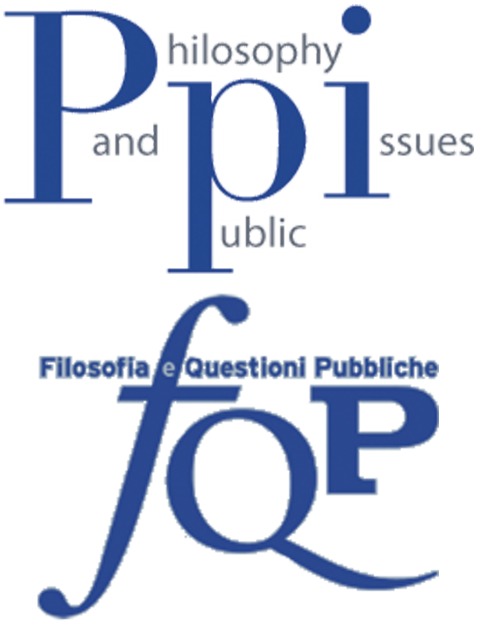
SYMPOSIUM

A CHANGING MORAL CLIMATE



A PRÉCIS TO

A PERFECT MORAL STORM

THE ETHICAL TRAGEDY OF CLIMATE CHANGE

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Reflecting on *A Perfect Moral Storm*

Stephen Gardiner

I am honored and grateful to the journal for proposing this symposium, and to my distinguished commentators for taking the time to engage with what is, apart from anything else, a very long book. Each of their papers deserves a fuller response than would be appropriate here; hence, inevitably, the few remarks I can offer will be too selective and too brief to address all the issues raised. Therefore, rather than attempting comprehensive replies, I will instead try to highlight those questions that seem to me the most central and interesting, especially when it comes to understanding the book itself. Luckily, my sense of the critiques is that behind the various disagreements are many, and often much more important, agreements, including about the importance of the ethical dimensions of the climate challenge. I am heartened by this general convergence, and the prospects it suggests for ethical action on climate change and other perfect storms in the future.

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I

Game Theory

Smead, Sandler and I agree about many important things about the potential role of game theory in ethical theorizing, including those likely to be controversial to others. Nevertheless, in their view key disagreements remain.[1]

1. Pluralism

One issue is that Smead and Sandler endorse a pluralistic approach that "uses multiple games to illuminate different aspects and dynamics of a complicated social situation," and regard my approach as too monistic. Specifically, they criticize the book for being focused on representing climate change as "one big game," as if (as they put it) the relevant question were "Which game theoretic is the right one for climate change?" rather than "Which games can usefully characterize which aspects of the climate problem?." Unfortunately, I am struggling to see the force of this objection, and so worry that I may be missing something. In the spirit of engagement, I will now try to explain my reaction by sketching a few points. I suspect that Smead and Sandler would agree with most of them; however, if they do, I need more help in understanding their methodological worry.

In my view, my approach is appropriately pluralistic, and a more radical pluralism would be unattractive. On the one hand, the perfect moral storm analysis is self-consciously pluralistic in a couple of important ways. First, it is *internally pluralistic*: it suggests that climate change involves the convergence of a number of distinct challenges to ethical action. Several of these have game

[1] Rory Smead and Ronald Sandler, "Game Theory and the Ethics of Global Climate Change" (2014), this issue. (Hereafter 'SS')

theoretic aspects in themselves (the global storm, the intergenerational storm, the ecological storm, even perhaps the problem of moral corruption); several also have subsidiary aspects that also seem amenable to game theoretic discussion (e.g., the governmental global storm (127)[2]); some even invite the specific game Smead and Sandler accuse me of "entirely dismissing," namely the battle of the sexes (e.g., the negotiation of shadow solutions (e.g., 122, 126, 137)). Second, the perfect moral storm analysis is also *externally pluralistic*: the analysis makes no claim to completeness (23). There are other dimensions of the problem, including other ethical dimensions, and some of these surely have aspects to which game theoretic analysis might be relevant.

On the other hand, I also believe that there are limits to the appeal of pluralism: it is neither possible nor desirable to be maximally pluralistic. For instance, the closest Smead and Sandler come to explaining what they mean by pluralism is in their complaint that "games such as the battle of the sexes should not be viewed as an alternative to the prisoner's dilemma (and related games), but rather as a way of representing different aspects of the problem." However, this claim strikes me as ambiguous, and so may mislead.

In general, game theoretic diagnosis of real world problems is not an inclusive project. There is no reason to ensure that all games are represented, and no background methodological assumption that this should be done. Indeed, too much pluralism would undermine the whole diagnostic enterprise. For instance, a maximally inclusive pluralism that demanded that all distinct games be assigned to at least one different aspect of the climate

[2] Stephen M. Gardiner, *A Perfect Moral Storm. The Ethical Tragedy of Climate Change* (New York: Oxford University Press, 2011). Unless otherwise specified, parenthetical references are to this text.

problem—so that none are left out—seems untenable. For one thing, there is no reason to presuppose such a happy alignment between aspects of the real world and theoretical possibilities. For another, there are just too many distinct games to accommodate: for example, there are at least 144 distinct two-by-two games alone.[3]

More specifically, radical pluralism would not fit with how the application of game theoretic models to real world problems actually works. First, while I agree that different games may characterize different aspects of the climate problem, games are genuine alternatives when it comes to characterizing the same aspect of a problem. For example, a specific structure cannot be both a battle of the sexes and a prisoner's dilemma at the same time and in the same respect, since the two models formally exclude one another. Given this, when talking about a specific aspect of a problem, one must choose and justify this choice.[4]

Second, the same game may be relevant to describing multiple aspects of the same problem. So, for instance, we might see the prisoner's dilemma employed to describe local, national and international aspects of climate change. Given this, the different models remain genuine alternatives to one another even if one recognizes that a given problem has many aspects. Notably, even if one chooses a particular game to describe one aspect, one cannot infer that other games will therefore be relevant to describing the remaining aspects.

Third, there is no reason to rule out "one big game" approaches in advance. In my view, when using game theoretic

[3] Stephen DeCanio and Anders Fremstad, "Game Theory and Climate Diplomacy," *Ecological Economics* 85 (2013), 177-187. (Hereafter, 'DF.')

[4] Of course, there is still a significant philosophical question about what counts as a distinct aspect and how to identify one, but this is not the issue Smead and Sandler identify.

analysis, the main diagnostic task is to identify which models provide the best accounts of those aspects of the problem at hand that are most relevant to policy. "One big game" approaches are ambitious, but they may also have compelling explanatory value in so far as they successfully "simplify strategic interactions so that their underlying principles can be understood" (SS, 16), and so accord with the core aims of game theory. Admittedly, this initially appears unlikely for a situation as complex as climate change; nevertheless, such approaches cannot simply be ruled out in advance. In particular, even though (given the above) I reject the "one big game" approach for climate change when that is understood in starkly monistic terms, the same is not true of many of those who employ game theory, and especially those who view climate change as a traditional prisoner's dilemma or tragedy of the commons. The view that climate change "is" a prisoner's dilemma, for example, seems very common in international relations and economics, and it is my main target in the sections Smead and Sandler identify. Indeed, even the overview article Smead and Sandler cite in support of their pluralism says various things that fit the "big game" approach. For example, it asks 'Is global climate protection more like a Prisoner's Dilemma or a Coordination Game?', states that 'it is critically important to know whether countries face a situation that better resembles an N-player Prisoner's Dilemma or an N-player Coordination Game', and hazards its own answer that "a payoff structure that is entirely consistent with the current state of scientific knowledge is that of the Coordination Game" (DF, 182-185). To my mind, these are, at least initially, all sensible questions to ask, and rejecting them requires argument and argument. Any radical pluralist methodology that rules them out of court from the beginning should thus be rejected.

More generally, though the "one big game" approach may be too bold, we should not reject the idea that some aspects of the

climate problem are more important than others, and that choosing between distinct game theoretic models can help us to understand how and why this is so. Indeed, such claims seem essential if game theoretic analysis is to play a significant analytical role in policy. In the book, I argue that the intergenerational storm, and especially the tyranny of the contemporary, are especially important to appreciating the ethical challenge, and I support this with an analysis of the history of international climate policy. This, I suspect, is where the action is, and an overly radical commitment to pluralism would get in the way.

