>26</sup> What if I offset my emissions by paying people to plant trees or retiring emissions permissions on the European or some other emissions trading scheme? See chapters 5 and 6 for further discussion.

<sup>27</sup> 40-50% of Africans say they have never heard of global warming. See <http://www.gallup.com/poll/124652/Awareness-Climate-Change-Threat-Vary-Region.aspx>

<sup>28</sup> These include the United States, the United Kingdom, Denmark, and Norway. The fact of anthropogenic climate change is less controversial in China and India. See <http://www.gallup.com/poll/117772/Awareness-Opinions-Global-Warming-Vary-Worldwide.aspx>

who is a high-emitter, may be inconsequential or negligible, and in any case unknown.<sup>29</sup> It is thus not surprising that people do not see picking up their kids after soccer practice as reckless or negligent behavior. They may be correct in thinking that this behavior does not fall under our prevailing concepts of negligent, reckless, or otherwise morally defective behavior.

#### 4.5 Human Rights and Domination

While actions that may contribute to climate change may not obviously fall under our prevailing notions of wrongful behavior, it may be claimed that they are instances of them nevertheless. In order to see this we need to think harder, and it is the job of philosophy to help us to do this. I may not have known that a whale was a mammal until I did some science, but once stirred to study, I saw that this was true: whales are mammals. Similarly, it might be said, it is reflection on our moral commitments, not conceptual revision or revolution that is needed to see that behaviors that may contribute to climate change are wrong.

Reflecting on our commitment to human rights is one way to see this, it might be said. Simon Caney has written that although there is no human right to a stable climate, “anthropogenic climate change violates human rights” including “the human right to life, the human right to health, and the human right to subsistence,”(166) and perhaps also “a human right to development” and “a human right not to be forcibly evicted.”(169)<sup>30</sup> Caney’s thought is analogous to Woody Guthrie’s idea that “some men rob you with a six-gun -- others with a fountain pen.”<sup>31</sup> They both rob you, but those who rob you with a fountain pen are seen as respectable while those who rob you with

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<sup>29</sup> Walter Sinnott Armstrong (reprinted in *Climate Ethics*) claims that the emissions from a Sunday drive in a gas guzzler (for example) have no causal effect in producing climate change. I allude to this claim throughout this chapter, and discuss it more fully in Chapter 5.

<sup>30</sup> Simon Caney, in *Climate Ethics*, p. 169. It has become increasingly common to see anthropogenic climate change as a human rights violation since the Inuit Circumpolar Conference petitioned the Inter-American Commission on Human Rights (ICHR) in 2005, charging the US government with violating the human rights of the Inuit people by emitting carbon, although the ICHR declined to hear the petition. See, e.g., Stephen Humphreys (ed.), *Human Rights and Climate Change* (Cambridge: Cambridge University Press, 2010).

<sup>31</sup> In his 1939 song “Pretty Boy Floyd.”

a six gun are viewed as criminals (though “[y]ou won't never see an outlaw [d]rive a family from their home”). Similarly, it might be said that those who kill innocent people with carbon are seen as respectable citizens while those who kill with bombs and guns are viewed as human rights violators.

But who in the climate change case are the moral equivalents of those who rob you with a fountain pen? Who are the human rights violators in the case of anthropogenic climate change?

Recent writers on human rights have tended to shy away from such questions in favor of talk about promoting human rights. They emphasize states and other institutions as the bearers of these duties rather than individuals. For example, James Nickel writes:

human rights are political norms dealing mainly with how people should be treated by their governments and institutions. They *are not ordinary moral norms applying mainly to interpersonal conduct* (such as prohibitions of lying and violence).<sup>32</sup>

There are reasons for such an emphasis. Talk about promoting human rights, and focusing on states and institutions as the bearers of such duties, helps to break down the distinction between “positive” and “negative” rights.<sup>33</sup> Moreover, this emphasis helps us to see that individuals who act in human-rights violating ways are often acting as authorized agents of states or other institutions.

However, on such a view any particular human right (or pattern of human rights violation) will imply a complicated account of duty-bearers and the contents of their duties, one that will be affected and mediated by various institutional, social, and political realities.<sup>34</sup> Moreover, there is no guarantee that an account that is adequate for a particular human right at one moment will apply to other human rights, or even the

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<sup>32</sup> From the Stanford Encyclopedia of Philosophy entry on human rights, available at <http://plato.stanford.edu/entries/rights-human/>. See also Thomas Pogge, *World Poverty and Human Rights* (Cambridge: Polity, 2002).

<sup>33</sup> This is an important theme in Henry Shue’s influential, *Basic Rights*, second edition (Princeton: Princeton University Press, 1996); the first edition was published in 1980.

<sup>34</sup> See Henry Shue, “Mediating Duties,” *Ethics*, 98, 4 (1988): 687-704

same human right at different moments.<sup>35</sup> Unsurprisingly, the development of specific accounts for various human rights is thus far underdeveloped, and no such account has been produced that would allow us to understand in detail who bears what duties with respect to the human rights violations that are supposed to be entailed by anthropogenic climate change.<sup>36</sup> Without such specific and precise accounts, there is a worry that replacing the language of moral responsibility with the language of human rights simply amounts to speaking in a louder voice.<sup>37</sup> This is especially important for us since we have turned to the discourse of human rights in the hope that it will help us to understand our moral responsibilities with respect to behaviors that may contribute to climate change.

Despite the emphasis on states and institutions in most contemporary accounts of human rights, the idea that individuals are also responsible for respecting, honoring, or promoting human rights is difficult to leave behind.<sup>38</sup> Indeed, most theorists of human rights, including those who emphasize institutional obligations, accept this.<sup>39</sup> Even when states or institutions are the most important agents in promoting human rights, there are many cases in which such duties will be distributed among, or entail duties for, individuals (e.g., as duties to refrain from behavior that may contribute to climate change, or as duties to obey laws which promote climate stability). Indeed, after characterizing what he calls a “hybrid” approach to upholding the human rights that are jeopardized by climate change, Caney writes that “[r]ecognizing the centrality

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<sup>35</sup> John Tasioulas discusses this under the rubric, “the dynamism of rights” in his “The Moral Reality of Human Rights,” in T. Pogge (ed.), *Freedom from Poverty as a Human Right: Who Owes What to the Very Poor?* (OUP, 2007), pp. 75-101.

