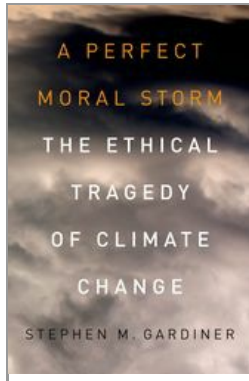


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A Perfect Moral Storm: The Ethical Tragedy of Climate Change

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Some Initial Ethics for the Transition

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[–] Abstract and Keywords

A full response to the perfect moral storm would require a major project in ethical theory. Nevertheless, this postscript claims that more limited moral and political theorizing is relevant to current debates about climate policy, and suggests a modest redirection of the public debate. Specifically, it argues for seven theses: that scientific uncertainty is not a core issue; that a precautionary approach is theoretically respectable; that past emissions matter; that the intragenerational burdens fall predominantly on developed countries; that intergenerational trajectories require ethical defense; that the current generation's right to self-defense should be taken seriously, but is sharply limited; and that individuals bear some responsibility for national and international failures.

Keywords: precautionary principle, scepticism, responsibility, emissions rights, subsistence emissions, equal per capita allocations, adaptation, UN framework convention on climate change, dead emitters,

ignorance objection

The bulk of this book focuses on describing the general ethical challenge posed by climate change, rather than responding to it. It also claims that a full response requires deep work in moral and political philosophy, since one basic component of the challenge is our lack of robust theory in many of the key areas, such as intergenerational ethics, international justice, environmental philosophy and scientific uncertainty. Despite this, it does not follow that ethics has nothing substantive to say about our current predicament, and the shape of the direction forward. This chapter illustrates the potential for such work through a brief commentary on five central aspects of climate policy: scientific skepticism, responsibility for past emissions, the setting of mitigation and adaptation targets, and the relationship between individual and collective responsibility. In doing so, it urges a modest redirection of the public debate.

Before beginning, let us frame the discussion with a distinction. Roughly-speaking, projects in *ideal* ethical theorizing aim to work out the best way in which to deal with some domain or issue in an otherwise neutral (or even moderately encouraging) practical setting.¹ As a result, such projects often assume that many current and contingent constraints on change - such as the existence of background injustice, maladapted institutions, or deeply hostile agents - can, from the point of view of theory, be set aside. For example, in ideal theory we are free to envision the target at which people of reasonably goodwill would like to aim, without thought as to how or even if this aim might be feasible under current real world conditions.

(p.400) By contrast, projects in the ethics of the transition articulate how we might proceed ethically starting from existing, and sometimes deeply constrained or ethically compromised, social realities in the direction of better solutions and general circumstances.² Sometimes such projects operate in the service of a robust ideal theory, but more often the challenge is how to muddle through even in the absence of a guiding “grand theory.” Either way, the ethics of the transition aims to identify how policies should be targeted and assessed given our actual constrained starting position. This is typically done through the use of intermediate normative criteria, parameters, benchmarks, and so on.

In the case of the global environmental crisis, this project seems especially important. For one thing, we lack robust theory in many of the relevant areas (e.g., intergenerational ethics, global justice) even when these are considered in isolation. For another, these areas require integration, both with each other and with other domains where we are more confident. Sensing that modern life has significant vices, but also major virtues, many hope to transform serious environmental concern into social change. But they also want this transformation to be responsive to, reflective of, and integrated with wider values. Given this, there is a need for an ethics of the transition that tries to synthesize such concerns in new and creative ways. In the absence of a grand integrative theory, in the interim we must pursue more indirect strategies. These include searching for ethical constraints by identifying intuitively clear cases of failure³, trying to articulate those constraints more fully, searching for levels of overlapping consensus across existing

theories, and defending such benchmarks against the forces of moral corruption.

In my view, ideal theory has an important role to play in addressing the global environmental crisis. But this chapter will focus on how we might make some modest progress with the ethics of the transition, focusing specifically on climate change. Section I points out how the foundational international agreement already takes a first step in that **(p.401)** direction, and how this creates a strong prima facie duty to act. Sections II-V confront some key arguments obstructing effective action. Section II addresses objections based on scientific uncertainty and the alleged irrationality of precaution. Section III confronts objections to considering past emissions. Section IV considers what to do about future emissions, and current and future damages. Section V addresses the problem of reconciling individual and collective responsibility. In closing, Section VI briefly considers the feasibility of postponing ideal theory. Inevitably, since these are large topics, the treatment will be preliminary and overly simplistic. Nevertheless, it should help to push the debate forward, by providing a starting-point for further discussion.

The main claims of the chapter can be summarized in eight propositions:

1. Ethical Concerns are Already at the Basis of International Climate Policy

The United Nations' Framework Convention on Climate Change (UNFCCC) relies on ethical concerns in framing its motivation, main objective, and guiding principles. Since the convention has been ratified by all major nations, the main actors have already acknowledged that they have ethical responsibilities, and so that there is a burden of proof against inaction. Moreover, since the convention was negotiated nearly two decades ago, and since very little of substance has been achieved in the interim, those responsible are subject to ethical criticism.

2. Scientific Uncertainty Does Not Justify Inaction

Arguments for inaction based on appeals to scientific uncertainty face an additional burden of proof. First, there is reason to think that climate science is not uncertain in the technical sense. Second, even if it were technically uncertain, this does not justify inaction. Uncertainty is a fact of life, and we often face situations where we must act in the face of it. Moreover, this is a case where we have a serious body of empirical and theoretical information on which we can rely. We are far from understanding nothing about the climate threat, and what we do understand seems more than sufficient to justify significant action.

(p.402) 3. Precaution is Theoretically Respectable

Arguments for inaction are often articulated as objections to the notion of precaution. In particular, the precautionary principle is sometimes said to be vacuous, extreme, or myopic. There is something to these charges if the principle is conceived of in a completely open-ended way. But there are more restricted ways to understand it, and under these kinds of conditions the principle signals a reasonable concern. In addition, the case for precaution is stronger when the decision-makers are not those vulnerable to unacceptable outcomes, but impose the threat of them on innocent others. Given that the

main actors have already accepted the need for precaution as part of the UNFCCC, the burden of proof on inaction is even greater.

4. Past Emissions Matter

There are large differences between the past emissions of developed and developing countries, and these are roughly correlated with economic prosperity. Some argue that they should be ignored on the grounds of ignorance, the idea of “first-come, first-served,” the fact that many past emitters are now dead, or political infeasibility. But these arguments are too quick, and ought not be accepted without further discussion. The burden of proof remains on those who would reject all historical accountability.

5. The Intragenerational Burdens Should Fall Predominantly on the Developed Countries

There is a strong ethical consensus surrounding the general direction of future policy. In the short- to medium-term, significant emissions reductions are needed, and most of the burdens of this shift away from fossil fuels must be borne largely by the developed nations, and especially the wealthy within those nations. The consensus is grounded by the convergence of concerns about historical responsibility, equal treatment, and the moral priority of subsistence emissions. The ethical consensus carries over to the question of how to deal with unavowed impacts. This involves issues of adaptation, compensation, recognition, and reconciliation.

(p.403) 6. Specific Intergenerational Trajectories Require Ethical Defense

The issue of how quickly global emissions should come down is also the subject of a rough consensus among scientists, policymakers, and activists. Although the general shape of action seems ethically justified, more specific benchmarks must be defended from the ethical point of view, and there are significant differences between them.

7. The Right to Self-Defense Is an Important, but Sharply Limited Rationale

An appeal to self-defense can explain why the current generation of the world's affluent are not required to completely ruin their own lives in order to comply with climate justice. However, this right is sharply limited. For example, it can be invoked only when there are no intermediate policies, and implies a need for compensation when this is not the case. Current climate policies are far from satisfying such constraints.

8. Individuals Bear Some Responsibility for Humanity's Failure

According to a traditional view in political thought, social and political institutions are legitimate because, and to the extent that, citizens delegate their own responsibilities and powers to them. On this account, if the attempt to delegate effectively has failed, then the responsibility falls back on the citizens again, either to solve the problems themselves, or else, if this is not possible, to create new institutions to do the job. If they fail to do so, then they are subject to moral criticism for having failed to discharge their original responsibilities.

This chapter aims to give an initial sense of why these propositions seem plausible. In doing so, it draws on the main strategies of an ethics of transition, including the

identification of moral constraints, arguments for overlapping consensus, and especially the practice of defensive moral and political philosophy.

(p.404) I. An Ethical Framing

The claim that climate change is an ethical issue may initially seem surprising. However, it should not be. After all, ethical concepts play a central role in the foundational legal document, the UNFCCC, which has been ratified by all major nations, including the United States. This treaty states as its motivation the “protection of current and future generations of mankind,” declares as its major objective the prevention of “dangerous anthropogenic interference” with the climate system, and announces that this objective must be achieved while also protecting ecological, subsistence, and economic values.⁴ In addition, the text goes on to list a number of principles to guide the fulfillment of these objectives, and these make heavy use of value-laden concepts. For example, appeals are made to “equity,” “common but differentiated responsibilities” (Article 3.1), the “special needs” of developing countries (Article 3.2), the “right” to development (Article 3.4), and the aim of promoting a supportive, open, sustainable, and nondiscriminatory international economic system (Article 3.5) (See chapter 1.1 for a more direct argument for the relevance of ethics.)