2. Stag Hunt

A second area of disagreement identified by Smead and Sandler concerns their enthusiasm for a game that I consider but do not highlight: the stag hunt. In the standard example, individual hunters must decide independently whether to hunt stag or hare. Hare they can get alone; stag hunting requires cooperation. Getting hare is okay, but the rewards are greater hunting stag. There are two stable equilibria ("all hunt stag," or "all hunt hare"); however, all would prefer stag.

Smead and Sandler say the stag hunt is important for analyzing the climate problem because it "represents a crucial obstacle to social cooperation" where "there are stable preferable states, but they are hard to reach, since we are 'stuck' in a suboptimal but equally rational solution (*from the view of individual self-interest*)" (SS, 21, emphasis added). They go on to assert that the stag hunt is valuable for "characterizing the problem of generating responsiveness to climate change" (SS, 21). They contrast this with the prisoner's dilemma model which, they say, represents the problem of stability. Specifically, on their view solutions to the prisoner's dilemma tell us how cooperation can persist once it is

reached, whereas solutions to the stag hunt tell us how to get to cooperation in the first place.[5]

Smead and Sandler claim that I "dismiss" the stag hunt because "it does not capture the climate problem" as well as the prisoner's dilemma, and remark that this is "an important oversight" (SS, 21). Though I cannot adequately address this issue here, let me make four quick comments.

The first is that my attitude to the stag hunt is more complex than the claim of "dismissal" suggests, and I worry that key features of my view are being lost in translation. First, in the relevant section I am considering the global storm aspect of climate change, not the whole problem. Second, I am comparing the stag hunt with my evolving tragedy of the commons (which the chapter is at pains to distinguish from the prisoner's dilemma). Third, I go on to say that the relevance of both models is likely to be undercut by the intergenerational storm. Fourth, I explicitly suggest that the stag hunt might become relevant if that storm could be assumed away. If so, it could capture "the climate problem" on a larger scale. Fifth, however, I also say that this might be true of other models too, and that it is difficult to say in advance.

The second comment is that I remain unsure why Smead and Sandler think that identifying the stag hunt is likely to play a large role in "*generating responsiveness* to global climate change." Specifically, I can see that it would be important if the current situation were one in which countries' current (very weak and sometimes obstructionist) actions on climate were best

[5] As it happens, I would resist this account. For example, in my view solutions to the prisoner's dilemma often facilitate cooperation. However, I will not pursue such arguments here.

understood as "hunting hare" and their aspirations as "hunting stag." However, what reason do we have to think this?

The third comment concerns one possible answer. Smead and Sandler sometimes seem to be asserting that countries really believe (a) that, "*from the view of individual self-interest*" (SS, 21), strong universal climate policy is the "stable preferable state" that is hard to reach ("hunting stag"), and (b) that they are "currently "stuck" in a suboptimal but equally rational solution" ("hunting hare"). However, these assertions appear to neglect much of the perfect moral storm analysis, including its explanation of the history of climate policy. As such, they require some clarification and defense. Not only is some account of what "individual [in this case presumably "national"] self-interest" means clearly needed[6], but Smead and Sandler need to show how their view overcomes pressure from both sides.

Specifically, on the one hand, if nation states conceive of their interests in ways that are biased towards the current generation (as the perfect storm analysis suggests), then their history of weak action may be "hunting stag" from their point of view, as this may constitute the most desirable shadow solution. If so, "solutions" to the stag hunt considered as such will not help to promote more robust climate action.

However, on the other hand, if the self-interest assumption is simply the old saw that countries can be relied upon adequately to represent the interests of current and future generations—so that one can assume away the intergenerational storm—then, while the idea that serious cooperation on climate is a stable and much preferred outcome ("hunting stag") becomes more plausible[7], it

[6] See also, Stephen Gardiner and David Weisbach, *Debating Climate Ethics* (Oxford University Press, forthcoming).

[7] This is why I say in the book that there *may* be a role for the stag hunt in analyzing this situation. Moreover, this is somewhat attractive on my view

nevertheless remains a mistake *simply to assume* that the stag hunt is the appropriate model for this aspect of the climate problem. One reason is that, if we are assuming that the intergenerational storm has been dealt with, it is hard to say in advance that the current situation amounts to a stable, "suboptimal but equally rational" solution ("hunting hare") rather than something more seriously dysfunctional.

To illustrate this point, consider just two issues. First, given that the current emissions trajectory poses significant risks of severe harms and catastrophe, it is not clear why appropriately *intergenerationally* sensitive governments would regard it as equivalent to "hunting hare." On the contrary, they may be so strongly motivated to avoid serious climate change that no solutions seem to them either rational or stable that do not involve very robust climate action. In this case, the correct game theoretic diagnosis may be a game like harmony, rather than stag hunt (cf. DF, 179).

Second, more generally, successfully addressing the intergenerational storm may *radically transform* the global situation. For instance, it may require major institutional reform; and, depending on how this accomplished, this may make many different accounts of the remaining intragenerational problem plausible (125-6). Given this, the rush to endorse a stag hunt analysis seems premature. An analysis of the game theoretic shape of the problem faced by a set of appropriately intergenerationally sensitive institutions will depend to a considerable extent on the structure of those institutions, and their relations to the rest of the global institutional architecture. Since these are currently

since my own interpretation of the perfect storm suggests that its deepest root is institutional.

obscure to us, we should not prejudge which model would make most sense of it.[8]

3. Intergenerational Games

Such worries suggest that the differences between myself and Smead and Sandler may be more serious than first meets the eye. In particular, I wonder whether they may be much more sympathetic to the traditional game theoretic analyses of climate change than I am. I am far from sure that this is so; however, there appears to be some indirect evidence for it in the commentary.

To begin with, it is possible that Smead and Sandler are unmoved by the intergenerational aspect of my analysis. Notably, they never mention either the intergenerational storm in general, or the tyranny of the contemporary and pure intergenerational problem in particular; moreover, what they do say tends to push these ideas aside. First, they continue to list the prisoner's dilemma as "the hard case" for solving a cooperation problem (SS, 19), even though I argue that the pure intergenerational problem is worse. Second, they highlight the stag hunt in part because of its connection to solutions to the prisoner's dilemma (SS, 19). Third, they list mitigating carbon emissions as an important aspect of climate change that *mirrors a prisoner's dilemma*[9]

[8] See also, Stephen Gardiner, "Calling for a Global Constitutional Convention Focused on Future Generations," forthcoming in *Ethics and International Affairs*.
[9] Some writers describe something like the tyranny of the contemporary as "an intergenerational prisoner's dilemma." This strikes me as a mistake. Though there are interesting commonalities (as I point out), there are also significant structural differences with serious policy implications. In my view, describing the pure intergenerational problem (for example) as an "intergenerational prisoner's dilemma" makes about as much sense as describing the battle of the sexes or harmony games as "friendly prisoner's dilemmas."

(SS, 19) even though I argue for a perfect moral storm model dominated by the tyranny of the contemporary, and also specifically claim that the prisoner's dilemma analysis of the global storm is undercut by the intergenerational storm.

More intriguingly, to illustrate their pluralist view Smead and Sandler reference with approval a recent overview of the potential contributions of game theory to climate policy. However, this (otherwise very helpful) paper manifests several features of the traditional approach in international relations and economic theory that I am arguing against.

