

Climate Change, Responsibility, and Justice

Dale Jamieson

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Abstract In this paper I make the following claims. In order to see anthropogenic climate change as clearly involving moral wrongs and global injustices, we will have to revise some central concepts in these domains. Moreover, climate change threatens another value (“respect for nature”) that cannot easily be taken up by concerns of global justice or moral responsibility.

Keywords Climate change · Global justice · Respect for nature · Responsibility

1 Introduction

I begin by characterizing the kinds of risk that climate change poses, and go on to describe several distinct kinds of practical responsibilities that it is widely thought to engage. After discussing these kinds of practical responsibilities in some detail, I briefly discuss the value of respect for nature. Finally, I draw some conclusions.

2 Risk and Responsibility

Climate change poses two different kinds of risk that can roughly be characterized in the following way. First, it poses the risk of a large, rapid, relatively linear change; and second, climate change poses the risk of an even larger, more rapid, non-linear change. The first sort of risk is typically discussed in the climate impacts

D. Jamieson (✉)

Environmental Studies Program, New York University, 285 Mercer Street, 901, New York, NY 10003-6653, USA

e-mail: Dwj3@nyu.edu

URL: <http://philosophy.fas.nyu.edu/object/dalejamieson.html>

literature and generally presupposed by economic models. While it is sometimes noted that climate change poses other sorts of risk, most models and assessments, especially those carried out by economists, lawyers and policy professionals, focus on risks of this first kind.¹ The second sort of risk is more frequently highlighted by scientists, environmental advocacy groups and (alas) Hollywood filmmakers.²

These different kinds of risk pose some of the same and some different questions. They pose many of the same questions because they mostly have the same causes. They pose some different questions because the first kind of risk is more likely to produce some relatively predictable winners, at least to some limit (say 2°C), than the second kind of risk, which is more likely to produce only losers and to be less predictable both in its occurrence and in its effects.

Since these risks are being imposed by human action, at least to a great extent, they raise questions of what I call ‘practical responsibility.’ Practical responsibility can be distinguished from both theoretical and causal responsibility, though practical responsibility may be closely associated with both. Practical responsibility concerns what we are responsible for doing while theoretical responsibility concerns what we are responsible for thinking. Exactly what relationships obtain between practical and theoretical responsibility depend on what we take the relationships to be between doing and thinking, and between practical and theoretical reason generally. Practical and theoretical responsibility can both be distinguished from causal responsibility in that the former notions are normative, and it is at least widely believed that the latter notion is fundamentally descriptive.³

I take practical responsibility to include varieties of both prudential and ethical responsibility. Prudential responsibility centres on responsibilities one has to oneself while ethical responsibility centres on responsibilities that one has to others. This otherwise (fairly) clear distinction can be muddled by shifting the identity of the agent who bears the responsibility. If I have some specific responsibility to my family, in the sense in which I am using the terms, it is an ethical responsibility; however, if the family of which I am a part has the same responsibility to itself then the family has a prudential responsibility, and perhaps so do I in virtue of being a member of the family. I leave it as an open question as to whether either prudential or ethical responsibilities should be seen as a variety of the other, or whether both should be seen as falling under some more general category.

It seems reasonably clear that being causally efficacious is a necessary condition for being practically responsible for imposing, reducing or eliminating a risk.⁴

¹ See, for example, the US Global Change Research Program (2001). For the claim that much work in climate change economics fails to address the second sort of risk adequately, see Weitzman (2007).

² For a study that focuses on this second sort of risk, see the National Academy of Science report (2002).

³ However, recent work by Joshua Knobe suggests that attributions of causal responsibility often follow attributions of practical responsibility rather than the other way around. See Knobe (2006).

⁴ Jules Coleman may be denying this when he claims that a case in which “you’ve done nothing about shoveling the snow from your walkways” and someone “coming to visit you slips and breaks her leg [...] is a case of responsibility without causation” (Coleman 1992, p. 274). For present purposes I will leave aside the question of whether he is denying my claim, and if so, whether his claim would be plausible.

However, I will leave it as an open question whether counterfactual causal efficacy can in some cases satisfy this condition. I will also leave it open as to what may be the other conditions for being practically responsible.

People are causally efficacious in different ways and respects. For example, I am causally efficacious when I choose the vegetarian option, and also when I organize an animal rights group. I am causally efficacious in my role as a consumer and also in my role as a professor. Since agents are causally efficacious both through individual and collective action, and through institutional roles, it is plausible to suppose that practical responsibility is plural and layered.