<sup>36</sup> Although Simon Caney deserves credit for carrying the discussion as far as he has. In addition to the paper cited above, see also his contribution to the Humphrey volume, and to C. Beitz and R. Goodin (eds.), *Global Basic Rights* (Oxford: Oxford University Press, 2009). My discussion below is about the general prospects for a human rights account of the wrongness of anthropogenic climate change, and is not aimed specifically at his view.

<sup>37</sup> This echoes Joel Feinberg’s concern with what he called “manifesto rights” in his “Nature and Value of Rights,” *Journal of Value Inquiry* 4 (1970): 243–257; reprinted in his *Rights, Justice, and the Bounds of Liberty* (Princeton: Princeton University Press, 1980).

<sup>38</sup> Judith Lichtenberg makes this point in her contribution to Beitz and Goodin.

<sup>39</sup> For example, Nickel explicitly qualifies his claim with the use of the word ‘mainly’, Griffin states that some duties grounded in human rights are owed by individuals to other individuals (in *On Human Rights* (Oxford, 2008), p.181), and Pogge talks about human rights “giving me a duty” on p. 66 of his *World Poverty and Human Rights* (Cambridge: Polity, 2002).

of states does not entail that one cannot apply these principles to individuals.”<sup>40</sup> In light of these considerations, it is worth discussing what duties individuals might have with respect to human rights claims, even while recognizing that most theorists of human rights would emphasize the institutional nature of the duties. This will help to bring out the difficulties involved in seeing anthropogenic climate change as a case of human rights violation.

As we have seen, Simon Caney claims that “anthropogenic climate change violates ... human rights” because of its impact on life, health, and subsistence. According to Caney, one reason anthropogenic climate change violates human rights is because it kills people. Compare this to the claim that murder violates human rights. When someone says that murder violates human rights, what she means is that agents violate human rights by performing acts of murder. If we were to follow this lead, we would say that agents violate human rights by performing acts of anthropogenic climate change which kill people. But if performing an act of anthropogenic climate change means bringing about climate change in the way in which performing an act of murder means bringing about a murder, then no agent violates human rights because no agent has the capacity to bring about climate change on her own.<sup>41</sup> On the other hand, if performing acts that may contribute to climate change is sufficient for committing an act of climate change, then everyone from Barack Obama to a Tibetan herder is a human rights violator.

The problem is that the relations between emitting GHGs, changing climate, and killing people are quite different and more complex than (say) the relations between waterboarding and torture. Water-boarding and other forms of torture are avoidable while some carbon emissions are not, for example those that occur because of respiration. Moreover, cooking, heating, and transport are generally required in order to have decent lives, and these require energy consumption. In virtually every country

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<sup>40</sup> On p. 246 of his contribution to Beitz and Goodin.

<sup>41</sup> We can imagine a case in which a single agent would be capable of changing climate, perhaps a supervillain such as James Bond’s nemesis, Ernst Stavro Blofeld. Various actors have aspired to such power at various times. For discussion, see James Fleming, *Fixing the Sky* (New York: Columbia University Press, 2010).

consuming energy means emitting carbon. In 2010 88% of global energy consumption came from fossil fuels.<sup>42</sup> Not only does everyone emit GHGs, but virtually everyone will be affected by climate change in some way. Torturers, on the other hand, do not torture themselves and certainly do not torture themselves by torturing others (except perhaps in some attenuated psychological sense).

One way of responding to at least part of this problem is to see it as presenting the challenge of identifying a permissible threshold. On this view it is only actions that go beyond this threshold that are suspect. But what exactly is the threshold for permissible GHG emissions and how can we determine what it is?

A general way of answering these questions would involve identifying the emissions to which people are entitled. Emissions that go beyond the emissions to which people are entitled constitute human rights violations.

There are different views about what are the emissions to which people are entitled. Some, including myself, have argued that people are entitled to equal per capita emissions, indexed to fixed population levels. It is only permissible for people to emit more if they purchase permissions from those who would willingly emit less.<sup>43</sup> Others have thought that historical patterns of emissions are relevant to determining the emissions to which people are entitled, either because historical patterns should be “grandfathered” or because past emissions count against present entitlements.<sup>44</sup> We do not need to resolve these disputes here. My goal is simply to bring out some of the consequences of a view that sees emissions that are in excess of some baseline as constituting human rights violations.

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<sup>42</sup> See BP’s Statistical Review of World Energy 2011, available at <http://www.economist.com/blogs/schumpeter/2011/06/energy-statistics>. A summary can be found by visiting <http://www.economist.com/blogs/schumpeter/2011/06/energy-statistics>

<sup>43</sup> D. Jamieson, “Climate change and global environmental justice.” In P. Edwards and C. Miller (eds). *Changing the Atmosphere: Expert Knowledge and Global Environmental Governance*. (Cambridge, MA: The MIT Press; 2001): 287–307; see also Peter Singer, *One World* (New Haven: Yale University Press, 2002).

<sup>44</sup> Luc Bovens defends qualified grandfathering in his contribution to D. Arnold, *Ethics and Climate Change* (Cambridge: Cambridge University Press, 2010).

Consider how the story might go on the equal per capita emissions approach.<sup>45</sup> Much of the world has coalesced around the idea that a 2 C warming of the earth's surface temperature would violate the FCCC which commits parties to preventing "dangerous anthropogenic interference with the Earth's climate system."<sup>46</sup> While much remains unknown about climate sensitivity, the German Advisory Council on Global Change has estimated that in order to have a 2/3 chance of keeping the warming under 2 C, each person in the world must emit no more than 2.7 tons of carbon dioxide (or its equivalent) per year between now and 2050.<sup>47</sup> An individual exhausts this level of emissions by flying roundtrip from San Francisco to New York, or maintaining a typical single family American home for one month. A years driving by a typical American produces twice these emissions. If we adopt the standard of equal per capita emissions and conjoin it with some plausible assumptions about what total emissions we should allow, then virtually all Americans are human rights violators, as are most of those in the rest of the world who live middle class (and beyond) life-styles. Yet not only do most of these people not feel like human rights violators, many of them do not think that they have choices that would allow them to emit less. Many people in the United States, say after a trip to Paris, London, or New York, that they would willingly take public transport if it were available to them but that it is not an option. On the view under consideration, billions of people around the world are human rights violators, yet it is not clear how they could refrain from being so, at least given the options that are now available to them.