First, it continues with the traditional assumptions. Most notably, despite framing itself as an "*exhaustive* treatment of the climate relevant 2*2 order games" (DF, 185; emphasis added), the paper simply *fails to consider* the intergenerational dimension, including the possibility of a tyranny of the contemporary, or indeed any aspect of the intergenerational storm. For instance, a basic assumption of the analysis is that there is "no economic or geopolitical advantage to be gained" if countries both pollute instead of both abating (DF, 178; cf. 181). This assumption appears to rule out the possibility of intergenerational buck-passing right from the start.[10]

Second, the paper promotes traditional solutions. For one thing, its main policy-relevant conclusions are that "the overriding barrier to achieving an international agreement to

[10] The authors make a couple of remarks very late in the paper that indirectly signal some disquiet about this assumption (DF, 186). However, given their claims to be offering an exhaustive analysis of the climate-relevant games, they apparently do not see a role for game theoretical analysis in exploring such matters. Intriguingly, they also suggest that one source of "unhappy" games in which it is difficult to get an agreement to abate is where the players "live in different moral universes" (DF, 183), though they do not suggest different views in intergenerational ethics as a source of such differences.

protect the climate may be *a failure of the leading governments to grasp the seriousness of the climate risk*" (182; emphasis in original), and that "greater understanding of the science" is key to resolving this problem (186). For another, the science it regards as important is the claim that "climate change is an existential threat to humanity and civilization, at a non-zero probability of significant magnitude that cannot be ignored" (182; emphasis added), and this is because they assume that this threat can engage with national "self-interest" understood as a concern for survival (182).[11]

In my view, this approach continues the mainstream tendency to focus almost exclusively on scientific issues and on international politics, while neglecting the ethical dimensions of the climate problem. It is thus very much opposed to my message in the book. Moreover, this narrowness causes mainstream approaches to neglect important features of the geopolitical situation that would be highlighted by a broader game theoretic approach. For example, in addition to missing the tyranny of the contemporary, the paper also overlooks two more specific policy implications of the perfect moral storm analysis. One is the argument (in chapter 6) that, rather than driving solutions, the prospect of increasingly severe climate change may make matters much worse by setting off the equivalent of an intergenerational arms race. The other is the possibility, central to my own interpretation of the perfect moral storm, that a vital element of the climate problem is an institutional gap, and that institutional reform may be needed to fill it. Both threats suggest that much more than "greater understanding of the science" is needed. Again, the problem of misdiagnosis looms large.

[11] They do add "(perhaps reinforced with equity considerations)"; however, there is no indication that intergenerational considerations are what they have in mind and the context suggests otherwise.

II

Responsibility

Dale Jamieson and I agree on many things in climate ethics, and on the most important. Even when it comes to the main issue at stake between us here—responsibility—our views are relatively close. Both of us believe that humanity faces a profound ethical challenge, and that part of the problem is that current practices fail to grasp this. Both of us think that moral corruption is part of the problem, and virtue part of the solution. Both of us suppose that a solution will probably require "the formulation and implementation of new moral norms and concepts."[12]

Where we differ is in our sense of the roots and scale of the ethical challenge. Jamieson believes that the roots are deep, and seems pessimistic about solutions. He believes that our current values evolved in "low-population-density and low-technology societies, with seemingly unlimited access to land and other resources," and so are ill-suited to a globalized world.[13] For him, the heart of the problem is that these values contain an account of responsibility which "presupposes that harms and their causes are individual, that they can be readily identified, and that they are local in time and space." Since climate change fits none of these criteria, our current values are inadequate. More specifically, Jamieson claims that our normal concepts of ethical responsibility fail to "gain traction" when confronted with issues such as climate change because these do not have the features of a

[12] Jamieson says that the difference between us is that while I believe that we have moral norms and concepts that apply that we are not living up to, he thinks that we do not have adequate moral norms and concepts that motivate us. However, since I think there is a theoretical storm, my view is perhaps more complex than this contrast implies. See Section VI.

[13] Dale Jamieson, "Ethics, Public Policy and Global Warming," *Science, Technology, and Human Values* 17 (1992), 139-153, at 148.

paradigm moral problem as represented in his Jack and Jill example, and this undermines how we understand the urgency of the case. Thus, he concludes, we face a "new problem": "the possibility that the global environment may be destroyed, yet no one will be responsible."[14]

I agree with Jamieson that conventional practices—at both the individual and social level—"fail to grasp, or get a grip" on climate responsibility, so that it "slips through the cracks." Let us call this "the grasping problem." One possible cause of this problem is Jamieson's diagnosis that our ethical *concepts* fail to "gain traction." However, this is not the only candidate explanation. I want to allow for rival explanations, including (though not limited to) the ones I suggested in the original paper. Though I cannot address all of the issues in this short reply, let me highlight a couple of points.[15]

1. Metaethics

One possibility involves metaethics. Jamieson is an avowed internalist about moral motivation. He thinks that if one really appreciates a justifying reason, then one will automatically have a corresponding motivating reason to act accordingly. As a result, for him a lack of motivation implies some kind of cognitive failure, and in this case he thinks the cause is conceptual. By contrast, I am willing to take externalism seriously. Externalism holds that agents might grasp the moral severity of a particular action perfectly well—and so possess a justifying reason not to do

[14] Jamieson, "Ethics, Public Policy," 149.

[15] I pursue some of this in more depth in Stephen M. Gardiner, "Is No One Responsible for Global Environmental Tragedy? Climate Change as a Challenge to Our Ethical Concepts" in Denis Arnold, ed., *Ethics and Global Climate Change* (Cambridge: Cambridge University Press, 2011), 38-59.

it—and yet not be motivated accordingly. In the most obvious cases, they see what the right thing to do is, but just don't want to do it.[16]

Externalism is one way to avoid Jamieson's conclusion about the need for a conceptual paradigm shift. Under internalism, a lack of motivating reasons suggests a lack of appropriate justification. However, according to externalism, we might genuinely appreciate the moral severity of the problem, and so the justifying reasons, and yet still not be motivated to act. This might show that there is something wrong with us (our motivations), but not with morality (our moral concepts). Perhaps we are just bad or imperfect moral agents. This need not imply that we need a conceptual paradigm shift, only that we ought to be morally better than we (currently) are.

2. Delegated Authority

Of course, rival candidate explanations for the grasping problem are available even without recourse to metaethics. Jamieson suggests in his current paper that "the most fundamental distinction in our prevailing moral consciousness is between [acts] that are morally suspect and those that are not," either because they are in a protected private sphere, or just because as a default we regard "most of what people do" as morally permissible (J, 39). He then argues that most acts relevant

[16] Jamieson likely does not distinguish between them because he assumes that there is a tight connection between appreciating moral severity (justifying reasons) and being motivated to act in accordance with them (motivating reasons), so that to some extent they stand or fall together. In particular, according to a popular and mainstream view in contemporary metaethics ("internalism about moral motivation," or simply "internalism"), if one really appreciates a justifying reason, then one will automatically have a corresponding motivating reason to act accordingly.

to climate change are not in the domain of "the suspect"; this is because they deviate too far from his paradigm case of Jack and Jill, and are "just a consequence" of people "getting on with their lives" (J, 42).

My account offers an alternative explanation of these phenomena. According to a long tradition in political theory, political institutions and their leaders are said to be legitimate because, and to the extent that, citizens delegate their own responsibilities and powers to them. The basic idea is that political authorities act in the name of the citizens in order to solve problems that either cannot be addressed, or else would be poorly handled, at the individual level, and that this is what, most fundamentally, justifies both their existence and their specific form.

Some democratic thinkers believe that the role of social and political institutions is to discharge as many ethical responsibilities as possible for the citizenry, so that under an ideal system individuals would not have to worry at all about such responsibilities, but would instead be maximally free to engage in their own pursuits (subject to the external constraints set out by the system). However, here it is noticeable that success breeds the elimination of responsibility at the individual level. The better the rest of the system is at discharging responsibilities on behalf of individuals, the fewer direct demands such responsibilities make on the individual. Hence, it is likely that the demands themselves become unfamiliar, and indeed perhaps invisible to the individual herself. If this is right, it seems plausible to think that the more effective a social system is (or is perceived to be) in discharging responsibilities in general, the more demanding any significant unmet responsibilities will seem. Or, to put the point in another way, for those used to very wide freedom to pursue their own ends without worrying about wider responsibilities, the

emergence of a serious failure to discharge is likely to be deeply jarring. The issues will seem very unfamiliar and the nature of the responsibilities extreme. Still, this may say more about the past successes of the delegated responsibility paradigm than its defects.

None of this suggests that the delegated responsibility paradigm is not open to criticism. Instead, my point here is that this is not a "new problem": the whole idea that individuals are responsible in this way is philosophically bold and puzzling. Climate change is one example; but there are countless others. So, there is a real question about why we should take this worry as special to global environmental problems, or especially problematic there. There is also a real worry that in a perfect moral storm we, the current generation of the affluent, might be complicit in moral corruption when we do.