Practical responsibility is plural in that the same act can discharge multiple practical responsibilities, for example, when I keep my promise to you by participating in a political demonstration. Practical responsibility is layered in that agents can have practical responsibilities at the different levels of social organization at which they are causally efficacious, for example, as individual voters and as members of a political party.⁵

My claim is that climate change engages several distinct kinds of practical responsibility: prudential and ethical, with the ethical including the moral and political. However, each of these responsibilities, while figuring in how we ought to respond to climate change, deviates from standard cases in which those kinds of responsibility obtain.

3 Prudential Responsibility

Prudential reasons for responding to climate change may seem quite strong, especially when one reflects on the fact that conservative politicians such as Margaret Thatcher, Nicolas Sarkozy and Angela Merkel have forcefully advocated action on this issue. The prudential case for acting on climate change is often made by analogy to arguments for buying insurance. For example, Stephen Schneider has said:

a continuation of “business as usual” raises a serious concern from the risk-management point of view, given that the likelihood of warming beyond a few degrees before the end of this century (and its associated impacts) is a better than even bet. Few security agencies, businesses or health establishments would accept such high odds of potentially dangerous outcomes without implementing hedging strategies to protect themselves, societies and Nature from the risks—of climate change in our case. This is just a planetary scale extension of the risk-averse principles that lead to investments in insurance, deterrence, precautionary health services and business strategies to minimize downside risks of uncertainty (Schneider 2007).

⁵ For more on this see Jamieson (2005).

Schneider has summarized this point in the following way:

“we buy fire insurance for our house and health insurance for our bodies. We need planetary sustainability insurance” (Schneider 2005).⁶

I agree that our present policy is contrary to most reasonable notions of enlightened self-interest and that there is some force to the insurance analogy. However, there are also some important disanalogies between investing in climate protection and purchasing insurance.

First, we have no actuarial tables for the climate protection market in the way that we do for accidents and fires. We have very little idea (much less any notion of statistical reliability) about the specific impacts of climate change on societies like ours, living on planets like this; much less any data about how specific changes in the composition of the atmosphere are likely to have these impacts. The disanalogies run even deeper. Insurance is typically purchased by an agent to benefit her/himself or, in some cases, those whom s/he loves or to whom s/he feels responsible. But in this case, we would be asking people who are now living very well, who under many scenarios have adequate resources for adaptation, to buy insurance that will mainly benefit poor people who will live in the future in some other country; and to do this primarily on the basis of predictions about the future based on climate models, expert reports and so on. Moreover, rich people do not for the most part love or feel responsible for their poor contemporaries, especially those who live across national boundaries, much less those who will live in the future.

Another way of making the case for collective prudential responsibility is through an economic assessment of the aggregate expected damages of climate change and the costs of avoiding them. This approach views the human community as a single agent, and compares the aggregate costs and benefits of various policies. While there is much to say about work in this area, I will mention only the extremely influential work of the American economist William Nordhaus (2008) and the British economist Nicolas Stern (2006). According to Nordhaus, optimal climate policy would involve a carbon tax of about \$17 per tonne in 2005, ramping up to \$270 per tonne in 2100. Stern claims that the optimal carbon tax now is \$311. While it is tempting to think of Nordhaus as advocating a ‘do nothing’ approach, we should remember this. While some countries are taking some action, globally we are very far from doing what Nordhaus thinks is optimal, much less what Stern thinks is required.

There are many subtle differences in their approaches. While both aggregate damages and work to identify the marginal social cost of carbon, Nordhaus does this in order to identify economically efficient mitigation strategies while Stern is more interested in evaluating pathways that avoid unacceptable atmospheric concentrations of greenhouse gases while identifying trade-offs. Nordhaus is working towards a global benefit–cost analysis. He takes this to be an empirical exercise and seems confident about what a competent study can hope to achieve. Stern, on the other hand, views climate change as a risk management problem involving great

⁶ Weitzman (2007), *op. cit.*, also employs the insurance analogy. While Jared Diamond does not employ this analogy, his *Collapse* (2005) has become a popular *locus classicus* for the view that we have prudential reasons to be concerned about environmental degradation.

uncertainties and diverse values, not all of which can be quantified. He thinks that the ethical dimensions of the problem are so central that we should not be very confident about what even the best economic study can hope to achieve.

