



Blomfield, M. R. (2016). Historical Use of the Climate Sink. *Res Publica*, 22(1), 67-81. <https://doi.org/10.1007/s11158-015-9312-z>

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Historical Use of the Climate Sink

Megan Blomfield¹

Published online: 30 March 2016

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Abstract In this paper I discuss a popular position in the climate justice literature concerning historical accountability for climate change. According to this view, historical high-emitters of greenhouse gases—or currently existing individuals that are appropriately related to them—are in possession of some form of *emission debt*, owed to certain of those who are now burdened by climate change. It is frequently claimed that such debts were originally incurred by historical emissions that violated a principle of fair shares for the world’s natural resources. Thus, a suitable principle of natural resource justice is required to render this interpretation of historical accountability complete. I argue that the need for such a principle poses a significant challenge for the historical emission debt view, because there doesn’t appear to be any determinate answer to the question what a fair share of climate sink capacity would have been historically. This leaves the historical emission debt view incomplete and thus unable to explain a powerful intuition that appears to motivate the view: namely, that there is *something* unjust about how the climate sink has historically been used. I suggest an alternative explanation of this common intuition according to which historically unequal consumption of climate sink capacity, whether or not wrongful in and of itself, is a symptom of broader global injustice concerning control over and access to the world’s natural resources. This broader historical injustice will be harder to quantify and harder to repair than that which the historical emission debt purports to identify.

Keywords Climate ethics · Global justice · Historical responsibility · Rectificatory justice · Resource rights

✉ Megan Blomfield
megan.blomfield@bristol.ac.uk

¹ University of Bristol, Bristol, UK

Historical Accountability for Climate Change: The Emission Debt Approach

Discussions of historical accountability for climate change are often couched in the terminology of debt: whether carbon debt, atmospheric debt, emission debt, climate debt, ecological debt, or natural debt. These concepts have entered the international climate debate due to the efforts of indigenous peoples, state representatives, campaigners and NGOs, and the media¹; and are drawing the attention of an increasing number of theorists concerned with the normative dimensions of climate change.² Accounts of how such debts are incurred and what they amount to vary. Some employ the notion to express the simple and plausible claim that the wealthy and industrialised have a moral duty to assist those particularly vulnerable to climate change grounded not in beneficence or charity, but by the fact that they are the most significant contributors to/beneficiaries of the process that created this problem. Others draw on tools from environmental economics in an attempt to provide a precise calculation of such debts.³

In this paper I follow Jonathan Pickering and Christian Barry by looking at a set of views according to which debts are possessed by those who ‘have used more than their fair share of the Earth’s ability to absorb the GHG emissions that cause climate change’ (Pickering and Barry 2012, p. 670). What I term ‘the historical emission debt view’ (HED) takes debts to have been incurred by those who historically used more than their fair share of the *assimilative capacity of the global climate sink* (the natural resource composed of forests, soils, the atmosphere and the ocean that assimilates our GHG emissions). The rough idea behind HED is that one can use a principle specifying just limits on historical use of climate sink capacity to identify debtors and creditors as—in the first instance—those who historically consumed more than their fair share of climate sink capacity and those at whose expense this excess use took place, respectively. As with financial debts, one might then argue that historical emission debts can be passed on to third parties in certain ways (usually through the transfer of goods to which those debts are attached); or, where these debts are incurred by collective entities such as companies and states, they may be claimed to persist through time despite changes in the membership of those entities.

¹ See, for example: the Anchorage Declaration (2009), the People’s Agreement of Cochabamba (2010); statements by the G77 and Bolivia (G77 2000: Art.45), Navarro (2009); the joint report by the World Development Movement and Jubilee Debt Campaign (Jones and Edwards 2009) and Klein’s (2009) *Rolling Stone* article.

² See Agarwal (2002, p. 377), Athanasiou and Baer (2002, p. 82), Baer (2002, p. 402), Beckerman and Pasek (1995, p. 410), Caney (2006, p. 464), Cripps (2011, p. 126), Duus-Otterström (2014), Eckersley (2015, pp. 486–487), Goeminne and Paredis (2010, §5), Grubb et al. (1992, p. 312), Halme (2007), Hayward (2007, p. 445), Kartha (2011, pp. 508–509), Knight (2011, p. 535), Martinez-Alier and Naron (2004, p. 18), Miller (2008, p. 133), Sinden (2010) and Smith (1991). Some theorists *equate* such debt with the idea of historical responsibility (Athanasiou and Baer 2002, p. 121) or historical accountability (Neumayer 2000, p. 186; Risse 2012, p. 394, fn.16).

