

Climate Change Justice

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I. Introduction

There is a broad scientific consensus that human-induced climate change is occurring and that urgent and drastic abatement measures have to be taken if global average temperature increases are to remain below what many climate scientists take to be an acceptable upper limit of 2°C relative to preindustrial levels. Moreover, it is often claimed that the United States, as one of the world's richest countries and one of the largest emitters of greenhouse gases, ought to bear an especially large burden of the abatement costs. Indeed, some philosophers have argued that the case for strong and immediate action on climate change is ethically overdetermined and that there are multiple compelling arguments for the same conclusion—that the United States and other rich industrialized countries have a moral obligation to take the lead in what ultimately needs to be a global effort to reduce emissions.¹

Eric Posner and David Weisbach (P&W in what follows) challenge this view in their thought-provoking book *Climate Change Justice*.² While they accept the scientific consensus on the urgent need for emissions reductions and argue for the importance of an international climate agreement, they question a number of intuitively plausible arguments that suggest that rich nations, chiefly among them the United States, ought to bear an especially large burden under any such agreement. As they put it: “Our argument is unusual. We strongly favor a climate change agreement, especially because it would help poor people in poor nations and we also favor redistribution from the rich to the poor. At the same time, we reject the claim that certain intuitive ideas about justice should play a major role in the design of a climate agreement” (*CCJ*, 5).

Their criticisms of justice arguments are of two kinds. First and foremost, they argue that even on the arguments' own terms—“that is, in terms of ideal theory, ignoring pragmatic considerations” (*CCJ*, 4)—several intuitively compelling justice arguments fail. Thus, they argue, for

¹ See, e.g., Henry Shue, “Subsistence Emissions and Luxury Emissions,” *Law & Policy* 15 (1993): 39–59; Shue, “Global Environment and International Inequality,” *International Affairs* 75 (1999): 531–45; and Shue, “Deadly Delays, Saving Opportunities: Creating a More Dangerous World?,” in *Climate Ethics*, ed. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010). The first two articles by Shue are also reprinted in this collection. See also Peter Singer, “One Atmosphere,” in *One World: The Ethics of Globalization* (New Haven: Yale University Press, 2002).

² Eric Posner and David Weisbach, *Climate Change Justice* (Princeton: Princeton University Press, 2010). Hereafter this book is cited parenthetically in the text as *CCJ*.

example, that a climate treaty is not supported by considerations of redistributive justice, since “a climate change treaty is not the only method of redistributing wealth and is unlikely to be the best way” (CCJ, 4).

Second, P&W criticize justice arguments for ignoring basic pragmatic or feasibility constraints: “Feasibility rules out the vast redistributions of wealth that many believe are morally required on grounds of corrective and distributive justice” (CCJ, 6). The main such constraint, which any realistic climate change agreement ought to satisfy, is International Paretianism, which holds that “all states must believe themselves better off by their lights as a result of the climate treaty.” This constraint, they emphasize, “is not an ethical principle but a pragmatic constraint” (CCJ, 6).

P&W’s explicit aim is to identify ethical obligations that are compatible with both deontological and welfarist approaches, yet the framework they themselves prefer is welfarism, which seeks “policies that maximize people’s well-being, defined variously as their subjective sense of well-being, satisfaction of desires or preferences, or satisfaction of certain objective parameters” (CCJ, 171). The aim of the book is to show how a climate treaty is possible that can satisfy both legitimate ethical demands and the pragmatic constraint imposed by International Paretianism: “Feasibility and welfarism are the two pillars of a successful climate treaty” (CCJ, 6).

There are two dimensions of the problem of climate change that make the problem particularly difficult to solve.³ The first is its global dimension. As P&W argue convincingly, any meaningful climate change agreement would require the participation of all major emitters of greenhouse gases. In addition to the most developed industrialized nations, such as the United States and the members of the European Union, these include the growing nations Brazil, Russia, India, and, most importantly, China, which in recent years has surpassed the United States as the world’s largest emitter of greenhouse gases. Moreover, even though the effects of climate change under a business as usual scenario will likely be serious in many regions of Earth, many of the world’s poorest nations are likely to be hit hardest and to suffer the most devastating consequences. It is often claimed that rich countries, which tend to be located in more temperate regions and will be better able to adapt to the effects of climate change, are obligated to protect poorer nations from climate change and its likely consequences. P&W disagree with this claim, even though they accept a (qualified) ethical cosmopolitanism, according to which the duties of nations transcend their borders, and even though they assume that wealthy nations have an ethical obligation to help the poor even in other nations.

³ See, e.g., Stephen Gardiner, *A Perfect Moral Storm: The Ethical Tragedy of Climate Change* (Oxford: Oxford University Press, 2011).

The second dimension is an intergenerational dimension. While the potential costs of moving from a carbon-based economy to one based on renewable energies have to be borne by the world's present generations, the main beneficiaries of abatement measures will be future generations. The question of to what extent present generations have a duty toward future generations is one of intergenerational justice. One of the most perplexing issues within a welfarist approach to this question is the issue of future discounting—that is, whether and to what extent future benefits and costs should be discounted in comparison to present benefits and costs.

In three introductory chapters of the book, P&W provide a survey of “ethically relevant facts and predictions” (chap. 1); a discussion of the comparative strengths and weaknesses of different policy instruments that address climate change, such as a carbon tax or a cap and trade scheme (chap. 2); and a survey of past initiatives, such as the Kyoto protocol, which they criticize for being mostly symbolic rather than substantive (chap. 3). The argumentative core of the book consists of four chapters, in which P&W criticize distributive and corrective justice arguments for the conclusion that the United States has an obligation to contribute disproportionately to abatement measures (in chaps. 4 and 5, respectively); argue against equal per capita emissions as the most just way of allocating emission rights (chap. 6); and examine the debate surrounding future discounting, arguing for a view that aims to do justice to both what they call “positivist” and “ethicist” insights concerning the appropriateness of discounting the future (chap. 7).

Drawing conclusions from the preceding discussion, P&W argue in chapter 8 that, on welfarist grounds, states have an obligation to “develop a broad, deep, and enforceable treaty that achieves appropriate climate goals” (*CCJ*, 170). The optimal climate treaty is determined by the following two-step process. First, a global and cross-temporal cost-benefit analysis, weighing the current costs of abatement measures against the future benefits of emission reductions, determines “emissions that are optimal for the globe” (*CCJ*, 88). Second, the global costs of abatement measures are distributed among nations in accord with International Paretianism, which demands that “all states must believe themselves better off by their lights as a result of the climate treaty” (*CCJ*, 6). Thus, while P&W take welfarism (as well as deontological arguments) to imply a *global* obligation of the world's present generations to agree to drastic greenhouse gas emissions cuts, they do not believe that there are good ethical arguments that entail a special obligation of rich nations to shoulder a disproportionately large share of the associated costs. The burden of the rich, as that of all countries, is restricted by International Paretianism.