Another approach to identifying a plausible baseline is to distinguish luxury from subsistence emissions.<sup>48</sup> The idea on this view is that everyone in the world is entitled

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<sup>45</sup> This paragraph (indeed this entire chapter) owes much to Douglas Kysar, "What Climate Change Can Do About Tort Law," ENVTL. L. 41 (2011).

<sup>46</sup> This target appears in various international documents and is enshrined in the Copenhagen Accord, available at [http://unfccc.int/documentation/documents/advanced\\_search/items/3594.php?rec=j&preref=60000573#beg](http://unfccc.int/documentation/documents/advanced_search/items/3594.php?rec=j&preref=60000573#beg).

<sup>47</sup> "Solving the Climate Dilemma: The Budget Approach," available at [http://www.eeac-net.org/bodies/germany/german\\_wbgu.htm](http://www.eeac-net.org/bodies/germany/german_wbgu.htm).

<sup>48</sup> Shue in *Climate Ethics*. There could also be a third category of emissions that could be grandfathered, auctioned, treated as excusable but not permissible, or in some other way, but we will

to subsistence emissions but no one is entitled to luxury emissions. It is luxury emissions that violate human rights.

There are clear cases of luxury and subsistence emissions. For example, Arnold Schwarzenegger driving his Hummer produces luxury emissions; a Kenyan farmer cooking her dinner on a dung fire produces subsistence emissions. However, for a large range of cases it is difficult to distinguish luxury and non-luxury, and subsistence and non-subsistence emissions.

The problem begins with the fact that people want the services that energy use provides, but care relatively little about the sources that produce the energy. Most people in the developed world probably do not even know where their energy comes from. Except in rare cases individuals are not presented with a cafeteria of options regarding energy sources from which they can select. It is true that some people have chronic concerns about some energy sources (e.g., oil and its relation to air pollution), and fears about some energy sources are brought to consciousness by particular episodes (e.g., an accident in a nuclear power). For the most part, however, what people care about are services that energy use provides such as transport, cooking, comfort, and convenience. Depending on where they live, transport might involve a gasoline powered Hummer or a camel who is fed dates, grass, wheat and oats. Cooking a meal might depend on a dung fire or electricity from a coal-fired generating plant. The quantity of emissions required to maintain a particular standard of living depends on differences in energy mix and other conditions across societies. For example, nearly 80% of the energy consumed in the United States comes from fossil fuels compared to only 60% of the energy consumed in France. It is thus not surprising that France's per capita GHG emissions are lower than those of the United States (though it might still be surprising that France's per capita emissions are less half of those in the United States). Of course, France's different energy mix and lower emissions are not simply a matter of luck or circumstance, though they may be experienced this way by individuals. The

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ignore this for present purposes. Although I am discussing equal per capita emissions and the distinction between luxury and subsistence emissions in relation to human rights violations, they could also be presented as criteria for fault liability.

existence of options such as public transport is a consequence of political and social choices. In any case, in both the United States and France, a large fraction of emissions might be regarded as luxury emissions. However, it is not clear that all emissions even in very low-emitting countries should be regarded as subsistence emissions. The quantity of emissions that are required for subsistence similarly depends on what energy sources are available and facts about social organization and the local environment. War and conflict matter, and so do other circumstances such as whether necessities are imported or locally produced and under what conditions. As a result of these factors and others, Zimbabwe emits several times as much carbon per dollar of output as most comparable African countries.<sup>49</sup> Yet it is far from clear how to turn these observations into calculations about the extent to which Zimbabwe's emissions are subsistence emissions.

A deeper problem in distinguishing luxury and subsistence emissions concerns how we regard various goods. Are the emissions associated with education, art-making and religion subsistence emissions, luxury emissions or something else? Each year about three million people visit Mecca for the Muslim Hajj, most of them traveling by air or automobile.<sup>50</sup> How should we regard these emissions? While there are clear cases of luxury and subsistence emissions, it is hard to find an actionable principle for dividing emissions into these categories.

Even if we had such a principle, it would still not be plausible to suppose that every luxury emission violates human rights. Given the non-linearities and buffers in the climate system, and the fact that human and societal factors are also implicated in producing the harmful effects of climate change, we cannot say exactly which emissions were causally active in producing climate change related harms.

Normally, human rights violations do not work in this way. That a particular act of torture violates human rights does not depend on complex and unknowable causal

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<sup>49</sup> <http://www.eia.gov/iea/carbon.html>

<sup>50</sup> This is about the same number of students who study abroad each year, according to the Institute of International Education. What do we think of these emissions? For an account of attempts to "green" the Hajj see <http://www.greenprophet.com/2010/06/green-hajj-mecca/>.

chains. There may be ignorance about a particular causal chain, but at least in principle it can be rectified. An electrode may fail or someone may intervene to prevent the suffering of a torture victim, but these possibilities are quite different from the cloud of uncertainty that surrounds slightly turning up my thermostat. Even if we are clear that Arnold Schwarzenegger produces luxury emissions each time he fires up his Hummer, we still cannot be confident that he is causally contributing to climate change, much less contributing to climate change related damages. While we might think that Arnold is selfish, thoughtless, or intemperate, it is difficult to see how he, or any individual engaged in producing luxury emissions, at least at this scale, can be seen as violating human rights.

Rather than violating human rights, John Nolt claims that anthropogenic climate change involves dominating posterity in a way that is analogous to historical instances of dominating racial, ethnic, or national minorities.<sup>51</sup> He characterizes domination in the following way:

A subject is (harmfully) dominated by an agent if and only if a)the agent wields superior power over the subject; b)the subject is not free to exit the relationship without incurring costs; c)the agent wields power over the subject arbitrarily; and d)the agent wields power in ways that harm the subject.<sup>52</sup>

He then argues that our relations with posterity satisfy this definition, so it follows that “our emissions of greenhouse gases constitute domination of posterity.”(61) He goes on to anticipate a remarkable range of objections.