³ See Matthews (2015), Neumayer (2000).

HED can be more precisely characterised as follows⁴: (1) historical emission debts are incurred by *historical use* of climate sink capacity in violation of a principle of fair shares (I explain what I mean by ‘historical use’ below); (2) the debtors are individuals or collectives that either (a) historically used more than a fair share themselves (historical polluters), or (b) are related to historical polluters in an appropriate way; and (3) the creditors are individuals or collectives on whom the impacts of climate change impose costs (either adaptation costs, or costs associated with loss and damage).⁵ I leave the question of what is owed by the debtors to the creditors open, but note that part of the appeal of HED appears to be that historical emissions can be relatively easily quantified and then converted into financial obligations.⁶

By *historical use* of climate sink capacity I mean something quite specific. In particular, I single out use by those who satisfy two criteria: firstly, they are no longer alive; and secondly, they could not have been expected to know that they were contributing to climate change. This restriction is designed to simplify the discussion that follows by ruling out certain other—very important—grounds on which responsibility for bearing the costs of climate change might be allocated. It is plausible that many currently existing people possess certain such responsibilities as a result of their past emissions of GHGs, regardless of whether they knew that they were contributing to climate change at the time. And I think—though I will not defend this position here—that individuals, collectives and corporations that have avoidably (in some sense to be specified) continued to exploit fossil fuels and emit GHGs when they knew, or should (in some sense to be specified) have known, that they were contributing to climate change are both morally culpable and significantly accountable for dealing with the problem. The same holds for those who have sought to prevent restrictions being placed on GHG emissions by undermining political negotiations and environmental policymaking, and spreading misinformation about climate change. My focus in this piece, however, is purely on the question of whether accountability can also accrue on other grounds than this: and in particular, as a result of what I have termed historical use of climate sink capacity.

Before I continue, it is important to note that those who defend accounts of historical accountability for climate change along these lines do not always talk in terms of debt. Theorists advocating what is known as the ‘beneficiary pays principle’ (BPP) also commonly assign climate costs to individuals and collectives that are appropriately related to historical polluters (again understood as those who historically used more than a ‘fair share’ of the Earth’s assimilative capacity for

⁴ Though Neumayer also uses the term ‘Historical Emission Debt’ (Neumayer 2000, p. 186), we define this concept in different ways.

⁵ Accounts of emission debt may also—or instead—take the creditors to be individuals or collectives who cannot consume a fair share of the climate sink themselves due to the excessive use of historical polluters. Although I do not discuss this view in what follows, the problem that I raise for HED—namely, the difficulty in identifying a fair shares principle for historical consumption of the climate sink—also presents a challenge for this alternative construal of climate creditors.

⁶ As Matthews puts it, ‘Fossil fuel carbon debts are easy to calculate... and could also potentially be monetized using estimates of the economic cost of climate damages from CO₂ emissions’ (Matthews 2015, p. 4).

GHGs); where the relevant relation is taken to be the receipt of benefits derived from those excess emissions (Bell 2010, pp. 437–438; Page 2011, pp. 421–422). I will present some challenges for HED—and, therefore, the related formulation of the BPP—before offering an alternative account of the injustice that characterised historical use of the climate sink.

Challenging HED (I): Fair Shares and the Climate Sink

Part of the appeal of backward-looking theories of accountability for climate change resides in their ability to make sense of a ‘common normative belief... that bearing an appropriate share of the global climate response burden is a matter of rectificatory justice, of ‘making amends’, rather than behaving beneficently to disadvantaged states or seeking to realize a preferred global pattern of resource distribution’ (Page 2012, p. 307). Historical accountability can be difficult to motivate, however, because it seems that duties to bear the costs of climate change can only be given a rectificatory rationale when they are ‘based on the wrongfulness of what was done’ (Meyer 2013, pp. 609–610)⁷; and it is hard to identify any *general* element of wrongdoing in historical emissions. The problem here, as David Miller says, is that climate change does not appear to be like normal instances of historical injustice—slavery, for example—‘where there was a clear historic wrong that required, and may still require, redress’ (Miller 2008, p. 136). The very thing that makes climate sink capacity so prone to overuse—namely, the difficulty of preventing anybody, anywhere from accessing it—has also meant that many of the injustices plaguing natural resource use are yet to be observed in its case. Nobody has fought wars over climate sink capacity, drawn borders around it to unjustly exclude others, or forcibly stolen from it.