Climate Change Justice is rich in provocative arguments and presents an important contribution to the literature on climate change. My discussion in the present article is largely

critical, however. Since a comprehensive examination of the many subtle and challenging arguments of the book is far beyond the scope of this article, I will focus primarily on the following issues: in section II, I examine P&W's criticism of the claim that the United States and other wealthy nations have a special obligation to contribute to a climate treaty simply because they are so rich. In section III, I discuss, much more briefly, the claim that the United States has no special obligation deriving from the fact that its historical emissions were so high and that it is the largest contributor to the current stock of greenhouse gases. Section IV contains a brief discussion of P&W's account of future discounting. Section V, finally, critically discusses the positive account defended in *Climate Change Justice*. I argue that there are several unresolved tensions between this account and the criticisms developed earlier in the book. I end by raising several worries about the role of International Paretianism within the overall account.

II. Distributive Justice

There appears to be considerable agreement among philosophers that developed countries have an obligation to bear a disproportionately large part of the costs of climate change.⁴ P&W challenge this consensus and in two chapters at the heart of their book argue that neither considerations of distributive justice nor considerations of corrective justice support the claim that developed countries, chief among them the United States, have a duty to bear an especially large part of the burden of any global climate change agreement. These two chapters draw heavily on two articles by Eric Posner and Cass Sunstein, and large sections are taken verbatim from the earlier articles.⁵

P&W approach the issue of distributive justice through an analogy. They invite us to imagine that India was threatened by an asteroid predicted to strike one hundred years from now and ask whether rich nations like the United States have an obligation to contribute disproportionately large funds to an endeavor to protect India from the strike simply because they are rich. They argue that despite initial intuitions to the contrary, the answer is "no," and that a more "sensible" and less "crude" kind of redistribution would be a direct cash transfer to India rather than an investment in technologies intended to avert the threat of a collision. The two main arguments for this conclusion are the following. First, a cash transfer would allow India to set its

⁴ See, e.g., Singer, *One World*; Shue, "Global Environment and International Inequality"; Simon Caney, "Cosmopolitan Justice, Responsibility, and Global Climate Change," *Leiden Journal of International Law* (2005): 747-75. Caney's article is also reprinted in Gardiner et al., *Climate Ethics*.

⁵ Posner and Sunstein, "Climate Change Justice," *John M. Olin Law & Economics Working Paper*, no. 354, University of Chicago Law School, 2007; Posner and Sunstein, "Climate Change Justice," *Georgetown Law Journal* 96 (2008): 1565-612.

own priorities and spend the money as it sees fit—perhaps on education or AIDS prevention rather than on combating the asteroid threat. Second, since the asteroid will only strike one hundred years from now, the money paid by the United States would benefit future citizens of India and not its present citizens. Yet P&W assume that “people living in poor countries in the future will almost certainly be wealthier than people living in poor countries today” (*CCJ*, 83). Thus, the present poor living in India have a much stronger claim to assistance than their descendants.

While P&W do not explicitly define what they mean by considerations of “distributive” or “redistributive justice,” they state that “poor people and poor nations have a claim of entitlement” (*CCJ*, 76) and suggest that this entitlement may derive either from an obligation to maximize overall welfare (under the assumption that added wealth is associated with diminishing marginal utility) or from the Rawlsian idea of a veil of ignorance. In Posner and Sunstein’s article, this entitlement is expressed as follows: “We agree that in many domains, resources should be redistributed from rich nations and rich people to poor nations and poor people.”⁶

According to P&W’s first argument, a cash payment would be superior to an engagement in the asteroid project, if the payment were large enough that it would balance any future losses in welfare due to the asteroid impact. For then the payment would be at least equivalent to the asteroid aid on purely welfarist grounds and would be superior to the latter because it would allow at least some flexibility in the choice of projects for which it would be used. But a welfarist conception allows for the maximization of welfare to include other goods and services aside from material goods and services. Applied to our case, maximizing welfare might include the enjoyment of certain natural goods. Thus, to assume that a cash payment is always a preferable form of redistributing resources presupposes that any amount of environmental degradation (and any loss in life) can (realistically) always be adequately compensated by sufficiently large cash payments. That is, the argument presupposes that monetary wealth and natural goods are fully substitutable. Yet while it may be the case for the *donor* nations that cash payments and programs that protect natural goods in a foreign country are perfectly substitutable for each other, it is far from obvious why we should also assume this for the *recipient* nations. What the best way of transferring wealth (broadly construed) is depends on the project at issue and on the recipients’ goals and preferences.

P&W’s second argument for the claim that a direct cash payment would be preferable to the United States investing money to reduce its carbon emissions appeals to the intergenerational dimension of the problem and asserts that a cash payment has the advantage of benefiting the poor current citizens of India rather than their relatively richer descendants: “If the world takes action

⁶ Posner and Sunstein, “Climate Change Justice,” p. 1571.

now, it will be spending current resources for the sake of future generations, which are likely to be much richer" (CCJ, 78). This is an assumption that is frequently made in the literature on the economics of climate change, but despite its widespread acceptance, it is not clear that it is justified. The assumption is usually supported by appeals to historical growth in GDP, but it is doubtful whether the Indian economy would be able to continue to grow if India were faced with severe food shortages and catastrophic weather events of the kind that would be increasingly likely if temperatures were to rise by 5°C or more. Consider as a perhaps even more stark case that of India's neighbor Bangladesh: will Bangladesh be able to experience economic growth if up to a third of the country is flooded as a result of rises in sea level? Quite plausibly, the resulting mass migrations and food shortages are incompatible with future growth.

Indeed, later in the book P&W themselves question the assumption that we can expect future generations to be much richer in the context of their criticism of what they call "positivist" approaches to future discounting. As P&W explain, positivists maintain that the future discount rate represents the opportunity costs of investments and that the appropriate discount rate ought to be determined purely empirically by extrapolating historically observed growth and interest rates. A prominent defender of this approach to discounting is the economist William Nordhaus, who argues for a discount rate of 5.5 percent.⁷ P&W criticize Nordhaus's choice as much too high, appealing to a technical issue concerning how expected rates of return are properly calculated under uncertainty. A correct calculation, P&W argue, effectively assigns higher weights to lower possible future rates of return. This has the consequence that the "discount rate recommended by the positivists *might be very low or even negative*, especially because climate change might itself lower the rate of return on investments" (CCJ, 153, my emphasis). Given the close connection between discount and growth rates, it follows that the expected growth rate used in comparing present and future welfare also ought to be very low or even negative.⁸

Moreover, even if we were to grant that there will be continued growth in *market goods*, such that future citizens of poor countries will be materially richer than current citizens of poor countries, it does not follow that the *overall welfare* of future generations will be higher than that of the present-day poor. Unless we assume full substitutability between environmental and produced good, it may be the case that negative environmental effects—that is, a decrease in the availability

⁷ See, e.g., William Nordhaus, *A Question of Balance: Weighing the Options on Global Warming Policies* (New Haven: Yale University Press, 2008).