3. Personal vs. Political

One implication of this rival explanation of the grasping problem is that Jamieson and I may also disagree about the relative importance of personal and political responsibility at the individual level. The delegated responsibility model helps to cast this debate in a different light. Consider a more standard case than climate. Suppose that there is a breakdown in basic security in another city in one's own state or country. For example, suppose that the entire police force of upstate New York were to resign, with the result that law and order vanished from the streets of Albany. Who would have the responsibility to deal with it? Presumably, it is the city and state governments, and (failing that) the government of the United States. Why? On the delegated responsibility model, it is because they have delegated authority to act "in our name." However, what if all of these

efforts to delegate failed? Would the rest of us be off the hook?[17] On the delegated responsibility model, the obvious answer is 'no'. Primarily, each of us would have some responsibility to try to get the existing institutions to live up to the responsibilities delegated to them, and (if this turned out to be hopeless) to establish new ones to replace them. Secondarily, we would also have a responsibility not to thwart good efforts to achieve these goals, but to cooperate with them. For instance, we should not try to benefit from the lawlessness by sending in looting parties, or making black market deals with potential looters.

Would each of us also have an individual responsibility to "get armed and go North" in order to police the streets of Albany ourselves? In principle, perhaps, if all other efforts towards better solutions failed. In practice, I doubt that it would come to that. Uncoordinated individual action would be a pretty poor way of addressing the real problem, and come at a very high cost. If we got to the point where average individuals had to seriously consider packing rifles and flak jackets, an awful lot would have to have gone wrong. Moreover, there would also have to be a good chance of making a meaningful difference, and the prospects for better solutions would have to be bleak. Consequently, on a plausible interpretation of the delegated responsibility model, the problem is not that there is a conceptual problem with individual responsibility, but that focusing on the individual's personal behavior seems the wrong way to tackle the problem, or at least so far down the list of serious options that it is a poor focus for action. Though there is some point to modifying one's personal behavior (e.g., by trying not to make the overall situation worse), individual political responsibility seems much more central.

[17] The wider burden may initially fall on Americans. However, under a number of circumstances the 'us' would extend to a wider global public.

4. George and Jack

Jamieson and I also disagree about paradigms and their role. Jamieson wants to "understand why we generally do not see our individual actions that contribute to climate change as morally valenced" (J, 44). He explains the grasping problem in terms of a conceptual failure, and argues for it using his classic example of Jack and Jill. He thinks that "through the lens of commonsense to see these acts as analogous to Case 6" (J, 44), but Case 6 has no traction for us. Rather than as a matter of responsibility, we tend to see the loss of bicycles that results as "just a consequence of Jack and others getting on with their lives," and so in the "morality-free zone" mentioned earlier (J, 42).

Jamieson says that the difference between the two of us amounts to an empirical dispute as to whether Jack 6 or George 7 is "closer to how most people see some actions that contribute to climate change." Though he concedes that in the end empirical research would be needed to answer this question, he thinks it obvious that most people don't think of their climate-relevant behavior as akin to throwing fireworks over poor parts of town, as George 7 proposes. I have three initial responses.

First, in general, I agree that it is an open question whether most people see climate change in general, or individual climate actions in particular, as raising ethical questions. However, I wouldn't bet against it. In my experience, plenty do. Moreover, most people who reject the ethical framing do so either because they don't think climate change is a problem (they are deniers), or because they think ethics is somehow unhelpful from the point of view of driving solutions (usually because they believe that other people are self-interested and not moved by ethical concern, however conceptually appropriate).

Second, I also agree that it is an empirical question how people actually understand the ethical shape of climate-relevant action. Still, for whatever it is worth, Jamieson and I have clashing intuitions here. For reasons mentioned in my original paper, I would be amazed to discover that people think of their climate-relevant behavior as conceptually akin to "depriving future people in other countries of bicycles." Moreover, in my personal experience, the fireworks story is much more likely to fit what they actually say and are concerned about, and especially their picture of the important harms of climate change.

Third, in any case, whatever the answers to these questions, in my view the central issue for Jamieson's account is whether people are prevented from understanding climate change as an ethical challenge *because of* a deep conceptual problem concerning the nature of moral and political responsibility, as illustrated in the Jack and Jill example. This is also an empirical question, but of a deeper kind. Still, it is surely relevant to that question to ask whether there is such a conceptual problem. If, as I argue, there is not, because Jack 6 involves a misdiagnosis, then how people actually "see" things (the shallower empirical question) may not settle the issue. Instead, we need to know why they do so; after all, even if they are inclined towards bicycles, this may itself be a sign of moral corruption.

III

Geoengineering

Geoengineering raises many questions. Two that are likely to jump out to moral and political philosophers are:

(1) Are there any circumstances under which geoengineering could be morally and politically justified?

(2) If there are such circumstances, might they actually arise in the climate case?

Chapter 10 of *A Perfect Moral Storm* is concerned with neither of these questions. However, to avoid distractions, let me just say that my view is that the answer to both is "yes." There are explicit indications of this in Chapter 10. Specifically, I say in passing that my criticisms of the Arm the Future argument themselves suggest where we might look for more successful arguments for geoengineering (378, 396), and specifically identify a realm of "fully moralized" arguments that incorporate concern for (at least) liability, compensation, political legitimacy, and lingering inertia (378).[18]

Despite this, the two justificatory questions are neither the main subject of chapter 10, nor important to its purpose. Instead, the chapter is concerned with developing a specific implication of the perfect moral storm analysis, the threat of an "evolving shadow strategy." Its goal is to explore this threat by illuminating "the possibility of moral corruption when geoengineering is pursued," and explaining "the ethical implications of this" (340). In particular, my concern about the fully moralized arguments is not their existence, but their relevance: "we must take seriously the possibility that robustly moralized [geoengineering] solutions will be even less politically available than [conventional] options" (396).

[18] Elsewhere, I add governance mechanisms, and individual protections. See Stephen M. Gardiner, "Geoengineering and Moral Schizophrenia: What's the Question?" in William Burns and Andrew Strauss (eds.) *Climate Change Geoengineering*: *Legal, Political and Philosophical Perspectives* (Cambridge: Cambridge University Press, 2013), at 14.

These preliminaries are helpful in clarifying what is at stake in Christopher Preston's commentary. Preston and I do not disagree about whether it is *possible* to justify geoengineering. We also agree that there is a threat of moral corruption, and that it deserves to be noted. Still, Preston has reservations.

First, he believes that, though moral corruption is possible, it is not (yet) manifest in practice, in early policy discussions. Most notably, he claims that leading scientific authorities take stronger positions on geoengineering policy than my focus on "moderate research only" suggests, and given this "we should take the research scientists at their word and trust them that SRM alone is not their goal" (P, 29-30)[19].

Second, Preston believes that emphasizing the threat of moral corruption has a "political cost": "well-meaning researchers become defensive when it is suggested that their intentions are simply to avoid doing anything about emissions" (P, 34). He thinks that this is regrettable "when they seem to view their work as a genuine effort to help in the face of a situation that seems increasingly to be getting out of hand" (P, 34). To avoid this undesirable "chilling effect" (my words, not his), Preston suggests that "while Gardiner's warning about moral corruption must be heeded, it should not drive the discussion" (P, 34).

1. The Subjects of Moral Corruption

One issue between us is the question of what the primary subjects of moral corruption are supposed to be. Preston assumes that it is particular scientists or scientific policy groups. However, my focus is not on such actors; in fact it is not really on agents at

[19] Christopher Preston, "Moral Turbulence and Geoengineering: A Lingering Hazard from the Perfect Moral Storm," this issue. (Hereafter, 'P.')

all (see also 2013, 28). In the book, I am concerned with "corruption that targets our ways of *talking and thinking*, and so prevents us from even seeing the problem in the right way" (301); hence, my primary subject is the *public discourse around climate change* and the need to protect it against this threat. Hence, I say "our main interest in moral corruption is really with how to fight it, *not who to blame for it*," given that "we are the ones vulnerable" to such distortion (308; emphasis added).

Moreover, insofar as (as a distant secondary matter) my analysis has implications for evaluating agents, my central concern would not be with those arguing for geoengineering, but with those to whom such arguments are directed, and especially those who will make the relevant decisions (typically, governments) or are ultimately responsible for them (typically, national publics).[20] I take it that the idea that most of the arguments for geoengineering I discuss are directed at such agents is uncontroversial. The proponents of geoengineering I am talking about are quite self-consciously trying to advise governments, to influence the policy discourse, and (often) to bring the discussion to the wider public. Hence, even when it comes to the secondary matter of agents, my main concern is with whether the *acceptance* of certain arguments by some of these bodies would involve succumbing to moral corruption.[21] Importantly, by itself this

[20] For example, in the Austen case in the preceding chapter on moral corruption that sets up this one, I am much more concerned with John than with Fanny.