Having said this, a value judgment about pure time preference is the most important difference between Nordhaus and Stern and drives most of the disparity in policy recommendations: Nordhaus discounts at 3% for pure time preference, declining to 1% in 300 years, while Stern rejects pure time preference altogether. Nordhaus thinks that whether and how much to discount for pure time preference is an empirical question. Since people do discount on this basis, he incorporates it in his model. Stern thinks that the question of whether to discount for pure time preference is a moral question involving what attitudes we should have towards future people. For him, the fact that people do often discount for pure time preference is no more reason for incorporating this into an economic model than the fact that people often affirm the consequent is grounds for rewriting the laws of logic. The dispute between Nordhaus and Stern on the question of pure time preference is a not a purely factual dispute but a conflict about what kind of question it is. In the broadest sense it is a dispute about values and this is what produces most of the difference in their policy recommendations, rather than disagreements about the core economics.

There are other reasons for doubting that the case for responding aggressively to climate change can be made simply in terms of prudential responsibility. First, the human community is not a single agent acting on the basis of rational self-interest. Human communities are diverse, involving individuals with different interests, and are not (in the economists' sense) perfectly rational or even, in many cases, aspiring to be so. Any climate change will have distributional effects, and the model of humanity as a single agent cannot adequately reflect such distributional conflicts. Second, viewing climate change as a problem of prudential responsibility typically involves treating all preferences as commensurable, usually by monetarizing them. But diverse values are at stake such as biodiversity protection and social solidarity, in addition to economic values such as income and assets. It is not clear that all such values can be meaningfully placed on the same scale, much less monetarized. Finally, the idea that one can know enough to perform reliable damage assessments of climate change up to the end of the century and beyond is patently absurd. One does not have to be a genius to recognize that we can barely predict the state of the economy from one quarter to another.⁷

4 Moral Responsibility

It is often said that climate change is a matter of individual moral responsibility. The climate change issue can be seen at its core as centring on rich people appropriating more than their share of a global public good and, in addition, harming poor people by causally contributing to extreme climatic events such as droughts, hurricanes and

⁷ I first brought these considerations to bear on the question of climate change in a 1988 lecture to the American Association for the Advancement of Science. See Jamieson (1992) reprinted in Jamieson (2002).

heat waves. Moreover, much of this behaviour is unnecessary, even for maintaining the profligate lifestyles of the global rich.⁸ As plausible as this is, once we begin to model the problem of climate change on more familiar cases of individual moral responsibility, important differences begin to emerge.

There are various paradigms of what constitutes a moral problem, but the following sort of case is surely at the centre: 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 Example 1, the case of Jack intentionally stealing Jill's bicycle.⁹ The individual acting intentionally has harmed another individual, the individuals and the harm are clearly identifiable, and they are closely related in time and space.

If we vary the case on any of these dimensions, we may still see the case as posing a moral problem, but its claim to be a paradigm moral problem weakens. Consider some further examples. In Example 2, Jack is part of an unacquainted group of strangers, each of which, acting independently, takes one part of Jill's bike, resulting in the bike's disappearance. In Example 3, Jack takes one part from each of a large number of bikes, one of which belongs to Jill. In Example 4, Jack and Jill live on different continents, and the loss of Jill's bike is the consequence of a causal chain that begins with Jack ordering a used bike at a shop. In Example 5, Jack lives many centuries before Jill, and consumes materials that are essential to bike manufacturing; as a result, it will not be possible for Jill to have a bicycle. While it may still seem that moral considerations are at stake in each of these cases, this is less clear than in Example 1, the paradigm case with which we began.

The view that morality is involved is weaker still, perhaps disappearing altogether for some people, if we vary the case on all these dimensions at once. Consider Example 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 bikes. For some people the perception persists that this case poses a moral problem. This is because it may be thought that the core of what constitutes a moral problem remains. Some people have acted in a way that harms other people. However, most of what typically accompanies this core has disappeared. In this case it is difficult to identify the agents and the victims or the causal nexus that obtains between them; thus, it is difficult for the network of moral concepts (for example, responsibility, blame, and so forth) to gain traction.

These 'thought experiments' help to explain why many people do not see climate change as a moral problem; or if they do see it as a moral problem, it fails to have the urgency of a paradigm moral problem. Structurally, climate change is most analogous to Example 6. A diffuse group of people is now setting in motion forces that will harm a diffuse group of future people. Indeed, if anything, the harm caused by climate change will be much greater than the loss of the opportunity to have a bicycle. Still, we tend not to conceptualize this as an urgent moral problem because

⁸ See Shue (1993).