⁸ The discount rate ρ is commonly assumed to satisfy the Ramsey equation $\rho = \eta g + \delta$. Here δ is the so-called rate of pure time difference, which is nonnegative; η is the elasticity of the marginal utility of consumption and multiplies the rate of growth g . Thus, a very low discount rate ρ implies a very low growth rate g .

in *nonmarket or environmental goods*—cannot be sufficiently made up for by an increase in wealth in market or produced goods. To the extent that droughts and extreme weather events will result in forced relocation, the collapse of food sources, mass starvation, and increased mortality rates, it may be that the overall welfare of future generations will be lower than that of present generations even if we assume continued growth in the consumption of market goods.

Curiously, P&W also make this very point in the context of their discussion of future discounting. Referring to an article by Thomas Sterner and Martin Persson, they point out that with increased scarcity the value of environmental goods relative to the rest of economy will increase. Sterner and Persson show that if we assume an economy with just two representative goods that are not perfectly substitutable for each other (a produced and an environmental good), then the expected relative price changes between the two goods as the environmental good becomes scarcer, leading to the increased importance of the environmental good.⁹ This has the effect that the *overall* wealth of future generations can decrease even under the assumption of continued growth in the consumption of the produced good. It is not easy to see how P&W's careful and subtle discussion of discount rates is compatible with their claim that the future poor "will almost certainly" be richer than people living in poor countries today.

P&W use the asteroid analogy to argue against the view that a climate treaty can be justified on general redistributive grounds. A climate treaty is unlikely to provide the best means for redistributing resources from the rich to the poor, since "poor nations would benefit more from cash transfers, and the current poor have a stronger claim to assistance than the future (less) poor" (*CCJ*, 78). But they also consider three more-restricted distributive claims on which a climate treaty might be based, two of which I want to discuss here. First, they consider the claim that a climate treaty ought to contain "when, where, and how" policies, which impose stronger abatement obligations on rich countries than on poor countries; and second, they discuss the claim that a treaty that "is optimal from the global standpoint" as far as the treaty's targets and obligations are concerned should in addition provide side payments from rich to poor (*CCJ*, 80).

In contrast to the general redistributive principle, the first more-restricted claim does not concern who should *pay* for emissions reductions, but rather *when, where, and how* emissions reductions are to be implemented.¹⁰ P&W argue that emission cuts cannot occur in rich nations alone, since meaningful reductions require the participation of all major emitters, including those in

⁹ Thomas Sterner and U. Martin Persson, "An Even Sterner Review: Introducing Relative Prices into the Discounting Debate," *Review of Environmental Economics and Policy* 2 (2008): 61–76.

¹⁰ An analogous claim in the asteroid case might concern *where* the laboratories and factories dedicated to combating the asteroid threat should be built, rather than *who should pay* for the endeavor.

the developing world. Moreover, an optimal climate treaty would be one that imposes cuts in emissions as efficiently as possible, and capping or reducing emissions in poor nations may often be cheaper per unit of CO₂-equivalent emissions than reductions in rich nations. Thus, constraining the *where* of emission reductions by redistributive concerns threatens to lead to inefficiencies. Quite independently of the question of who ultimately ought to pay for the costs of the reductions, such inefficiencies ought to be avoided.

P&W here point to an important distinction in allocating the obligations of different states under a climate treaty: the distinction between where emissions reductions are to occur and who ought to pay for these reductions. Yet while P&W's efficiency argument introduces a legitimate demand on climate policies, a treaty based *purely* on efficiency considerations might face considerable pragmatic hurdles. Not implausibly, the maximally efficient climate treaty would not allow emissions in the developing world to rise above current levels: after all, an extremely cheap way of avoiding additional emissions is simply not to build additional power plants. Developing countries forcefully insist, however, that they be allowed rising emissions, at least in the near term, to enable them to catch up in economic development. Thus, for reasons of feasibility a climate treaty that does not allow for inefficiencies as a result of rising emissions in the developing world, at least in the near term, might be impossible to ratify. The best realistic climate treaty arguably would be one that neither permits "poor nations . . . to continue with business as usual" (CCJ, 82) nor ignores legitimate economic concerns of developing countries, as P&W themselves point out.¹¹

The second more-restricted redistributive claim once again concerns the question of who ought to pay for emissions reductions and asserts that for reasons of distributive justice a climate treaty should include side payments from the rich to the poor. P&W are deeply skeptical of this claim as well: "an optimal climate treaty with redistributive side payments," they say, "is just two treaties in one—a climate treaty and what might be called a foreign aid treaty" (CCJ, 85). But there is no justification for combining the two kinds of treaty into one: "It is not at all clear why a climate treaty and a foreign aid treaty should be combined. . . . Certainly, there is no ethical requirement to combine a climate treaty and a foreign aid treaty into one document " (CCJ, 86). They conclude: "A climate change treaty should focus on climate change, not on other goals" (CCJ, 88). What is more, even if a climate treaty were to generate a surplus, this surplus would be better used if it were

¹¹ For an analysis of different emissions pathways under such "mixed approaches," see J. Füssler, M. Herren, M. Guyer, J. Rogelj, and R. Knutti, *Emission Pathways to Reach 2°C Target*, Report by INFRAS and IAC ETH Commissioned by the Swiss Federal Office for the Environment, 2012. According to one such proposal, "a developing country has to start mitigation action as soon as it reaches average per capita emissions or a GDP per capita of 20,000 USD" (p. 5).

distributed as an incentive to those nations who were especially quick at making emission cuts rather than given to poor nations on redistributive grounds.¹²

P&W are not opposed in general to a climate treaty that includes side payments, but in an optimal climate treaty these payments should go from states that have a stronger interest in a climate treaty to those that have a weaker interest and not from the rich to the poor. Such side payments would ensure the participation of those states less threatened by climate change, and thus would be needed to ensure that the treaty satisfies International Paretianism. In fact, the optimal climate treaty “could well require side payments to rich countries like the United States and rising countries like China, and indeed possibly from very poor countries which are extremely vulnerable to climate change—such as Bangladesh” (*CCJ*, 86)! But clearly such side payments would grossly exacerbate existing inequalities and would amount to a payment from the states most threatened by climate change to those primarily responsible for the existing stock of greenhouse gases in the atmosphere. Thus, requiring such payments would only be ethically defensible if P&W’s objections to principles of distributive and corrective justice succeed. Moreover, one might have doubts about P&W’s pragmatic defense of the side payments, which appeals to International Paretianism. As I will argue in section IV, this principle is problematic and considerations of feasibility do not unequivocally favor it.

