

Cosmopolitan Justice, Responsibility, and Global Climate Change

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Abstract

It is widely recognized that changes are occurring to the earth's climate and, further, that these changes threaten important human interests. This raises the question of who should bear the burdens of addressing global climate change. This paper aims to provide an answer to this question. To do so it focuses on the principle that those who cause the problem are morally responsible for solving it (the 'polluter pays' principle). It argues that while this has considerable appeal it cannot provide a complete account of who should bear the burdens of global climate change. It proposes three ways in which this principle needs to be supplemented, and compares the resulting moral theory with the principle of 'common but differentiated responsibility'.

Key words

ability to pay; common but differentiated responsibility; cosmopolitanism; global climate change; the 'polluter pays' principle; Rawls; rights; Shue

It's exciting to have a real crisis on your hands when you have spent half your political life dealing with humdrum things like the environment.¹

The world's climate is undergoing dramatic and rapid changes. Most notably the Earth has been becoming markedly warmer and its weather has, in addition to this, become increasingly unpredictable. These changes have had, and continue to have, important consequences for human life. In this paper I wish to examine what is the fairest way of dealing with the burdens created by global climate change. Who should bear the burdens? Should it be those who caused the problem? Should

* Professor of Political Theory, University of Birmingham. Earlier versions of this paper were presented at the Department of Politics, University of Leicester (16 February 2005 – the day the Kyoto Protocol came into effect); a Conference on 'Global Democracy, the Nation-State and Global Ethics' which was held at the Centre for the Study of Globalization at the University of Aberdeen and which was funded by the Leverhulme Trust (18–20 March 2005); the Annual Conference of the Political Studies Association (5–7 April 2005); the Symposium on 'Cosmopolitanism, Global Justice and International Law' organized by the *Leiden Journal of International Law* and the Grotius Centre for International Legal Studies (28 April 2005); and, finally, as a Plenary Lecture at the Seventh Graduate Conference in Political Theory at the University of Warwick (7 May 2005). I am grateful to those present for their questions and comments. I am particularly grateful to Roland Axtmann, Marcel Brus, Matthew Clayton, John Cunliffe, Lorraine Elliott, Carol Gould, James Pattison, Fabienne Peters, Roland Pierik, Thomas Pogge and Kok-Chor Tan. Special thanks are due to Wouter Werner for his suggestions and to my commentator at the Symposium at the Grotius Centre for International Legal Studies at The Hague, Peter Rijpkema, for his response to my paper. This research was conducted as part of an Arts and Humanities Research Council (AHRC) research project on 'Global Justice and the Environment' and I thank the AHRC for its support.

1. Margaret Thatcher in 1982 during the Falklands War. Quoted in S. Barnes 'Want to Save the Planet? Then Make Me Your Not So Benevolent Dictator', *The Times*, 9 April 2005.

it be those best able to deal with the problem? Or should it be someone else? In this paper I defend a distinctive cosmopolitan theory of justice, criticize a key principle of international environmental law, and, moreover, challenge the ‘common but differentiated responsibility’ approach that is affirmed in current international environmental law.

Before considering different answers to the question of who should pay for the costs of global climate change, it is essential to be aware of both the distinct kind of theoretical challenge that global climate change raises and also the effects that climate change is having on people’s lives. Section I thus introduces some preliminary methodological observations on normative theorizing about global climate change. In addition, it outlines some basic background scientific claims about the impacts of climate change. Section 2 examines one common way of thinking about the duty to bear the burdens caused by climate change, namely the doctrine that those who have caused the problem are responsible for bearing the burden. It argues that this doctrine, while in many ways appealing, is more problematic than might first appear and is also incomplete in a number of different ways (sections 3–8). In particular, it needs to be grounded in a more general theory of justice and rights. The paper then presents an interest-based account of global environmental rights, and from this derives four principles which determine who should bear the burdens of global climate change (section 9). This account is then compared and contrasted with an alternative approach, namely the principle of ‘common but differentiated responsibilities’ that is articulated in a number of international legal documents on the environment (section 10). Finally, in section 11 I observe that normative analyses of climate change tend to oscillate between individualist and collectivist principles.

I. GLOBAL CLIMATE CHANGE

Prior to beginning the normative analysis, it is necessary to make three preliminary points.

1. The topic of this paper is one instance of what might be termed ‘global environmental justice’, by which I mean the global distribution of environmental burdens and benefits. As such, it is worth making some methodological observations about the utility, or otherwise, of applying orthodox theories of distributive justice to climate change. How relevant are the normal theories of justice to this topic? Indeed, are they relevant at all? If they are relevant, in what ways, if any, do they need to be revised or adjusted? To answer this set of questions we may begin by observing that the standard analyses of distributive justice tend to focus on how income and wealth should be distributed among the current members of a state. To construct a theory of global environmental justice requires us to rethink three assumptions underpinning this normal analysis.²

2. See, in this context, Rawls’s discussion of the ‘problems of extension’ and in particular, his discussion of the issues surrounding how ‘justice as fairness’ is extended to deal with the international domain, future generations, duties to the environment, and non-human animals (as well as its extension to the ill): ‘The Law of Peoples’, *Collected Papers*, ed. S. Freeman (1999), 531 (and, more generally, 531–3). See also J. Rawls, *Political Liberalism* (1993), 20–1.

First, distributive justice concerns itself with the distribution of burdens and benefits. Now conventional theories of distributive justice tend to focus on benefits such as wealth and income. It is important, then, to ask whether this framework can usefully be extended to include environmental burdens and benefits. In particular, we face the question of how to value the environment. Should it be valued because of its impact on what Rawls terms 'primary goods', by which Rawls means goods such as income, wealth, liberties, opportunities, and the social bases of self-respect?³ Or should it be valued because of its effects on what Sen and Nussbaum call 'capabilities', where this refers to a person's ability to achieve certain 'functionings'?⁴ Here we should be alive to the distinctive aspects of the environment that might mean that its importance (for a theory of justice) cannot be captured by the orthodox liberal discourse of resources, welfare, capabilities, and so on.⁵

Second, whereas conventional theories of distributive justice concern themselves with the distribution of burdens and benefits within a *state*, the issues surrounding climate change require us to examine the *global* distribution of burdens and benefits. An appropriate analysis needs, then, to address whether the kinds of principle that should be adopted at the domestic level should also be adopted at the global level. Perhaps the two are relevantly analogous, in which case the principles that should be implemented at home should also be implemented abroad. Perhaps, however, they are so completely different that we cannot apply principles fit for the domestic realm at the global level.⁶ Either way, a theory of justice that is to be applied to global climate change must, of necessity, address the question of whether the global dimensions of the issue make a morally relevant difference.

Third, global environmental justice raises questions of intergenerational justice. This is true in two senses. First, the effects of global climate change will be felt by future people, so that an adequate theory of global environmental justice must provide guidance on what duties to future generations those living at present have. It must consider whether future people have rights, and whether there should be a social discount rate.⁷ It must, further, explore whether the principles that apply within a generation will necessarily apply to future generations. Do the principles that apply within one generation differ from those that apply across time into the future? Some,

3. See J. Rawls, *A Theory of Justice* (1999), 54–5, 78–81, 348, and *Justice as Fairness: A Restatement*, ed. E. Kelly (2001), 57–61, 168–76.

4. See M. C. Nussbaum, *Women and Human Development: The Capabilities Approach* (2000), and A. Sen, 'Capability and Well-being', in M. Nussbaum and A. Sen (eds.), *The Quality of Life* (1993), 30–53. For an excellent analysis of several different accounts of what should be distributed and an assessment of their implications for our evaluation of global climate change see E. Page, *Climate Change, Justice and Future Generations* (2006), ch. 3.

5. In what way might the environment be a distinctive kind of problem? I shall not explore this question fully here, but note that possible answers might be that: (i) some natural resources are non-renewable and hence their consumption is irreversible; (ii) the value of some natural resources cannot adequately be captured in monetary terms; or (iii) many environmental benefits and burdens are essentially public in nature (that is, for a contiguous group of people either all are exposed to an environmental hazard such as air pollution or none are).

6. For more on this, and for my defence of a cosmopolitan approach, see S. Caney, *Justice Beyond Borders: A Global Political Theory* (2005). See also the defences of a cosmopolitan approach in T. Pogge, 'Recognized and Violated by International Law: The Human Rights of the Global Poor', and K.-C. Tan, 'International Toleration: Rawlsian versus Cosmopolitan', both in this issue.

7. For an analysis of the latter see D. Parfit, *Reasons and Persons* (1986), Appendix F, 480–6.

like John Rawls, clearly think that they do, for he holds that the ‘difference principle’ (that the basic structure should be designed to maximize the condition of the least advantaged) should govern the distribution of resources within one generation but should not be applied intergenerationally. Another principle, that of just savings, determines the obligations persons have to future generations. According to the principle of ‘just savings’, societies should save enough so that succeeding generations are able to live in a just society. They need not pass on any more than that and certainly need not seek to maximize the condition of the least advantaged persons who will ever live.⁸ Second, and furthermore, topics such as climate change require us to explore the moral relevance of decisions taken by previous generations. For example, some of the deleterious effects of industrialization are being felt now. This prompts the question of who should be responsible for dealing with the ill-effects that result from earlier generations. In short, then, a theory of justice that is to apply to global climate change must address the question of how the intergenerational dimensions of the issue make a morally relevant difference.