⁹ I first introduced this series of examples in Jamieson (2007b).

it is not accompanied by the characteristics of a paradigm moral problem.¹⁰ Climate change is not a matter of a clearly identifiable individual acting intentionally so as to inflict an identifiable harm on another identifiable individual, closely related in time and space.

There are other paradigms of moral responsibility but, as a first approximation, they do not seem to apply neatly to climate change either. For example, in cases of strict liability we hold an agent responsible for the consequences of an action even if there was no malign intention. Much of the argument for strict liability rests on economic and policy considerations but, historically, strict liability was also often applied to acts which were regarded as especially dangerous, such as storing explosives. However dangerous it may be for us all to drive to the store, this rationale does not seem to apply to any one of us driving to the store. In other cases we hold someone responsible even if they have no malign intent if they are negligent in failing to act in a way that satisfies a standard of reasonable care. Perhaps a case could be made that present and future high emitters of greenhouse gases are negligent in this way, but it is not easy to make this case when it is widely believed that human action is not a primary cause of the climate change that is now underway.¹¹

There is a deeper problem about whether contributing to climate change is a matter of moral responsibility. The paradigm that I have been discussing views the causation of harm as being at the centre of what makes an act a matter of moral concern. Even if harm causation is neither necessary nor sufficient for an act or omission to be of moral concern, that some such connection exists has been a very influential, if not universally shared, view in modern moral philosophy.¹² However, recent work in social psychology suggests that when it comes to construing an act or omission as within the domain of morality, other considerations are just as important to people as harm causation. 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 most people.¹³ Since these considerations can come apart, often people 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

¹⁰ I am assuming that the perception of urgency flags as a problem drifts further from the paradigm. Whether or not this is true is worthy of further investigation.

¹¹ According to a recent Rasmussen Report, 44% of American voters say that climate change is primarily caused by long-term planetary trends rather than human activity. See Rasmussen Report (2009). It could be argued that these Americans are culpable in their ignorance of the relation between human action and climate change, but when prominent public figures are climate change deniers and science education is so obviously inadequate it is difficult to make this case.

¹² The most thorough treatment of the normative significance of harm causation is Joel Feinberg's magisterial four-volume work (Feinberg 1984–1988). Though criminal law is Feinberg's main concern, much of what he says applies to morality as well.

¹³ For an introduction to this work visit <http://faculty.virginia.edu/haidt/mft/index.php?t=home>.

[...] 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 (Gilbert 2006).

Climate change presents us with an issue that displays some of the marks of a paradigm moral problem but fails to exhibit others. Viewing climate change as a problem of individual moral responsibility to some extent requires a revision of everyday understandings of moral responsibility.

5 Political Responsibility

Climate change seems to present us with another challenge to our notion of ethical responsibility. In addition to being a rather deviant case of individual moral responsibility, it presents us with the political challenge of securing global justice. Ugandan President Yoweri Museveni has been quoted as saying that climate change is 'an act of aggression by the rich against the poor'.¹⁴ The data seems to bear him out. Most of the emitting is done by the rich countries of the North, but most of the climate-change related dying is done in the poor countries of the South (Patz et al. 2005).

When we look at some countries in particular the case seems even stronger. A recent paper suggests that climate change will lead to a 1-m change in sea level by the end of the century (Grinsted et al. 2009). Such a sea level rise will flood one-third of Bangladesh's coastline, creating an additional 20 million environmental refugees. In addition, saline water will intrude even further inland, fouling water supplies and crops, and harming livestock. This will occur as cyclones and other natural disasters become more frequent and perhaps more intense. In order to begin to adapt to climate change by building embankments, cyclone shelters, roads and other infrastructure, it is estimated that four billion dollars would be required. Yet Bangladesh's total national budget in 2007 was less than \$10 billion. Bangladesh suffers in all these ways, yet its carbon dioxide emissions per capita are one twentieth of the global average. Several small island states, such as the Maldives, will lose even more. They will literally cease to exist as their landmass is swallowed by rising seas.

¹⁴ See The Economist (2007).