However, I am not satisfied. It is strange to think that a subject can be dominated by an agent when the subject does not exist when the agent engages in the dominating actions, and indeed would not exist at all if the agent did not engage in these actions. Nolt discusses something like this objection under the heading of “the

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<sup>51</sup> John Nolt, “Greenhouse Gas Emission and the Domination of Posterity,” in D. Arnold, ed., *The Ethics of Global Climate Change* (New York: Cambridge University Press, 2011), pp. 60-76.

<sup>52</sup> Nolt takes this account from Francis Lovett, “Domination: A Preliminary Analysis,” *Monist* 84,1 (January 2001).

non-identity objection.” He asks us to consider a child born into slavery who would not otherwise have existed had there been no such institution. He claims that, even so, slavery is an injustice to the child, and concludes that “[l]ikewise it does not follow from the premise that future people owe their lives to our domination that the domination was not unjust.”(72)

I agree that once the child is born, living in slavery is an injustice to the child. But this observation does not bear on the objection that I want to raise. My concern is not with the question of whether our domination of posterity is unjust, but whether the relationship between us and posterity constitutes domination in the first place.

Generations bring their successors into existence and bequeath to them, not just capital stock, but also the very conditions of their existence. Consider the case of Manhattan where the harvest has always been rich, but what is on offer has changed from nature to experience. Because of the legacy bequeathed by past generations, today people in Manhattan can enjoy walking on the Highline, visiting the Metropolitan Museum of Art, and soaking up the ambience of Greenwich Village. However, the same generations which bequeathed this legacy destroyed the wild green paradise that had been bequeathed to them with its oysters the size of dinner plates, dense flocks of birds that darkened the sky, and rivers so thick with fish that they could be pulled out by hand.<sup>53</sup> What should we say about them? We can be grateful for their legacy, castigate their short-sightedness, or assume a wide range of other attitudes. What we cannot say is that they dominate us. It is true that they determined the fact and conditions of our existence, but this is simply a consequence of how generations are temporally related, and does not bear on the question of domination.

There are cases, however, in which a present generation can dominate posterity. Suppose that a present generation imposes a technology on posterity that would effectively eliminate people’s ability to act freely, however exactly that concept is

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<sup>53</sup> The very thought of Gowanus Bay oysters today conjures up a starkly different image. For more, visit [http://books.google.com/books?id=6EjpxuZAsH0C&pg=PA189&dq=HUDSON+RIVER+OYSTERS&hl=en&ei=oLkTvXuO6X30gHN0s38BA&sa=X&oi=book\\_result&ct=result&resnum=10&ved=0CGUQ6AEwCQ#v=onepage&q=oysters&f=false](http://books.google.com/books?id=6EjpxuZAsH0C&pg=PA189&dq=HUDSON+RIVER+OYSTERS&hl=en&ei=oLkTvXuO6X30gHN0s38BA&sa=X&oi=book_result&ct=result&resnum=10&ved=0CGUQ6AEwCQ#v=onepage&q=oysters&f=false)

understood. A program written by people living in the present would determine everything that everyone in the future would do. In this case it seems plausible to say that the present generation would be dominating posterity by depriving them of freedom. Once this point is granted it might be said that we can imagine less draconian circumstances in which present generations might dominate posterity. Suppose that the present generation rigged a doomsday device that would explode in 2100. It would seem reasonable to say that this is an act of domination, since virtually all of life in the run-up to 2100 would be consumed by attempts to dismantle the device. There would be little space for those under threat to devote their time and energy to other projects.

What this brings out is the inadequacy of the definition with which Nolt is working. My examples are cases of domination, not because power is being wielded arbitrarily, but rather because of the extent to which present generations have power over posterity. The problem is not that the present generation brings posterity into existence and constrains its choices, but rather that it determines the content of its choices (or, in the second case, comes very close to determining them). Once we see that it is the extent to which an agent has power over a subject that matters, then we can see why anthropogenic climate change does not involve the domination of posterity by the present generation. The power that the present generation wields over posterity by changing climate, great as it is, is not sufficient for domination. Posterity will live in a very different world than we do as a result of climate change. People will suffer and much that is of value will be lost. However, the losses will be more like the biological impoverishment of Manhattan than the elimination of free will.

What this brief survey shows is that both the human rights and domination approaches face serious challenges. Neither provides an explanation of how individual actions that may contribute to climate change can be taken up by common sense morality. Our everyday moral notions continue to strain to account for such behavior. The moral problem that some believe that climate change presents, bursts out of our paradigm of individual responsibility.

#### 4.6 Differences That Matter

Thus far I have tried to show that there are serious difficulties in bringing actions that may contribute to climate change under our common sense notion of individual moral responsibility. In discussing these difficulties I have adverted to some of the features of the climate change problem that make this so. In this section I will address some of these features explicitly. None of them are unique to climate change, though they are more extreme in this case than others, and no other problem displays all of these features.<sup>54</sup> Taken together, they go a long way in showing why climate change poses a unique challenge to our common sense moral notions

The first feature that makes climate change different from most other problems concerns the magnifying power of technology. Simple acts such as starting a car or adjusting a thermostat have broader and more extensive causal reach than previous forms of transportation and thermoregulation such as walking and firebuilding. The growth and development of technology, especially in regard to the production and management of energy, is to a great extent responsible for this. While once people had the power to disrupt their local environments, now people have the power to alter the planetary conditions that allowed human life to evolve and continue to sustain it. In recognition of the increasing human domination of the planet, some scientists propose that we have entered a new geological era, the Anthropocene.<sup>55</sup> For the first time in human history we are now able to remove large amounts of carbon that are sequestered deep inside the earth and transfer it to the atmosphere, thus affecting global climate. This is part of what Revelle and Suess meant when they wrote in their

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<sup>54</sup> I cannot explore here the differences and similarities between climate change and other problems. However, I do want to say that the forces that I discuss in this section are bringing to life new problems that resemble climate change, and they already have transformed some old problems. The problem of global poverty, for example, now has characteristics that it did not have when Sidgwick was contemplating our duties to those who are remote in space.