Drawing on these, then, we can say that an adequate theory of justice in relation to climate change must explain in what ways global climate change affects persons’ entitlements and it must do so in a way that (i) is sensitive to the particularities of the environment; (ii) explores the issues that arise from applying principles at the global rather than the domestic level; and (iii) explores the intergenerational dimensions of global climate change.⁹

2. Turning now from methodological considerations to more empirical matters, an adequate analysis of the ethical dimensions of global climate change requires an empirical account of the different ways in which climate change is affecting persons’ fundamental interests (by which I mean those interests that a theory of justice should seek to protect). In what follows I shall draw heavily on the findings of the Intergovernmental Panel on Climate Change (IPCC), set up in 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO).¹⁰ It has now issued three assessment reports – in 1990, 1995 and 2001. For our purposes the key report is *The Third Assessment Report* published in 2001. This includes four volumes – *Climate Change 2001: The Scientific Basis*, *Climate Change 2001: Impacts, Adaptation and Vulnerability*, *Climate Change 2001: Mitigation*, and a summary of all three reports, *Climate Change 2001: Synthesis Report*. The findings

8. For Rawls’s claim that the principles that apply across generations are distinct from those that apply within one generation and for his affirmation of a ‘just savings’ principle, see J. Rawls, *A Theory of Justice* (1999), 251–8 and Rawls, *Justice as Fairness*, *supra* note 3, at 159–60. We should also note that Rawls does not simply propose two different principles to govern ‘justice to contemporaries’ and ‘justice to future people’; he also adopts two different methods for deriving these principles. As is well known, his derivation of the principles of justice to govern contemporary members of a society invokes what persons seeking to advance their own primary goods would choose in the ‘original position’. His derivation of the principles of justice to govern future generations also invokes the original position but, in its last form, stipulates that parties should choose that principle that they would want preceding generations to have honoured. (On the latter see *Justice as Fairness*, *supra* note 3, at 160.) So Rawls treats intergenerational justice very differently from ‘justice to contemporaries’ – both in the method he employs and in the conclusions he reaches. (Note that Rawls’s method for deriving the ‘just savings’ principle has changed over time: see *ibid.*, at 160, n. 39.)

9. See, further, S. Caney, ‘Global Distributive Justice and the Environment’, in R. Tinnevelt and G. Verschraegen (eds.), *Between Cosmopolitan Ideals and State Sovereignty: Studies on Global Justice* (forthcoming).

10. See the IPCC’s website: <http://www.ipcc.ch/about/about.htm>.

of the IPCC have, of course, been criticized by a number of people – including, for example, Bjørn Lomborg – and there have, in turn, been replies to those critics.¹¹ I am not qualified to enter into these debates and so I shall report the IPCC's claims without assuming that those claims are incontestable. The IPCC reports most fully on the impacts of global climate change in its report entitled *Climate Change 2001: Impacts, Adaptation and Vulnerability*. In the latter it claims that global climate change will result, *inter alia*, in higher sea levels and therefore threaten coastal settlements and small island states. It will also result in higher temperatures and as a consequence will generate drought, crop failure, and heatstroke. The rise in temperature will also lead to an increased incidence of malaria and cholera. To this we should also add that global climate change will result in greater weather unpredictability. This is, of course, only the briefest of summaries.¹² A fuller account will be introduced later on.

3. Having noted various ways in which climate change has harmful effects, I would now like to clarify what I mean when I refer to 'the burdens of global climate change'. As is commonly recognized, there are two distinct kinds of burden imposed by recent changes to the climate – what I shall term 'mitigation burdens' and 'adaptation burdens'.¹³ 'Mitigation burdens', as I am defining that term, are the costs to actors of not engaging in activities that contribute to global climate change. Those who engage in a policy of mitigation bear an opportunity cost: they forego benefits that they could have had if they had engaged in activities which involve the emission of high levels of greenhouse gases (GHGs). To make this concrete, mitigation will involve cutting back on activities like the burning of fossil fuels and, as such, it requires either that persons cut back on their use of cars, electricity, and air flight or that they invest in other kinds of energy resource. Either way, mitigation is, of course, a cost for some.¹⁴ The second kind of burden is what I have termed 'adaptation

11. B. Lomborg *The Sceptical Environmentalist: Measuring the Real State of the World* (2001), ch. 24. For one critical response see M. A. Cole, 'Environmental Optimists, Environmental Pessimists and the Real State of the World – An Article Examining *The Sceptical Environmentalist: Measuring the Real State of the World* by Bjørn Lomborg', (2003) *Economic Journal* 113, 488, esp. at 373–6.

12. See J. J. McCarthy, O. F. Canziani, N. A. Leary, et al. (eds.), *Climate Change 2001: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (2001).

13. The distinction between 'mitigation' and 'adaptation' comes from the IPCC. So, e.g., vol. 2 of the 2001 report of the IPCC focuses on adaptation: see, in particular, B. Smit and O. Pilifosova, 'Adaptation to Climate Change in the Context of Sustainable Development and Equity', in McCarthy et al., *supra* note 12, ch. 18. Vol. 3, by contrast, focuses more on 'mitigation': see B. Metz, O. Davidson, R. Swart, and J. Pan (eds.), *Climate Change 2001: Mitigation – Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (2001). See also Henry Shue's illuminating analysis of the different ethical questions raised by global climate change: 'Subsistence Emissions and Luxury Emissions', (1993) 15 *Law and Policy* 40; *idem*, 'After You: May Action by the Rich be Contingent upon Action by the Poor?', (1994) *Indiana Journal of Global 1 Legal Studies* 344; and *idem*, 'Avoidable Necessity: Global Warming, International Fairness, and Alternative Energy', in I. Shapiro and J. Wagner deCew (eds.), *Theory and Practice: NOMOS XXXVII* (1995), 240.

14. The mitigation costs incurred by an actor A are not restricted to cases where A minimizes A's own GHG emissions. Consider, e.g., the 'Clean Development Mechanism' policy enunciated in Art. 12 of the Kyoto Protocol (<http://unfccc.int/resource/docs/convkp/kpeng.html>). Under this proposal certain countries (those listed in Annex I) may be given credit for cutting GHG emissions if they support the use of development projects that enable developing countries to develop in a way which does not emit high levels of GHGs. Since what they do has the effect of lowering GHG emissions and it has a cost for them (the cost of supporting clean development) then, in principle, this cost should be included under the heading of mitigation costs: they are making a sacrifice which enables there to be a reduction in GHG emissions.

burdens'. These are the costs to persons of adopting measures which enable them and/or others to cope with the ill-effects of climate change. For there are ways in which people can adapt to some of the predicted outcomes of global climate change. They might, for example, spend more on drugs designed to minimize the spread of cholera and malaria. Or they might spend more on strengthening coastal regions against rising sea levels. These too should obviously count as a burden, for they require resources that could otherwise be spent on other activities.

My focus in this article is on the question 'who should bear the costs caused by climate change?' I shall not explore the difficult question of how much we should seek to mitigate and how much we should seek to adapt. This is, of course, a key question when determining what specific concrete policies should be implemented. It is also the subject of some controversy.¹⁵ However, I wish to set that practical issue aside and simply focus on the more abstract question of who is morally responsible for bearing the burdens of climate change where the latter is silent on the choice between adaptation and mitigation.

2. THE 'POLLUTER PAYS' PRINCIPLE

Let us turn now to a normative analysis of the responsibility of addressing these problems. On whose shoulders should the responsibility rest? Who is duty-bound to bear the burdens of global climate change? One common way of thinking about harms, including both environmental and non-environmental harms, maintains that those who have caused a problem (such as pollution) should foot the bill. In other words the key principle is that 'the polluter should pay'. This principle has considerable intuitive appeal. In everyday situations we frequently think that if someone has produced a harm (they have spilled rubbish on the streets, say) then they should rectify that situation. They as the causers are responsible for the ill-effects.

The 'polluter pays' principle (hereafter PPP) is also one that has been affirmed in a number of international legal agreements.¹⁶ The Organization for Economic Co-operation and Development (OECD), for example, recommended the adoption of the 'polluter pays' principle in Council Recommendations of 26 May 1972 and 14 November 1974.¹⁷ In addition to this, on 21 April 2004 the European Union and Council of Ministers passed a directive affirming the 'polluter pays' principle.¹⁸ The

15. See, e.g., Lomborg, *supra* note 11, at 305–18, esp. 318. Lomborg takes the highly controversial view that it would be more cost effective to focus on 'adaptation' rather than 'mitigation'. For a contrasting view see J. Houghton, *Global Warming: The Complete Briefing* (2004), 242–321 and M. Maslin, *Global Warming: A Very Short Introduction* (2004), 136–43.

16. For two excellent treatments of the role of the 'polluter pays' principle in international environmental law to which I am much indebted see P. Birnie and A. Boyle, *International Law and the Environment* (2002), 92–5, 383–5; and P. Sands, *Principles of International Environmental Law* (2003), 279–85.

17. The documents for both Council Recommendations can be found in OECD, *The Polluter Pays Principle: Definition, Analysis, Implementation* (1975).

18. See Directive 2004/35/CE of the European Parliament and of the Council (passed on 21 April 2004) on environmental liability with regard to the prevention and remedying of environmental damage. The text can be found in the Official Journal of 30 April 2004 (L143) at <http://europa.eu.int/eur-lex/pri/en/oj/dat/2004/L143/L14320040430en00560075.pdf>.

principle has also been recommended by the Commission on Global Governance.¹⁹ In addition to this, a number of academic commentators on the subject have applied this principle to the costs of global climate change. Henry Shue, for example, has drawn on the principle that those who have caused pollution should clear it up, and has argued vigorously that members of industrialized countries have caused global climate change and hence they, and not members of developing countries, should bear the burdens of climate change.²⁰ Furthermore, others in addition to Shue have argued that this is the right way of thinking about bearing the burdens of global climate change. Eric Neumayer, for instance, argues that the costs of global warming should be determined according to 'historical accountability'.²¹ We might further note that the IPCC has addressed the question in *Climate Change 2001: Mitigation*.²² It sought not to recommend any one course of action but it did cite the 'polluter pays' principle, along with various others, as a possible principle of justice. How appropriate, then, is the 'polluter pays' principle for determining the responsibility to bear the costs of climate change?

Let us begin our analysis by noting two clarificatory points.

First, the principle that the polluter pays usually means literally that if an individual actor, X, performs an action which causes pollution, then that actor should pay for the ill-effects of that action. Let us call this the micro-version. One might, however, reconstruct the PPP to mean also that if actors X, Y, and Z perform actions which together cause pollution, then they should pay for the cost of the ensuing pollution in proportion to the amount of pollution that they have caused. Let us call this the macro-version. This says that polluters (as a class) should pay for the pollution that they (as a class) have caused. So, whereas the micro-version establishes a direct link between an agent's actions and the pollution suffered by others, the macro-version establishes an indirect link between, on the one hand, the actions of a group of people (e.g., emitting carbon dioxide) and, on the other hand, a certain level of pollution.