Such facts seem to lead to the conclusion that climate change poses questions of global justice. While this may be true, there are complications. Since the atmosphere does not attend to national boundaries and a molecule of carbon has the same effect on climate wherever it is emitted, climate change is largely caused by rich people, wherever they live, and is suffered by poor people, wherever they live. We can attribute primary responsibility for climate change to the 500 million people who emit half of the world's carbon, but not all of them live in the rich countries of the North.¹⁵ While it is difficult to get accurate statistics that would precisely locate these 500 million people, we can use automobile ownership as a rough proxy. As of 2002 there were about 800 million cars in the world with more than 230 million in the United States, 76 million in Japan and nearly 50 million in Germany. There were more than 20 million cars in China and more than 17 million in India, while there were only about 18 million in Canada, 12.5 million in Australia, and a little over 2 million in New Zealand (Dargay et al. 2007). It thus seems plausible to suppose that more of those people who are the principal causes of climate change live in China than in Canada, Australia and New Zealand (or in many European countries such as Austria, Belgium, Switzerland and the Netherlands for that matter).

Moreover, since poor people suffer most from climate change, wherever they live, it is plausible to suppose that, like those who contribute most to causing climate change, those who will suffer most are also distributed around the globe. The societal factors that caused Hurricane Katrina to be so devastating in New Orleans—high levels of inequality, large populations living in poverty, poor public services and so on—will lead to similar consequences in the future. Indeed, there is reason to suppose that poor people in the United States will suffer more from climate change than similarly situated people in a country such as Cuba, which has less inequality and a more effective public sector in responding to climate and weather-related disasters (Mas Bermejo 2006).

I do not want to deny that climate change poses questions of global justice. Rather, my point is that, like questions of individual moral responsibility, the problems that climate change presents us with stray from the paradigm of global justice. In several important respects, causing climate change is not like one country unjustly invading another country. The nation-state is one level of social organization that is relevant to addressing climate change because it is casually efficacious, but the nation-state is not the primary bearer or beneficiary of ethical responsibilities in this regard.

What I have claimed in this and the previous section is that we cannot simply say that climate change confronts us with a clear case of ethical responsibility. We can argue, to my mind plausibly, that climate change does pose questions of ethical responsibility, but this argument would have to be revisionary. We would have to show that there are good reasons for extending or revising our concepts of ethical responsibility in such a way that problems posed by climate change would fall under them. This is very different from the case that was made in the 1970s regarding the moral status of animals. The argument of Singer and others was that sentient non-human animals are clear instances of morally considerable beings, and our

¹⁵ Here I rely on data from Steve Pacala (personal communication).

traditional failure to realize this is simply a case of moral blindness.¹⁶ When seen from this perspective, the case for why climate change should be viewed as confronting us with an ethical challenge is more difficult to make.

6 Respect for Nature

Thus far I have claimed that both prudence and ethics can be seen as providing reasons to respond to climate change, but in both cases they stray from the norms. In my view there is another value that climate change puts at risk that is often not noticed, and recognizing this value helps to explain why some people are so passionate about this issue. I call this value ‘respect for nature’, and I claim that embracing this value should motivate people to acknowledge a responsibility to respond to climate change.¹⁷ While I think that such a duty is recognized by many people, it is difficult to make clear and to defend. Like many duties, it is easier to say when it is violated than when it is respected.

In 1997 a distinguished group of scientists published an influential article in which they assessed the human impact on nature (Vitousek et al. 1997). They calculated that between one-third and one half of Earth’s land surface had been transformed by human action; that carbon dioxide in the atmosphere had increased by more than 30% since the beginning of the industrial revolution; that more nitrogen had been fixed by humanity than all other terrestrial organisms combined; that more than half of all accessible surface fresh water was being appropriated by humanity; and that about one quarter of Earth’s bird species had been driven to extinction. From these facts they inferred that ‘it is clear that we live on a human-dominated planet’. It is of course clear that over the last decade these measures of human domination have only increased.

While it may be difficult to say what exactly the duty of respect for nature consists in, it seems clear that where there is such a duty, human domination violates it (this much Kant would have agreed with). So if it is true that humans dominate nature, then it seems safe to say that humans would violate a duty of respect for nature (were there such a duty, and everything else being equal).