Substantive ethical concerns are therefore central to how international climate policy is framed, and this framing adopts a strategy familiar in the ethics of the transition. The UNFCCC seeks to guide future policy by announcing a set of intuitive criteria that require further articulation and integration, but nevertheless are useful in pointing towards clear and egregious violations. This is relevant in the current political context. Since the main actors have acknowledged that they have ethical responsibilities, there is a serious burden of proof against both inaction and action that does not take the relevant values seriously. Since the convention has been in place for nearly two decades, the lack of major progress since then suggests that those responsible are subject to strong ethical criticism.⁵

(p.405) Given that the project of confronting climate change, seen in ethical terms, already has considerable standing in the real world, establishing its relevance is, arguably, not the most pressing task of the ethics of the transition. Instead, the main issues seem to be: (1) how to interpret, reconcile, and implement the relevant values; (2) whether the convention's account of them should be challenged or extended; and (3) most importantly, how to address the fact that those who have openly committed themselves to these values have apparently failed to be guided by them.

This is not the place to attempt the large projects of synthesizing or assessing the values of the framework convention. Instead, the remainder of this chapter will focus on the third question, and in particular how substantive ethical analysis can help in confronting many of the arguments currently used to stall effective action.

II. The Ethics of Skepticism

On the face of it, the claim that climate change poses a substantial threat demanding action is supported by a broad scientific consensus.⁶ Still, in the public realm it has been subject

to two prominent challenges.⁷

1. Scientific Uncertainty

The first asserts that the science remains uncertain, so that current action is unjustified. This claim raises important epistemic and normative questions about what constitutes relevant uncertainty, and what amounts to appropriate action under it. We can make some progress on the first question if we begin with a distinction. In economics, situations involving uncertainty are distinguished from those involving risk. Suppose one can identify a possible negative outcome of some action. That outcome is a risk if one can also identify, or reliably estimate, the probability of its occurrence; it is uncertain if one cannot.⁸

(p.406) An initial objection to the first challenge is that, on this standard account of uncertainty, it is unclear whether mainstream climate science is uncertain in the technical sense. As it turns out, the IPCC assigns probabilities to many of its projections, making the situation overtly one of risk. Moreover, many of these assignments are both high, and associated with substantial negative damages; hence, they seem more than sufficient to justify significant action.⁹

The initial objection is powerful. However, there may be a way to rehabilitate the challenge. Most of the IPCC's probability assignments are based on expert judgment, rather than, say, on direct appeals to causal mechanisms. Hence, these are "subjective," rather than objective probabilities. Appeal to subjective probabilities is common in many approaches to risk. (Indeed, some claim that all probabilities are ultimately subjective.¹⁰) But if one is suspicious of subjective probabilities in general, or has particular reasons to be skeptical in this case, one might reject the IPCC assignments and continue to regard climate change as genuinely uncertain in the technical sense.

Still, granting this concession is not enough by itself to make the skeptic's case. Even if we were to assume for a moment that we lack robust probability information, there remains something troubling about the claim that one should refuse to act just because of this. Arguably, some kind of uncertainty "is an inherent part of the problem."¹¹ For instance, if we knew precisely what was likely to happen, to whom, and whose emissions would cause it, the problem might be more easily addressed; at the very least, it would have a different shape.¹² Hence, to refuse to act because of uncertainty may be either to refuse to accept the climate problem as it is, insisting that it be turned into a more respectable kind of problem first, or else to endorse the principle that "do nothing" is the appropriate response to uncertainty. But neither looks appealing. The former suggests a head-in-the-sand approach that seems clearly unacceptable, and the latter is also dubious. After all, in real life, **(p.407)** we neither can pick and choose the problems we face, nor simply ignore the one's we don't like the look of.

More generally, perhaps the most crucial point to make about the problem of uncertainty is that it is important not to overlay it. On the one hand, many decisions we have to make in life, including many important decisions, are also subject to considerable

uncertainties.¹³ But this does not imply that I should do nothing, or that I cannot make a decision. On the other hand, not all uncertainties are created equal. For instance, in some cases I may know almost nothing about the situation¹⁴, but in others I may know a great deal.¹⁵ Moreover, uncertainty in some kinds of case seems clearly worse than in others.¹⁶

These points are relevant because it seems reasonably clear that we have to make some kind of decision about climate change, that it is not an unfamiliar kind of decision, and that we do have a considerable amount of information. As Donald Brown argues: “A lot of climate change science **(p.408)** has never been in question ... many of the elements of global warming are not seriously challenged even by the scientific skeptics, and ... the issues of scientific certainty most discussed by climate skeptics usually deal with the magnitude and timing of climate change, not with whether global warming is a real threat.”¹⁷ But if this is right, then the inference from uncertainty to inaction does not seem compelling.

To see this point more clearly, let us briefly examine a number of sources of uncertainty about global warming. The first concerns the direct empirical evidence for anthropogenic warming itself. This has two main aspects. First, systematic global temperature records, based on measurements of air temperature on land and surface-water temperature measurements at sea, exist only from 1860; satellite-based measurements are available only from 1979. For earlier measurements, we have to rely on more patchy observations and indirect (proxy) data. This makes long-term comparisons more difficult. Second, there is no well-defined baseline from which to measure change.¹⁸ While it is true that the last couple of decades have been the warmest in human history, it is also true that the long-term climate record displays significant short-term variability, and that, even accounting for this, climate seems to have been remarkably stable since the end of the last Ice Age 10,000 years ago, as compared with the preceding 100,000 years.¹⁹ Hence, global temperatures have fluctuated considerably over the long-term record, and it is clear that these fluctuations have been naturally caused.

The skeptics are right, then, when they assert that the observational temperature record is a relatively weak data set, and that the long-term history of the climate is such that even if the data were more robust, we might be mistaken in concluding solely on this basis that humans are **(p.409)** causing the recently observed rises.²⁰ Still, we should not infer too much from this. For it would be equally rash to dismiss the possibility of warming on such grounds. Even though it is possible that the empirical evidence might be consistent with there being no anthropogenic warming, it is also true that it provides just the kind of record we would expect from such warming.

This paradox is caused by the fact that our epistemological position with respect to climate change is intrinsically very difficult. Indeed, it may simply be impossible to confirm climate change empirically from our current position, at least to a very high standard of scientific proof (see Appendix 2). This is because our basic situation may be a bit like that of a coach who is asked whether the existing performance of a fourteen-year-old athlete shows that

they will reach the highest level of their sport. Suppose the coach has the best evidence that she can have. It will still only be evidence for a fourteen-year-old. It will be at most consistent with reaching the highest level. It cannot be taken as a certain prediction. But that does not mean it is no prediction at all, or worthless. It is simply the best prediction she is currently in a position to make. Presumably, a major league scout would regard the prediction as worthwhile information, even if not conclusive. This is particularly so if the scout knows that waiting to be sure—until the prospect is twenty-one, say—will substantially increase the cost to the club of acquiring him.²¹

(p.410) Fortunately, in the case of climate change the empirical temperature record is far from our only evidence. Instead, we also have strong theoretical grounds for concern. First, the basic physical and chemical mechanisms that give rise to a potential global warming effect are well understood. In particular, there is no scientific controversy over the claims (a) that in itself a higher concentration of greenhouse gas molecules in the upper atmosphere would cause more heat to be retained by the earth and less radiated out into the solar system, so that other things being equal, such an increase would cause global temperatures to rise; and (b) that human activities since the industrial revolution have significantly increased the atmospheric concentration of greenhouse gases. Hence, everyone agrees that the basic circumstances are such that a greenhouse effect is to be expected.²²

Second, the remaining scientific dispute, insofar as there is one, concerns the high level of complexity of the global climate system, given which there are the other mechanisms that might be in play to moderate such an effect. The issue here is whether there might be negative feedbacks that either sharply reduce or negate the effects of higher levels of greenhouse gases, or even reduce the amount of them present in the atmosphere. Current climate models suggest that most related factors will likely exhibit positive feedbacks (water vapor, snow, and ice), while others have both positive and negative feedbacks whose net effect is unclear (e.g., clouds, ocean currents). Hence, there is genuine scientific uncertainty.