This distinction is relevant because the micro-version can be applied only when one can identify a specific burden that results from a specific act. It is, however, inapplicable in cases where one cannot trace specific burdens back to earlier individual acts. Now climate change clearly falls into this category. If an industrial plant releases a high level of carbon dioxide into the air we cannot pick out specific individual costs that result from that particular actor and that particular action. The macro-version can, however, accommodate the causation of such effects. Even if one cannot say that A has caused this particular bit of global warming, one can

19. Commission on Global Governance, *Our Global Neighbourhood* (1995), 208, 212.

20. See H. Shue 'Global Environment and International Inequality', (1999) 75 *International Affairs*, 533–7. Shue writes that his argument is not equivalent to the 'polluter pays' principle because he interprets the PPP to be a 'forward-looking' principle that says that future pollution ought to be paid for by the polluter (at 534). However, I shall interpret the PPP to refer to the view that past, current, and future pollution ought to be paid for by the polluter. Shue is therefore affirming a 'polluter pays' approach, given the way in which I am defining that term.

21. See E. Neumayer, 'In Defence of Historical Accountability for Greenhouse Gas Emissions', (2000) 33 *Ecological Economics*, 185–92.

22. See F. L. Toth and M. Mwandosya, 'Decision-Making Frameworks', in Metz et al., *supra* note 13, ch. 10, s. 10.4.5, 669 (for mention of the 'polluter pays' principle) and 668–73 (for general discussion).

say that this increase in global warming as a whole results from the actions of these actors. Furthermore, note that the macro-version can allow us to ascribe greater responsibilities to some. Even if it does not make sense to say that we can attribute a specifiable bit of global warming to each of them we can still say that those who emit more carbon dioxide than others are more responsible than those others. In principle, then, if one had all the relevant knowledge about agents' GHG emissions it would be possible to make individualistic assessments of just how much each agent owes. In the light of the above, then, we should interpret the PPP (when it is applied to the case of global warming) along the lines suggested by the macro-version.²³

Second, to apply the 'polluter pays' approach to climate change we need to know 'who is the polluter?' What is the relevant unit of analysis? What kinds of entity are the polluters? Are they individuals, states, or some other entity? Furthermore, which of these entities plays the greatest role? Suppose that the relevant actor is, in fact, states; we then face the empirical question 'which particular states contribute the most?' Our answer to the question 'who pollutes?' is, of course, essential, if we accept the PPP, to enable us to allocate responsibilities and answer the question 'who should pay?'

Many of those who adopt a PPP approach to climate change appear to treat countries as the relevant unit. Shue, for example, makes constant reference to 'countries' and 'states'.²⁴ Similarly Neumayer refers always to the pollution caused by emitting countries, referring, for example, to 'the Historical Emission Debt (HED \hat{i}) of a country'.²⁵ As he says, his view

holds countries accountable for the amount of greenhouse gas emissions remaining in the atmosphere emanating from a country's historical emissions. It demands that the major emitters of the past also undertake the major emission reductions in the future as the accumulation of greenhouse gases in the atmosphere is mostly their responsibility and the absorptive capacity of nature is equally allocated to all human beings no matter when or where they live.²⁶

In their view, then, the polluters are countries. But is this an appropriate analysis? Consider the following possibilities.

(a) *Individuals*. First, we might observe that individuals use electricity for heating, cooking, lighting, televisions, and computers, and, of course, they consume fossil fuels by driving cars and by taking aeroplane flights – all of which are responsible for carbon dioxide emissions. The Third Assessment Report of the IPCC, moreover, says in its prescriptions that individuals must change their energy-intensive lifestyles.²⁷ Should we say, then, that individuals should pay? If so, it would seem that instead

23. Here it is interesting to note that the European Union's recent directive on environmental liability (2004/35/CE) expressly rejects what I am terming the macro-version of the polluter pays principle and affirms the micro version. See para. 13 and Art. 4 s. 5, available at http://europa.eu.int/eurlex/pri/en/oj/dat/2004/L_143/L_14320040430en00560075.pdf.

24. See, e.g., Shue, *supra* note 20, at 534, 545. Shue elsewhere refers to 'nations (or other parties)' ('After you', *supra* note 14, at 361), but generally assumes that the polluters/payers are nations.

25. Neumayer, *supra* note 21, at 186.

26. *Ibid.*, at 186.

27. See Toth and Mwandosya, *supra* note 22, at 637–8.

of stating simply that each country should pay its share we should ideally, and in principle, claim that each individual should pay their share.

(b) *Economic corporations.* Perhaps, however, it might be argued that the primary causes of greenhouse gas emissions are those economic corporations which consume vast amounts of fossil fuels and/or bring about deforestation. If this is so, then presumably the primary responsibility should accrue to them.²⁸

(c) *States.* Maybe, however, the relevant unit of analysis is the state. As noted above, this is what many commentators on the subject assume. Since they think that states should either cut back on GHG emissions or devote resources to cover the costs of adaptation they must think that states are the primary cause of global climate change.

(d) *International regimes and institutions.* However, it might perhaps be argued that one relevant factor is supra-state institutions and the nature of international law. One might, for example, think, like Thomas Pogge, that the ‘explanatory nationalism’ adopted by position (c) is untenable, for it fails to recognize the extent to which we are part of a globally interdependent order and that this gives rise to events often seen as domestic in nature.²⁹ Drawing on this, might one argue that the causes of pollution are not accurately seen as ‘countries’ or ‘states’ but rather international institutions or the international system. Perhaps, it might be argued, existing international institutions (such as the World Trade Organization (WTO) and the International Monetary Fund (IMF)), by promoting economic growth, encourage countries to engage in deforestation and the high use of fossil fuels, both activities which lead to climate change.

With this taxonomy in mind, let us make three points. The first is that the likely answer to the question ‘who is the polluter?’ will involve reference to several different kinds of actor. The aim of the taxonomy above is not to suggest that the appropriate answer lies at one level alone. Second, we should observe that to reach the standard conclusion (namely that certain *countries* should pay) we need to show that options (a), (b), and (d) do not hold. It might, for example, be argued against (d) that international law and regimes do not have any autonomy – they are merely the creations of states and, as such, the relevant level of analysis is the actions of states. And it might be argued against (a) and (b) that it is not possible to ascertain the GHG emissions of individual persons or individual corporations. Given this, we should refer to the GHG emissions of a country as the best approximation available. Alternatively, it might be argued against (a) and (b) that the GHG of individuals or corporations is what has been permitted by the relevant state, so that the latter should be held liable. My aim, here, is not to canvass any of these options, it is simply to point out that the only way to vindicate the conclusion reached by Neumayer, Shue, and others is to establish that the relevant unit of analysis is the state and that the other options collapse into it. Of course, further empirical analysis may reveal that

28. As noted above, Shue maintains that industrialized countries should pay. Notwithstanding this, he also refers to the actions of ‘the owners of many coal-burning factories’ (*supra* note 20, at 535) – a level (b) explanation.

29. For Pogge’s discussion of ‘explanatory nationalism’ see his *World Poverty and Human Rights: Cosmopolitan Responsibilities and Reforms* (2002), 15, 139–44.

it is simply implausible to hold that states are the appropriate entities and we need a fine-grained analysis which traces the contributions of individuals, corporations, states, and international actors and which accordingly attributes responsibilities to each of these.

Having made these two clarificatory points, let us turn now to consider some of the problems faced by the ‘polluter pays’ approach to allocating the burdens of climate change.

3. PAST GENERATIONS

One problem with applying the ‘polluter pays’ principle to climate change is that much of the damage to the climate was caused by the policies of earlier generations. It is, for example, widely recognized that there have been high levels of carbon dioxide emissions for the last two hundred years, dating back to the Industrial Revolution in western Europe. This poses a simple, if also difficult, problem for the ‘polluter pays’ principle: who pays when the polluter is no longer alive? And the proposal, made by Neumayer and Shue, that the industrial economies of the first world should pay seems, on the face of it, unfair, for it does not make the actual polluters pay. Their conclusion, then, is not supported by the PPP: indeed it violates the PPP.

This is a powerful objection. However, at least three distinct kinds of response are available to an adherent of the argument under scrutiny.

3.1. The individualist position

One reply is given by both Shue and Neumayer. Both raise the problem of past generations but argue that this challenge can be met. In Shue’s case, his response is that the current inhabitants of a country are not ‘completely unrelated’ to previous inhabitants and, as such, they can still bear responsibility for the actions of their ancestors. In particular, says Shue, they enjoy the benefits of the policies adopted by previous generations.³⁰ As he writes, ‘current generations are, and future generations probably will be, continuing beneficiaries of earlier industrial activity’.³¹ The same point is made by Neumayer, who writes,

The fundamental counter-argument against not being held accountable for emissions undertaken by past generations is that the current developed countries readily accept the benefits from past emissions in the form of their high standard of living and should therefore not be exempted from being held accountable for the detrimental side-effects with which their living standards were achieved.³²

Let us call this reply the ‘beneficiary pays’ principle (BPP). Put more formally, this claims that where A has been made better off by a policy pursued by others, and the pursuit by others of that policy has contributed to the imposition of adverse effects on third parties, then A has an obligation not to pursue that policy itself (mitigation) and/or an obligation to address the harmful effects suffered by the third parties (adaptation).

30. *Supra* note 20, at 536.

31. *Ibid.*, at 536; see also 536–7.

32. *Supra* note 21, at 189. I have omitted a footnote (n. 4) which appears after the word ‘achieved’.