The elusive *wrongful factor*⁸ in historical use of climate sink capacity cannot generally be located in the intentions of historical emitters since (as many have pointed out and as I have stipulated in the case at hand) they were excusably ignorant that their actions were contributing to climate change (see, for example, Bell 2010, pp. 437–438; Caney 2005, p. 761). One might instead seek to pinpoint the wrong in the harm done to the victims of climate impacts,⁹ but this is unlikely to be an easy connection to make either. Historical emissions would not have subjected anybody to harmful climate impacts *at all* had climate change been averted; so the link between historical emitters and climate harms only exists due to numerous intervening factors that took place *after* their actions. If a switch to sustainable technology had happened in time, or emissions had stayed at a sufficiently low level, or international mitigation of climate change had succeeded—historical emitters

⁷ Or, as Zellentin puts it, ‘rectificatory justice requires both responsibility for causing the problem at hand in a morally significant way *and wrongdoing*’ (Zellentin 2015, p. 269; emphasis added).

⁸ Page uses this terminology in his discussion of a closely related BPP (Page 2012, p. 311).

⁹ See Zellentin (2015).

could have used the same amount of climate sink capacity, but there would have been no victims of climate impacts for them to have harmed.¹⁰

The promise of HED is that it appears to offer a way around this problem. Here—to borrow an analogy from Axel Gosseries—we can view the Earth’s assimilative capacity for GHGs as a bin into which our emissions are dumped (Gosseries 2005, p. 282). Until we reach the top of the bin, no dangerous interference occurs with the climate system and there are no victims of anthropogenic climate change. Once this capacity is breached, however, harmful climate impacts result—and then we are faced with the question of who is responsible for this wrong, and how the costs of dealing with it should be allocated.¹¹

HED makes the seemingly plausible suggestion that we should figure out what a fair distribution of emissions within the *safe* amount would have been and then count emissions in excess of this as wrongful emissions, which incur a debt to those impacted by climate change. When historical accountability is construed this way, the ignorance of historical polluters is supposed to become irrelevant because we can say that they committed a wrong unknowingly and thus should be held (at least partly) *liable* for the resulting costs of their excess emissions, even if they cannot be morally blamed for them.¹² This account is incomplete, however, without stating what a fair share of climate sink capacity would have been, and here we come across the most fundamental challenge for HED: that of defending a principle of justice that can be applied retroactively to identify fair shares.

Some such principle is essential in order to identify the acts of overuse through which historical emission debts are originally incurred. Here, many theorists seem to agree that ‘the principles of historical responsibility and equal entitlements come together naturally in calculations of ‘natural debt’ (Grubb et al. 1992, p. 313); claiming such debts to accrue to those who have appropriated more than an equal per capita share of climate sink capacity.¹³ However, as I have argued elsewhere, an equal per capita emissions allocation appears very difficult to defend given the nature of the climate sink (Blomfield 2013, §5). As Fabian Schuppert also points out (this volume), a significant portion of this natural resource is constituted by forests. Forests, however, are unevenly distributed across the Earth’s surface and thus likely to be subject to unequal legitimate claims.¹⁴ The defender of the equal per capita view must explain why it is that shares of climate sink capacity should be equal in a world where some have contributed far more than others to sink preservation (or

¹⁰ See also Miller (2008, pp. 131–133), Page (2012, p. 312).

¹¹ This is an oversimplified model in two respects. Firstly, as Gosseries says, it implies the existence of a ‘clear threshold’ beyond which harmful impacts occur—something that may be lacking in reality (Gosseries 2005, p. 282). Furthermore, the capacity of the Earth’s climate sink is not fixed in this way; it can be reduced by deforestation, for example, and increased by enhanced atmospheric concentration of GHGs (IPCC 2013, pp. 484, 502).

¹² See Bell (2011, pp. 401–403), Neumayer (2000, p. 188), Shue (1994, p. 363).

¹³ See Athanasiou and Baer (2002, pp. 82–83), Baer (2002, p. 402), Kartha (2011, pp. 508–509), Martinez-Alier and Naron (2004, p. 18), Matthews (2015), Neumayer (2000, p. 185), and Sinden (2010, p. 297).

¹⁴ See Mancilla (this volume) for similar worries about whether it is appropriate to distribute rights to natural resources across the globe when the resources in question have a limited range.

depletion); where access to natural resources that can be used in carbon neutral energy production is similarly uneven (with some having fewer renewable energy options *because* they live on land which is forested and thus ill-equipped for biofuel or solar production); and where the benefits of *other* terrestrial resources (e.g. income derived from the sale of precious metals and fossil fuels) have been allowed to accrue to different groups and individuals in an extremely unequal pattern that would only be preserved by distributing this particular resource on an equal per capita basis.