However, again, we must be cautious about inferring too much from this. On the one hand, uncertainty about feedbacks is already represented in mainstream projections of climate change. For example, it is **(p.411)** one major reason why the IPCC offers a range of projected temperature rises over the current century (e.g. of 1.1°–2.9°C for a low emission scenario, with a best estimate of 1.8°C, and of 2.4°C–6.4°C for a high emission scenario, with a best estimate of 4.0°C).²³ It is not therefore a compelling reason for dismissing such projections.²⁴ On the other hand, we should not assume that any residual uncertainty cuts in favor of less action. There may be no more reason to believe that we will be saved by unexpectedly large negative feedbacks, than that the warming effect will be much worse than we would otherwise anticipate due to unexpectedly large positive feedbacks.²⁵

In conclusion, while there are uncertainties surrounding both the direct empirical evidence for warming and our theoretical understanding of the overall climate system, these cut both ways. In particular, while it is conceivable (though currently unlikely) that

the climate change problem will turn out to be chimerical, it is also possible that global warming will turn out to be much worse than anyone has yet anticipated. More importantly, the really vital issue does not concern the presence of scientific uncertainties, but rather how we decide what to do under such circumstances, and the ways in which this is open to ethical assessment. To these issues we now turn.

2. Precaution

The UNFCCC makes the claim that “where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing [precautionary] measures [to anticipate, prevent, or minimize the causes of climate change and mitigate its adverse effects]” (Article 3.3). Hence, the treaty explicitly rules out some kinds of appeal to uncertainty as justifications for inaction, and it does so precisely in an attempt to block the kinds of skepticism mentioned above. **(p.412)** Since the convention has been ratified, there is a strong ethical reason for the main actors to abide by this provision.

Stated as it is in the convention, this appeal to precaution is extremely minimal and underdeveloped. However, some have tried to generate a more general precautionary principle.²⁶ According to one standard statement, this asserts “when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”²⁷ However, such claims have frequently been dismissed as extreme, myopic, and ultimately vacuous. Couldn't a precautionary principle be invoked to stop *any* activity, however beneficial, on the basis of any kind of worry, however fanciful? If so, the critics charge, surely it is irrational, and ought to be rejected. This is the second challenge to action on climate change.

Let us consider two basic replies to this challenge. The first addresses the rationality and general coherence of the precautionary principle. Understood in a completely open-ended way, the principle may be vulnerable to some of the objections listed above. However, it is plausible to restrict its application by introducing criteria to guide when the principle should be applied. Elsewhere, I illustrate this using John Rawls's criteria for the application of a maximin principle: that the situation is uncertain, in the sense that the parties lack reliable probability information; that they care little for potential gains above the minimum they can secure by acting in a precautionary manner; and that they face outcomes that are unacceptable.²⁸ This approach not only diffuses the original objections, but suggests that many disputes about precaution ultimately do not rest on a rejection of the principle, but rather on disagreement about whether the relevant criteria are met.²⁹ This significantly reframes **(p.413)** the theoretical debate. Rather than foundational disagreements about whether the notion of precaution makes any sense, we are instead engaged in more substantive disputes about (for example) whether the relevant outcomes are really unacceptable, whether we do care more about potential gains of nonprecautionary behavior, and whether we have trustworthy probabilities.

At a more practical level, a reasonable case can be made that the Rawlsian precautionary

principle applies to climate change. First, it seems clear that some of the projected impacts, being severe or catastrophic, are morally unacceptable. Second, we have already seen that there may be uncertainty in the technical sense.³⁰ The third condition—that we care little for the gains that can be made beyond those secured by precautionary action—is more contentious. For example, Cass Sunstein has argued that this condition threatens to confine the Rawlsian version of the principle to trivial cases, and in particular undermines the application to global warming because the costs of mitigation amount to hundreds of millions of dollars.³¹ However, I remain unconvinced. Though Sunstein is surely right that more work needs to be done in fleshing out the precautionary principle, it is not clear that the problem with the third condition is that it is “trivial.” Remember that Rawls is speaking of gains that can be made *above some minimum we can guarantee* through eliminating the worst-case scenario. Hence, much depends on how one understands the alternative options. To see this, consider an example. Suppose we could avoid the possibility of catastrophic climate change and guarantee a decent quality of life for everyone, all at the cost of slowing down our rate of accumulation of purely *luxury* goods by only two years.³² This might satisfy the “care little for gains” condition even if the cost of those luxury goods in dollar terms were very large. For instance, perhaps the importance of averting catastrophic climate change might simply make such a loss seem relatively unimportant. (Suppose, for example, that the hit were taken by the global budgets for cosmetic research, Hollywood movies, or professional sports teams.³³)

(p.414) Given this point, the real issue seems to revolve around the interpretation and elaboration of the “care little for gains” condition, rather than whether it is “too stringent.”³⁴ Resolving this issue is likely to involve a substantive project in normative ethics.

The second basic reply to the challenge to precaution is a moral one. If precaution is often reasonable in cases involving actors who impose threats of unacceptable outcomes on themselves, it seems even more reasonable when they impose such threats on innocent others. Intuitively, there are risks that I can choose to run for myself that I ought not to make you run on my behalf. Moreover, the moral problem in such cases is heightened when the benefits to me are minor in comparison to the disaster I may inflict on you, and when you are completely vulnerable. Naturally, more remains to be said here. But the basic point is enough to disrupt the initial case against precaution.

In conclusion, neither of the two challenges to climate action seems decisive when pressed. When we understand the state of the science and the intellectual respectability of precaution, much contemporary skepticism about action on climate change becomes unwarranted. At best, skeptical concerns would justify some caution about the way in which we frame and implement climate policies moving forward. But they do not seem to license either inaction, or the current trajectory of global emissions. Indeed, what we do understand about climate change suggests that a robust skepticism about action is likely to be profoundly reckless and unethical. Faced with this kind of situation and this kind of evidence to continue to accelerate hard into the problem, exposing the global poor, future generations and the rest of nature to a profound threat, seems very difficult to justify. At the very least, the burden of proof seems very squarely on those who would

claim otherwise. Given that the main actors have already accepted the need for precaution as part of the UNFCCC, this burden is even greater.

III. Past Emissions

If action is warranted, who should take it, and what should be done? The UNFCCC asserts that countries should act “on the basis of equity and in **(p.415)** accordance with their common but differentiated responsibilities and respective capabilities [such that] ... the developed country Parties should take the lead in combating climate change and the adverse effects thereof” (Article 3.1). Hence, there is a strong presumption that the developed countries should move first, and take the largest initial burden. As we shall see, this claim also seems to be a matter of strong ethical consensus, although precisely how to interpret it in policy poses more difficult questions.

One proposal for action is that responsibility should be assigned in light of past emissions. Two kinds of argument are prominent. The first invokes historical principles of responsibility, along the lines of the commonsense ideals of “you broke it, you fix it” and “clean up your own mess.”³⁵ Such principles are already familiar in environmental law and regulation, appearing, for example, in various versions of the “polluter pays” principle. They imply that those who cause a problem have an obligation to rectify it, and also assume additional liabilities, such as for compensation, if the problem imposes costs or harms on others. The second kind of argument appeals to fair access. The thought is that the atmosphere's capacity to absorb greenhouse gases without adverse effects is a limited resource that is, or ought to be, held in common. If some have used up the resource, and in doing so denied others access to it, then compensation may be owed. The latecomers have been deprived of their fair share.

Such rationales for considering past emissions seem straightforward and readily applicable to climate change. Moreover, it is easy to see their general tendency. For example, the United States is responsible for 29% of global emissions since the onset of the industrial revolution (from 1850–2003), and the nations of the EU 26%; by contrast, China and India are responsible for 8% and 2% respectively. In light of this, it is natural to conclude that their duties to act are different.

Despite this, appeals to past emissions have been subject to four prominent objections.

1. Ignorance

The first asserts that past polluters were ignorant of the adverse effects of their emissions, and so ought not to be blamed. They neither intended nor foresaw the effects of their behavior, and so should not be held **(p.416)** responsible. This objection occurs in academic writings,³⁶ but also has political prominence. As the top U.S. negotiator, Todd Stern, put it at the Copenhagen meeting: “I actually completely reject the notion of a debt or reparations or anything of the like. For most of the 200 years since the Industrial Revolution, people were blissfully ignorant of the fact that emissions caused a greenhouse effect. It's a relatively recent phenomenon.”³⁷

The ignorance objection initially seems compelling, but turns out to be more complicated

when pressed. First, it is worth distinguishing blame as such from responsibility. Though it is true that we do not usually blame those ignorant of what they do, still we often hold them responsible. Hence, showing that blame is inappropriate is insufficient to dismiss past emissions.³⁸ Second, there are reasons for holding the ignorant responsible in this case. On the one hand, consider the “you broke it, you fix it” rationale. If I accidentally break something of yours, we usually think that I have some obligation to fix it, even if I was ignorant that my behavior was dangerous, and perhaps even if I could not have known. It remains true that I broke it, and in many contexts that is sufficient. After all, if I am not to fix it, who will? Even if it is not completely fair that I bear the burden, isn't it at least less unfair than leaving you to bear it alone?³⁹ On the other hand, consider the fair access rationale. Suppose that I unwittingly deprive you of your share of something and benefit from doing so. Isn't it natural to think that I should step in to help when the problem is discovered? For example, suppose that everyone in the office chips in to order pizza for lunch. You have to dash out for a meeting, and so leave your slices in the refrigerator. I (having already eaten my slices) discover and eat yours because I assume that they must be going spare. You return to find that you now don't have any lunch. Is this simply your problem? We don't usually think so. Even though I didn't realize at the time that I was taking your pizza, this does not mean that I have no special obligations. The fact that I ate your lunch remains morally relevant.