So if the current inhabitants of industrialized countries have benefited from a policy of fossil-fuel consumption and that policy contributes to a process which harms others, then they are not entitled to consume fossil fuels to the same degree. Their standard of living is higher than it otherwise would have been and they must pay a cost for that.³³

This line of reasoning has some appeal. Two points, however, should be made about it. First, we should record that the BPP is not a revision of the ‘polluter pays’ approach, it is an abandonment of it. It would justify imposing a burden on someone who cannot, in any conceivable sense, be said to have brought about an environmental bad but who nonetheless benefits from the policy that caused the environmental bad. In such a case that person is not a polluter but they are a beneficiary. Thus, according to the PPP, they should not be allocated a duty to make a contribution to cover the environmental bad; according to the BPP, however, they should. My second point is that the application of the BPP in this instance is more problematic than it might first seem. The reason for this draws on what Derek Parfit has termed the ‘non-identity problem’ in his seminal work *Reasons and Persons*. We need therefore to state this problem. In *Reasons and Persons* Parfit drew attention to an important feature of our moral duty to future generations. Parfit begins with the statement that who is born (which particular person) depends on exactly when their parents mated. If someone’s parents had mated at a different time, then, of course, a different person would have been born. It follows from this that the policies that persons adopt at one time affect who will be born in the future. So suppose that we build factories now which have no immediate malign effects but which release poisonous fumes in 300 years. Now Parfit’s point is this: the policies adopted now led to the birth of different people than would have been born if these policies had not been adopted. The future generations whose lives are threatened by poisonous fumes would not have been born were it not for the factory construction. So they cannot say that they were made worse off or harmed by the policy. The policy, according to Parfit, is bad but it has not made anyone worse off than they would have been if the policy had not been enacted.³⁴

Now I think that a very similar point could be made against the use of the ‘beneficiary pays’ principle by the argument under scrutiny.³⁵ For it claims that the policies of industrialization benefited people who are currently alive. But in the same way that using up resources did not *harm* future people so industrialization

33. A similar position is defended by Axel Gosseries in his illuminating and interesting paper, ‘Historical Emissions and Free-Riding’, (2004) 11 *Ethical Perspectives*, 1, at 36–60. I came across Gosseries’ paper after completing this article and hope to address it more fully subsequently.

34. Parfit, *supra* note 7, ch. 16.

35. This claim about the impossibility of benefiting future people, we should note, has also been made by Thomas Schwartz. In a pioneering paper published in 1978 he presented reasoning like that given in the last paragraph to show that the policies of present generations do not benefit future generations. Schwartz’s argument is directed against population policies that are justified on the grounds that they would make future people better off. His argument, though, also tells against claims that current individuals have been made better off by industrialization (and hence that they have a duty to pay for the GHG emissions that were generated by this benefit-producing industrialization). See T. Schwartz, ‘Obligations to Posterity’, in R. I. Sikora and B. Barry (eds.), *Obligations to Future Generations* (1978), 3–13. I came across Schwartz’s paper only when I had finished this article and was making the final revisions. My debt here is to Parfit’s work.

did not make an *improvement* to the standard of living of currently existing people. We cannot say to people, ‘You ought to bear the burdens of climate change because without industrialization you would be much worse off than you currently are.’ We cannot because without industrialization the ‘you’ to which the previous sentence refers would not exist. Industrialization has not brought advantages to these people that they would otherwise be without.³⁶ And since it has not we cannot say to them, ‘You should pay for these because your standard of living is higher than it would have been.’³⁷ For this reason the BPP is unable to show why members of industrialized countries should pay for the costs of the industrialization that was undertaken by previous generations.

3.2. The collectivist position

While the first response to the question as to why later generations should pay for the industrializing policies adopted by their ancestors is a rather individualistic one, a second response to the intergenerational challenge affirms a collectivist position.³⁸ This approach argues that the problem we are addressing arises only if we focus on individual persons. If we focus on individuals then making current individuals pay for pollution that stems from past generations is indeed making someone other than the polluter pay. Suppose, however, that we focus our attention on collective entities like a nation or a state (or an economic corporation). Consider a country such as Britain. It industrialized in the late eighteenth and the nineteenth centuries, thereby contributing to what would become the problem of global warming. Now if we take a collectivist approach we might say that since Britain (the collective) emitted excessive amounts of GHGs during one period in time then Britain (as a collective) may a hundred years later, say, be required to pay for the pollution it has caused, if it has not done so already. To make this collective unit pay *is* to make the polluter pay. So to return to the original objection, one might say that the premise of the objection (namely that the polluter is no longer alive) is incorrect.

36. Here we should note one complication to my argument. In an appendix to *Reasons and Persons* Parfit entertains the possibility that bringing someone into existence can be said to benefit them. He does not commit himself to this view but he does think it is a potentially plausible view. To this extent there is an asymmetry in his treatment of harm to future generations (one cannot harm future people because the dangerous policies affect who is born) and his treatment of benefit to future generations (one can benefit future people by bringing them into existence). See Parfit, *supra* note 7, Appendix G (at 487–90). See, in particular, Parfit’s discussion of what he terms ‘the two-state requirement’, where this states that ‘We benefit someone only if we cause him to be better off than he would otherwise at that time have been’ (at 487; see further 487–8). I am grateful to Edward Page for bringing this asymmetry to my attention and for a number of very helpful discussions of the issues at stake. I shall not seek to challenge Parfit’s arguments to the effect that bringing people into existence may benefit them (the arguments he musters in Appendix G). I would, however, maintain that to sustain the disanalogous treatment of future harm and future benefit, Parfit needs to confront the possibility that the non-identity problem undermines the claim that we can benefit future people and also needs to explain why that is not correct. Without such an argument, the non-identity problem would (as I have argued in the text) appear to undermine the BPP. Note: Schwartz’s account can be contrasted with Parfit’s on this point for, unlike Parfit, Schwartz explicitly claims that one cannot either harm or benefit future people: *supra* note 35, at 3–4.

37. We might, of course, say ‘you should pay because you are so much better off than others’, but this appeals to a quite different principle and will be taken up later in the paper.

38. A collectivist account is suggested by Edward Page in an ingenious discussion of Parfit’s non-identity problem. See E. Page, ‘Intergenerational Justice and Climate Change’, (1999) 47 *Political Studies* 1, at 61–6. (See also J. Broome, *Counting the Cost of Global Warming* (1992), 34–5.) Page, however, is not addressing the argument I am making. Rather he employs a collectivist approach to rebut Parfit’s non-identity problem.

Prior to evaluating this argument we should make three observations. First, note that although in this instance I have used an example of a nation as a collective there is no reason to assume that it must take this form. Suppose, for instance, that there is in existence a long-standing corporation. We might argue, in a collectivist vein, that if this entity has emitted high levels of carbon dioxide in the past then it should foot the bill now. The individual decision-makers of the time might be long gone but the corporation persists. Second, we might observe that the collectivist response is also relevant to the preceding discussion of the BPP. My objection to the use of the BPP above was that the acts which led to a higher standard of living (in this case industrialization) did not make the standard of living of currently alive persons higher than it would have been had industrialization never taken place. The collectivist perspective adds a different dimension to this for, as Edward Page has rightly noted, the identities of nations are less changeable over time than those of individuals. Industrialization may have affected which individuals get born: because of it different people are born than would have been born without it. And is because of this it is inaccurate to say that currently alive individuals have a higher standard of living than those same individuals would have had if industrialization had never taken place. However, the acts of industrialization did not (let us assume) bring different countries into existence than would otherwise have existed.³⁹ So to turn to the objection to the BPP: whereas we cannot say that industrialization has bestowed (net) advantages on currently existing individuals that they would otherwise be without, we *can* say that industrialization has bestowed (net) advantages on currently existing countries (such as Britain) that they would otherwise be without. The collectivist response thus enables us to defend the BPP against my Parfit-inspired objection.⁴⁰ Third, and finally, we might observe that the collectivist response coheres with the way that some political philosophers have recently argued. For example, in *The Law of Peoples* John Rawls gave two examples which appealed to a similar kind of reasoning in order to rebut a cosmopolitan political morality. In one example Rawls asks us to compare a society which industrializes with one that eschews that path, choosing instead a more pastoral way of life. For his second example Rawls again asks us to compare two societies. One, by granting women greater reproductive autonomy, results in a more controlled population policy with fewer children being born. The other society, by contrast, does not pursue this kind of population policy. In these scenarios, concludes Rawls, self-governing peoples (liberal or decent) should take responsibility for their policies. So to take the first example, Rawls's view is that justice does not require that the wealthy industrialized society should assist the poorer pastoral society.⁴¹ Similar reasoning is adduced by David Miller, who argues that self-governing nations should be held accountable for their decisions.⁴²

39. Page, *supra* note 38, at 61–6.

40. See also Schwartz's discussion of this position. Schwartz briefly considers the collectivist position described in the text. He rejects it on the grounds that what matters are benefits to individuals; benefits to collectives have no moral weight. *Supra* note 35, at 6–7.

41. See J. Rawls, *The Law of Peoples with 'The Idea of Public Reason Revisited'* (1999), 117–18.

42. D. Miller, 'Justice and Global Inequality', in A. Hurrell and N. Woods (eds.), *Inequality, Globalization, and World Politics* (1999), 193–6.

Let us now evaluate this collectivist response to the problem of past generations. It is vulnerable to two objections. First, it is not enough to draw attention to the possibility of affirming a collectivist position. We need to ascertain whether we have any reason to prefer a collectivist to an individualist approach. To vindicate the collectivist perspective we need an argument that can show when and why it is accurate to say that a collective caused an environmental bad and hence that that collective must pay. Indeed, we need an argument as to why this description is better than a more individualistic one (individuals a, b, and c polluted, and so individuals a, b, and c should pay). Second, a collectivist approach is vulnerable to a troubling problem. The root problem is that it seems unfair to make individuals pay the costs generated by preceding generations. In taking a collectivist route are we not being unfair to individuals who did not make those decisions and who might have objected violently to those decisions? Can they not reasonably complain that they were not consulted; they did not vote; they disapprove of the policies and, as such, should not be required to pay for decisions that others took. 'Normally', they might add, 'individuals cannot inherit debts from parents or grandparents, so why should this be any different?' For this reason, then, a collectivist response to the problems raised by the excessive GHG emissions of earlier generations is not an attractive position.⁴³

3.3. A third response

Thus far we have examined two responses to the intergenerational objection. The first contends that people currently living in industrialized countries have benefited from pollution-causing economic growth. The second contends that the relevant causal actors are collectives which still exist today (either corporations or countries or collective units such as 'the industrialized world'). A third response would be to argue that all the burdens of human-induced climate change should be paid for by existing polluters. The suggestion, then, is that current polluters should pay the costs of their pollution and that of previous generations. In this way, it might be said, the mitigation and adaptation costs of climate change are shouldered by the polluters (and not by non-polluters). But this seems unfair: they are paying more than their due. The intuition underlying the PPP (about which more later) is that people should pay for the harm that *they* (not others) have created. It is alien to the spirit of the principle to make people pay for pollution which is not theirs. So even if the proposal does, in one sense, make polluters pay (no non-polluters pay), it does not make sure that the costs of polluters are traced back to the particular polluters and that is what the PPP requires.