<sup>55</sup> This idea has been popularized by Paul Crutzen and has become so influential that the 2011 Geological Society of America meetings were entitled, "Archean to Anthropocene: The Past is the Key to the Future." For the case for the Anthropocene as a geological epoch, see Jan Zalasiewicz, Mark Williams, Alan Smith, Tiffany L. Barry, Angela L. Coe, Paul R. Bown, Patrick Brenchley, David Cantrill, Andrew Gale, Philip Gibbard, F. John Gregory, Mark W. Hounslow, Andrew C. Kerr, Paul Pearson, Robert Knox, John Powell, Colin Waters, John Marshall, Michael Oates, Peter Rawson, and Philip Stone, "Are We Now Living in the Anthropocene?," *GSA Today* (February, 2008).

1957 paper that "[h]uman beings are now carrying out a large scale geophysical experiment of a kind that could not have happened in the past nor be reproduced in the future."<sup>56</sup> Climate change may be the first challenge of this new epoch.

The spatial reach of climate change, especially in relation to the acts that may contribute to it, is a second feature that helps to differentiate this problem from others. Climate change a global phenomenon that has local effects, and is insensitive to the locations of the emissions that cause it.<sup>57</sup> The atmosphere does not care where GHG emissions occur. It responds in the same way whether they come from the poles, the equator, or somewhere in between. One consequence is that some of the worst damages of climate change will occur in the Southern Hemisphere, while more than 90% of GHG emissions have occurred in the Northern Hemisphere.<sup>58</sup> It is as if millions of acts that occur very far from you, all over the world, are in some way associated with the pain in your foot.

A third difference between climate change and most other problems we face is the systematicity of the forces that give rise to it. People pay an enormous amount of attention to computing carbon footprints and arguing over responsibility for emissions, yet the fact is that the manipulation of the global carbon cycle is intrinsic to the existing global economy.<sup>59</sup> Consider a simple example. Coal is mined in Australia, shipped to China, burned in electrical generating plants, which are used to power factories that produce products that are consumed in Europe and the United States. Billions of individuals are implicated in different ways in manipulating carbon, and it is unclear how to allocate responsibility among them. It is usually assumed (in the United States anyway) that China is responsible for these emissions, but everyone has an argument for offloading responsibility to someone else. It is Australia that extracts the coal, it is

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<sup>56</sup> Revelle, Roger, and Hans E. Suess, "Carbon Dioxide Exchange between Atmosphere and Ocean and the Question of an Increase of Atmospheric CO<sub>2</sub> During the Past Decades," *Tellus* 9 (1957): 18-27.

<sup>57</sup> This is because atmospheric mixing is rapid compared to the atmospheric residency times of GHGs. For details, see John Wallace and Peter Hobbs, *Atmospheric Sciences, An Introductory Survey*, second edition (San Diego: Academic Press, 2006).

<sup>58</sup> K. Dow, and T. E. Downing, *Atlas of Climate Change* (Berkeley: University of California Press, 2006).

<sup>59</sup> Many carbon calculators can be found on the web, for example at <http://www.carbonfootprint.com/calculator.aspx>.

China where the emissions occur, and it is the United States and Europe that consume the products with the embedded carbon.<sup>60</sup> One could argue that China's current "bad boy" image as the world's largest carbon emitter is simply a consequence of Europe and the United States outsourcing manufacturing to China.<sup>61</sup> The outsourcing of manufacturing has brought about some redistribution of income both across and within countries.<sup>62</sup> It is also likely that it has increased carbon emissions.<sup>63</sup>

In my opinion there is no clear winner in this argument: the assignment of responsibility seems arbitrary, at least within limits. Every nation that is implicated in this cycle benefits in some way and every nation will also in some way suffer. Moreover, the process is dynamic. As the global economy changes, Australia may be replaced as the energy provider, China as the manufacturing site, and the United States and Europe as the end users. But as long as the global economy is carbon-based, the problems we face will be the same, regardless of which countries and individuals are occupying which roles.

A fourth feature of climate change that makes it different from other problems is that it is the world's largest and most complex collective action problem. It is the largest, since everyone is a climate change actor and virtually everyone will be affected by climate change. It is the most complex for many reasons, including the high degree of connectivity in the climate system, the non-linear nature of many of the relationships, threshold effects, and buffers that exist in the system. What I want to emphasize here is the differences of scale that are involved in moving from human action to the climate system, and back to damages.

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<sup>60</sup> About one-third of China's carbon emissions occur in export industries (see C. Webber, G. Peters, D. Guan and K. Hubacek, "The Contribution of Chinese Exports to Climate Change" *Energy Policy* 36 (2008): 3572-3577.

<sup>61</sup> For evidence of outsourcing emissions see G.P. Peters, J.C. Minx, C.L. Weber, and O. Edenhofer, "Growth in Emission Transfers via International Trade from 1990 to 2008," *Proc Natl Acad Sci USA* 108 (2011): 8903-8908.

<sup>62</sup> Given everything we hear about China's rapid growth it is sobering to be reminded that it is now the 94<sup>th</sup>, 95<sup>th</sup>, or 100<sup>th</sup> richest country in the world in per capita GDP (according to the International Monetary Fund, the World Bank, and the CIA World Factbook respectively), firmly ahead of Egypt but well behind Peru.

<sup>63</sup> Christopher Weber and H. Scott Matthews, "Embodied Emissions in U.S. International Trade: 1997-2004," *Environmental Science and Technology* 41,14 (2007): 4875 - 4881;

Consider an oversimplified story.<sup>64</sup> I emit carbon, which makes its way through the earth system and, perhaps in concert with other GHGs and atoms of carbon, contributes to global warming.<sup>65</sup> The warming affects the global climate system, which in turn affects the distribution, frequency, and intensity of various meteorological events. These events occur in an environment that can result in anything from an insurance claim for a BMW damaged in a hailstorm, to the collapse of a government.<sup>66</sup> For my carbon emission to have a causal effect in producing these harms, its influence must travel upwards through various global systems that affect climate, and then downwards, damaging something that we value.