(p.417) 2. First-come, First-served

The second objection emerges from the claim that there is a disanalogy between the pizza case and that of past emissions. In the pizza case, you have a clear right to the eaten slices, because you have already paid for them. But in the case of emissions, where the shares of the latecomers are used up by those who come earlier, it might be maintained that the latecomers have no such claim. Perhaps it is simply “first-come, first-served,” and hard luck to the tardy.

In my view, this response is too quick. We must ask what justifies a policy like first-come, first-served in the first place. To see why, consider one natural explanation. If a resource initially appears to be unlimited, then those who want to consume it might simply assume at the outset that no issues of allocation arise. Everyone can take whatever they want, with no adverse consequences for others. In this case, the principle is not really first-come, first-served (which implies that the resource is limited, so that some may lose out), but rather “free for all” (which does not). Since it is assumed that there is more than enough for everyone, no principle of allocation is needed.

But what if the assumption that the resource is unlimited turns out to be mistaken, so that free for all becomes untenable? Do those who have already consumed large shares have no special responsibility to those who have not, and now cannot? Does the original argument for free for all justify ignoring the past? Arguably not. After all, if the parties had considered at the outset the possibility that the resource might turn out to be limited, which allocation principle would have seemed more reasonable and fair: “free for all, with no special responsibility for the early users if the resource turns out to be limited,” or “free for all, but with early users liable to extra responsibilities if the assumption of

unlimitedness turns out to be mistaken"? Offhand, it is difficult to see why a ignoring the past would be favored. Indeed, there seem to be clear reasons to reject it: it makes later users vulnerable in an unnecessary way, and provides a potentially costly incentive to consume early if possible. Given this, first-come, first-served looks unmotivated. Why adopt an allocation rule that so thoroughly exempts early users from responsibility?⁴⁰

(p.418) 3. Dead Emitters

The third objection to considering past emissions emphasizes that, since significant anthropogenic emissions have been occurring since 1750, many past polluters are now dead. Given this, it is said, "polluter pays" principles no longer really apply to a substantial proportion of past emissions; instead, what is really being proposed under the banner of polluter pays is that the descendents of the original polluters should pay for those emissions, because they have benefited from the past pollution (because of industrialization in their countries). However, the argument continues, this "beneficiary pays principle" is unjust because it holds current individuals responsible for emissions that they did not cause (and could not have prevented), and in ways which diminish their own opportunities.⁴¹

Much could be said about this objection,⁴² but here let me make just two comments. First, the claim that polluter pays does not apply is more complex than it first seems. For example, it does apply if it refers not to individuals as such but to some entity to which they are connected, such as a country, people, or corporation. Moreover, this is the case in climate change, where polluter pays is usually invoked to suggest that countries should be held responsible for their past emissions, and these typically have persisted over the time period envisioned.

Many proponents of the objection recognize this complication. To meet it, they typically reject the moral relevance of states, and instead invoke a strong individualism that claims that only individuals should matter ultimately from the moral point of view. Still, [second] note that this move makes the argument more controversial than it initially appears. On the one hand, even many individualists would argue that states often play the role of representing individuals and discharging many of their moral responsibilities. Given this, more needs to be said about why the fact of membership is irrelevant for assigning responsibility. On the other hand, the argument ignores the issue that a very strong individualism would also call into question many other practices surrounding inherited rights and responsibility. Put most baldly, if we are not responsible for at least some of the debts incurred by our ancestors, why are we entitled to **(p.419)** inherit all of the benefits of their activities? In particular, if we disavow their emissions, must we also relinquish the territory and infrastructure they left to us? The worry here is that, if successful, the attempt to undermine polluter (or beneficiary) pays is liable to prove too much, or at least to presuppose a radical rethinking of global politics.

4. Practicality

The fourth objection to taking past emissions seriously claims that doing so would be impractical. Instead, it is said, if agreement is to be politically feasible, we must ignore the

past and be forward-looking in our approach. The most prominent response to this objection is that it makes a rash claim about political reality. On the contrary, it will be said, since a genuinely global agreement is needed to tackle climate change, and since many nations of the world would not accept an agreement that did not explicitly or implicitly recognize past disparities, any attempt to exclude the past from consideration is itself seriously unrealistic.⁴³

In conclusion, prominent attempts to exclude past emissions from consideration on ethical grounds do not appear to succeed. Still, how to include such emissions in climate policy remains an important and nontrivial question. One reason for this is that it is difficult to disentangle the role of past and future emissions. On the one hand, the future emissions that make climate change pose such a large threat do so principally against the backdrop of past emissions. Not only do these remain in the atmosphere for a long time, but they also make any given level of future emissions more dangerous than it might have been.⁴⁴ Hence, the past constrains the future, and past emitters might be held liable for that. On the other hand, a similar point applies in reverse. The “liability” of the past is in part determined by future behavior. Past emissions become more dangerous if there are greater future emissions. Hence, though it might initially be tempting to assign responsibility for adaptation efforts solely on the basis of past emissions, this obscures the fact **(p.420)** that how much adaptation is ultimately necessary (or feasible) will depend on future emissions as well. Given these points, the issue of past emissions casts a notable shadow over other allocation questions.

IV. Future Emissions

If something must be done to limit future emissions, then imposing such a limit will have the effect of transforming an open access resource into one that must be distributed.⁴⁵ This raises profound ethical questions, and especially ones of procedural and distributive justice.

1. Procedural Justice

Procedurally, the main issue is how to get an agreement that pays due respect to all of the parties involved. In practice, international discussion has treated emissions reductions as a matter for political horse-trading. Individual nations offer cuts in terms of their own emissions in exchange for cuts from the others, and other nonclimate-related benefits. However, in an international system characterized by historical injustice and large imbalances of power, the prospect that such bargaining will be fair to all parties seems dim. Moreover, as Henry Shue argues, there is a threat of compound injustice.⁴⁶ Those treated unfairly in the past are likely to be more vulnerable to current injustices because of their past treatment. Finally, there are worries that the interests of those most affected by future climate change—future generations, the very poor, animals, and nature—are not adequately represented. Why expect an agreement driven by representatives of the current generation of the world's most affluent people to produce justice in this context?

The question of how to arrange a climate regime that is procedurally fair is an important

one. But some of the concerns might be met if we had a good idea of what a fair distributive outcome might look like. At the theoretical level, this issue is complex. But one natural way to frame it is in terms of three questions.

(p.421) 2. The Allocation Question

The question that has received most attention so far asks how those emissions allowable at a particular time should be allocated. A large number of proposals have been made, but nevertheless there seems to be a strong ethical consensus supporting the basic idea of “common, but differentiated responsibilities”, that the richer, developed nations should take the lead in acting on climate change, and bear the greatest burdens. To see why, let us briefly review just three basic proposals, to get a sense of the terrain and suggest some further complications.⁴⁷

a. Equal Per Capita

The first proposal is that of equal per capita entitlements.⁴⁸ The intuitive idea is that, other things being equal, permissible carbon emissions should be distributed equally across the world population, because no individual has a presumptive right to more than an equal share.⁴⁹ A shift to per capita entitlements would generally support the ethical consensus, since national emissions levels are strongly linked with economic prosperity as conventionally understood. However, it faces two initial challenges.

First, it has radically different implications for particular nations. In 2005, global per capita emissions were at 1.23 metric tons of carbon. But national averages show wide discrepancies. In the United States, for example, the average in 2005 was 5.32; in the United Kingdom it was 2.47; in China 1.16; in India 0.35; and in Bangladesh 0.08.⁵⁰

Suppose, for example, that we were to call for roughly a 20% cut in global emissions in the next decade, and distribute the remaining emissions **(p.422)** on a per capita basis, at roughly 1 metric ton each. This would imply that citizens of the United States would have to cut their emissions by more than 80%, those of the United Kingdom by nearly 60%, and those of China by around 14%, while the Indians could increase their emissions by around 65% and the Bangladeshis by 92%. In short, on the face of it, the burden of the shift to equal per capita entitlements seems very different for different countries. As a result, it is often said that it would be more dislocating, and therefore unfair, for those who emit the most to make such drastic cuts since much of their infrastructure depends on much higher rates of emission.

The second initial challenge is that people in different parts of the world have different energy needs. For example, those in northern Canada require fuel for heating that those in more temperate zones do not. Hence, there is a question about whether equal resource entitlements really do treat people as equals. This resonates with a deep issue in political philosophy about what the appropriate aim of equality should be: equality of resources, welfare, capabilities, or something else.⁵¹

In practice, most proponents of the equal per capita approach suggest that these two challenges can be largely dealt with by making the right to pollute tradable once allocated.