However, William Leiss thinks that humans cannot dominate nature since ‘properly speaking only other men can be the objects of domination’. This is because “as Hegel showed [...] an essential feature of domination is the struggle for recognition of the master’s authority” (Leiss 1994, p. 122). I see no reason to read Hegel’s insightful remarks on the master/slave relation as an attempted analysis of the concept of domination *simpliciter*; and if it were such an attempt, I see no reason to think it successful. We can suppose that people are dominated by other people, even (perhaps especially) when they are not cognitively capable of recognizing the master’s authority. Leiss’s analysis strikes me as exemplifying the ubiquitous

¹⁶ See, for example, Singer (2001).

¹⁷ I am greatly indebted to Paul Taylor’s early and important work on this topic; however, it will become clear that my conception of respect for nature is significantly different from his. See Taylor (1989).

tendency of philosophers to over-intellectualize what is required for concept application.¹⁸

Why should we suppose that humans dominate nature? Vitousek and his colleagues provide evidence for the human domination of nature, but the question of what the domination consists in remains open. There is a tradition in environmental ethics that thinks of nature as autonomous, and (as is the case for humans) domination is thought to (roughly) consist in undermining autonomy through arbitrary interference.¹⁹ Some will cavil at the idea that nature can be thought of as autonomous, but consider the following. It is not entirely clear what autonomy means, even in the case of humans, but to some extent it seems to relate to being self-caused.²⁰ If we think of nature as that which is distinct from humanity, then it is clear why Vitousek and his colleagues think that the facts that they report show that humans dominate nature. Rather than being governed by its own laws and internal relations, nature is increasingly affected by human action. Humans, like other forms of life, influence their environments and affect the nature that gave rise to them, but what makes the present human relationship with nature one of domination is the degree and extremity of the human influence on nature. At some point the causal influence is so through-going that it can be said to constitute domination.²¹

I will assume in what follows that no conclusive argument has been given that prevents us from saying, along with Vitousek and his colleagues, that we live on a human-dominated planet, and that if there is a duty of respect for nature, then human domination violates that duty.²² Anthropogenic climate change violates the duty of respect for nature because it is a central expression of the human domination of nature.

The human domination of nature is expressed both substantively and attitudinally. The numbers cited above show the substantive nature of human domination. The human domination is also expressed attitudinally in the ways that we think about nature and feel about our relations with it. It is not too much to say that as a civilization we treat the Earth and its fundamental systems as if they were toys that we can treat carelessly, as if their functions could easily be replaced by a minor exercise of human ingenuity. It is as if we have scaled up slash-and-burn agriculture

¹⁸ There are other accounts of domination in the literature that are typically applied to humans dominating other humans, but, as far as I can see, they are not committed to the idea that only humans can be the subjects of domination. See, for example, Pettit (1997). Generally on the subject of domination I have benefited from John Nolt's unpublished 'Greenhouse Gas Emissions and the Domination of Posterity'.

¹⁹ See, for example, Katz (1997); the essays collected in Heyd (2005); and Turner (1996). What Turner means by 'wildness' is related to what I mean by 'autonomy'. For reservations, see O'Neill et al. (2008, pp. 134–137).

²⁰ Jerome Schneewind argues that autonomy is a relatively recent conceptual construction with its origins in Kant. See Schneewind (1997).

²¹ For more on these themes, see Jamieson (2008, pp. 166–168) and Jamieson (2002, 190–196).

²² Those who find Leiss's view convincing can view me as defending an analogue duty to respect for nature that is violated when the analogue to the human domination of nature that is now occurring obtains.

to a planetary scale.²³ Seen in this way, our collective behaviour towards nature seems to be a paradigm of disrespect.

Thus far I have discussed why we might think that we are violating a duty of respect for nature on condition that we have such a duty. But what can be said in favour of the view that we have such a duty in the first place?

I believe that there is some intuitive plausibility to the idea that there is such a duty, but more needs to be said to properly motivate it. It can still be asked how the claim that there is such a duty could be justified. In what follows, I will tentatively explore three possible grounds for supposing that we have such a duty. What I say is speculative, not conclusive. Much more work would have to be done to build a convincing case for the existence of such a duty.

One ground for supposing that there is a duty of respect for nature is prudential. We do better by our own lights when we respect nature. Versions of this argument are ubiquitous in the environmental literature and something like this view is implicit in such slogans as Barry Commoner's 'third law of ecology' which states that 'nature knows best' (Commoner 1971), and Wallace Broecker's analogy that emitting greenhouse gases is like poking a dragon with a sharp stick (Broecker 2004). Something like this view can also be seen as providing the foundation for the precautionary principle. In its crudest and most general form, it is in the background of the claim by Costanza and his colleagues that the minimum value of the services that ecosystems provide is between \$16 and \$54 trillion, and that their study 'highlights the relative importance of ecosystem services and the potential impacts on our welfare of continuing to squander them' (Costanza et al. 1997, p. 259). How plausible one finds this as a foundation of a duty to respect nature depends on one's views about duties to others founded on prudence, as well as on one's view about the substance of these claims. It is worth noting that many people would find little to object to here.