[21] For instance, in more recent work, I discuss a specific kind of example where this appears to be the case. In situations of *creative myopia*, "an agent invokes a set of strong moral reasons to justify a given course of action, but this course of action is supported by those reasons only because the agent has ruled out a number of alterative courses of action more strongly supported by the same reasons, and where this is due to motives she has that are less important, and are condemned by those reasons" (Gardiner, "Moral Schizophrenia," 19).

concern does not imply that those *offering* the arguments are themselves morally corrupt, as Preston appears to assume.[22] More importantly still, nor would the concern necessarily be assuaged even if we were confident that the relevant scientists could be taken at the word about their own intentions. Most obviously, in a setting prone to moral corruption, perhaps their intentions make little difference.

2. The Paradox of Political Inertia

One worry I have is that turning the emphasis of the moral corruption discussion towards who is arguing for geoengineering risks obscuring a central point. In my view, some arguments for geoengineering are far too simplistic, especially in the way they take a highly moralized "geoengineering is necessary to save the planet" approach. These arguments fail to take seriously the fact that, even if some forms of geoengineering policy are or might be an important part of a moralized solution, others can also manifest the problem and even make it worse. One of my claims is that in context the most ethically defensible (i.e., fully-moralized) versions of geoengineering policy seem unlikely to be adopted. The main reason for this is that they are morally and politically demanding in similar ways to other robust climate policies that are already subject to political inertia.

This point is especially relevant to early arguments for geoengineering, since many of these are motivated by a concern for political inertia. The key problem is that, after taking that motivation very seriously, they then proceed to neglect it. For instance, in chapter 10 I focus on a popular argument I call the "Arm the Future" argument. One reason I dislike the generic

[22] They may be; but they may not. At most, it raises the question—a question that in any case is not my focus.

version of this argument is that it assumes that geoengineering becomes a serious policy option only because of political inertia, but then fails to consider how such inertia might also constrain geoengineering options. We might call this *the Paradox of Political Inertia.*

3. What People Say

Arguably, the paradox of political inertia infects the early debate. Consider just a few issues. First, some appear to assume that only highly moralized geoengineering policies are on the table. This often seems to be Preston's approach. For example, in discussing an "SRM only" approach he uses the language of "necessity" to circumscribe the options:

> […] the political security necessary for a stable, long-term deployment would *have to be* established. […] Mechanisms to compensate those harmed by precipitation changes associated with SRM would *have to be* created … This list of requirements *necessary* for perpetual SRM is long and the costs are obviously high (P, 32).[23]

Similarly, for limited term geoengineering, Preston says:

> If the prospect of perpetual SRM is rejected then some serious planning for cessation—involving significant emissions reductions and perhaps even some carbon dioxide removal from ambient air—is *required* (P, 33).[24]

[23] For example, though he says we need compensation, an exit strategy, etc. Preston does not even consider minimal versions of geoengineering policy, or the possibility of minimally decent or positively indecent geoengineering policies. I think this is myopic. I also think it has a potentially undue warming effect on the geoengineering discourse. If we encourage people to think that ethically robust mitigation and adaptation is on the table, coupled with ethically robust geoengineering, then we are promoting a misleading picture.

[24] I agree that cessation is underdiscussed. The problem of moral corruption may provide part of the explanation of why.

Unfortunately, such "requirements" presuppose decision-makers who are interested in long-term stability and compensation. These seem to be ethical concerns. Importantly, it is not obvious why a buck-passing generation would see them as necessary features of a geoengineering policy. Many possible geoengineering policies do not include them. This would suggest that they are flawed from the ethical point of view. However, that does little to reassure us that none of them would ultimately emerge. In my view, we should not discourage discussion of such possibilities by assuming them away. To do so underestimates the moral and political complexity of geoengineering policy.

The second issue is that it is far from clear that those who advocate for a more general approach to climate policy that includes geoenginering have a full appreciation of the ethical implications. One concern is that mitigation and adaptation are not all that is at stake here. For instance, ethical geoengineering would have to address difficult issues of global governance and compensation. However, these would involve deep questions about global legitimacy and international justice that are barely even on the agenda. For example, even when major reports mention governance, they tend to assign it to venues that seem inadequate to the profound issues raised. The Bipartisan Policy Center's report, for instance, takes a very limited "coalition of the willing" approach to international cooperation, where a necessary condition for membership of the willing seems to be being well-resourced, scientifically and otherwise.[25] (This was a major reason

[25] Bipartisan Policy Center 2011, *Geoengineering: A National Strategic Plan for Research on the Potential Effectiveness, Feasibility, and Consequences of Climate Remediation Technologies*, 31.
http://bipartisanpolicy.org/library/report/task-force-climate-remediationresearch

that I withdrew from that report.)[26] Moreover, even the more ambitious Royal Society report suggests as the appropriate venue the United Nations Commission for Sustainable Development, rather than mentioning more robust venues such as the UN Security Council, NATO, the G20, the US Congress, let alone the possibility of radical geopolitical reform.[27] Neither approach seems to take very seriously the point that geoengineering is a genuinely global and intergenerational issue that potentially affects fundamental aspects of the lives of billions of people, many of them poor or residing in poor countries.

The third issue is that it is not clear how deep the commitment even to partially moralized geoengineering policies suggested by such reports really is. Some are, no doubt, deeply sincere. However, for others the situation is more complicated. For example, in recounting his own BPC experience in *Nature*, Dan Sarewitz tells us that he yielded on some points "in order to gain political capital to secure issues that had a higher priority for me," and that others did the same.[28] In general, Sarewitz concludes "disagreements between panelists are settled not with the 'right' answer, but by achieving a political balance across many of the issues discussed." Such a balance might not, therefore, show a serious commitment to moralized geoengineering. For instance, in context, some may believe that publicly backing more comprehensive climate policies turns out in practice to be functionally equivalent to promoting very limited approaches,

[26] Cf. Joe Romm, 'Dysfunctional, Lop-Sided Geoengineering Panel to Launch Green Washing Euphemism 'Climate Remediation'", *Climate Progress*, October 11, 2011.

[27] Gardiner, "Moral Schizophrenia"; Stephen M. Gardiner, "Some Early Ethics of Geoengineering: A Commentary on the Values of the Royal Society Report" *Environmental Values* 20 (2011), 171.

[28] Daniel Sarewitz, "The Voice of Science: Let's Agree to Disagree," *Nature* 478, 7 (2011).

such as modest geoengineering research only. Hence, though they feel politically obliged to make the familiar claims about the need for mitigation, adaptation and robust governance, they also see themselves as insulated from accepting the ethical implications by (what is in their assessment) the wider geopolitical reality. Though this may not apply to many scientists, it is one factor in the emerging politics of geoengineering. As one leading researcher recently advised me, "don't assume that the arguments in print are the one's scientists really believe."

4. Chilling Effects

Preston's second main worry is that highlighting the possibility of moral corruption has a "political cost." In particular, he worries that "well-meaning researchers become defensive when it is suggested that their intentions are simply to avoid doing anything about emissions."[29] I do not think that this should be a major concern. For one thing, I have already said that my focus is not on the *intentions* of researchers. For another, to the extent that

[29] I'm not sure which "political cost" Preston intends. The most obvious reading is that it is just a cost for ethicists who are denied opportunities to engage with scientists. However, a stronger claim would be that this aspect of the perfect storm analysis itself contributes to political inertia on climate change by reducing the likelihood that scientists will pursue geoengineering, especially of the fully moralized kind. I confess that I have not (yet) personally seen any evidence of a chilling effect of the first sort. The second "cost" is more interesting. Some may calculate the odds of moralized geoengineering to be small enough (and the risk of morally indecent geoengineering so high) for the cost to be worth absorbing. I am not sure what to think of this argument, except to say that this is a question scientists have to wrestle with (regardless of what I say), and that neither this answer nor its contrary seems obviously wrong. However, one thing that seems worth pointing out is that a refusal to engage for fear of being accused of participating in moral corruption is not itself proof against such corruption. In some settings, my argument (appropriately misinterpreted) may be a convenient scapegoat.