On this version of the proposal, those for whom the costs of reduction are high can buy unused allocations from others whose costs are low. In addition, it is usually thought that allocations will actually be made to states on the basis of their populations, rather than directly to individuals.⁵² In practice, then, the thought is that the effect of the per capita proposal is that developed nations will end up buying large amounts of currently unused capacity from the developing world in order to make their own cuts more manageable.

This more complex proposal raises many new issues. On the one hand, there are concerns about feasibility. For one thing, on the face of it, trading seems to involve a massive transfer of wealth from the rich to the poor nations. For another, the proposal of giving the allowances to states may lead far away from the initial intuition towards equality. **(p.423)** In many countries, the thought goes, such allowances are likely to become just another resource for the elite to plunder, perhaps in collusion with, and on behalf of, outside forces. What then of individuals in poor countries to whom the right is nominally given? Does the appeal to individualism turn out merely to be a convenient illusion? On the other hand, concerns about fairness remain. Do tradable allowances simply allow the rich countries to continue their polluting habits by “buying off” the poor? Perhaps they are morally akin to environmental indulgences, simply a fancy way for the rich to spend their way out of the implications of their bad behavior;⁵³ and perhaps they also undermine a sense of collective moral endeavor.⁵⁴

More generally, it may be that in practice the main appeal of the “equal per capita plus trading” proposal lies not in equal division as such, but elsewhere: in the way it appears to reconcile concern for the future with recognition of the past, and with global justice more generally. After all, because current prosperity is highly correlated with past emissions, the trading mechanism provides a way for the rich nations to provide some compensation to the developing world (and without overtly appearing to do so). If the numbers had worked out differently (if, that is, the poor countries turned out to be the big current polluters per capita), then it may be that the per capita approach would have little support.

Perhaps then “equal per capita” is best seen as a hybrid proposal, aimed at reconciling a number of different desiderata. In addition to accommodating some notion of equality and responsibility for the past, it also seems to facilitate resource transfers to the least well-off, to allow the rich to protect themselves against too painful a transition, and to provide incentives for technical innovation.

b. Subsistence Emissions

The second proposal for allocating future emissions initially appears to overcome some of the worries about the modified per capita approach by putting concern for the poor and for individuals right at the heart of its approach. Henry Shue maintains that individuals have an inalienable **(p.424)** right to the emissions necessary for their survival or some minimum level of quality of life. He proposes that such emissions should be open neither to trading, nor appropriation by governments, and that they ought to be sharply distinguished from other emissions, especially those associated with luxury goods⁵⁵. At first glance, this proposal has a different logic than that of tradable per capita rights. On

the one hand, subsistence emissions rights are inalienable, suggesting not only that they cannot be exchanged, but also that they should be guaranteed even if this would predictably lead to serious harm to others, such as future generations. On the other hand, subsistence emissions are subject to a strict threshold, implying that emissions above that threshold might be distributed according some principle other than equality.

Of course, the subsistence emissions proposal also raises new difficulties. Most obviously, what counts as a “subsistence emission”? After all, former U.S. president George H. Bush infamously stated at the Rio Earth Summit in 1992 that “the American way of life is not up for negotiation.” Does that mean that we should regard an emissions rate of 5.32 metric tons per capita as the subsistence level for Americans? Surely not. Yet even subsistence at a minimal level of quality of life presumably does include some social and cultural factors,⁵⁶ and these may involve different levels of absolute emissions. So, how do we decide what is necessary and what is not? Again, some moral and political philosophy seems needed.

Less obviously, in practice it is not clear that the proposal has real advantages over the equal per capita approach. On the one hand, the two may not be easily separable. Given the fungibility of the notion of “subsistence,” it seems likely that the task of determining an adequate minimum may turn out to be very close to that of deciding on an appropriate long-term trajectory (see below) and then assigning equal per capita rights. On the other hand, if the two approaches do diverge, it is not clear that the subsistence approach does a better job of protecting vulnerable individuals. Consider some examples. If culturally sensitive subsistence emissions overshoot the equal per capita allocation, then they justify an increase in the burdens on future generations. Alternatively, if they undershoot that allocation, then the “excess” emissions need to be distributed in some other way. If this is equal per capita, then **(p.425)** (again) the two approaches may amount to much the same thing. But if it is not—and in particular if they are to be distributed by market forces—then the subsistence approach may end up being less favorable to the poor than equal per capita.

c. Equal Burdens

The third allocation proposal is that nations should share the costs of mitigation fairly amongst themselves by trying to equalize their marginal costs in reducing emissions. This is presumably part of the appeal of nations declaring percentage reduction targets. The thought is that if each reduces their own emissions by, say, 20% in a given period, then all take on equal burdens. Martino Traxler suggests that an equal burdens approach has major political advantages. No nation has any stronger reason to defect than any other, and each experiences the maximum moral pressure to participate.⁵⁷

I am not so sure. First, the proposal is entirely future-oriented. Not only does it ignore past emissions; it also has the effect of embedding recent emissions levels. For example, a cut of 20% would reduce per capital levels in the United States to 4.26, and in India to 0.28. Is this fair, given that the United States is so much richer? Even more starkly, if ultimately the global cut needs to be 80%, is it fair that the equal percentage cut approach

reduces the U.S. level to 1.64 per capita, when this is still significantly higher than current Chinese and Indian levels, and when Bangladesh is pushed down to a miniscule 0.1 per capita?

Second, as the first point already suggests, the correct measure of “equal burdens” is morally contentious. Consider three proposals. The first aims to equalize the marginal economic cost of reduction in each country. However, assume for a moment that this turns out to be \$50 per metric ton. Does it matter that this amounts to the cost of nice evening out for the average American, but more than a month's income for the average Bangladeshi? Presumably, it does. Given this, a second proposal might aim at equalizing marginal welfare instead. But what if the worst off are in so wretched a condition that taking more from them **(p.426)** will make little difference to their misery, but the very well off are so accustomed to luxury that even small losses hit their subjective states very hard? Does this justify taking more from the poor? Again, presumably not. Finally, as a third proposal, suppose that we adopt a more substantive account of goods, distinguishing (for example) between luxuries and subsistence goods, and differentiating their importance to welfare. Then we could protect the poor from additional deprivation by insisting that the rich should give up all their luxuries before the poor give up anything.⁵⁹ However, even if this is morally correct, it seems highly politically controversial, and so undermines many of the (alleged) practical advantages of the equal burdens approach.

In short, “equal burdens” is a contentious phrase, compatible with many different accounts of equality and burdens. Thus, the real issue is which account of these is correct. But here the usual metric of equal percentage cuts looks untenable, and other versions seem either unacceptable, or else to push back in the direction of the ethical consensus.

In conclusion, this section illustrates why ethical discussion of the allocation problem seems to support the general consensus that the richer, developed nations should take the lead in acting on climate change.⁵⁸ However, it also suggests some complications with particular proposals. In addition, it should be said that specific allocation proposals will probably have significantly different concrete implications for particular nations, especially as the climate issue evolves. Hence, though the general direction of ethical action is clear, much more work will need to be done on these questions as we move forward.

3. Unavoided Impacts

The second theoretical question about distribution concerns unavoidable impacts. In practice, this has received even less political attention and **(p.427)** action than mitigation. Although the developed nations have promised substantial funds for many years, these have not yet materialized, much to the chagrin of poor nations. Not only has little been placed in the relevant UN fund, but even those developed countries (such as the EU) who have been publicly supportive seem interested mainly in reallocating existing foreign aid, rather than providing new funds.⁶⁰

As a matter of theory, much of the ethical consensus on allocation seems to carry over to

unavoided impacts, since many of the same facts (e.g., concerning historical responsibility and current emissions levels) seem relevant. Nevertheless, there are complications, especially about how to understand the scope of the problem. Consider just two examples.

First, in climate policy, unavoidable impacts are usually discussed in terms of assistance for “adaptation,” understood as “adjustment in natural or human systems ... which moderates harm or exploits beneficial opportunities.”⁶¹ But this focus is liable to mislead, since it must be acknowledged that adaptation efforts “will not prevent all damages.”⁶²

On the one hand, some unavoidable impacts will simply have to be endured. This raises distinct issues of justice which should not be ignored. Most obviously, there is a case for compensation, and perhaps in forms such as financial resources and immigration rights, rather than technical assistance, the usual focus of “adaptation” measures. Less obviously, since some losses cannot be compensated, and since compensation is not the whole of justice in any case, other modes of restitution, such as recognition and reconciliation, may also become prominent over time. On reflection, this should not be surprising. For example, the loss of indigenous homelands facing small island states (such as the Maldives) appears to have similarities with other, more historical, grievances of indigenous populations, where matters of recognition and reconciliation loom large.