Why, then, should a climate treaty not include redistributive side payments? P&W once again appeal to both ethical and pragmatic considerations. The pragmatic difficulty they see is that states are just not very good at agreeing on any multilateral foreign aid treaty: “It would be terrible if states fail to agree on a climate treaty with optimal when, where, and how policies because they cannot agree on the magnitude and allocation of foreign aid, and who should be most responsible for it” (*CCJ*, 87). Yet it seems to me that P&W’s representation of the situation as a two-step process, involving first a climate treaty and then a separate foreign aid treaty is somewhat misleading. What they call “a foreign aid treaty” determines how much each nation ultimately has to pay as its share of the costs of the climate treaty. Thus, as difficult as it may be to reach such an agreement—and the past decades of futile attempts to reach a global climate agreement bear witness to this difficulty—there can be no climate change agreement without *some* decision on how to distribute abatement costs, based on distributive principles or on other principles. Thus, “foreign aid is an extremely

¹² “The upshot is that while distributing the surplus in favor of poor countries satisfies International Paretianism and hence cannot be ruled out on feasibility grounds, this approach deserves skepticism” (*CCJ*, 96). And: “We agree that, other things being equal, the surplus should be given to poor states rather than wealthy ones. But other things are not equal; incentive effects matter as well” (*CCJ*, 186).

difficult problem, one that is in its own way every bit as complicated as climate science,” and many countries would try to resist the necessary “inspection, monitoring, reporting, and so forth” (*CCJ*, 87), but these are problems for *any* procedure for distributing the costs of the treaty and do not provide an argument specifically against a procedure based on redistributive principles.

To the extent that P&W offer an argument for their claim that there is “no ethical requirement to combine a climate treaty and a foreign aid treaty into one document,” the argument seems to be that any duty rich states have toward the poor has to derive from a general principle of redistribution: there can be no obligation of the rich that arises within the context of an individual policy alone: “duties to the poor should be considered in the context of the overall set of policies rather than for each policy. We should care about net transfers to the poor rather than whether particular individual policies, such as climate change policies, transfer resources to the poor. There is no obligation that each individual policy must be designed to achieve this goal” (*CCJ*, 175). But this argument presupposes that every duty of the rich toward the poor is founded on redistributive considerations, and this presupposition can be questioned, as I want to argue now.

At the beginning of their discussion, P&W express their central question as follows: “Our question in this chapter is whether rich nations have a special obligation to deal with climate change, not because they are principally responsible for the problem, but simply because they are rich” (*CCJ*, 73). This question is then treated as the question of whether “a climate treaty should be used to redistribute wealth from rich to poor countries” (*CCJ*, 80). Their strategy in arguing against the second claim, as we have seen, is to appeal to a welfarist framework and argue that, once we compare different mechanisms for redistributing wealth, it is questionable that the redistributive effects of a climate change agreement provide the best means of increasing overall welfare: “A climate change treaty is not the only method of redistributing wealth and is unlikely to be the best way” (*CCJ*, 4). But the second question is not equivalent to the first.

The second question asks whether a climate treaty can be justified on general redistributive grounds within a welfarist or utilitarian framework. But let us assume that the need for a climate treaty can be given some other ethical justification independently of redistributive considerations. For example, let us assume that the need for drastic greenhouse gas emission reductions can be established by appealing to a human right—“the human right not to suffer from the disadvantages generated by global climate change,” as Simon Caney has argued.¹³ Given that present generations

¹³ Caney, “Cosmopolitan Justice,” in Gardiner et al., *Climate Ethics*, p. 136. This right, Caney argues, follows from the following: “Persons have fundamental interests in not suffering from: (a) drought and crop failure; (b) heatstroke; (c) infectious diseases (such as malaria, cholera, and dengue); (d) flooding and

have to bear whatever costs arise from ensuring that this right will not be violated for future generations, the question arises of how to allocate these costs. A special obligation of rich nations might then follow from a principle of fairness, as Henry Shue, for example, has proposed: “Among a number of parties, all of whom are bound to contribute to some common endeavor, the parties who have the most resources normally should contribute the most to the endeavor.”¹⁴ According to this principle, rich nations, simply because they are rich, have a special obligation to ensure that future generations do not suffer from the effects of climate change, since unlike the global poor they are in a position to bear the costs without themselves thereby suffering an infringement of their own rights. P&W’s “foreign aid treaty” might be one way in which rich nations might meet this obligation.

The principle of fairness appears to be *prima facie* plausible. In fact, Shue himself believes that “the general principle itself is sufficiently fundamental that it is not necessary, and perhaps not possible, to justify it by deriving it from considerations that are more fundamental still.”¹⁵ If P&W want to establish that there is no ethical requirement, independent of an overall principle of redistribution, that the rich contribute disproportionately to a climate treaty simply because they are rich, they would have to show that considerations of fairness, too, are at bottom considerations of redistribution. For if, with Shue, we took a principle of fairness to be fundamental, then P&W’s redistributive justice arguments would no longer apply. In particular, the existence of alternative strategies for increasing global welfare would not absolve rich nations from their duty to contribute disproportionately to the common endeavor of ensuring that the human rights of future generations are not violated.¹⁶

I have claimed that even if a special duty of the rich cannot be established on general welfarist grounds, such a duty might follow from a principle of fairness. I want to end this section by suggesting that even a welfarist defense of a special obligation of the rich, appealing to a general principle of redistribution, can be given. According to the latest (2012) projections by the International Energy Agency, global greenhouse gas emissions continued to increase in 2012 and the world is on track to a horrific 6°C warming by the end of the century. That is, we are on track, within the next ninety years, for temperatures that are at least as much warmer than the current

the destruction of homes and infrastructure; (e) enforced relocation; and (f) rapid, unpredictable, and dramatic changes to their natural, social, and economic world” (p. 135).

¹⁴ Shue, “Global Environment and International Inequality,” in Gardiner et al., *Climate Ethics*, p. 105.

¹⁵ *Ibid.*

¹⁶ I cannot argue here for either Caney’s or Shue’s principle. My aim here is more limited. I merely want to point out that a special obligation of the rich to bear a large share of the costs of a climate treaty can be founded on ethical considerations other than a general principle of wealth redistribution.

average temperature as temperatures during the last ice age were colder. Warming of that magnitude will probably trigger many not fully understood feedback mechanisms; but even without full knowledge of what a 6°C world would look like, it is plausible to assume that many currently densely inhabited regions of the planet would become uninhabitable and that such a severe and, from a geological perspective, almost instantaneous warming would put severe stresses on many ecosystems, on food productions, and on the functioning of human societies. Plausibly then, unless immediate and drastic abatement measures are taken, many people in the future will suffer consequences that will decrease their well-being so dramatically that no increase in other measures of wealth or well-being, such as increased consumption of produced goods (even if assumed to be independent of climate change), would be able to make up for this dramatic loss. Moreover, arguably consumption would not be unaffected by climate change and the economic disruptions that would occur in a 6°C world would be so severe that it would lead to dramatic decreases in GDP in many regions of the world as well.