it matters, I think the raising the problem of moral corruption actually helps to articulate a concern that scientists already have, and which has a more important "chilling effect" on research. In my experience, many well-meaning scientists are concerned about participating in geoengineering research because they fear that they may thereby be drawn into an activity that makes things worse, rather than better. In particular, they are worried about science being used to exacerbate global problems, and especially environmental injustice, and do not want to *become complicit* in this. They are therefore (rightly) suspicious of the overly simplisitic "save the planet" arguments common in early discussions of geoengineering, and in particular their strongly moralistic flavor. My analyses in chapter 10 and elsewhere help to articulate these worries by exploring some of the moral complexities of geoengineering. Though this may have some "chilling effect" on the simplistic arguments, this seems warranted. It also seems better than encouraging the "warming effect" of presupposing that the only kinds of geoengineering on the table are fully moralized versions, and therefore ignoring the problem of political inertia. In practice, this seems a very dangerous assumption indeed. From my point of view, it provides a strong reason why the issue of moral corruption—understood in terms of the distortion of our ways of thinking and talking—should remain close to the center of discussions of geoengineering policy. Unless well-meaning researchers can be reassured that their efforts are likely to help address, rather than exacerbate, the perfect moral storm then we are unlikely to see the right kind of progress. However, this is largely a problem about our (collective) intentions rather than theirs. Ignoring it threatens to have very high moral and political costs.

IV

The Intergenerational Storm

Gianfranco Pellegrino poses a number of potentially serious challenges to my analysis. Prominent among these are:

(1) My account relies on a conception of intergenerational fairness that is not licensed by the intergenerational storm.

(2) We lack compelling duties of fairness towards future generations.

(3) At most, we have duties of beneficence towards future generations

(4) We have strong duties of intragenerational justice towards present victims of climate change.

(5) These claims (1-4) undermine the unity of the perfect moral storm analysis by suggesting that the problems of climate ethics are scattered.

Though I cannot respond to all of them here, I will offer a brief response to the most pressing.

Pellegrino's main argument takes the form of a specific analysis of the intergenerational storm, the two worlds story, made vivid through a specific analogy, Derek Parfit's auditorium problem. Within the two worlds story, the first, maximal world is one where each generation restrains its maximization, and the second world is the lowering-maximizing world " where the first generation overemits and later generations continue this trend."[30]

[30] Gianfranco Pellegrino, "Justice in the Auditorium," this issue. (Hereafter 'GP.')

Pellegrino claims that our world is of the second kind, where the first generation has already passed on, and we and our successors are in later generations. This implies, he says, that "the moral assessment of a lower-maximizing world is the *only relevant* issue in intergenerational ethics" (GP, 82; my emphasis). Moreover, this assessment should not involve concepts such as harm, fairness and justice. Pellegrino says: "only the first generation can be asked to be fair," "later generations are not causally responsible […] fate has been fixed," so that "demanding each of the later generations to abstain cannot be a request of fairness, but rather a duty of beneficence" (GP, 86).

To illustrate these claims, Pellegrino employs an auditorium analogy. In a flat auditorium, if the first row stands up this blocks the view of each subsequent row equally and none are further disadvantaged when rows between them and the first also stand up. Hence, "the first row's choice worsens the view of each of the other rows, while the choices of each of the other rows have no impact on the succeeding rows," with the consequence that "each of the rows except the first does not harm their successors, at least not in the sense of making them worse off" (GP, 85).

My most general objection to Pellegrino is that his approach involves a serious misdiagnosis. Specifically, his assumptions about the shape of the intergenerational storm strike me as highly specific, very stark, and most importantly as not fitting the climate case.

1. "Fixing Fate"

Let us begin with Pellegrino's claims that the first generation is in the past and has already done its work, that given this each subsequent generation is precommitted to an equal level of harm, and that the first generation's successors cannot add to that harm.

This picture appears false for climate change. In particular, mainstream scientific analysis suggests that current and future generations can increase the level and speed of climate change. The IPCC, for example, offers various scenarios for future changes in global temperatures over the next hundred years and beyond, these scenarios are associated with different levels of negative impacts, and the difference between them depend in large part on the emitting activities of current and future people. For example, a low emissions pathway through the 21st century makes it likely that the overall temperature increase will be less than two degrees Celsius (relative to 1850-1990), whereas a high emissions pathway makes it unlikely.[31]

This has several implications. First, it is simply not true that the first generation "fixes the fate" of its successors, in the sense that "each of the rows except the first does not harm their successors, at least not in the sense of making them worse off." Consequently, Pellegrino is mistaken to claim that "the choices of each of the other rows [after the first] have no impact on the succeeding rows" (GP, 85).

Second, in fact, the situation is in some ways the very reverse of what he suggests. Arguably, the most dangerous greenhouse gas emissions are still in the future, and without them earlier emissions would not be nearly so problematic, and perhaps (on some views) not problematic at all. This is reflected in the fact that mainstream scientific groups, such as the IPCC and the Royal Society continue to claim that it is possible to avoid

[31] Intergovernemental Panel on Climate Change (IPCC), Working group 1, "Summary for Policymakers" (2014), Table SPM.1, 12. Available at: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

"dangerous climate change," and to discuss the political benchmarks based on this goal.[32]

In general, the lesson is that suggested in my chapter 11: "it is difficult to disentangle the role of past and future emissions. […] [T]he future emissions that make climate change pose such a large threat do so principally against the backdrop of past emissions […] [and] the "liability" of the past is in part determined by future behavior" (419-420). More specifically, because of this problem of disentanglement, we should question Pellegrino's auditorium analogy. One option—that he mentions but dismisses—is to think of a sloped auditorium. In such an auditorium, the first row may inconvenience the second without affecting the views of higher rows. However, I am inclined to think that we should reject the analogy more decisively. For instance, Pellegrino appears to assume that the only option available to succeeding generations is to overemit. But this is surely contentious. First, presumably, there are other ways open to subsequent rows to get a view of the stage, and some of these can also help their successors. For example, there is no need to stand if everyone is offered a hoverchair or the stage itself can be raised up. In this spirit, successful investment in solar energy may mean that high carbon emissions become unappealing. Second, it is also open to the successor generations to remain seated. Maybe they can just listen to the performance. Perhaps this involves taking a loss, but maybe they should do so for the sake of the future. After all, what is at stake for later rows in the climate case is not really the middle-class nightmare of not being able to see the show properly; instead, mainstream projections suggest it is issues such

[32] IPCC (2014); Royal Society 2009. Geoengineering the Climate: Science, Governance, and Uncertainty.
http://royalsociety.org/policy/publications/2009/geoengineering-climate

as famine, disease, relocation and death. Some retrenchment, especially when it comes to "luxuries," thus seems justifiable.

2. Wider Worlds

The problem of misdiagnosis also infects Pellegrino's two world framework. First, we need more worlds. In addition to the maximal and lowering-maximizing worlds, there is the possibility of what I shall call rebounding worlds: worlds where at least some earlier generations engage in lowering-maximizing, but later generations can still choose to cooperate. This would remain true even if some generations inflict irreversible harms on all their successors, for the simple reason that successors earlier in the sequence can still make matters much worse for later successors.

Second, though Pellegrino intends his framework to capture the intergenerational storm, it does not fit the spirit of my discussion. In general, Pellegrino's model is highly specific in a way that implies a radical narrowing of the intergenerational storm. This undermines my attempt to provide a broad and flexible analysis. Most notably, in my book the intergenerational storm is broadly defined in terms of the tyranny of the contemporary, and this is initially presented in terms of a core example. However, the core example does not fit Pellegrino's two world framework or his auditorium model. It is explicit in that example that the buck-passing is iterated with cumulative effects. Since Pellegrino's account cannot accommodate this case, it excludes the core case of the intergenerational storm as I introduce it.

V

Ethical Methodology

At the outset of the book, I state that: "sometimes the best way to make progress in solving a problem is to clarify what the problem is" (3), and that the task is to explain why, given that the relevant facts are known, effective action on the global environmental crisis is proving so difficult.

Central to my account is the idea that the climate problem is often misdiagnosed, in general as an essentially scientific, economic and international problem, and more specifically as a traditional tragedy of the commons (or prisoner's dilemma) played out between nation states who reliably represent the interests of their present and future citizens. Against this, I argue that climate change poses an ethical challenge, and specifically constitutes a perfect moral storm dominated by the tyranny of the contemporary and the problem of moral corruption. In such a storm, the current generation and especially the most affluent face strong temptations to pass the burdens of their activities onto the future, the global poor, and the rest of nature in ways that are morally indefensible.