On the other hand, there is the possibility of catastrophic changes than can neither be adapted to, nor endured. For example, if the earth really experiences a warming comparable in magnitude to an ice age shift (e.g., 5 degrees C), but over the course of only a century or so, or if climate change triggers dramatic threshold events, then the impacts on **(p.428)** humanity might transcend historical experience. In such scenarios, the whole idea that we should address unavoidable impacts through “adaptation” may end up seeming “quaint at best.”⁶³

Second, much depends on what we are willing to call a climate impact. Not only will no one's death certificate ever read “climate change,” but many actual deaths will result from the interplay of climate with institutional failures caused by other moral and political problems.⁶⁴ As an illustration of this general problem, we might note that while it is often said that we can avoid “dangerous climate change” if the global temperature rise can be limited to 2 C, it is also frequently claimed that climate change is already responsible for around 300,000 deaths per year.⁶⁵

4. The Trajectory Question

The third theoretical question about distribution asks what the appropriate trajectory of global carbon emissions should be over the coming decades and centuries. Conventional climate policy implicitly involves envisioning a long-term aim, and then deciding how quickly to achieve that aim. On the first issue, it seems clear that a business-as-usual path that exposes the future to the scientifically-plausible risk of an ice-age like shift in temperature in less than a hundred years is ethically unacceptable. From this it follows, given scientific projections, that any ethical policy would demand that global emissions

peak sometime in the next few decades and then decline significantly for the foreseeable future. Not to make this demand seems to expose the future to extreme risk. A strong rationale would be needed to make this ethically acceptable, and none seems forthcoming.⁶⁶ In other words, this is a place where climate policy runs into a serious ethical constraint, one to which any theoretical approach would have to respond in order to be at all plausible.

Despite this promising beginning, work needs to be done to specify a more fine-grained target. In mainstream policy discussion, a number of different proposals have been made. Some claim that we should prevent a temperature rise of above 2 degrees C, some that we should aim at **(p.429)** a specific atmospheric concentration of carbon dioxide (or the equivalent), such as 350, 450, or 550 ppm, and others that we should not exceed a given total of human emissions, such as one trillion tons of carbon.⁶⁷ But the differences between these targets are not much discussed. The first reason for this is presumably that, since all the targets actually offered are far from business-as-usual projections, advocates assume that a move towards any would be one substantially in the right direction, and so are disinclined to highlight disagreements on the specifics. A second reason is that there appears to be substantial agreement on the speed at which we should try to reach these long-term goals. Currently, many scientists and activists have converged on the claim that global emissions reductions of 20–40% by 2020, and 50–80% by 2050, are roughly appropriate.

This political consensus is encouraging, and does aid the attempt to find benchmarks for the ethics of the transition. Nevertheless, we should be careful. Such quantitative pronouncements tend to obscure the underlying ethical issues. Most prominently, the question of how quickly to reduce global emissions implicitly requires making a decision on how to balance the interests of the present and the future, and ultimately requires a moral judgment. More specifically, though much talk of specific percentage reductions is carried out in the language of “feasibility,” and so seems technical, this is a mistake. Presumably, it would be perfectly *technically* feasible for us all to reduce our emissions by 50–80% tomorrow, or even to eliminate them completely. We could, after all, just turn off our electricity for a large portion of the day, refuse to drive, and so on. The problem here is not that this cannot be done; it is rather that, given our current infrastructure, we assume that a very rapid reduction would cause social and economic chaos, and a humanitarian disaster for the current generation (see chapter 1). If this assumption is correct, we are justified in not considering such drastic measures. But the justification is moral: a policy that demanded them of us would be profoundly unjust.

This move away from the “feasibility” rationale makes an important difference. Even if emissions cuts are disruptive at some levels, presumably at some point the risks imposed on future generations are severe enough to outweigh them. Perhaps the current proposals—such as 20% **(p.430)** by 2020—capture the appropriate tradeoff point. Nevertheless, it would be nice to see some argument for this claim, especially since an issue of intergenerational justice is at stake, and since we are likely—given the perfect storm—to be biased in our own favor. To see why this is important, consider two issues.

First, the trajectory concern is already arising for some of those most vulnerable to climate impacts. For example, some world leaders criticized the Copenhagen Accord's endorsement of a two degree limit as too high. For example, Mohamed Nasheed, the president of the Maldives, asserted:

Anything above 1.5 degrees, the Maldives and many small islands and low-lying islands would vanish. It is for this reason that we tried very hard during the course of the last two days to have 1.5 degrees in the document. I am so sorry that this was blatantly obstructed by big-emitting countries.⁶⁸

And Lumumba Stanislaus Di-aping, the Head of the G-77 group of developing countries went so far as to declare:

[The draft text] asks Africa to sign a suicide pact, an incineration pact in order to maintain the economic dominance of a few countries. It is a solution based on values, the very same values in our opinion that funnelled six million people in Europe into furnaces.⁶⁹

Whatever one thinks of the rhetoric of these claims, the basic ethical worry is clear. Any decision on the trajectory of emissions limits implicitly makes choices about what kinds of impacts are acceptable and unacceptable, and the values driving those choices are currently being hidden in technical language.⁷⁰

Second, if the essential rationale for the current generation's continuing with relatively high levels of emissions in the near term were one of self-defense,⁷¹ this would have further implications. Rights of self-defense usually come with sharp limits, especially when directed **(p.431)** towards the morally innocent.⁷² For example, one is normally required to use other (nonharmful) means of escaping the threat if possible; and if it is not possible, one is permitted only to use the minimum force necessary. In addition, one is usually required to provide some form of restitution (e.g., financial compensation) if the victim is innocent. Interestingly, such stringent restrictions seem to play very little role in current discussions of the trajectory question. Instead, the focus is on how the current generation may preserve its own expectations into the future by implementing a policy that allows as much as possible to go on exactly as before. It is far from clear that this is a morally defensible policy. Unfortunately, the perfect storm analysis easily explains it.

In conclusion, the ethical consensus surrounding strong action led by the developing nations looks compelling. Nevertheless, we should be aware of a range of deeper issues moving forward. For example, on the allocation question, differences in rationale are likely to have significant implications for specific allocations, which may make a large difference to particular actors; on the impacts question, the issue of what to count as an unavoids climate impact will have profound distributive implications; and on the trajectory question, the current consensus on medium-term objectives obscures some important ethical assumptions about what is owed to the future. Such issues put pressure on existing theoretical approaches, especially as mediated through the ethics of the transition. So, in a moment I turn to some brief remarks about more ideal forms of theorizing. Before doing

so, let us turn briefly to the issue of responsibility.

V. Responsibility

If action is needed, and the rough shape of the burdens clear, who is responsible for making it happen?⁷³ At first glance, this question may seem almost impossible to answer. There are two main reasons. First, it seems plausible to claim that our existing institutions were simply not **(p.432)** designed for, and did not evolve in response to, global environmental problems that play out over many generations. Hence, it is unclear who has the responsibility and authority to act. Second, it might also be claimed that our ethical frameworks are also not up to the task. For example, Dale Jamieson has suggested that our current values evolved relatively recently 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.⁷⁴ More specifically, he asserts that these values include as a central component 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.”⁷⁵ But, he claims, problems such as climate change fit none of these criteria, so that a new value system is needed.⁷⁶

Both of these worries raise serious issues in global ethics, and I cannot offer a full response here. Nevertheless, some preliminary remarks may help to diffuse the initial challenge. 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. This simple model suggests an equally simple account of failures of ethical responsibility.

First, it seems to follow straightforwardly that the most direct responsibility for the current failure of climate policy falls on recent leaders and current institutions. If authority is delegated to them to deal with global environmental problems, then they are failing to discharge the relevant responsibilities and are subject to moral criticism for this failure.

Against this, it might be reasserted that such institutions were not designed to deal with large global and intergenerational problems; hence, the assignment of responsibility is unfair. There is some truth to this. Nevertheless, we should not concede too much too quickly. After all, existing leaders and institutions have not been slow to take up the issues and assume the mantle of responsibility—making many fine **(p.433)** speeches, organizing frequent meetings, promising progress, making the topic a campaign issue, and so on. In addition, we have the explicit commitment to act, and act ethically, registered in the UNFCCC and its ratification. Hence, even if this role was not originally envisioned, many political actors have acted as if it did belong to them, and that they were capable of discharging it. They did not, for example, simply declare to their constituencies that the topic was outside of their purview or competence, nor did they advocate for fundamentally new or different institutions (e.g., by declaring the need for a new global

council on the topic, or even a global constitutional convention). Given this, it is far from clear that they cannot be held at least partly responsible for assuming the role, and for their subsequent failure to deliver. They can hardly claim to be ignorant of, or to have refused, the responsibility.