The first objection has not challenged the claim that the polluter should pay (except for Shue's revision of the principle). Rather it has shown, first, that proponents of the PPP are not entitled to conclude that current members of industrialized states

43. See also Gosseries, *supra* note 33, at 41–2 on this. For a nice discussion of the way in which collectivist approaches are insufficiently sensitive to the entitlements of individuals see K.-C. Tan, *Justice Without Borders: Cosmopolitanism, Nationalism and Patriotism* (2004), 73–4. More generally, see S. Caney, 'Global Equality of Opportunity and the Sovereignty of States', in T. Coates (ed.), *International Justice* (2000), 142–3, for a discussion of the principle at issue.

should pay for the costs of global warming. And, second, it has more generally shown that the PPP cannot say who should bear the costs of climate change caused by past generations. We might, however, raise questions about the ‘polluter pays’ principle itself. I now want to consider several challenges to the fundamental principle.

4. IGNORANCE AND OBLIGATION

One doubt about the ‘polluter pays’ principle is that it is too crude and indiscriminating in its treatment of the relevant duty-bearers. What if someone did not know that performing a certain activity (such as burning fossil fuels) was harmful? And suppose, furthermore, that there was no way in which they could have known that it was harmful. In such a situation their ignorance is excusable and it seems extremely harsh to make them pay for something that they could not have anticipated. This raises a problem for the ‘polluter pays’ principle in general. It also has considerable relevance for the issue at hand, for it is widely accepted that many who have caused GHG emissions were unaware of the effects of their activities on the earth’s atmosphere. Furthermore, their ignorance was not in any way culpable: they could not have been expected to know. This objection, note, applies in different ways to the individualist and collectivist approaches considered earlier. To the collectivist version it says that even if we can deal with past generations because the fossil fuel consumption was due to the past actions of a collective (Britain, say), this collective entity was, until the last two or three decades, excusably ignorant of the effects of fossil fuel consumption. To the individualist version it says that even if we forget about previous generations and focus simply on those currently alive, some of those individuals responsible for high emissions levels were (excusably) unaware of their effects. The objection from ignorance, thus, has more significance for the collectivist than the individualist position. Whereas the individualistic position has to explain how we deal with the GHGs emitted by currently living persons who were in (excusable) ignorance of their effects, the collectivist position has to deal with the GHGs that were emitted by both past and present members of collectives who were in (excusable) ignorance of their effects.

To this argument we might further add that Neumayer’s version of the historical approach to climate change is particularly vulnerable. For Neumayer would make current generations of a country pay for all instances where a previous generation of that country emitted more than their equal per capita entitlement.⁴⁴ But how could they be expected to know that this was the entitlement? This kind of retrospective justice would seem highly unfair.

Consider now some replies to this line of reasoning. One response to it is that this point no longer has any relevance because it has been known for a considerable period that fossil-fuel consumption and deforestation cause global climate change. This is how Peter Singer, for example, responds; for him the objection of ignorance is

44. *Supra* note 21, at 186.

inapplicable for post-1990 emissions.⁴⁵ Neumayer takes the same tack, but for him the relevant cut-off point is the mid-1980s.⁴⁶

But what of high GHG emissions that took place before 1990 (or the mid-1980s)? This first response leaves pre-1990 pollution uncovered. Individuals before that time caused carbon dioxide emissions which have contributed to global warming and this first response cannot show that pre-1990 polluters should pay for global warming. It therefore leaves some of the burdens of global warming unaddressed. As such it should be supplemented with an account of who should bear the burdens of climate change that result from pre-1990 GHG emissions.

Given this, let us consider a second reply. In his 'Global Environment and International Inequality', Shue argues that it is not unfair to make those who have emitted high levels of GHGs bear the burden of dealing with climate change, even though at the time they were not aware of the effects of what they were doing. Shue maintains that the objection of ignorance runs together punishment for an action and being held responsible for an action. His suggestion is that it would indeed be unfair to punish someone for actions they could not have known were harmful to others. However, says Shue, it is not unfair to make them pay the costs: after all, they caused the problem.⁴⁷

In reply, it is not clear why we should accord weight to this distinction. If one should not punish ignorant persons causing harm, why is it all right to impose financial burdens on them? More worryingly, Shue's proposal seems unfair on the potential duty-bearers. As Shue himself has noted in another context, we can distinguish between the perspective of rights-bearers and the perspective of duty-bearers.⁴⁸ The first approach looks at matters from the point of view of rights-holders and is concerned to ensure that people receive a full protection of their interests. The second approach looks at matters from the point of view of the potential duty-bearers and is concerned to ensure that we do not ask too much of them. Now, utilizing this terminology, I think it is arguable that to make (excusably) ignorant harmers pay is to prioritize the interests of the beneficiaries over those of the ascribed duty-bearers. It is not sensitive to the fact that the alleged duty-bearers could not have been expected to know.⁴⁹ Its emphasis is wholly on the interests of the rights-bearers and, as such, does not adequately accommodate the duty-bearer perspective.⁵⁰

Neither of the two replies, then, fully undermines the objection that an unqualified 'polluter pays' principle is unfair on those people who were high emitters of GHGs but who were excusably ignorant of the effects of what they were doing.⁵¹

45. P. Singer, *One World: The Ethics of Globalization* (2002), 34.

46. Neumayer, *supra* note 21, at 188. Shue also makes this kind of response but does not specify a key date after which one cannot claim excusable ignorance: Shue, *supra* note 20, at 536.

47. Shue, *supra* note 20, 535–6. Neumayer makes a similar but distinct reply, arguing that the objection runs together 'blame' and 'accountability'. Blaming those who could not have known of the effects of their actions is unjustified, but they are nonetheless accountable: see *supra* note 21, at 188, 189 n. 4.

48. H. Shue, *Basic Rights: Subsistence, Affluence, and U. S. Foreign Policy* (1996), 164–6.

49. A similar position is defended by Gosseries. See his nuanced and persuasive treatment of what he terms 'the ignorance argument', *supra* note 33, at 39–41.

50. This emphasis is evident in Neumayer's discussion: see, e.g., *supra* note 21, at 188.

51. We might note a third response. Someone might reply that even though there was no incontrovertible evidence prior to 1990/1985, there was reason to think that GHGs caused global climate change. And drawing on this, they might argue that pre-1990/1985 emitters had a duty to act on the precautionary

5. THE IMPOVERISHED

Let us turn now to another worry about taking a purely historical approach to distributing environmental responsibilities. The worry is simply that such an approach may be unfair on the impoverished. Consider, for example, a country that has in the recent past caused a great deal of pollution but that remains poor. Since it is poverty-stricken we might argue that it should not have to pay for its pollution. In this kind of situation the ‘polluter pays’ principle appears unfair, for it asks too much of the poor.

These concerns are powerful, but we must be careful in drawing conclusions here. This argument does not establish that the ‘polluter pays’ principle should be abandoned. Rather it suggests (if we accept the claim that countries should not be required to pay when they are extremely impoverished) that we should supplement the PPP with an additional (and competing) principle (the poor should not pay). One can, that is, take a pluralist response. In support of this conclusion, consider the following scenario. Suppose that a country that is poor creates considerable pollution. Drawing on the preceding argument we might think that they, the polluters, should not pay. But then suppose that they suddenly become very wealthy (and, for simplicity’s sake, do so for reasons absolutely unconnected with their pollution). Since they can now afford to pay for the costs of their pollution we surely think that they should pay and the ‘polluter pays’ principle (PPP) should now be acted upon because it can, in all fairness, be required of the polluters. Given their new-found wealth they should compensate for the environmental bads they generated. The key point here is that the argument from poverty does not entail that a ‘polluter pays’ approach should be abandoned. Rather it entails that we should reject a monist, or purist, approach which claims that the responsibility for addressing environmental harms should only be assigned to those who have caused them, and it argues that the PPP should be supplemented by other principles.

Another point is worth making here, namely that the objection under consideration suggests that an adequate account of people’s environmental responsibilities cannot be derived in isolation from an understanding of their ‘economic’ rights and duties. It illustrates, that is, the case for not adopting an atomistic approach which separates the task of constructing a theory of environmental justice from a theory of economic justice and so on.⁵²

6. THE EGALITARIAN DEFENCE

Let us turn now to the rationale often adduced in support of adopting a PPP approach to deal with the intergenerational aspects of global climate change. Those who

principle and therefore should have eschewed activities which released high levels of GHGs. Since they did not adopt such a precautionary approach, it might be argued, they should shoulder a proportionate share of the burdens of climate change. The argument then is neither that they did know (response 1) nor that it does not matter that they did not know (response 2): it is that they should have adopted a cautious approach and since they did not they are culpable. How effective this reply is depends on when we think the precautionary principle should be adopted.