1. Minimalism

One feature of my approach to clearly identifying the problem is a methodological minimalism. I aim to "couch the ethical risks of our current predicament in the broadest possible terms" (5), to "specify the global environmental tragedy in language that almost

all morally serious people can accept" (5), and to do so while "prejudging as few normative questions as possible."[33]

It is important to notice that methodological minimalism does not entail a refusal to make ethical judgments. On the contrary, I maintain that it is not possible to correctly identify climate change as a problem without making at least some substantive ethical claims, and this is part of my reason for characterizing climate change as an ethical problem. Therefore, the goal of minimalism is not ethical neutrality, understood as the avoidance of ethical claims as such. Instead, the aim is, as far as practicable, to avoid prejudging contentious questions *within ethical theory* when making the substantive ethical claims. Thus, for instance, I seek, as far as possible, to present those ethical claims that are necessary to the analysis without presupposing any particular normative theory or family of theories, such as Millian utilitarianism, Scanlonian contractualism, Rawlsian liberalism, Neo-Aristotelian virtue ethics, and so on.

One illustration of this approach occurs when I introduce the intergenerational storm with a core example involving front-loaded goods that give modest benefits to the group that consumes them (and only to them), but impose very high costs on all later groups. On the one hand, I simply *assert* that "intuitively, the core example poses a moral problem," so that "other things being equal, it is hard to see how the practice it portrays could be justified" (152). So, I make a substantive ethical claim. Nevertheless, on the other hand, I immediately emphasize that I am not trying to prejudge how this problem should be characterized from the point of view of ethical theory:

[33] This is also represented in my alleged "casualness" about the use of 'we' (see Marcello Di Paola, "Climate Change and Moral Corruption," this issue, at 56. Hereafter 'DP'), and my avoidance of an overly precise definition of 'moral corruption' (J, 46-47).

> *There are perhaps different ways of describing what has gone wrong.* It seems highly plausible to say that the infliction of high costs on later groups for the sake of modest benefits for oneself is at least unfair or unjust. Depending on the case, one might also want to add (*or substitute*) that it is thoughtless, reckless, selfish, cruel, or callous (to mention but a few options). *Still, that there is a moral problem of some kind seems clear enough.* (152; emphases added)

The methodological minimalism with respect to ethical theories is justified for a number of reasons, including the following. First, since the focus of the analysis is on promoting the idea that climate change is an ethical challenge rather than some other kind of problem, it is appropriate to focus on what subsequent ethical theories should seek to explain rather than presupposing a particular explanation. Second, since one central component of the analysis is that the perfect moral storm poses a challenge to ethical theories as such (as manifest in the theoretical storm), violations of methodological minimalism seem premature. Third, the whole approach is rooted in the idea that sometimes problem identification is a useful first step that helps to ground further progress, and an evolving methodological modesty can be an important strategy in the ethics of the transition. In the absence of a widely-accepted and compelling "ideal theory" and especially a theory that one can simply "invoke and apply," one way to proceed (theoretically and politically) is to see how far one can preserve something like a wide "overlapping consensus" on climate action. Beginning with methodological minimalism in identifying the problem and then seeing how far one can preserve some degree of theoretical modesty moving forward thus seems a promising strategy.

All that being said, my commitment to minimalism is not absolute even at the first stage,[34] and I do not expect that strong

[34] Hence, my reference to the 'almost all morally serious people' (5).

forms of theoretical modesty can be maintained indefinitely.[35] In particular, some approaches to climate change may not be able to register that there is a moral problem, or may insist on severely truncating the shape of the problem. For instance, some argue that intergenerational concern can or should extend only over 2-3 generations or so,[36] sometimes because this is the limit of "solidarity" among citizens.[37] In this spirit, Marcello Di Paola claims that "governments are obligated to their living citizens, first and foremost (and plausibly, but already less stringently, to the next couple of generations of their future citizens […])" (DP, 57), and that, given this, are "more or less" morally justified in partaking in intergenerational buck-passing. On this view, it seems that such governments can manifest the behavior of the core example—taking modest benefits for 2-3 generations and imposing severe costs on those coming later—and yet fail to be open to moral criticism.

My account of the intergenerational storm resists such positions.[38] It takes the view that, other things being equal, this is a moral problem. The thought is that the prospect of intergenerational buck-passing (e.g., especially of the forms

[35] Hence, even in the context of introducing minimalism, I go on to say "presumably, potential solutions to the tragedy will have to go further, and make claims that are more controversial" (5).

[36] Gardiner and Weisbach, forthcoming.

[37] David Heyd, "A Value or An Obligation?" in Lukas Meyer and Axel Gosseries, eds. *Intergenerational Justice* (Oxford: Oxford University Press, 2009).

[38] I also have issues with "Businesses are obligated to their living shareholders, first and foremost" (DP, 57). This may not be wrong as stated—since "first and foremost" does not directly imply exclusively or to the expense of all other considerations. Nevertheless, the spirit of Di Paola's remark does suggest very strong readings of the phrase, or at least a reading strong enough to imply that businesses would be justified in ignoring the moral claims of others. In my view, this is an untenable (although sadly common) view of business ethics and the social role of business.

highlighted in the core example and the tyranny of the contemporary) imposes a strong burden of proof against the 2-3 generation view that most morally serious people would want to meet. I suspect that most solidarity theorists would accept this, and try to meet that burden (e.g., through stories about overlap, accounts of other kinds of moral reasons to take later generations into account, or other institutions to be charged to do it). However, this is not true of all proponents of a 2-3 generation view, and so the perfect moral storm is not morally neutral with respect to them. Instead, it takes a specific ethical stand.

2. Fairness

Of course, it is possible to go too far in the other direction. For example, Pellegrino objects that the intergenerational storm presupposes a framework of fairness or justice, and implicitly suggests that this makes my analysis prejudiced against approaches to climate change based on what he calls "beneficence." In general, I reject this objection.

First, the core example of the intergenerational storm was (deliberately) designed to be compatible with utilitarian-style welfarist intuitions. Specifically, if the current benefits are modest and future costs very high, then the costs clearly outweigh the benefits, and utilitarians have good reason to condemn buck-passing of this kind. Given this, the assumption that such buck-passing poses a moral problem does not beg the question against the utilitarian welfarist.

Second, I am clear that the language of fairness or justice is not essential to characterizing the core example. For example, I say that "depending on the case, one might also want to add (or substitute) that it is thoughtless, reckless, selfish, cruel, or callous (to mention but a few options)" (152),

Nevertheless, there may be more to be said. As I indicate in the book, I believe that it is highly plausible to see the problem in terms of fairness and justice, and (given this) I feel free to frequently characterize the intergenerational storm in this way. Hence, as it happens "*rather than as a presupposition of the perfect moral storm analysis*," I do think that the aptness of the fairness and justice language is plausible enough to impose a burden of proof on utilitarians and other welfarists to account for that plausibility. In other words, there is some pressure on versions of climate ethics that rely mainly or exclusively on "beneficence" to show why this would not license outcomes that intuitively seem manifestly unfair or unjust, and so to promote a highly truncated account of our moral responsibility to future generations. I do not claim that this burden cannot be met; but I think it is there.

Moreover, in my view the burden is highly relevant in practice, since views of this type do show a strong tendency towards minimizing concern for future people, a tendency exhibited in Pellegrino's own recommendations. Offhand, they thus seem to encourage a dismissal of the intergenerational storm, and perhaps thereby an endorsement the tyranny of the contemporary, rather than a solution to it. Often, of course, the dismissal takes place under the guise of strongly highlighting the needs of the present and especially the current poor. However, this does not eliminate the burden of proof. Addressing the global storm does not in itself justify ignoring the intergenerational, and can itself be a tempting cover for moral corruption.[39]

Of course, none of this implies that utilitarian or welfarist views should be dismissed from the outset. Most obviously, there

[39] This problem also afflicts rights-based approaches. For example, see my 'Human Rights in a Hostile Climate.' In David Reidy and Cindy Holder, eds. *Human Rights: the Hard Questions* (Cambridge: Cambridge University Press, 2013).

is a mainstream utilitarian strategy for dealing with such problems. Indirect utilitarians can argue that commitments to fairness and justice of this sort—e.g., commitments not to engage in intergenerational back-passing as characterized by the core example—are strong promoters of utility over the long-term. In my view, such strategies are highly plausible (whether one is a utilitarian or not), at least as a first step. Moreover, as I say in the chapter on cost-benefit analysis, the neglect of such philosophically popular versions of utilitarianism in policy debate is a large problem that infects discussion of climate change and may itself manifest a corruption of the discourse. One lesson I would draw is that indirect utilitarians should not so easily concede the sole representation of the "welfarist" view to those who favor direct calculation, especially as understood by the rather narrow methods of standard economic cost-benefit analysis (e.g., in terms of market discount rates and prices).