Nevertheless, second, the more important issue is the following. Suppose that it is true that humanity currently lacks the appropriate institutions to deal with global environmental change. What follows? If political institutions normally operate under delegated authority from the citizens, the answer seems clear. This is a case where the delegation has either not happened, or else has failed to be successful. How do we think about this? Again, there is a natural answer. If the attempt to delegate effectively has failed, then the responsibility falls back on the citizens again—either to solve the problems themselves, or else, if this is not possible, to create new institutions to do the job. If they fail to do so, then they are subject to moral criticism, for having failed to discharge their original responsibilities.

At first glance, this move may seem startling. If the world's leaders and institutions are failing to deal with climate change, the average person might ask, how does that suddenly become *my* problem? Moreover, isn't that deeply unfair?

In response, let me make two comments. First, although the move is startling, it is a traditional one in political theory, and often made in mainstream arguments about rights of civil disobedience, revolution, and the like.⁷⁷ In short, this is not a foreign, or even unusual, model of political responsibility. Indeed, arguably, it is built into the foundations **(p.434)** of democratic thinking and institutions more generally, as a natural consequence of their basic rationale. Hence, if there is a problem, it is not new, and not specific to climate change. The whole idea that citizens might be politically responsible for the behavior of their institutions is in some respects a radical and demanding one.

Second, the fact that the move seems startling to many contemporary readers may itself be the consequence of a certain vision of modern political justification. 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). But 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. But this may say more about the

past successes of the delegated responsibility paradigm than its likelihood of current or future failure.

Whatever the cause of the jarring problem, it seems clear that we need better ways of understanding our collective responsibilities and how to discharge them. This can be a part of the ethics of the transition, but also raises questions in ideal theory. To this, I now turn.

VI. Ideal Theory

The ethics of the transition aims to influence policy through existing institutional constraints and gradual attempts to modify those constraints. But it is reasonable to ask whether this is a feasible project. Early signs are not encouraging. Recent history implies that existing institutions have **(p.435)** both allowed the threat to arise, but are (at best) reluctant to address it. Hence, the ethics of the transition is haunted by two more radical thoughts. The first is that current institutions might be seriously—and perhaps fatally—flawed and so should be rejected.⁷⁸ The second is that “you can't get there from here.” Perhaps existing institutions and theories must be radically reconceptualized to reflect new global and ecological realities, and perhaps the necessary moves overwhelm the logic of a climate-focused account.⁷⁹

In the face of such worries, some concessions seem inevitable. In general, most political philosophers working today believe that the current world order is seriously unjust. More specifically, it seems wise to acknowledge that climate change involves issues which current political institutions and theories do not seem designed for, nor obviously well-equipped to handle. Hence, whatever one thinks about the ethics of the transition, it seems clear that ideal theory matters. Most prominently, climate change is one of a number of contemporary global problems that casts doubt on the traditional philosophical strategy of constructing basic justice on the model of a single self-sufficient nation-state. If we have truly entered a new epoch on the earth, a geological era dominated by humanity—the “anthropocene”⁸⁰—then such a model seems at least seriously incomplete, and perhaps hopelessly outdated. Theorists should ask whether this requires revising their grand visions of ethics and justice. Given these things, the project of ideal theory seems pressing.⁸¹

(p.436) Nevertheless, we should not be too quick to dismiss the ethics of the transition. Even if existing institutions and theories are hopelessly inadequate, we can hardly expect a transformation to better overnight; so, there remains a place for intermediate theorizing. In addition, we should recognize that such theorizing might play a number of different roles. At the extremes, some will conceive of climate ethics as operating completely in isolation of other, nonclimate concerns (the isolation model), while others will see climate change as opening the door to a dramatically new world order (the vanguard model). But there are more moderate conceptions. For example, perhaps transitional climate policy should merely aim for modest improvement in other areas, insofar as it intersects with them (the mild rectification model); or perhaps it should remain content with not making wider injustice worse (the neutrality model). Importantly, discussions of the merits of these rival models seem part of the ethics of the transition rather than an

obstacle to it.

More generally, it is important to note that what is at stake here is likely to depend as much on background beliefs about political reality as anything else, and so raise serious questions about the boundaries of the ideal. Practical “political reality” is, of course, a treacherous notion, as geopolitical events of the last fifty years (e.g., the fall of the Berlin Wall, the end of apartheid in South Africa) have shown. But such worries infect ideal theory as well. Rawls, for example, claims to found his own political philosophy on a notion of “realistic utopia” that aims to reconcile the real constraints of human nature and the world with the (equally treacherous) concept of “utopia.” But how are we to decide what the “real constraints” on ideal theory are? Given this problem, perhaps the differences between ideal and nonideal cases are more a matter of degree than of kind. This issue is itself a matter for serious theoretical discussion.

VII. Conclusion

The aim of this chapter was to illustrate how substantive ethical theorizing is relevant to current debates about climate policy, and thereby suggest a modest redirection of the public debate. The main claims were:

1. Ethical considerations are already at the basis of international climate policy.
- (p.437)** 2. Scientific uncertainty does not justify inaction.
3. Precaution is theoretically respectable.
4. Past emissions matter.
5. The intragenerational burdens should fall predominantly on the developed countries.
6. Specific intergenerational trajectories require ethical defense.
7. The right to self-defense is an important, but sharply limited rationale.
8. Individuals bear some responsibility for humanity's failure.

Obviously, more needs to be done to fully develop and defend these propositions. But I hope that they help to give shape to the emerging ethics of the transition. At this point in time, getting started is the most important thing.

In closing, I want to make one final point about how to think about the roles of both ideal theory and the ethics of the transition. Some may be pessimistic about the ability of current institutions and their likely successors ever to deal with climate in anything like an ethical way—and perhaps this initial discussion only heightens such fears. I would resist this pessimism. Nevertheless, even if it turns out to be well founded, I would still insist that there is some point to work on climate ethics. While it is true that a central purpose of ethics is to guide change, it can also have other roles. In my view, prominent among these is the task of *bearing witness* to serious wrongs even when there is little hope of change. Ideal theory is central to this task. However, the ethics of transition can also play a part. Though we may not yet know either what a fully ethical approach to climate would look like, or how to get there in the long term, visions of what might count in the near term are still of some value in holding us accountable. This is so even if all they do is remind us that what we do now falls far short of any morally defensible goal. **(p.438)**

Notes:

(1.) Rawls says ideal theory “assumes strict compliance and works out the principles that characterize a well-ordered society under favorable circumstances” (Rawls 1999, 216). Presumably, strict compliance and well-orderedness might be subsumed under “favorable circumstances”. However, I am not concerned with pursuing a precise definition here.

(2.) For example, some contemporary work in cosmopolitan political theory imagines what a world would (and should) look like that transcended state institutions and boundaries. This is work in ideal theory. By contrast, other cosmopolitan writing considers how existing institutions might be reformed to function in ways either more in keeping with cosmopolitan ideals, or more likely to lead eventually to better cosmopolitan structures (and hopefully both).

(3.) Rawls 1999, 253.

(4.) For example, Article 2 states: “Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.”

(5.) Chapters 3–4; Brown 2002.

(6.) IPCC 2007; Oreskes 2004; UNFCCC 1992.

(7.) A third challenge is the claim of many mainstream economists that only modest steps should be taken since (they say) the costs of substantial action outweigh the benefits. I address this argument in chapter 8.

(8.) Knight 1921.

(9.) IPCC 2007c.

(10.) Friedman 1976.

(11.) Broome 1992, 18.

(12.) For example, using ozone depletion and deforestation as his case studies, Rado Dimitrov argues that the crucial variable in resolving global environmental problems is knowledge of their cross-border consequences, rather than of their extent and causes, since this “facilitates utility calculations and the formation of interests” (Dimitrov 2003, p. 123).

(13.) For example, suppose I am weighing a job offer in a distant city, and that one major consideration is what kind of life my eighteen-month-old son will have. The information I have about this is riddled with uncertainty. I know that my current location offers many advantages as a place for children to grow up (e.g., the schools are good, the society

values children, there are lots of wholesome activities available) but some considerable disadvantages (e.g., great distances from other family members, a high youth suicide rate). But I have no idea how these various factors might affect my son, particularly since I can only guess at this stage what his personality might turn out to be. So, I am in a situation of uncertainty.

(14.) For example, suppose that the position is on the other side of the world in New Zealand, but I have never been there, nor know anyone who has. Then, I might be completely bereft of information on which to make a decision. (These days, of course, I have the Internet, the local library, and Amazon.com. But pity the situation of the early settlers.)

(15.) For example, suppose I'm now thinking about my fifteen-year-old daughter. In this case, I do have considerable information about her personality, preferences, goals, and aspirations. But this does not mean there is not considerable uncertainty about how good the move would be for her. Suppose, for example, that I know that the most important thing from her point of view is having a group of very close personal friends. I also know that she is good at making friends; but I don't know whether a suitable group will present itself. Uncertainty, then, can come with more or less information attached, and information of very different kinds.

(16.) E.g., The “never been to New Zealand” case seems clearly worse than “fifteen-year-old daughter”.

(17.) Brown 2002, 102. Thus our situation seems more like the fifteen-year-old daughter case than “never been to New Zealand.”