This suggests the following welfarist and redistributionist argument for a special obligation of wealthy states:

1. Not taking immediate and drastic measures to decrease greenhouse gas emissions would lead to environmental damages, especially in poor countries, so catastrophic that either (i) the increasing scarcity in environmental goods could not be compensated for even by a continued increase in the consumption of market goods, or (ii) the consumption of market goods would decrease significantly.
2. These damages would be so large in many regions of the world that global welfare in the future would be significantly lower than it would have been without drastic abatement measures.
3. Therefore (from [1] and [2]), meaningful climate action cannot be substituted for other redistributive measures without a significant decrease in overall global welfare: the optimal strategy for maximizing overall welfare has to include meaningful climate action.
4. If wealthy nations contribute disproportionately to a climate agreement, then this has the effect of redistributing wealth from the present rich to the future relatively poorer, and in particular from present rich nations to future desperately poor nations.
5. A redistribution of wealth from the current rich nations to future poor nations increases overall welfare; and it increases welfare more than a redistribution from the current poor to the future poor.

6. Therefore (from [3], [4], and [5]), if we have an obligation to pursue policies that maximize overall global welfare, wealthy nations have an obligation to contribute disproportionately to a climate agreement.

In fact, P&W appear to accept all the premises of this argument. In particular, they endorse considerations in support of (1) and (2), as we have seen above, even though these considerations are in tension with their “crudeness” objection and the claim that future people will be richer than present people. P&W consider and reject the view that environmental and produced goods are incommensurable and that environmental goods have infinite value (*CCJ*, 55ff.). But (1) does not depend on an assumption of incommensurability. All that is required is that the negative consequences associated with climate change will be so dire that they cannot be substituted for market goods of realistic overall value. Given that we currently appear to be on a path to a 6°C world, this assumption is not all that implausible.

III. Corrective Justice

There is a crucial disanalogy between the case of the asteroid and that of greenhouse gas emissions: the asteroid constitutes a threat to which the United States and other wealthy countries have not contributed, whereas U.S. emissions contribute substantially to climate change. Thus, the second kind of argument P&W examine is a corrective justice argument that explicitly takes considerations of responsibility into account. The argument states that since the United States is responsible for the largest per country share of past emissions, it has a special obligation to devote significant resources to rectifying the problem of climate change. As P&W construe it, the argument is entirely backward-looking and derives a special responsibility for the United States to devote significant resources to remedying the problem of global warming solely from the fact that the United States has been the largest contributor *to the existing stock* of greenhouse gases in the atmosphere (rather than *the current flow* of greenhouse gases).

The corrective justice argument is based on the plausible maxim “clean up your own mess.”¹⁷ Yet P&W argue that for this maxim and for considerations of corrective justice to apply, we have to be able to identify a wrongdoer from whom others can demand compensation. Here we face a dilemma. Either the wrongdoers are taken to be the past individuals who were directly responsible for past emissions (individuals who are no longer alive and thus cannot be called upon to provide compensation), or the wrongdoers are taken to be states. But, P&W maintain, states are

¹⁷ For a discussion of this maxim and various criticisms of it, including the central criticism raised by P&W, see Shue, “Global Environment and International Inequality.”

not people and hence cannot act. As Posner and Sunstein put it in their earlier paper: “Nations are not individuals: they do not have mental states and cannot, except metaphorically, act.”¹⁸ Thus, “the idea that nation-states can be moral agents is highly unappealing” (*CCJ*, 101). The moral agents who could be asked to act to correct the harms caused by past emissions are the current individual inhabitants of the United States, who cannot, however, be held accountable for past emissions.

P&W offer very little defense of their strong individualism beyond the claim that it is a “standard assumption” (*CCJ*, 101). Yet P&W’s position is not as universally accepted as they suggest. Christian List and Philip Petit write in their recent defense of the notion of group agency that “by many accounts, however, the state is an agent. It is an entity that deals across change of government with its own members and with other states, and as befits an agent, is routinely held to expectations of consistency in legal and other forums. Indeed an entire research tradition within international relations theory, the so-called realist tradition, is based on modeling states as unitary rational agents.”¹⁹ Given that P&W’s rejection of the moral relevance of states plays a central role in their argument against considerations of corrective justice, a more substantive engagement with collectivist views would have been helpful.

One argument P&W do offer against taking states to be moral agents is that this would have morally unacceptable consequences for the state’s individual citizens. They point out that there are many Americans alive today who act in an environmentally responsible way and try to cut down on their own emissions. “Holding these people responsible for the wrongful activities of people who lived in the past seems perverse,” P&W maintain (*CCJ*, 104). But it is not *prima facie* obvious why membership in a state or a society cannot play a role in assigning moral accountability. Indeed, one may argue that just as we derive benefits from being a member of a nation, we also have responsibilities that come with belonging to that nation, and both benefits and responsibilities may partly be the result of actions of the nation’s past citizens.²⁰

P&W argue that any responsibility of present members of American society to correct for past greenhouse gas emissions could only arise from a detailed accounting of how past emissions might benefit present members. But no such detailed accounting seems needed to establish a

¹⁸ Posner and Sunstein, “Climate Change Justice,” p. 1572

¹⁹ Christian List and Philip Petit, *Group Agency* (Oxford: Oxford University Press, 2011), p. 40. See also David Miller, *National Responsibility and Global Justice* (Oxford: Oxford University Press, 2007). In this book, Miller argues that “there is no good reason to exclude nations as a source of special duties” since they can meet the following conditions: “the relationships in question should be intrinsically valuable, the duties in question should be integral to those relationships, and maintaining the relationships does not intrinsically involve injustice to outsiders.”

²⁰ Gardiner, *A Perfect Moral Storm*, chap. 11.

collective responsibility arising from a nation's past actions. Consider the following analogy. Immigrants to the United States are expected to pay their full taxes, even though approximately 20 percent of taxes are spent on interest costs to service the national debt. Arguably, at least some of this debt is the result of expenditures that benefit current inhabitants of the United States, but presumably not all past expenditures have present benefits for every taxpayer. P&W's argument suggests that immigrants ought to be allowed to engage in a detailed accounting of what past government expenditures might benefit them in calculating their taxes. What is more, P&W's individualism seems to be in tension with a conception of nations as historical entities that can be held to the kind of consistency in legal and other contexts to which List and Petit draw our attention.²¹ For this kind of consistency seems to presuppose the ability to hold a nation's present citizens and government collectively accountable for past actions and decisions of the nation's government.