52. For further discussion of this methodological point see Caney, *supra* note 9.

canvass a 'historical' approach to allocating the responsibilities for addressing climate change often invoke egalitarian principles of justice in support of their position. Shue, for instance, argues that current members of industrialized countries should bear the burdens of climate change on the grounds that

Once . . . an inequality has been created unilaterally by someone's imposing costs upon other people, we are justified in reversing the inequality by imposing extra burdens upon the producer of the inequality. There are two separate points here. First, we are justified in assigning additional burdens to the party who has been inflicting costs upon us. Second, the minimum extent of the compensatory burden we are justified in assigning is enough to correct the inequality previously unilaterally imposed. The purpose of the extra burden is to restore an equality that was disrupted unilaterally and arbitrarily (or to reduce an inequality that was enlarged unilaterally and arbitrarily).⁵³

In a similar vein, Neumayer argues that 'historical accountability is supported by the principle of equality of opportunity'.⁵⁴ And Anil Agarwal, Sunita Narain, and Anju Sharma make a similar point:

some people have used up more than an equitable share of this global resource, and others, less. Through their own industrialization history and current lifestyles that involve very high levels of GHG emissions, industrialized countries have more than used up their share of the absorptive capacity of the atmosphere. In this regard, the global warming problem is their creation, so it is only right that they should take the initial responsibility of reducing emissions while allowing developing countries to achieve at least a basic level of development.⁵⁵

What are we to make of these related lines of reasoning? I should like to make two points in reply. First, the egalitarian argument can work only if we take a collectivist, as opposed to an individualist, approach; second, a collectivist approach is, in this instance, implausible. Consider the first point. The egalitarian argument maintains that countries such as the United States and Britain should pay for the excessive emissions of their ancestors. So the idea is that since the United States, say, used more than its 'fair' share at an earlier period in time it must use less now to even things out. But, this, of course, is taking a collectivist approach. It is claiming that since a collective entity, the United States, emitted more than its fair quota, this same collective entity should emit a reduced quota to make up. The egalitarian argument thus works if we treat communities as the relevant units of analysis. It does not, however, if we focus on the entitlements of individuals. To see this imagine two countries which now have an identical standard of living. Now imagine that one of them, but not the other, emitted excessive amounts of greenhouse gases in the past. It is then proposed that members of the one country should, in virtue of the pollution that took place in the past, make a greater contribution to dealing with global climate change than members of the other country. The first point to note is that this policy is not mandated by a commitment to equality of opportunity. It may

53. Shue, *supra* note 20, at 533–4.

54. Neumayer, *supra* note 21, at 188.

55. A. Agarwal, S. Narain, and A. Sharma, 'The Global Commons and Environmental Justice – Climate Change', in *Environmental Justice: International Discourses in Political Economy – Energy and Environmental Policy* (2002), 173.

be true that some people in the past will have had greater opportunities than some currently living people, but that simply cannot be altered: making their descendants have fewer opportunities will not change that. In fact making their descendants pay for the emissions of previous generations will violate equality, because those individuals will have less than their contemporaries in other countries. So if we take an individualist position, it would be wrong to grant some individuals (those in country A) fewer opportunities than others (those in country B) simply because the people who used to live in country A emitted higher levels of GHGs.

Which position should we take – a collectivist or an individualist one? This leads to my second point. I believe that we should favour the individualist one. To see why consider an example, of two families each with a son. Now suppose that several generations ago one of the families (family A) sent their child to a prestigious and distinguished public school (Eton College, say), whereas family B sent their equivalent child to a quite ordinary school. Now on an individualistic approach, the fact that someone's great-great-great grandfather enjoyed more than fair opportunities does not give us any reason to give them a less than equal opportunity. But the collectivist position is committed to claiming that we should penalize the descendant. It must say that since one *family* had a greater than fair allocation of educational opportunities in the past this must be rectified now by giving it (or, rather, one of its current members) a less than equal opportunity now. But that seems just bizarre and unfair.

In short, then, the egalitarian argument for ascribing responsibilities to current members of industrialized countries is unsuccessful: it could work only if we adopted a collectivist methodology that I have argued is unfair.

7. INCOMPLETENESS

Let us turn now to two further general limitations of the 'polluter pays' principle (limitations which also undermine its treatment of global climate change). The first point to be made here is that the 'polluter pays' principle is incomplete, for it requires a background theory of justice and, in particular, an account of persons' entitlements. To see this we should observe that the 'polluter pays' principle maintains that if persons have exceeded their entitlements then they should pay. Given this, to make the claim that someone should pay requires an account of what their entitlement is. In addition to this, to ascertain how much someone should pay also requires a precise account of their entitlements, for we need to know by how much they have exceeded their quota. What we really need, then, is an account of what rights, if any, people have to emit greenhouse gases. Is there no right to emit? Or is there a right to emit a certain fixed amount? In short, then, the 'polluter pays' principle must be located within the context of a general theory of justice and, on its own, it is incomplete.⁵⁶

56. My argument, here, is analogous to Rawls's discussion of 'legitimate expectations'. Rawls argues that we cannot define persons' entitlements (their legitimate expectations) until we have identified a valid distributive principle and ascertained what social and political framework would best fulfil that ideal: only when we have the latter can we work out what individual persons are entitled to. In the same spirit, my argument

It is worth recording here that the language used by Shue, Neumayer, and Agarwal, Narain, and Sharma illustrates the point at stake. Shue, for example, argues that those who have ‘taken an *unfair* advantage of others by imposing costs upon them without their consent’ (my emphasis) should bear the burdens of climate change: his account thus presupposes an understanding of people’s ‘fair’ share.⁵⁷ And Neumayer’s analysis is predicated on the assumption that each person has an entitlement to an equal per capita allocation of carbon dioxide emissions. He maintains that agents that have exceeded this quota therefore have a responsibility to pay extra later.⁵⁸

Note that this last point is not an objection to the PPP. It is simply pointing out that the PPP requires supplementation.

8. NON-COMPLIANCE

There is one final query that one might raise about the ‘polluter pays’ principle (and its application to global climate change). This is that the principle is incomplete in an additional sense. It assigns primary responsibilities – the polluter bears the primary responsibility to bear the burden. Often, however, primary duty-bearers fail to comply with their duties. In such circumstances we might not know who the non-compliers are. Furthermore, even if we do know who they are, we might be unable to make them comply. This prompts the question: what, if anything, should be done if primary duty-bearers do not perform their duties? One option might be to leave the duties unperformed. In the case of global climate change, however, this would be reckless. In light of the havoc it wreaks on people’s lives we cannot accept a situation in which there are such widespread and enormously harmful effects on the vulnerable of the world. In the light of this, we have reason to accept a second option, one in which we assign ‘secondary’ duty-bearers. And the point here is that the PPP is simply unable to provide us with any guidance on this. Since it says only that polluters should pay it cannot tell us who the secondary duty-bearers should be when we are unable to make polluters pay. In this sense, too, it is incomplete.⁵⁹

It may be appropriate to sum up. I have argued that the PPP approach to climate change is inadequate for a number of reasons. It cannot cope with three kinds of GHG, namely GHGs that were caused by

- (i) earlier generations (*cannot pay*);
- (ii) those who are excusably ignorant (*should not be expected to pay*); and

is that we cannot define people’s responsibilities until we have identified a valid distributive principle and seen what social and political framework realizes that ideal. See Rawls, *A Theory of Justice*, *supra* note 3, at 88–9, 273–7.

57. *Supra* note 20, at 534.

58. *Supra* note 21.

59. The terminology of ‘primary’ and ‘secondary’ duty-bearers comes from Shue, *supra* note 48, at 59 (see also 57 and 171 for relevant discussion).

(iii) those who do not comply with their duty not to emit excessive amounts of GHGs (*will not pay*).

Furthermore, the egalitarian argument for the historical application of the ‘polluter pays’ principle does not work. Finally we have seen two ways in which the historical approach is incomplete: it is silent on what should occur when people do not perform their duty and it needs to be embedded in a theory of justice.

Two other points bear making here. First, it is interesting to return to the methodological preliminaries introduced in section 1, in particular the point that a theory of global environmental justice must be able to cope with the intergenerational dimensions of global environmental problems. For the upshot of the first objection to the PPP (the past generations objection) is that the PPP cannot easily be extended to apply in an intergenerational context. To elaborate further: it is much easier to insist that the polluter should pay when we are dealing with a single generation in which both the polluter and those affected by the pollution are contemporaries. But, as the past generations objection brings out, the principle that the polluter should pay becomes inapplicable when the pollution results from people no longer alive.

Second, although I have argued above that the ‘polluter pays’ approach is incomplete and unable to deal with various kinds of activity which contribute to global climate change, this, of course, does not entail that it should be rejected outright. In the first instance, it rightly applies to many actors who are currently emitting excessive levels of GHGs or have, at some stage since 1990, emitted excessive amounts. So even if it should not be applied to the distant past it can apply to the present and near past. Furthermore, even if we reject its application to the past we may still use it for the future. That is, we can inform people of their quota and build institutions that ensure that if people exceed it then they must make compensation.

9. JUSTICE AND RIGHTS

Having argued that a purely ‘polluter pays’ approach is incomplete in a number of ways, we face the question of how it should be supplemented. How should the burden of climate change be distributed?

In this section I wish to outline an alternative way of thinking about global justice and climate change, an account that avoids the weakness of a purely ‘polluter pays’ approach. The argument begins with the assumption that

(Pr) A person has a right to X when X is a fundamental interest that is weighty enough to generate obligations on others.

This claim draws on Joseph Raz’s influential theory of rights. And it follows him in claiming that the role of rights is to protect interests that we prize greatly.⁶⁰

60. J. Raz, *The Morality of Freedom* (1986), ch. 7.

The next step in the argument maintains that

- (P2) 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 the destruction of homes and infrastructure;
 - (e) enforced relocation; and
 - (f) rapid, unpredictable and dramatic changes to their natural, social and economic world.

Yet, as the Third Assessment Report of the IPCC records, all the malign effects listed in (P2) will be generated by climate change. The predicted temperature increases are likely to result in drought and crop failure. They will also lead directly to more deaths through heatstroke. Furthermore, with increased temperatures there is a predicted increase in the spread of malaria, cholera and dengue fever. In addition to this, the increased temperatures are predicted to melt ice formations and thereby contribute to a rise in sea level which will threaten coastal settlements and countries such as Bangladesh which are flat and close to sea level. As well as simply destroying buildings, homes, and infrastructure, a known effect of climate change will be to force some inhabitants of small island states and coastal settlements to relocate. Finally, we should note that the IPCC maintains that global climate change is not simply a matter of global *warming*: it will lead to high levels of unpredictable weather patterns. This jeopardizes a vital interest in stability and being able to make medium- and long-term plans.⁶¹

Given this, it follows that there is a strong case for the claim that

- (C) Persons have the human right not to suffer from the disadvantages generated by global climate change.