Here is one way of thinking about this problem. I, along with many other people, toss an invisible smidgen of something into a blender. A man takes a drink of the resulting mixture. Am I responsible for the graininess of the texture, the chalkiness of the taste, the way it makes him feel after drinking it, his resulting desire for a Budweiser? You might think that I am a smidgen responsible, since a smidgen is the amount that I tossed into the blender. But I am tempted to say that I am not responsible even for a smidgen of the result because there are so many thresholds, nonlinearities, and scalar differences that intervene between my action and the outcomes.<sup>67</sup>

Even if I am wrong about this, it should still be clear that the problems that climate change confronts us with are importantly different from textbook collective action problems that have us trying to find solutions to an overgrazed commons or an overexploited fishery. In the climate change case, the distance from my particular acts to the damages that occur is far greater on several dimensions than in the cases that common sense morality normally confronts.<sup>68</sup>

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<sup>64</sup> Tyler Volk tells a much more charming version of part of this story in his *Carbon Rising* (Cambridge MA: The MIT Press, 2008).

<sup>65</sup> Global warming is usually understood as an increase in Earth's mean surface temperature.

<sup>66</sup> For example, the 1973 collapse of the Ethiopian monarchy is often blamed on a drought-induced famine. There were of course other factors involved; there always are.

<sup>67</sup> I hope that it is clear that I have not committed any of the mistakes in moral mathematics that Derek Parfit discusses in *Reasons and Persons*, Ch. 3.

<sup>68</sup> Schelling made a similar point in an economic context in the 1980s when he said that we cannot map marginal abatement on to climate impacts.

A fifth difference between climate change and other problems concerns the temporal reach of GHGs. These gases have different residency times in the atmosphere, ranging from a few years for methane to millennia for some manmade gases such as tetrafluoromethane, which is used as a low-temperature refrigerant mainly in the manufacture of electronics, perhaps even in the fabrication of the computer on which I am writing these words. I will focus mainly on carbon dioxide.

Imagine that after reaching an atmospheric concentration of 450 ppm sometime in the next decade, we immediately stop all carbon dioxide emissions. By the year 3000, neither atmospheric concentrations of carbon dioxide nor global mean surface temperature would have returned to their pre-industrial baselines, and sea levels would still be rising.<sup>69</sup> It is as if someone steps on your foot, politely says excuse me, and then walks away, while the pain in your foot persists for the rest of your life.

The time horizons involved in climate change are flabbergasting. The idea that our contemporary way of life has left a mark on the planet that will persist for millennia is difficult to comprehend, much less to internalize in our decision-making. When we blandly say that climate change poses problems of obligations to future generations we obscure the fact that common sense morality was not built to respond to problems that involve such long time horizons.<sup>70</sup> There are future generations, and then there are those who will live centuries or millennia in the further future.

It is true that most of us care about many of those who are near us in time. This may be because our lives overlap with theirs, or because they are our children or grandchildren. Our concern may extend a little further into the future, in part because of something we might call “sentimental transitivity.” We care about our children’s children because we care about our children and they care about their children, or perhaps we care about our children’s children because we see them as our own. The reach of this concern may extend another generation or two but it rapidly gives out.

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<sup>69</sup> Susan Solomon et al, “Irreversible Climate Change Due to Carbon Dioxide Emissions,” *PNAS* 2009 (106): 1704-1709.

<sup>70</sup> Nor is not clear that our moral theories do much better. This, I think is one of the central lessons of James Lenman’s provocative “Consequentialism and Cluelessness” *Philosophy and Public Affairs*, 2000.

Some abstract concern about the future may take its place, but that is not the same as caring about those who will live in the future. One difference is that we cannot picture the people of the next millennium who will cope with the sea levels that will still be rising as a result of climate change. We have very little idea of what their lives will be like and what will matter to them. It is difficult for us to empathize with them. Whatever abstract concern for the future that remains is not as motivating nor as uniformly distributed as concern for one's children or grandchildren.<sup>71</sup>

There are philosophers who think that this presents no special problem because all generations, from the present to the further future, are linked by a "chain of love" or are part of an iterative "intergenerational community."<sup>72</sup> As we move through time, each generation cares for several generations into the future. Those who live in the further future will be cared for their immediate predecessors, just as we were cared for by our immediate predecessors and we care for those who will immediately succeed us. This approach dissolves the problem of the further future, replacing it by the vision of a loving, temporally extended community.

Perhaps this picture would be true if the damages that could be inflicted on future people were linear through time, but they are not. Damages can display many different kinds of temporal patterns. They can crescendo much like a musical piece. They can erupt suddenly far into the future. For this reason damages can be exported to the further future, largely bypassing the two or three generations that present people care most about. Cluster bombs, toxic waste dumps and of course, climate change all have this potential.<sup>73</sup>

Part of the problem with motivating concern for those who will live in the further future is that reciprocity is at the center of common sense morality. Of course, reciprocity is not always demanded, nor is it demanded from everyone at every stage in

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<sup>71</sup> It is an amusing if mind-boggling exercise to read Robert Lacey and Danny Danziger, *The Year 1000: What Life Was Like at the Turn of the First Millennium, An Englishman's World* (London: Little Brown and Company, 1999), and then try to imagine the people they describe, imagining our lives today.

<sup>72</sup> The former view is John Passmore's in *Man's Responsibility for Nature* (London: Duckworth, 1974); the latter view is Avner de-Shalit's in *Why Posterity Matters*, London, Routledge, 1995).

<sup>73</sup> The *Stern Review* estimates that 80% of the damages of climate change will occur after 2200, largely because of the lag time in the climate system.

life. Nevertheless, the asymmetric nature of our relationship to those who will live in the further future is part of why it is difficult to motivate concern. Those who will live in the near future can stand in reciprocal relations with us. They can care for us when we are old, as we care for them when they are young. They can complete our projects, fulfill our hopes, and make some of our dreams come true. Nothing very much like this can exist between us and those who will live in the further future.<sup>74</sup> We have enormous power over them, but they have very little, if any, power over us.<sup>75</sup> This is one reason why, when faced with the time horizons that the problems of climate change present, common sense morality is largely silent.<sup>76</sup>

A sixth difference between anthropocentric climate change and the problems that common sense morality is used to confronting concerns the extent to which climate change is world-constituting.

There is a sense in which any action is world-constituting. The world that results from my wearing a Hawaiian shirt to the Humane Society benefit is, in various subtle ways, different from the world that results from my wearing a sober blue suit. In addition to the brute difference between the two worlds, ripples radiate from my sartorial choices, affecting the world in a multiplicity of ways. However, unlike my sartorial choices, climate change will radically repopulate and remake the entire world.