A second problem for the corrective justice argument P&W consider is that abatement programs would benefit people living in the future and that these people would benefit not by being compensated for harm they will have suffered but rather by our preventing them from becoming victims in the first place. The moral basis for such an abatement program, they conclude, cannot therefore be a principle of corrective justice, but simple welfarism: "Such an argument does not rely on principles of corrective justice—it is forward-looking rather than backward-looking" (*CCJ*, 108). But even if an abatement program would not offer compensation for a harm suffered, this does not imply that historical considerations can have no moral force in considering obligations to reduce emission levels.²² In fact, this last objection runs together two different questions that ought to be considered separately: First, can actions of *past* members of a nation result in moral responsibilities for its *current* members? (That is, does the United States have a special obligation toward future generations due to its *past* emissions?) Second, what if anything is the ethically relevant difference between *compensating* for harms suffered and *preventing* harms from occurring? It is not *prima facie* obvious what the connection is between these two issues.

In this section and the last I discussed P&W's criticisms of arguments that the United States has a special obligation to contribute to efforts to reduce greenhouse gas emissions because (1) its

²¹ The individualism also seems to be in tension with their own application of International Paretianism, which asks states to engage in a cross-temporal cost-benefit analysis to determine whether a state's present costs associated with emissions reductions do not exceed the benefits to its future citizens.

²² See also the discussion of polluter pays principles and the use shared resources in Singer, "One Atmosphere."

greater wealth requires it to contribute greater resources to avert harm from poorer nations and (2) its especially large contributions to the existing stock of greenhouse gas in the atmosphere entail a special responsibility for its present citizens. Neither of these two arguments takes into account the fact that the United States' *current* emissions present a large contribution to the *current flow* of greenhouse gases. Indeed, the United States is second only to China in its current overall annual emissions, and its per capita emissions are among the highest in the world (and are more than twice that of the E.U. average and more than five times as high as China's per capita emissions). Thus, one can argue that the United States ought to drastically reduce its greenhouse gas emissions not because participation in a climate treaty will redistribute some of the United States's wealth to poorer nations or because its *past* emissions significantly contributed to the threat to other nations, but because it has a duty now not to engage in activities that will inflict serious harm on others.

Unfortunately, any detailed discussion of a harms argument, appealing to the very high present emissions of the United States and other wealthy countries, is absent in *Climate Change Justice*. P&W quickly dismiss any such argument by maintaining that "there is no deontological restriction on engaging in behavior that imposes risks on people in the future—virtually all behavior imposes risks on others" (CCJ, 108). But clearly there is a deontological restriction against harming others and it would require a more detailed argument to show that the harm we cause future people does not meet the conditions on impermissible harms. John Broome has recently argued that our current emissions are unjust precisely because they harm future people and has identified several conditions on when harming is unjust, all of which acts of emitting greenhouse gases meet. These include that the harm is the result of something we do, that the harm caused is severe, and that the harm is not accidental, since we know that our actions cause serious harm.²³ It would take some care to motivate and spell out carefully such a harms argument and to assess its prospects. But if P&W want to establish their overall negative conclusion "that the central arguments about justice encounter serious objections" (CCJ, 4), they would also have to engage with arguments that current emissions by the inhabitants of rich nations are unjust because they contribute to a serious harm to future generations.

IV. Cost-Benefit Analysis and Future Discounting

P&W's welfarist framework requires that we be able to aggregate and compare welfare or utilities across time. A central question for any cross-temporal comparison of utilities is whether future

²³ John Broome, *Climate Matters: Ethics in a Warming World* (New York: W. W. Norton, 2012), chap. 4.

utilities or welfare should be discounted with respect to the present. P&W examine this question in some detail in chapter 7 of the book, offering a useful critical introduction to some of the main issues concerning future discounting.

As P&W explain, there are two basic approaches to future discounting—an ostensibly purely empirical or “positivist” approach and an overtly normative or “ethicist” approach. Positivists argue that the discount rate represents the opportunity cost of investments and can be determined empirically from observed market rates of return on investments. Ethicists maintain that the discount rate depends on moral judgments concerning our obligation toward the future. P&W argue for a pair of claims that are meant to carve out a middle ground between the positivists’ and the ethicists’ position: they want to agree with the ethicists that choosing projects based solely on a cost-benefit analysis can do injustice to future generations. In fact, on their view the morally correct overall amount to invest or save for future generations has to be determined by ethical considerations independent of a cost-benefit analysis. But they agree with the positivists that whether a particular project aimed at securing our legacy for the future is a good one to pursue has to be determined by comparing the project’s projected rate of return with the market rate. Thus, the debate between positivists and ethicists, according to P&W, is the result of “a conflation of discounting welfare with discounting money” (*CCJ*, 150): “Discounting . . . should be seen only as a method of choosing projects, not as a method of determining our ethical obligations to the future” (*CCJ*, 168).²⁴

To illustrate their view, they ask us to imagine that we have determined, independently of a cost-benefit analysis aimed at maximizing intergenerational welfare, that the ethically justified legacy we should leave to the future is \$100. Discount rates play no role in determining the amount of our legacy. We then use the market rate of return to determine what the most efficient ways will be for ensuring our legacy to the future. For example, it might turn out that, given the relevant time horizon, we could invest \$10 today to ensure that future people will have \$100. Under these circumstances any project that would require an initial investment larger than \$10 in order to yield \$100 in the future is inefficient and should not be taken up.

P&W then imagine that we discover that, due to unforeseen environmental harms, our legacy to the future will be reduced to \$70. In light of this discovery we have to reevaluate how

²⁴ P&W are committed to “intergenerational neutrality,” but they do not take this to mean that the discount factor should be set equal to zero. Rather, they understand this more broadly as the view “that people in the current generation should not be treated as more valuable than people in the next generation” (*CCJ*, 144), which might entail that we have to invest more for the future than a cost-benefit analysis with discounting recommends (see *CCJ*, 145).

much our legacy ought to be. We might conclude that both present and future generations will have to share the burden resulting from the environmental harms and that as a result both present and future generations will be less well off: we need to increase our current investment but perhaps only by what is required to ensure that future generations will receive \$95. Again, our decision on how to adjust our legacy will be based on considerations that make no appeal to future discounting. Indeed, P&W want to leave open how the ethically appropriate amount may be determined: “we take no position on whether it should be more or less than \$100 because of the damages from climate change” (*CCJ*, 216, note 16).