Having adduced this argument, note that it (unlike a 'polluter pays' approach) does not necessarily rest on the assumption that climate change is human-induced. Its insistence is that persons' pre-eminent interests be protected and it is not, in itself, concerned with the causes of climate change. Suppose that climate change is not anthropogenic: this argument would still hold that there is a human right not to suffer from global climate change as long as humans could do something to protect people from the ill-effects of climate change and as long as the duties generated are not excessively onerous. The duties that follow from this right could not, of course, be mitigation-related duties but there could be adaptation-related duties.⁶²

61. For a comprehensive account of the effects of climate change and empirical support for the claim that climate change causes phenomena (a) to (f) see McCarthy et al., *supra* note 12. For instance, chapter 9 on human health provides data on the links between climate change and drought (a), heatstroke (b), and malaria, dengue and cholera (c). Chapters 6 and 17 detail the ways in which climate change results in threats to coastal zones and small island states (and thereby results in (d), (e) and (f)).

62. The argument sketched above could be generalized to address other environmental burdens. For an excellent analysis of the human right not to suffer from various environmental harms, the grounds supporting this right and the correlative duties, see J. Nickel, 'The Human Right to a Safe Environment: Philosophical Perspectives on its Scope and Justification', (1993) 18 *Yale Journal of International Law*, at 281–95. Nickel does not discuss climate change.

With this account in mind we face two questions: ‘who has the duty to bear the burdens of dealing with global climate change?’ and ‘what are people’s entitlements in terms of emitting GHGs?’ Let us consider the first question. Drawing on what has been argued so far I would like to propose four different kinds of duty:

- (D1) All are under a duty not to emit greenhouse gases in excess of their quota.
- (D2) Those who exceed their quota (and/or have exceeded it since 1990) have a duty to compensate others (through mitigation or adaptation) (a revised version of the ‘polluter pays’ principle).

But what of GHG emissions arising from (i) previous generations; (ii) excusable ignorance; and (iii) polluters who cannot be made to pay? These, we recall, were the kinds of GHG emission that could not adequately be dealt with by a purely ‘polluter pays’ approach. My suggestion here is that we accept the following duty:

- (D3) In the light of (i), (ii), and (iii) the most advantaged have a duty either to reduce their greenhouse gas emissions in proportion to the harm resulting from (i), (ii), and (iii) (mitigation) or to address the ill-effects of climate change resulting from (i), (ii), and (iii) (adaptation) (an ability to pay principle).

These first three principles are, however, inadequate. For we need also to accept that

- (D4) In the light of (iii) the most advantaged have a duty to construct institutions that discourage future non-compliance (an ability to pay principle).⁶³

We should not take pollution as a given and then act in a reactive fashion: rather, we should be pro-active and take steps to minimize the likelihood of excessive pollution. And for that reason we should accept (D4). Let us call this the ‘hybrid account’.⁶⁴

The key point about this account is that it recognizes that the ‘polluter pays’ approach needs to be supplemented and it does so by ascribing duties to the most advantaged (an ‘ability to pay’ approach). The most advantaged can perform the roles attributed to them, and, moreover, it is reasonable to ask them (rather than the needy) to bear this burden since they can bear such burdens more easily. It is true that they may not have caused the problem but this does not mean that they have no duty to help solve this problem. Peter Singer’s well-known example of a child

63. For an emphasis on constructing fair institutions see Shue, *supra* note 48, at 17, 59–60, 159–61, 164–6, 168–9, 173–80, and C. Jones, *Global Justice: Defending Cosmopolitanism* (1999), 66–72, esp. 68–9.

64. For a general discussion of the different kinds of duties generated by human rights see S. Caney, ‘Global Poverty and Human Rights: The Case for Positive Duties’, in T. Pogge (ed.), *Freedom from Poverty as a Human Right: Who Owes What to the Very Poor?* (2006). For an account that is similar to the hybrid account see Darrel Moellendorf’s brief but perceptive discussion in *Cosmopolitan Justice* (2002), 97–100. Like the hybrid account, Moellendorf’s account brings together a ‘polluter pays’ approach with an ‘ability to pay’ approach. There are, however, several important differences: (i) Moellendorf’s view does not take into account excusable ignorance; (ii) he does not address the question of what to do if people do not comply with their duty not to emit excessive GHGs; and (iii) he does not propose a principle akin to (D4).

drowning in a puddle brings this point out nicely.⁶⁵ Suppose that one encounters a child face down in a puddle. The fact that one did not push the child in obviously does not mean that one does not have a duty to aid the child.

It should be noted that this account of persons' duties is incomplete, for we still need to ascertain what counts as a fair quota. As we saw above, it is only with reference to the latter that we can define what counts as *unfair* levels of GHG emissions. It is not possible, in the space available, to answer the question 'what is a fair quota?', but I should like to suggest that any credible answer to that question must draw on the interest-based account presented above. That is, in ascertaining the appropriate emissions levels we need to balance persons' interests in engaging in activities that involve the emission of GHGs, on the one hand, with persons' interests in not suffering the harms listed in (P2), on the other. We also need to employ a distributive principle. I have argued elsewhere that we have good reason to prioritize the interests of the global poor.⁶⁶ For this reason I would suggest, here, that the least advantaged have a right to emit higher GHG emissions than do the more advantaged of the world. As Shue himself argues, it is unfair to make the impoverished shoulder the burden.⁶⁷ So my account would entail that the burden of dealing with climate change should rest predominantly with the wealthy of the world, by which I mean affluent persons in the world (not affluent countries).⁶⁸

As such (D1)–(D4) may, in practice, identify as the appropriate bearers of the duty to deal with global climate change many of the same people as a 'polluter pays' approach. It does so, though, for wholly different reasons. We might, speaking loosely, say that the contrast between my hybrid account and a historical approach is that a historical approach is diachronic (concerned with actions over time and who caused the problem), whereas mine has a diachronic element but is also synchronic (concerned with how much people have now and who can bear the sacrifice). It is also important to record that (D1)–(D4) will target different people from a purely 'polluter pays' approach in a number of situations. The two accounts identify the same duty-bearers only in cases where both (i) 'all those who have engaged in

65. P. Singer, 'Famine, Affluence, and Morality', (1972) 1(3) *Philosophy and Public Affairs* 229–43. I am grateful to Kok-Chor Tan for advice about how to bring out the normative appeal of (D3) and (D4).

66. Caney, *supra* note 6, at ch. 4.

67. In 'Global Environment and International Inequality', Shue defends not just the 'polluter pays' principle but also an 'ability to pay' principle (*supra* note 20, at 537–40). In addition to this, he argues that there should be a 'guaranteed minimum' threshold below which people should not fall and hence that the very poor should not pay (*ibid.*, at 540–4). Shue's claim is that all three principles yield the same conclusion – affluent countries are responsible for meeting the burdens of climate change (at 545). For further discussions where Shue has argued that the wealthy should bear the mitigation and adaptation costs of climate change and that the poor be given less demanding duties see 'After You: May Action by the Rich be Contingent upon Action by the Poor?', 'Avoidable Necessity: Global Warming, International Fairness, and Alternative Energy', 250–7, and 'Subsistence Emissions and Luxury Emissions', especially 42–3, all *supra* note 13.

68. One common principle suggested is that all persons have an equal per capita right to emit carbon dioxide (see, e.g., R. Atfield, *Environmental Ethics* (2003), 179–80; P. Baer, J. Harte, B. Haya, et al., 'Equity and Greenhouse Gas Responsibility', (2000) 289 *Science* 2287; T. Athanasiou and P. Baer, *Dead Heat: Global Justice and Global Warming* (2002), esp. 76–97; Neumayer, *supra* note 21, at 185–92; and S. Bode, 'Equal Emissions Per Capita over Time – A Proposal to Combine *Responsibility* and *Equity of Rights* for Post-2012 GHG Emission Entitlement Allocation', (2004) 14 *European Environment* 300–16.) For the reason given in the text, however, this seems to me unfair on the poor. (See, too, Shue 'Avoidable Necessity: Global Warming, International Fairness, and Alternative Energy', *supra* note 13, at 250–2, and S. Gardiner, 'Survey Article: Ethics and Global Climate Change', (2004) 114 *Ethics* 584–5).

activities which cause global climate change are wealthy' and also (ii) 'all those who are wealthy have engaged in activities which cause global climate change'. But these two conditions may not apply. Consider two scenarios: in the first, a unit emits high levels of GHGs but is poor and not able to contribute much to bearing the costs of climate change. In such a case the PPP would ascribe duties to them that my hybrid account would not. Consider now the second scenario: a unit develops in a clean way and becomes wealthy. If we adopt a purely 'polluter pays' approach then this unit should not accrue obligations to bear the costs of global climate change but according to the hybrid account they would.⁶⁹ So the Hybrid Account and the 'polluter pays' account differ in both theory and practice.

Thus far I have introduced the hybrid account and shown how it remedies defects from which the 'polluter pays' approach suffers. Some, however, might object to (D1)–(D4), and to strengthen the hybrid account further I wish to address one objection that might be pressed against it. The objection I have in mind takes issue with (D3) in particular. It runs as follows: (D3) is unfair because it requires those who are advantaged but who have complied with (D1) and (D2) to make up for the failings of those who have not complied with their duties. And, it asks, is this not unfair? Why should those who have been virtuous be required to do yet more (as (D3) would require) because some have failed to live up to their obligations?

Several comments can be made in reply. First, it should be stressed that the hybrid account explicitly seeks to address this concern by insisting, in (D4), that institutions should be designed so as to discourage non-compliance. It aims, therefore, to minimize those demands on people that stem from the non-compliance of others. Second, we might ask the critic what the alternatives are to asking the advantaged to address the climate change caused by non-compliers (as well as that stemming from past generations and excusable ignorance). One option would be to reject (D3) (and (D4)) and ask the impoverished and needy to pay but, as we have seen, this is unfair. A second option would be to let the harm to the climate that results from the excessive GHG emissions of some go unaddressed. But the problem with this is that the ill-effects that this will have on other people (drought, heatstroke, crop failure, flooding) are so dire that this is unacceptable. Such a position would combine neglect (on the part of those who have exceeded their GHG quota) with indifference (on the part of those who could address the problems resulting from the high GHG emissions of others but choose not to). And if we bear in mind that those who are adversely affected by climate change are frequently poor and disadvantaged,⁷⁰ we

69. Note that even if (a) and (b) hold and the PPP and the hybrid account identify the same people as duty-bearers, they may well make different demands on different people. They would converge exactly only if (a) and (b) hold, and if (c), there was a perfect positive correlation between how much GHGs persons have emitted, on the one hand, and how much wealth they possess, on the other. Since the PPP allocates duties according to how much GHGs persons have emitted and since the hybrid account allocates duties, in part, according to how much wealth persons have, (c) is necessary to produce total convergence in their ascription of duties.