It will radically repopulate the world because it is highly contingent which particular individuals come into existence, and climate change will affect who marries whom and what children are conceived. A warmer world may mean later bedtimes, which almost certainly would result in different sperm uniting with different eggs, bringing different people into existence than otherwise would have been born. As these climate change babies grow up and procreate, the fraction of people who owe their

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<sup>74</sup> This is not to say that those in the further future cannot stand in moral relations with those in the past, at least from the perspective of some moral theories. For example, people in the further future may yet satisfy the prophet's desire (Amos 5:24) that "judgment run down as waters, and righteousness as a mighty stream."

<sup>75</sup> For the importance of reciprocity to human cooperation generally, see M.A. Nowak and R. Highfield, *SuperCooperators: Why We Need Each Other to Succeed* (New York: [Simon & Schuster](#), 2011).

<sup>76</sup> The failure of common sense morality to provide much guidance with respect to the further future is at the heart of the controversy over the discount rate discussed in Chapter 2.

existence to climate change will steadily increase. Derek Parfit rhetorically asks, “how many of us could truly claim, ‘Even if railways and motor cars had never been invented, I would still have been born?’.”<sup>77</sup> Similarly, the people of the future can ask (also rhetorically) whether they would have been born had the world not gone down the path of emitting more than thirty billion tons of carbon dioxide per year.<sup>78</sup>

Unlike some philosophers, I think this is an important consideration.<sup>79</sup> Climate change will make millions of people worse off, but it will also produce a world stocked with a different population than otherwise would have existed, many of whom will have lives worth living, but less good than those of the people who would have existed had we not changed climate. This brings out an important difference between the challenge posed by climate change and the kinds of problems that are central to common sense moral thinking. Much or most of what we morally object to in everyday life is person-affecting, in that it concerns actions that affect people who exist independently of the actions. Many of the climate change damages, on the other hand, will be suffered by people who would otherwise not have existed.<sup>80</sup>

Climate change will remake the world as well as repopulating it. Climate change will produce a world that is radically different than the one that would otherwise have existed. Consider, again, my example of the transformation of Manhattan. Is it better or worse that Manhattan was transformed from a natural paradise to the city that it is today? This question is difficult to answer and it is relatively near. Consider another question which elicits an even longer time horizon. Is it better or worse that Christianity arose and became a world religion? The world that I know and can imagine is the

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<sup>77</sup> Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984): 361. The concern that I discuss in this paragraph is of course related to Parfit’s “non-identity problem.”

<sup>78</sup> <http://www.pbl.nl/en/publications/2010/No-growth-in-total-global-CO2-emissions-in-2009>

<sup>79</sup> Gardiner, *A Perfect Moral Storm*; Shue, reprinted in *Climate Ethics*, p. 159, note 3. John Broome was the first to emphasize the importance of this consideration to the ethics of climate change in his *Counting the Cost of Global Warming* (Cambridge: The White Horse Press, 1992).

<sup>80</sup> Other paradoxes discussed by Parfit 1984, Part 4 bring out respects in which common sense morality does not fare well with choices that result in different numbers of people brought into existence. A good introduction to the literature on the non-identity problem can be found by visiting <http://plato.stanford.edu/entries/nonidentity-problem/>.

world in which Christianity figured prominently in its history. I was educated in Christian schools. Most of the art, music, and architecture that I love are in some sense Christian.

The problem with these questions is not that we do not know the answers, but rather that they do not seem to admit of answers, at least from the point of view of common sense morality. From my present perspective, asking these questions can seem like asking whether it is a good thing that there is an oscillation between glacial and inter-glacial periods. These are questions about the value of features that form the very structure of the world within which we make evaluations. Moral evaluations, at least those of the sort that we are generally prepared to make, arise within these structures rather than being about these structures. Common sense morality operates within a horizon of possibility. It is not well-equipped to make judgments about the conditions that fix these possibilities.

Thus far I have been emphasizing how grand and profound the problems are that are posed by anthropogenic climate change, and how for that reason they outrun the responses that are characteristic of common sense morality. However, it is also true that philosophical accounts of morality are often caricatures, overemphasizing, for example, the importance and centrality of harm causation to our ordinary moral notions.<sup>81</sup>

Recent work by psychologists such as Daniel Gilbert and Jonathan Haidt has convincingly shown that our moral conceptions are only loosely associated with the infliction of harm. Many people are morally appalled by such apparently harmless acts as consensual gay sex or flag burning, but are completely unmoved by deaths caused in war or by environmental pollution. Jonathan Haidt and his colleagues have claimed that considerations involving fairness and reciprocity, in-group and loyalty, authority and respect, and purity and sanctity are, in addition to considerations about the causation of harm, at the foundation of morality as conceived by many people.<sup>82</sup> Since these

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<sup>81</sup> The centrality of harm to morality is a Millian idea, thoroughly developed in Joel Feinberg's magisterial four-volume work *The Moral Limits of the Criminal Law* (New York: Oxford University Press, 1984-1988). Though criminal law is Feinberg's main concern, much of what he says applies to common sense morality as well.

<sup>82</sup> For an introduction to this work visit <http://faculty.virginia.edu/haidtlab/mft/index.php?t=home>.

considerations can come apart, people often will deny that harm-causing activity is within the moral domain, while at the same time considering behaviour that does not cause harm to be of moral import. Daniel Gilbert brings these considerations to bear on the question of climate change when he writes that

[...] global warming doesn't [...] violate our moral sensibilities. It doesn't cause our blood to boil (at least not figuratively) because it doesn't force us to entertain thoughts that we find indecent, impious or repulsive. When people feel insulted or disgusted, they generally do something about it, such as whacking each other over the head, or voting. Moral emotions are the brain's call to action. Although all human societies have moral rules about food and sex, none has a moral rule about atmospheric chemistry. And so we are outraged about every breach of protocol except Kyoto. Yes, global warming is bad, but it doesn't make us feel nauseated or angry or disgraced, and thus we don't feel compelled to rail against it as we do against other momentous threats to our species, such as flag burning. The fact is that if climate change were caused by gay sex, or by the practice of eating kittens, millions of protesters would be massing in the streets.<sup>83</sup>

Climate change presents us with questions that display some of the marks of a paradigm moral problem but fail to exhibit others. To a great extent the difficulty of addressing these aspects of climate change as involving moral questions arises from the power and novelty of the problem, and the frailty of our moral consciousness. Viewing these aspects in moral terms would require revising our everyday understandings of moral responsibility.