P&W give the impression that their view merely presents a clarification or perhaps an adjustment of traditional intertemporal cost-benefit analysis—a clarification that affords both ethical and positivist considerations their proper place. But in fact the view amounts to a rejection of the core idea of using cost-benefit analysis to evaluate intergenerational projects by aiming to maximize overall utility or welfare across time. On the standard approach, the problem of determining the optimal climate policy involves comparing the negative effect of abatement measures on *present* consumption with the positive effect of such measures on *future* consumption. This comparison requires a choice of discount rates. Often future utilities are discounted with a time-discount factor greater than zero, but even if we decide not to discount future utilities, this amounts to a choice of a discount factor equal to zero. And once we have decided what the correct discount factor is, cost-benefit analysis determines what the correct legacy to leave for the future is: the correct legacy is that which maximizes cross-temporal utility or welfare.

That is, when P&W propose that the ethically justified amount of our legacy to the future ought to be determined independently of an aggregation of present and future welfare, not only are they agreeing with the “moderate” ethicist’s view that discounting has to respect intergenerational neutrality, but they appear to be agreeing with the more “radical” ethicist who questions the very appropriateness of cost-benefit analysis for the evaluation of long-term intergenerational projects—that is, they seem to reject the very idea that weights can be assigned to future benefits and costs in a way that would allow us to assign future utilities a present value.²⁵

V. A Case for Climate Action?

In chapter 8, P&W summarize the core theses that have emerged from the preceding discussion and sketch their own positive view. First, they endorse a form of cosmopolitanism: “Wealthy nations have an ethical obligation to help the poor, including those living in other, poor nations” (*CCJ*, 174).

²⁵ For a defense of the more “radical” view, see, e.g., Gardiner, *A Perfect Moral Storm*, chap. 8.

Thus, despite their earlier commitment to a strong individualism, they ultimately seem to agree with the collectivist view that nations can have moral obligations. The second thesis, which is a consequence of their critique of distributive justice arguments, is that “there is no requirement that this obligation should be met through a climate change treaty” (*CCJ*, 175). Third, they maintain that “the most important obligation with respect to climate change is to develop a broad, deep, and enforceable treaty that achieves appropriate goals” (*CCJ*, 170). Moreover, a climate treaty, they hold, “has a very strong ethical justification—it would promote the well-being of people around the world, and especially people in future generations” (*CCJ*, 188). And finally, “a climate agreement must respect the principle of International Paretianism” (*CCJ*, 178). That is, P&W’s overall view is that there is an ethical obligation for a climate treaty, but that there is a pragmatic constraint on any treaty that has a realistic chance of being adopted.

Urgent and strong climate action seems desperately needed in light of the accumulating scientific evidence, and it is a merit of *Climate Change Justice* that it emphasizes the need for a strong climate treaty much more clearly and unambiguously than Posner and Sunstein did. Thus, P&W stress:

The world needs to reduce emissions. While people disagree about the speed and extent of necessary reductions, it seems relatively clear that over the long run emissions from many sources, particularly from the energy sector, will have to decline dramatically, possibly to zero. Because doing so may significantly increase human welfare or because of deontological arguments for protecting the environment, the obligation to reduce emissions arguably rises to the level of an ethical obligation. (*CCJ*, 178)

Yet anyone who, after reading P&W’s extended and detailed criticisms of various justice arguments, is looking for an equally detailed defense of their positive view will be disappointed. Neither do they develop a deontological argument for the protection of the environment nor do they explain how a welfarist argument for a climate treaty can survive critical arguments similar to the ones advanced in earlier chapters.

P&W maintain that the optimal treaty is one that maximizes *global* intergenerational welfare and that the contributions of *individual nations* to such a treaty are to be determined by the purely pragmatic constraint of International Paretianism. In this final section I want to raise three worries about this positive view. First, P&W’s appeal to cross-temporal welfare maximization is in tension with their own view on future discounting. Second, their claim that a climate treaty is supported by welfarism is subject to the very objections they themselves raise against a distributive

justice argument. These two criticisms are not objections to the account itself but to its motivations within P&W's overall framework. And third, the two-tier account, according to which ethical considerations enter only at the global level and the degree of participation of individual nations in a global agreement is governed purely by each nation's self-interest, is problematic.

First, P&W contend that "an optimal climate treaty would set the emission limits at the level that maximizes global welfare" (*CCJ*, 84). But any such maximization requires that we know how to aggregate welfare across times to compare the present costs of a climate treaty with its future benefits. Welfarism and intergenerational cost-benefit analysis need to, and in fact do, take a position on what the appropriate legacy for the future ought to be—it is a legacy that maximizes overall welfare across time—and, thus, welfarism leaves no room for the kind of agnosticism expressed by P&W in their discussion of future discounting. There are excellent reasons, many of them discussed by P&W, for rejecting the standard use of intergenerational cost-benefit analysis. But what is left unclear is what they want to put in its place to support their claim that an optimal climate treaty maximizes intergenerational global welfare.

Second, if we assume they have an account of how to aggregate welfare across generations, P&W's criticisms of a distributive justice argument for climate action seem to apply with equal force to their claim that an optimal climate treaty can be given a welfarist justification. Climate change abatement measures would result in costs to present generations for the sake of future generations—that is, climate measures would amount to a redistribution of wealth from present to future generations. If we understand P&W's claim that an optimal climate treaty would maximize global welfare as stating that the treaty is justified since it would increase the well-being of future people more than it would decrease the welfare of people living today, then their claim is subject to the "crudeness objection": would it not be better to invest the money we are willing to spend on climate change abatement measures in some form of interest-bearing monetary instrument and allow future generations to use the money as they see fit? A climate change treaty, the earlier argument by P&W seems to imply, is a much "cruder" way of increasing overall welfare (by redistributing resources from present to future generations) than a cash payment.

If, by contrast, we understand P&W's claim as stating that a climate treaty, all other things being equal, would increase welfare more than any alternative strategy for redistributing welfare, then it is unclear why this fact could not have been used to rebut the earlier criticism of the distributive justice argument. If a climate treaty and the wealth redistribution it entails have to be part of the optimal strategy for increasing welfare, then the crudeness objection does not arise.

It is also unclear how the claim might be able to avoid the objection that future generations will be richer than people living today: a climate treaty, P&W's view seems to imply, would amount to a transfer of welfare from the present relatively poorer people to future richer people. In fact, this problem is exacerbated if we impose International Paretianism as an additional pragmatic constraint and require that each nation perform a cost-benefit analysis individually to determine whether it would be better off as a result of the climate treaty. If people in the future in general were to be richer, then each country would see its own contributions to a treaty as a redistribution of resources from its present relatively poor citizens to its future rich citizens.

To be sure, we have seen above that these objections can be answered: unless we assume full substitutability between environmental and market goods, a cash payment will not always be the most sensible form to increase overall welfare, and, for reasons discussed above, we should assume that expected future growth under climate change will be very low. But then P&W's objections to a distributive justice argument can be answered as well.