3. Virtue

Another possible methodological objection would be that my account presupposes virtue ethics, since as Di Paola puts it "virtues rather than obligations are in the background of Gardiner's thought" (DP, 61). It is true that I have a background in virtue ethics and that appeal to such ideas would be an important part of my own theoretical suggestions about how to confront the perfect moral storm. Nevertheless, I do not think that my account of the storm presupposes this tradition in how it characterizes the climate problem, or at least that it does so in a prejudicial way. Instead, I suspect that what is noticeable is that some parts of my account take seriously issues that seem more pressing for virtue-based approaches, and which some opponents would therefore wish to ignore (e.g., the idea of tarnishing evils in chapter 10). However, in my view to omit these issues just for

this reason seems to amount to a prejudice against virtue. Accommodating such a prejudice would impoverish our sense of what the problem is, and compromise the effort to defend the claim that it is an ethical problem. It would also lead us to underestimate the need for other theoretical approaches to respond to these issues.

4. Resolves

In the end, of course, one cannot maintain minimalism forever. Indeed, even overlapping consensus requires development of the various views subject to that consensus, and such consensus may not apply to all aspects of the climate debate. Thus, there is a pressing need for more "ideal theory," and so for expansion. In addition, though modesty may be helpful as part of the ethics of the transition, at some point such an ethics may also simply have to take a stand. Indeed, it is possible that in the end fairly specific and controversial ethical claims are the best (or even the only) hope for motivating change.[40] Even given the initial theoretical modesty, I do not rule this out. The perfect moral storm analysis aims to facilitate this discussion, not prevent it.

Still, some approaches do strike me as too rigid and dogmatic. For example, though (when stepping away from modesty) I agree with Di Paola that virtue can play a key role in addressing the perfect moral storm, I am uncomfortable with his idea that agents should simply "resolve" to address climate change, where this involves an intention "especially designed to stand firm in the face of contrary inclinations and/or dissonant information" where "their pursuit is non-contingent on the behavior of

[40] E.g., Dale Jamieson, "Climate Change, Responsibility and Justice," *Science and Engineering Ethics* 16 (2010), 431-445.

others," and the reasons for grounding their adoption are unimportant.

Offhand, this kind of entrenchment strikes me as too extreme. In my view, virtue is grounded in reasons, open to new information, and sensitive to variation in situations. Hence, cultivating firm nonrational entrenchment of some views is generally an undesirable approach, and likely to lead to wider social problems if practiced more widely.

Of course, I also suggest that some kinds of strength of character and institutional robustness are required for holding firm to pre-theoretical commitments in the face of the perfect moral storm, and especially given the theoretical storm and the problem of moral corruption. However, for me both the reasons underlying the pretheoretical commitments and the standing threats are important. Not only can they play a role in guiding an appropriate defensive ethics, but they also suggest some limits to defensiveness. In cases where a relevant virtue is not yet developed, Aristotle would urge us to lean towards the extreme to which we are naturally less inclined. This, rather than dogmatic entrenchment, seems good advice for an emerging ethics of the transition.

VI

The Theoretical Storm

A further worry about the resolve suggestion is that it seems to presuppose that we already know what to entrench, whereas on my view there is a theoretical storm to confront, and so the way forward is less clear and less secure.

1. Clear Cases

This leads us to another objection. In my discussion of the Dashwood case, Di Paola claims that I "make a peculiar move," "where we are suddenly rescued from the theoretical storm and transposed onto a placid moral shore" (DP, 63). Specifically, Di Paola suggests that I suddenly "factor out" the theoretical storm by presupposing that duties of global and intergenerational justice not only exist, but consist in clear moral requirements.

My response is that it is not a violation of the theoretical storm to appeal to some ethical considerations. The theoretical storm rests on the idea that we lack robust theories in the relevant areas, not that we lack the ability to make any ethical judgments at all. This move is signaled very early in the book:

> *"Even given the theoretical storm, the broad outlines of what must be done are relatively clear and well-known*, especially in the short- to medium-term (see chapter 11). Even lacking robust theory, intermediate guidance is possible using indirect methods, such as *identifying intuitively clear cases of failure*, trying to articulate ethical constraints based on those cases, searching for levels of overlapping consensus across existing theories, and defending such benchmarks against the forces of moral corruption." (10; emphases added)

It is also signaled in my endorsement of the following quotation from Rawls:

> It does not follow [from the severity of the theoretical problems] […] that certain significant ethical constraints cannot be formulated. […] it may often be clear that a suggested answer is mistaken even if an alternative doctrine is not ready to hand" (184).[41]

Hence, in the parallel with the Dashwood case, I presuppose that there are some norms of global and intergenerational ethics,

[41] John Rawls, *A Theory of Justice*, rev. ed. (Cambridge (MA): Harvard University Press 1999), 253.

and that it is clear that these are violated by the recent history of international climate policy. However, this does not imply that there is no theoretical storm. The claim that such norms exist and we can identify clear cases of violation does not at all imply that we have robust theories to guide us.

2. The Promise of Justice

As part of this objection, Di Paola resists drawing a parallel between John Dashwood's promise making and the aforementioned norms. This is a comment I have heard a number of times. In one way, I confess that in the past I have been inclined not to take it very seriously. In the end the analogy does not require a very tight correspondence between John's reasons for action and ours. It is enough that both John and we have strong moral reasons to act well. Hence, for my purposes, focusing on this dispute somewhat misses the point of the example.

Nevertheless, I do think that the analogy is stronger than the objection recognizes. Let us begin with basic objection that John makes an explicit promise and we do not. This strikes me as false. In the United Nations Framework Convention on Climate Change, the nations of the world explicitly committed themselves to "the protection of current and future generations of mankind," and the specific objective of preventing "dangerous anthropogenic interference" in the climate system. This convention was subsequently ratified by virtually all nations, included the large and emerging emitters, such as the United States, China, the European Union, Russia and India. Subsequently, the leading nations have repeatedly endorsed the general goals of the UNFCCC. More recently, in the Copenhagen Accord of 2009, they have also committed themselves to

interpreting "preventing dangerous anthropogenic interference" in terms of the goal of restricting climate change to 2 degrees. In short, in highly relevant respects we have promised, very publicly and explicitly.

More tellingly, in my view, in both cases the moral issues at stake are much deeper than the explicit agreement to address them. Henry Dashwood has strong moral reasons for asking the promise of John, John recognizes these reasons when he makes the promise, and in large part agrees because of this. As a result, John's duty to act is to some extent independent of the explicit promise, and would remain strong even without the promise. The same is true in our case. For example, even if the UNFCCC had never been negotiated and ratified, most of our moral reason to act on climate change would remain and be equally strong. Though the fact that we promised makes a difference, it is only a relatively small difference.

Di Paola dismisses my claims about John as "conjectural." This strikes me as too quick. In particular, the subsequent nature of Fanny's reasoning and the historical context count against it. On the first, even Fanny recognizes that she needs strong counterarguments, and that the burden of proof is on her. Rather than dismissing the norms directly, she attacks their applicability in cases of "half-blood," and argues that their application to his half-sisters is superceded by John's closer attachment to his own son. Notably, the latter argument requires presupposing some intergenerational norms. On the second, can we really imagine (morally-speaking) John saying simply, "No, Father: the money's mine and I'll do as I see fit, whatever the consequences for my siblings"? Would it be any less morally preposterous for us to say, "No, future people: the power is ours and we intend to use it whatever the consequences for you"? To me, the idea that our

generation may leave as its epitaph "We made no promises" is a morally chilling prospect.

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