#### **4.7 Revision and Complacency**

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<sup>83</sup> <http://articles.latimes.com/2006/jul/02/opinion/op-gilbert2>

What I have been suggesting is that common sense morality is not responsive to some important aspects of anthropogenic climate change. Theorists such as Simon Caney, Steve Gardiner, John Nolt, Henry Shue, Peter Singer, and myself, who have argued that various actions relating to climate change are morally wrong should be read as urging us to revise our conceptions such that such actions fall under our ordinary conceptions of what is morally wrong, they should be read as trying to urge us to revise our conception of moral wrongness such that these actions would count as morally wrong. In other words, they are engaged in “persuasive definition.”<sup>84</sup> It is important to recognize this because how one argues for revising concepts is quite different from how one argues that particular acts fall under our existing concepts.

Compare the task of revising our conceptions in this case with Peter Singer’s arguments for famine relief and animal liberation.

In “Famine, Affluence, and Morality” Singer tried to show that a simple ethical principle which most of us accept has sweeping implications.<sup>85</sup> He did not try to persuade us to accept new principles or to revise fundamental moral understandings. He simply tried to bring out the consequences of a principle to which we already were committed. Seeing the argument in this light helps to explain the power and influence of the paper. The arguments that we considered in 4.5 for the claim that climate change violates human rights or involves present people in dominating posterity are similar in purpose. They try to show that we are committed to seeing actions that may contribute to climate change in this light, even though most of us do not normally see them in this way.

Singer’s argument for animal liberation urges us to extend our principles, rather than arguing that we should acknowledge a principle that we already tacitly embrace.<sup>86</sup> He argues that principles that we already hold that lead us to oppose racism, sexism, and unnecessary suffering should be extended so that they apply to non-human animals

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<sup>84</sup> C.L. Stevenson, “Persuasive Definitions”. *Mind* 47 (July, 1938): 331–350.

<sup>85</sup> Peter Singer, “Famine, Affluence, and Morality” *Philosophy and Public Affairs* (1972): 229-243. In unpublished work Avram Hiller has tried to do something similar for climate change.

<sup>86</sup> Peter Singer, *Animal Liberation* (New York: Harper Perennial Modern Classics, 2009).

as well. Singer has arguments for extending these principles, but his opponents have arguments for what they consider principled stopping points.<sup>87</sup> The argument for animal liberation is directed towards leading us to embrace a new commitment. While animal liberation is an instance of “the expanding circle,” responding to famine is a matter of internal consistency.

My claim is that anthropogenic climate change is not like either of these cases, and that is part of why it is so difficult for people to see important aspects of this problem in moral terms. Common sense morality does not commit us to the views that climate ethicists say we should hold, and modest extensions of our principles will not do the trick either. Some new moral understandings are required if we are to moralize some important aspects of our climate changing behavior.

Having drawn sharp distinctions between recognizing the consequences of our moral commitments, extending them, and revising them, I now want to soften them. A revision is not a replacement. Any revision of a domain must preserve enough connection to the domain of which it is a revision to be worthy of the name. There are also borderline cases between recognizing, extending, and revising. Nevertheless, drawing these distinctions helps us to see why it is so difficult to frame important aspects of climate change as presenting a moral problem.

Common sense morality is a complex tapestry of distinct threads. One thread sees morality as flowing out of special relationships and associative duties. Another regards moral and backward looking causal linkages as closely tracking each other. Another finds the ability to provide benefits and prevent harms as central. A great deal of moral theory involves pulling on these and other threads to the exclusion of others. Moral theorizing is important, but much more goes into revising a morality.

There are historical examples of revisions, even revolutions, in morality. One was

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<sup>87</sup> See, for example, Bernard Williams, “The Human Prejudice,” in J. Schaler, *Peter Singer Under Fire* (Chicago: Open Court Publishing, 2009); Singer’s reply in the same volume; and my discussion in *Ethics and the Environment* (Cambridge: Cambridge University Press, 2008).

associated with the rise of capitalism.<sup>88</sup> What had formerly been considered vices (e.g., selfishness) were redescribed and transformed into virtues. What might previously have been seen as harming others through competition came to be seen as simply a consequence of the rise of the new capitalist man, whose pursuit of self-interest was producing greater benefits overall. It is difficult to know whether we now are on the verge of revising our morality in the face of new challenges. Only time will tell.<sup>89</sup>

#### 4.8 Concluding Remarks

In Chapter 3 I showed that economics cannot give us clear directives for acting on climate change because it rests on ethical commitments. What I have argued in this chapter is that common sense morality cannot provide these ethical commitments with respect to some important aspects of climate changing behavior. In light of this, and given the difficult nature of the problem, it is not surprising that we have failed to act effectively in response to climate change.

However, these insights also confront us with new challenges. How do we live in the face of this silence from our morality? What progress can we hope to achieve in confronting the problems of climate change? These are the topics of the next two chapters.<sup>90</sup>

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<sup>88</sup> I owe this example to David Johnstone. Mandeville's *The Fable of the Bees* was a text that contributed to this revision in morality. The "luxury" debates provide a window on this transition. See M. Berg and E. Eger (eds.), *Luxury in the Eighteenth Century: Debates, Desires and Delectable Goods* (Basingstoke: Palgrave, 2003).

<sup>89</sup> For some suggestions about how the revisions might go, see my "When Utilitarians Should be Virtue Theorists," *Utilitas* 19,2 (June, 2007): 160-183.

<sup>90</sup> This chapter has benefited greatly from a good working over by Matthew Adler, Allen Buchanan, Simon Caney, Jedediah Purdy, Peter Singer and Walter Sinnott-Armstrong, at a workshop on the book manuscript held at Duke University. Thanks especially to Walter Sinnott-Armstrong for organizing the workshop, and to Peter Singer for written comments on an earlier draft of this chapter. I have also benefited from comments by Chris Schlottmann and Raquelle Stiefler.