A second reason for respecting nature is that it provides a background condition for our lives having meaning. While it would be implausible to think that it is a necessary or sufficient condition for all lives having meaning, it does seem to be a very important condition in many cultures at many times. It is easy to think of examples of the contribution of nature to life's meaning from history, literature or contemporary culture. Blake's idea of England as a 'green and pleasant land' is important both in literature and in English history. The cherry orchard in Chekhov's play of the same name defines the life of everyone in the community. Think of the role landscape plays in the cultures of indigenous peoples. For that matter think of how the 'flatirons' define Boulder, Colorado.

An analogy may help to bring the point out more clearly. Representational painting is not the only kind of valuable painting, but it is one very important kind of valuable painting. Indeed, it may be the mother from which other forms of valuable painting emerged. Representational painting exploits the contrast between foreground and background. What is in the foreground gains its meaning from its contrast with the background. What I want to suggest is that nature provides the background against which we live our lives, thus providing us with an important

²³ I owe this image to Jeremy Waldron (personal communication).

source of meaning. This, it might be claimed, is sufficient for supposing that we have a duty to respect nature. For when we fail to respect nature, we lose an important source of meaning in our lives.

A third reason for respecting nature is from a concern for psychological integrity and wholeness. As Kant (and later Freud) observed, respecting the other is central to knowing who we are and to respecting ourselves. Indeed, the failure to respect the other can be seen as a form of narcissism. One can imagine a kind of natural history that views the recognition of nature as an ‘other’, beyond our control, as at the root of self-identity and communal life.²⁴

Much more would have to be said to make any of these views plausible or to say what a duty of respect for nature would come to. What I hope to have accomplished in this section is to show that it may be plausible to suppose that there is such a duty, that such a duty need not be based on a morally extravagant view such as biocentrism or ecocentrism, and that such a duty may be relevant to our climate destabilizing behaviour.

7 Conclusion

In this paper I have discussed the view that the risks of anthropogenic climate change impose practical responsibilities, some of which are prudential and some of which are ethical. I have claimed that while these views are plausible, they would require revising our conceptions of moral and political responsibility. I have also suggested that in addition to whatever duties are generated by these responsibilities, another duty—respect for nature—also seems engaged by the risk of climate change. This duty is not widely discussed and is under-theorized and defended. However, I suspect that unless a duty of respect for nature is widely recognized and acknowledged, there will be little hope of successfully addressing the problem of climate change.

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References

- Broecker, W. (2004). Interview: Wallace Broecker discusses his work on climate change. <http://www4.alief.isd.tenet.edu/cahowe/EnvSci/Wallace%20Broecker.htm>
- Coleman, J. (1992). *Risks and wrongs*. New York: Cambridge University Press.
- Commoner, B. (1971). *The closing circle*. New York: Knopf.
- Costanza, R., d’Arge, R., de Groot, R., et al. (1997). The value of the world’s ecosystem services and natural capital. *Nature*, 387(115), 253–260.

²⁴ Respecting the otherness of nature can break in at least two different directions: one towards seeing nature as a partner, the other towards aestheticizing nature and seeing it as the object of the experience of the sublime. I say a little more about this in Jamieson (2007a) and in Jamieson (2008).