(18.) There is, of course, an important presumption here. Dale Jamieson points out that the very idea of climate change presupposes a paradigm of stability versus change, and this brings with it a need to distinguish signal from noise (Jamieson 1991, 319–21).

(19.) According to data largely from Arctic ice cores, in the last 10,000 years the variation in average global temperatures is less than one degree Celsius; in the preceding 100,000 years, variations were sometimes experienced of up to five or six degrees Celsius in less than 100 years (Houghton 1997, chapter 4).

(20.) Interestingly, this does not imply that we should not have a global warming policy to limit emissions. It could be that the observed warming trend is natural but if it were to continue, this might be just as potentially disastrous for current patterns of human life on the planet as artificially induced warming would be. It might then turn out that some abatement of projected anthropogenic emissions would be justified as a counteracting measure.

(21.) The analogy with the climate case is as follows. What really concerns us about climate change is the prospect of a dramatic climate shift over the next century or two, of the sort suggested by a substantial rise in average global temperature, such as 1.1–6.4 C.

(This is like being concerned with the eventual mature athlete.) However, we are currently still fairly early in the evolution of climate change impacts. (The athlete is still young.) The leading scientific authority is telling us that thus far observed “warming of the climate system is unequivocal” and “very likely” (meaning a probability of 90% or more in their judgment) due to human activity.²¹ At this point, the IPCC is referring to an observed global temperature rise of around 0.8 C, and is essentially saying that global warming provides a good explanation for this, and nonanthropogenic explanations are not forthcoming. (The coach who is monitoring the young athlete thinks that he is a very good prospect.) But there is still some chance that this judgment may turn out to be mistaken. (The coach might admit that the probability is only 90% in her judgment, so that there is a 10% chance that the prospect won't mature into a top-class athlete; and also, that she might be mistaken about the 90% judgment.) Nevertheless, it does provide information relevant to decision making, especially given that delaying action will make action much more expensive, or even impossible. (The mature athlete will be very expensive, maybe too expensive for the club to buy.) This is especially so if there are some things that can be done initially that are relatively easy and not too costly. (Perhaps the club could offer a contract with opt-out clauses, and performance incentives.)

(22.) As pointed out in chapter 3, the potential gains from carbon emissions are far from exhausted, given the low per capita rates in most parts of the world. Hence, even if global warming were not yet occurring, we would, other things being equal, expect it at some time in the future, as global emissions rise.

(23.) IPCC 2007a.

(24.) One may try to argue that the IPCC ranges are inadequate, but this is a separate argument, to be assessed on its merits.

(25.) In particular, there is no reason to assume that our planet's atmosphere is robustly stable in the face of different inputs. The atmosphere of Venus, for example, has undergone a runaway greenhouse effect. (It is easy to forget that what we are dealing with fundamentally is a band of gases around the earth that is just a few miles wide.)

(26.) Others have proposed addressing uncertainty with various default rules and institutional mechanisms that are sometimes discussed under the heading of precaution but sometimes not. See, for example, Cranor 1994, 2004, 2006; Michaels 2008; Shrader-Frechette 1993.

(27.) Wingspread 1998.

(28.) I add a fourth condition to Rawls's list: that “the range of outcomes considered are in some appropriate sense ‘realistic,’ so that, for example, only credible threats are considered” (Gardiner 2006, 51–2). See also Cranor 2003, 2004.

(29.) For example, the criticism that the resources spent on precautionary policies would produce major benefits if used elsewhere suggests an attack on the “care little for gains”

condition.

(30.) If there is not, then the probabilities of severe impacts seem large enough to justify action on other grounds.

(31.) Sunstein 2005, 112. Because of this, he tries to “build on” the Rawlsian version to develop an alternative “catastrophic harm precautionary principle” (Sunstein 2006, 168).

(32.) Shue 1993; Gardiner 2006a.

(33.) Recall that Rawls says only that we must care “little” for the gains of an alternative strategy, not that we need not care at all.

(34.) Contra. Sunstein 2006, 156.

(35.) Shue 1999; Singer 2002.

(36.) Caney 2005 (but see Caney 2011); Posner and Sunstein 2007; Posner and Weibach 2010.

(37.) Revkin and Zeller 2009.

(38.) Shue 1999.

(39.) Shue 1999, 2009.

(40.) Of course, the case is even stronger if one takes into account negative side effects. “Free for all, with no special responsibility for the early users if their use turns out to harm others” looks highly implausible in most settings.

(41.) Caney 2005; Posner and Sunstein 2008.

(42.) See also Gosseries 2003; Meyer and Roser 2006.

(43.) Athanasiou and Baer 2002.

(44.) For example, if we had not already seen an increase in atmospheric concentration of carbon dioxide from 270 to 380 ppm, then we would have another 110 ppm to play with. (I thank Henry Shue for discussion on this point).

(45.) Shue 1995.

(46.) Shue 1992.

(47.) More complex proposals exist (cf. Bear et al. 2007; Chakravarty et al. 2009). But these remarks should provide an entry point into thinking about those too.

(48.) Agarwal and Narain 1991; Meyer 2000; Jamieson 2001; Athanasiou and Baer 2002; Singer 2002.

(49.) Sometimes this rationale may be based in a basic egalitarian intuition. But it is also supported because per capita allocation serves wider ethical goals (Singer 2002), or (perhaps most often) because it is viewed as a pragmatic principle that at least moves in the right direction (away from grandfathering huge international inequality in emissions levels, for example), and has the advantage of comparative simplicity.

(50.) Boden et al. 2009.

(51.) Sen 1980; Dworkin 2000; Page 2007.

(52.) This reflects the fact that the per capita proposal was originally conceived within the context of national allocations (as an alternative to grandfathering and similar schemes) and the appeal of administrative simplicity.

(53.) Goodin 1994.

(54.) Sandel 2005; Sagoff 1999.

(55.) Shue 1993, 13.

(56.) Traxler 2002.

(57.) Traxler 2002. However, Traxler is thinking in terms of luxury emissions, and so would presumably not support a uniform 20% cut. (See below.) For a more recent appeal to the metaphor of teamwork, see Miller 2010.

(58.) Approaches that prioritize the interests of the least well-off also endorse the consensus because the developing countries are much poorer than the developed countries. In 2007, average income in 2007 in the U.S. and U.K. was above \$45,000 per year; in China it was \$2604, in India \$976, and in Bangladesh \$428 (UN 2009a). Moreover, these averages do not highlight some of the worst problems. In 2005, more than 10% of the world's population lived in absolute poverty, on less than \$1 per day, unable to meet their basic needs.

(59.) Shue 1992; Traxler 2002.

(60.) Vidal and Adam 2009.

(61.) IPCC 2001, 365.

(62.) IPCC 2001, 226.

(63.) Jamieson 2008.

(64.) Jamieson 2005.

(65.) Global Humanitarian Forum 2009.

(66.) For responses to some objections, see chapter 8.

(67.) E.g., Copenhagen Accord 2009, McKibben, Allen et al. 2009.

(68.) BBC 2009.

(69.) BBC 2009.

(70.) Some claim that it is better to help the current generation of the world's poor at the expense of climate action. For a response, see chapter 8.

(71.) Traxler 2002.

(72.) Some maintain that such rights do not apply when the rights-holder is responsible for bringing about the situation, or when the victim is innocent. There is a vast philosophical literature on such matters. For an entry-point, see McMahan 2002, 2005.

(73.) This section draws on Gardiner 2011c.

(74.) Jamieson 1992, 148; Jamieson 2010.

(75.) Jamieson 1992, 148.

(76.) Jamieson 1992, 147.

(77.) E.g., Rawls 1999. I am not advocating these measures. How to respond to political failure is a complex and difficult question. Moreover, one must be sure not to overlook either the successes of conventional institutions, nor the potential for certain kinds of intervention to make matters (much) worse.

(78.) Dryzek 1987. See also chapter 7.

(79.) Perhaps it is even the case that a conventionally unfair climate deal leads to less injustice overall.

(80.) Crutzen and Stoermer 2000.

(81.) The basic moral logic of the situation may also drive us away from the status quo. For example, considering the allocation problem, no one cares much about carbon emissions for their own sake, but only about the role they play in human lives. Hence, some have advocated moving away from the focus on national emissions targets towards metrics such as development rights (Baer et al 2007), human rights against environmental harm (Caney 2005; Vanderheiden 2008), or basic capabilities (Holland 2008; Schlosberg 2009). Such a shift may be morally justified; but it does suggest a substantial departure from current political norms and institutional structures. Consider, for example, that if there is a "Germany in China," there must be something like a Pakistan or Bangladesh too (in order to generate China's low average per capita emissions). China could address this by pursuing greater internal equality if it wished. But if we insist that

international policy must be adjusted instead—to ensure that different classes of Chinese emitters are treated differently—we seem to be saying that the international community should exert significant authority over China's internal affairs.