Finally I want to raise three worries about the permissibility of International Paretianism as an additional purely pragmatic constraint on any climate treaty. First, P&W allow that the obligation to reduce emissions might derive from a deontological argument. Yet if, following Caney, the need for a climate treaty were underwritten by a human right of future generations, it is not obvious that it should be permissible for nations to adjust their level of participation in the treaty based on their self-interest. Considerations of self-interest plausibly may not constrain our duty to ensure that the human rights of others are not violated. Instead, what seems relevant is who is responsible for the violation of the right—that is, who emits greenhouse gases—and who has the resources to best protect those rights that are threatened.

Second, as P&W themselves concede, there can be a tension between feasibility and ethical arguments. They propose “to resolve this tension by making the following two assumptions. First, only a treaty that satisfies International Paretianism . . . is feasible. Second, among the many treaties that satisfy International Paretianism, ethical principles will have some sway” (*CCJ*, 143). But this resolution does nothing to address the most serious tension: the fact that there are situations in which the two planks of the account—intergenerational global welfare maximization and International Paretianism—cannot be jointly satisfied.

Consider the following simple toy example involving two countries, A and B, with two generations, 1 and 2. Assume that the total resources of A1 and B1 are \$100 and \$100,000, respectively, but that the population of A1 is much larger than that of B1. That is, we are assuming that the current population of A is very poor and is much poorer than the population of B. Let us

further assume that climate change threatens to reduce the resources available to A2 to close to \$0, while there are negligible consequences for B2. That is, under business as usual B2 will be almost as wealthy as B1, while the resources of country A will be wiped out almost completely. Finally, assume that an investment of \$90 by the present generation would ensure that the negative consequences of climate change for A2 would be largely avoided and would leave A2 with \$95. Given plausible assumptions about diminishing marginal utility, a principle of welfare maximization entails that B would have to bear the entire cost. In fact, we may plausibly assume that overall intergenerational welfare would remain largely unaffected by any redistribution of resources solely between the very poor generation A1 and the desperately poor generation A2. Yet International Paretianism implies that the entire cost should be borne by country A, even though, by assumption, the current population A1 is already very poor.

That is, the two core assumptions of P&W's account cannot in general be jointly satisfied. How realistic are the assumptions of my toy example? Posner himself has taken economic cost-benefit analyses to suggest that the costs to the United States as a result of climate change would be relatively small even under a "worst case scenario."²⁶ Moreover, many of the world's poorest nations are likely to suffer most from climate change. Thus, the actual world might very well resemble the toy example in that the maximum contributions of wealthy nations under International Paretianism might fall well short of what intergenerational welfare maximization would require. At least this might be so, if Posner and Sunstein's rather sanguine view on the threat to the United States posed by climate change were correct.²⁷

Third, even when pragmatic considerations may legitimately and consistently enter, it is not clear that such considerations unequivocally support International Paretianism. Let us again suppose with Posner and Sunstein that climate damages to the U.S. economy would be relatively small. The economy-climate models on which these claims are based, such as Nordhaus's DICE model, are extremely idealized and arguably underestimate expected economic damages

²⁶ See Posner and Sunstein, "Climate Change Justice," p. 1582.

²⁷ For an examination of how deep the emission cuts in different countries would have to be by midcentury, under various burden sharing approaches, to reach the 2°C target of the 2010 Cancun agreement, see Füssler et al., *Emission pathways*. Whether there could be an agreement that satisfies International Paretianism, of course, also depends on how high the costs of abatement measures would be—a question on which there seems to be considerable disagreement. But in light of the drastic emission cuts that would be required very soon, it is far from obvious that there exists a burden sharing approach that satisfies International Paretianism and allows us to stay within the 2°C target.

dramatically.²⁸ They arguably also overestimate the cost of abatement measures. But let us assume (not unrealistically, unfortunately) that U.S. policy makers make use of these projections to guide their decisions. Then International Paretianism implies that the optimal climate treaty would ask only for very minimal participation by the United States, or might even, as P&W suggest, have to include side payments to the United States to “buy” its participation. Many nations would reject such a treaty because they would perceive it as grossly unfair—both because it would violate a principle of fairness (such as Shue’s principle mentioned above) and because it would ignore the contributions of the United States to the current stock of greenhouse gases. Arguably, something like this is what as a matter of fact has happened in climate negotiations up until the present: a large stumbling block to a meaningful and binding global agreement seems to be the unwillingness of the United States to participate and the complaint by less developed nations that any agreement without significant U.S. participation would be unfair. Thus, it is far from obvious that considerations of feasibility unequivocally speak in favor of International Paretianism. How participants view the ethical situation also seems to impose constraints on what kind of agreement is feasible.²⁹

What should we do when different pragmatic constraints pull in different directions? P&W themselves suggest an answer: “International Paretianism is, at best, a rough attempt to solve the tension between realism and idealism. We see it as a pragmatic starting point for negotiations” (*CCJ*, 181). But considering Paretianism merely as *a starting point*, which when combined with other constraints might result in a treaty that no longer satisfies the principle, suggests a position significantly weaker than the claim that “any treaty must satisfy . . . International Paretianism” (*CCJ*, 6).

There is much food for thought in this challenging and provocative book. But the stark tensions between some of the book’s core theses leave the reader puzzled as to what, in the end, the case for climate action advanced by P&W is meant to be. Fortunately, this does not mean that no strong ethical case for immediate and drastic emissions reductions can be made, for, as I have argued, arguments from distributive and corrective justice survive P&W’s criticisms. There is also a

²⁸ See, e.g., Mathias Frisch, “Modeling Climate Policies: A Critical Look at Integrated Assessment Models,” in *Conceptual Foundations of Climate Modeling*, ed. E. Winsberg and E. Lloyd (Chicago: University of Chicago Press, forthcoming).

²⁹ One might take International Paretianism simply as an empirical fact: No treaty has as a matter of fact ever been adopted that violates the principle, P&W suggest. If perceived fairness provides a similar empirical constraint, then the conclusion to draw is perhaps an extremely pessimistic one: if there is no climate treaty that can, at least approximately, satisfy both Shue’s principle of fairness and International Paretianism, the outlook for successful climate action is dim.

compelling welfarist argument for a strong climate treaty, even if it is not an argument P&W themselves explicitly make.

Thus, I agree with P&W that there is a strong welfarist case for urgent and dramatic global greenhouse gas emissions reductions. But such an argument can and should be coupled with considerations of justice to determine the contributions of individual countries to a climate treaty. That the United States needs to take a leading role in any such treaty remains ethically overdetermined: it is among the richest countries; it is responsible for a large percentage of the existing stock of greenhouse gases; and it is one of the biggest contributors to the current flow, both as a whole and on a per capita basis. Finally, that considerations of fairness, of corrective justice, and of the harm caused by current emissions have to play a role in any acceptable climate treaty follows not only from ethical but also from pragmatic considerations: no global agreement in which the United States is not willing to play a leading role has a realistic chance of being adopted.

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