- Dargay, J., Gately, D., & Sommer, M. (2007). Vehicle ownership and income growth, worldwide: 1960–2030. *Energy Journal*, 28(4), 163–190. http://www.econ.nyu.edu/dept/courses/gately/DGS_Vehicle%20Ownership_2007.pdf, <http://faculty.virginia.edu/haidt/mft/index.php?t=home>
- Diamond, J. (2005). *Collapse*. New York: Penguin Books.
- Feinberg, J. (1984–1988). *The moral limits of the criminal law*. New York: Oxford University Press.
- Gilbert, D. (2006). If only gay sex caused global warming. *Los Angeles Times*, July 2. http://www.randomhouse.com/kvpa/gilbert/blog/200607its_the_end_of_the_world_as_we.html
- Grinsted, A., Moore, J. C., & Jevrejeva, S. (2009). Reconstructing sea level from paleo and projected temperatures 200 to 2100 AD. *Journal Climate Dynamics*, 6th Jan. doi:10.1007/s00382-008-0507-2.
- Heyd, T. (Ed.). (2005). *Recognizing the autonomy of nature: Theory and practice*. New York: Columbia University Press.
- Jamieson, D. (1992). Ethics, public policy, and global warming. *Science, Technology, and Human Values*, 17(2) (Spring), 139–153.
- Jamieson, D. (2002). *Morality's progress*. Oxford: Oxford University Press.
- Jamieson, D. (2005). Duties to the distant: Humanitarian aid, development assistance, and humanitarian intervention. *Journal of Ethics*, 9(1–2), 151–170.
- Jamieson, D. (2007a). Justice: The heart of environmentalism. In R. Sandler & P. Pezzullo (Eds.), *Environmental justice and environmentalism: The social justice challenge to the environmental movement* (pp. 85–101). The MIT Press: Cambridge, MA.
- Jamieson, D. (2007b). The moral and political challenges of climate change. In S. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change* (pp. 475–482). New York: Cambridge University Press.
- Jamieson, D. (2008). *Ethics and the environment: An introduction*. Cambridge: Cambridge University Press.
- Katz, E. (1997). *Nature as subject*. Lanham, MD: Rowman and Littlefield.
- Knobe, J. (2006). The concept of intentional action: A case study in the uses of folk psychology. *Philosophical Studies*, 130, 203–231.
- Leiss, W. (1994). *The domination of nature*. Montreal: McGill-Queens University Press.
- Mas Bermejo, P. (2006). Preparation and response in case of natural disasters: Cuban programs and experience. *Journal of Public Health Policy*, 27(1), 13–21.
- National Academy of Science Report. (2002). *Abrupt climate change inevitable surprises*. Washington, DC: National Research Council, National Academy Press.
- Nordhaus, W. (2008). *A question of balance: Weighing the options on global warming policies*. New Haven: Yale University Press.
- O'Neill, J., Holland, A., & Light, A. (2008). *Environmental values*. London: Routledge.
- Patz, J. A., Campbell-Lendrum, D., Holloway, T., & Foley, J. A. (2005). Impact of regional climate change on human health. *Nature*, 438(17 Nov), 310–317.
- Pettit, P. (1997). *Republicanism: A theory of freedom and government*. Oxford: Clarendon Press.
- Rasmussen Report. (2009). http://www.rasmussenreports.com/public_content/politics/pt_survey_toplines/january_2009/toplines_global_warming_january_15_16_2009
- Schneewind, J. (1997). *The invention of autonomy*. New York: Cambridge University Press.
- Schneider, S. H. (2005). We buy fire insurance for a house and health insurance for our bodies. We need planetary sustainability insurance. *Proceedings of the National Academy of Sciences of the United States of America*, 102(44), 15725–15727. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1276082>
- Schneider, S. H. (2007). http://cesp.stanford.edu/news/cesp_codirector_and_climate_scientist_stephen_schneider_testifies_before_congress_on_the_subject_of_climate_change_risks_and_control_strategies_20070327/index.html
- Shue, H. (1993). Subsistence emissions and luxury emissions. *Law and Policy*, 15(1), 39–59.
- Singer, P. (2001). *Animal liberation*. New York: Ecco.
- Stern, N. (2006). *The economics of climate change: The Stern review*. Cambridge: Cambridge University Press.
- Taylor, P. (1989). *Respect for nature*. Princeton: Princeton University Press.
- The Economist. (2007). Africa and climate change. May 10th. http://www.economist.com/world/mideast-africa/displaystory.cfm?story_id=E1_JTGPQNG
- Turner, J. (1996). *The abstract wild*. Tucson, AZ: The University of Arizona Press.

- US Global Change Research Program. (2001). Climate change impacts on the United States: The potential consequences of climate variability and change. <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/overview.htm>
- Vitousek, P. M., Mooney, H. A., Lubchenco, J., & Melillo, J. M. (1997). Human domination of earth's ecosystems. *Science*, 277(5325), 494–499. doi:10.1126/science.277.5325.494.
- Weitzman, M. (2007). A review of the Stern review on the economics of climate change. *Journal of Economic Literature*, 45(Sept), 703–724.