70. For further on this see the following: J. B. Smith, H.-J. Schellnhuber, and M. M. Q. Mirza, 'Vulnerability to Climate Change and Reasons for Concern: A Synthesis', in McCarthy et al., *supra* note 12, esp. at 916, 940–1, 957–8; R. S. J. Tol, T. E. Downing, O. J. Kuik, and J. B. Smith, 'Distributional Aspects of Climate Change Impacts', (2004) 14(3) *Global Environmental Change* 259–72; and D. S. G. Thomas and C. Twyman, 'Equity and Justice in Climate Change Adaptation Amongst Natural-Resource-Dependent Societies', (2005) 15(2) *Global Environmental Change* 115–24.

have yet further reason to think that the advantaged have a duty to bear the burdens of climate change that arise from the non-compliance of others. If the choice is of *either* ascribing duties to the poor and needy *or* allowing serious harm to befall people (many of whom are also poor and needy) *or* ascribing duties to the most advantaged it would seem plausible to go for that third option.⁷¹ One final thought: there is, we can agree, an unfairness involved in asking some to compensate for the shortcomings of others. The question is: how should we best respond to this? My suggestion is that we respond best to this as suggested above, by seeking to minimize those demands and by asking the privileged to bear this extra burden. To this we can add that the virtuous *are* being ill-treated but that the right reaction for them is to take this up with non-compliers (against whom they have just cause for complaint) and not to react by disregarding the legitimate interests of those who would otherwise suffer the dire effects of climate change. For these three reasons, then, (D₃) can be defended against this objection.⁷²

10. A COMPARISON OF THE HYBRID ACCOUNT WITH THE CONCEPT OF 'COMMON BUT DIFFERENTIATED RESPONSIBILITY'

Having outlined and defended the hybrid account I now want to compare it with a related doctrine that is commonly affirmed in international legal documents on the environment – the concept of 'common but differentiated responsibility'. By doing so we can gain a deeper understanding of the hybrid account, its relation to international legal treatments of climate change, and its practical implications.

The concept of 'common but differentiated responsibility' was given expression in the 1992 Rio Declaration, and it is worth quoting Principle 7 of the Declaration. It affirms that

States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have *common but differentiated* responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies

71. For a similar line of reasoning see Moellendorf's persuasive discussion of who should deal with the ill-effects caused by the GHG emissions of earlier generations. Moellendorf convincingly argues that it would be wrong to ask anyone other than the most advantaged to bear the burdens of the GHG emissions of earlier generations. See Moellendorf, *supra* note 64, at 100. My claim is that the same reasoning shows that the advantaged should also bear the costs stemming from non-compliance.

72. As Wouter Werner has noted, the Hybrid Account may also encounter a problem of non-compliance. What, it might be asked, should happen if some of those designated by (D₃) to deal with the problems resulting from some people's non-compliance do not themselves comply with (D₃)? Three points can be made in response. First: we should recognize that even if this is a problem for the Hybrid Account it does not give us reason to reject it but rather to expand on it. The PPP, for example, fares no better: indeed, it fares worse, for the Hybrid Account, unlike the PPP, at least addresses the issue of non-compliance. Second, if *some* of those designated to perform (D₃) fail to do so then one reply is that at least some of their shortfall should be picked up by others of those designated by (D₃). The third and final point to make is that there will be limits on this. That is, one can ask only so much of those able to help, though where we draw this line will be a matter of judgement and will depend on, amongst other factors, how much they are able to help and at what cost to themselves. For further pertinent enquiry into persons' moral obligations when others fail to do their duty see Parfit's pioneering discussion of 'collective consequentialism' (*supra* note 7, at 30–1), and Liam Murphy's extended analysis of this issue in L. Murphy, *Moral Demands in Non-ideal Theory* (2000).

place on the global environment and of the technologies and financial resources they command.⁷³

The same idea is also affirmed in Article 3(1) of the United Nations Framework Convention on Climate Change.⁷⁴ In addition to this, the concept of ‘common but differentiated responsibility’ is evident in the 1997 Kyoto Protocol. For example, the Preamble stipulates that the Protocol is ‘guided by Article 3’ of the United Nations Framework Convention on Climate Change (which, as we have just seen, includes a commitment to ‘common but differentiated responsibility’) and the principle of ‘common but differentiated responsibility’ is explicitly affirmed in Article 10.⁷⁵ This account of the responsibilities generated by climate change has some similarities to the hybrid account, for they both insist that duties fall on all (compare, for example, (D1) and (D2)) and yet both also insist that different demands can be made of different parties (as in (D3) and (D4)). Furthermore, both accounts allow that the duties to which a party is subject depend on (i) what they have done and (ii) what they are able to do. For example, the hybrid account maintains, in (D2), that those who have exceeded their quota should make up for that. In addition, it maintains, in (D3) and (D4), that those who are able to do more should bear more onerous duties. The same two reasons for affirming ‘differentiated’ duties are contained within the notion of ‘common but differentiated responsibilities’.⁷⁶ This can be seen in the last sentence of Principle 7 of the Rio Declaration quoted above, which claims that ‘The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of [i] *the pressures their societies place on the global environment* and of [ii] *the technologies and financial resources they command*’.⁷⁷

Having noted these commonalities, it is worth stressing some key differences. First, the principle of ‘common but differentiated responsibility’ refers to the responsibilities of states. This is apparent, for example, in Article 7 of the Rio Declaration quoted above. The same is also true of Article 10 of the Kyoto Protocol.⁷⁸ The hybrid account, however, does not restrict its duties to states. Furthermore, given the considerations adduced above in section 2 in particular, we have no reason to ascribe duties only to states. A second key difference is that the principle of ‘common but differentiated responsibility’ tends to be interpreted in such a way that

73. <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> (emphasis added).

74. See <http://unfccc.int/resource/ccsites/senegal/conven.htm>.

75. For the Preamble and Art. 10 of the Kyoto Protocol see <http://unfccc.int/resource/docs/convkp/kpeng.html>. My understanding of the principle of ‘common but differentiated responsibility’ is indebted to Lavanya Rajamani’s instructive discussion of that principle as it appears in the Rio Declaration, the UNFCCC, and the Kyoto Protocol: see her ‘The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime’, (2000) 9(2) *Review of European Community and International Environmental Law* at 120–31. See also the useful discussions by P. G. Harris, ‘Common but Differentiated Responsibility: The Kyoto Protocol and United States Policy’, (1999) 7(1) *New York University Environmental Law Journal* at 27–48, and Sands, *supra* note 16, at 55–6, 285–9, 362.

76. See, on this, Rajamani, *supra* note 75, esp. at 121–2, 130, and Sands, *supra* note 16, at 286.

77. <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> (emphasis added).

78. <http://unfccc.int/resource/docs/convkp/kpeng.html>.

states are held accountable for the decisions of earlier generations.⁷⁹ But such a position is, I have argued, unfair on current generations and (D1)–(D4) do not accept these kinds of historical responsibilities. Another difference is that the principle of ‘common but differentiated responsibility’, unlike the hybrid account, does not take into account what I have termed excusable ignorance. In the light of these three differences (as well as others), (D1)–(D4) would have quite different implications from the principle of ‘common but differentiated responsibility’ as that principle is conventionally interpreted. In short, then, we might say that the hybrid account is one way of interpreting the general values affirmed by the principle of ‘common but differentiated responsibility’ but that it departs considerably from the standard versions of that principle affirmed in international legal documents.

11. CONCLUDING REMARKS

It is time to conclude. Two points in particular are worth stressing – one methodological and the other substantive. The methodological observation takes us to an issue that has run throughout the paper – namely whether we should adopt an individualist methodology or a collectivist one. This issue has cropped up in three different contexts.

First, who are the polluters? If we take an individualist approach then we will say that for some pollution (that of earlier generations) we cannot make the polluter pay, for the individual polluters are dead. If, however, we take a collectivist approach we will say that collective A polluted in an earlier decade (or century) and hence that it should pay for the pollution now.

Second, who has benefited from the use of fossil fuels? Because of the non-identity problem we cannot say to the particular individuals who are alive today, ‘You enjoy a higher standard of living than you would have done in a world in which industrialization had not occurred.’ We can, however, make this claim to, and about, collectives.

Third, who is the bearer of the right to emit greenhouse gases (individuals or collectives)? The rationale given by Shue and Neumayer, and by Agarwal, Narain, and Sharma for a historical approach works only if we assume that the answer to this question is ‘collectives’. On an individualist approach, however, the rights-bearers are individuals and it is unjust to impose sacrifices on some current individuals because, and only because, of the excessive emissions of earlier inhabitants of their country.

This paper has argued for an individualist account, but the issue requires a much fuller analysis than has been possible here.

79. See Rajamani, *supra* note 75, esp. at 121–2. Rajamani goes further than this and writes that the principle of common but differentiated responsibility requires that states that have emitted high levels of GHGs in the past have a duty specifically to pursue a policy of *mitigation* and that this duty falls on them (*ibid.*, at 125, 126, 130). The hybrid account, by contrast, is not, of necessity, committed to this claim.

The second point worth stressing is that if the arguments of this article are correct, then one common way of attributing responsibilities (the PPP) is more problematic than is recognized. In the light of this, I have suggested an alternative view which overcomes some of these difficulties. It should be stressed that much more remains to be done. Further theoretical and empirical analysis is needed to answer the question raised earlier on as to who is (causally) responsible for global climate change. Furthermore, much more is needed on the appropriate distributive criterion and on how we ascertain a fair quota. However, what I hope to have shown is that the account I have outlined provides the beginnings of an answer.