In the face of these challenges, the HED theorist could abandon the equal per capita principle and suggest an alternative account of what fair shares of climate sink capacity would have been historically.¹⁵ However, my claim that the question how to share the climate sink calls for broader consideration of differential interaction with, access to, and use of natural resources points to a deeper problem that threatens HED more generally; one discussed by Simon Caney. Caney argues that the equal per capita emissions view faces ‘a general challenge’ that if, as is generally taken to be the case, ‘distributive justice is concerned with the fair share of a “total package” of goods, then we have *no* reason to endorse a principle that applies solely to one particular item, such as greenhouse gas emissions’ (or, equivalently, the assimilative capacity of the climate sink that those emissions use up). Unless we are provided with sufficient reason to focus on the allocation of this particular resource in isolation, not only is the equal per capita principle threatened, but also the very idea that there is any such thing as ‘*the* fair distribution’ of climate sink capacity (Caney 2012, p. 271).

This general challenge, which Caney defends from a number of anticipated counter-objections (Caney 2012, §V–VI), poses a significant problem for HED; one that is exacerbated by the particular features of the resource with which they are concerned. Significantly, use-rights to the assimilative capacity of the climate sink are not valuable in themselves, but only instrumentally: climate sink capacity is an important means in the production of goods, such as energy and food, which can themselves be used to promote human wellbeing. These use-rights are also a *strongly substitutable* means, however, in the sense that the specific goods that they are employed to produce can be provided in other ways (Caney 2012, §VII). How much climate sink capacity must be used in the production of any given good is heavily dependent on the agricultural or energy producing technology employed; the carbon intensity of any fossil fuels being used; and the availability of natural resources that can be used for alternative, renewable energy production (e.g. hydropower, geothermal energy or wind power). It thus becomes even harder for proponents of HED to justify their focus on the distribution of this particular natural resource in isolation.

The essential problem, then, is that it does not appear to make sense to talk of *the* fair distribution of climate sink capacity.¹⁶ One might find this a troubling idea in

¹⁵ This is a move made by Dues-Otterström (2014, p. 457) and Bell (2010, p. 429). Neither is very specific about what fair shares would amount to if not equal shares (in Bell’s case, this is because he doubts that we need to have a particularly detailed account in order to identify historical polluters).

¹⁶ There is simply ‘no such thing as a fair distribution of greenhouse gas emissions per se’ (Caney 2009, p. 137).

our current circumstances, where any remaining climate sink capacity must be allocated somehow among the parties that wish to claim it; and ideally in a way that promotes global justice. However, as a forward-looking distribution problem there are ways to address this challenge: namely, by designing a fair political process ‘in which the relevant parties decide what particular combination of natural resources will be employed in order to realize people’s entitlements’ (Caney 2012, p. 298), taking broader concerns of global justice into account. But the problem remains that with no such process having taken place in the past, the question what a fair share of climate sink capacity *would* have been seems to have no determinate answer.

Challenging HED (II): Fair Shares of the Benefits

Without a principle specifying just limits on past use of climate sink capacity there are resulting difficulties in determining who—currently—should be held accountable for historical use of this natural resource. It is sometimes claimed that current members of developed states inherit the historical emission debts of their predecessors because they are in receipt of benefits derived from these past, excess emissions (see Duus-Otterström 2014, pp. 458–461; Neumayer 2000, pp. 186, 189). As Hayward argues in his account of ecological debt, it seems reasonable that when one inherits an asset one must also assume any liabilities that are attached to it, because otherwise the legitimate interests of creditors would be harmed (Hayward 2008, p. 15). The challenge just identified obviously create difficulties for this view, however; because if one cannot show that unfair shares of climate sink capacity were used in the creation of any particular benefits deriving from historical emissions, then it is unclear why we should think that there are debts attached to these assets—or that such debts are inherited along with them.

By shifting our focus to the *benefits* of historical emissions we may, however, find another means by which to formulate HED. In the absence of a principle identifying fair shares of climate sink capacity itself, that is, we might instead consider what would constitute a fair distribution of the *benefits and burdens* created by historical use of climate sink capacity. One might then argue that those who have benefitted from such use owe a debt to those who are now burdened by the climate change to which it has causally contributed.

One must also be careful here, however, because it does not appear that those in receipt of benefits derived from historical use of climate sinks should necessarily be held accountable for climate change. Presumably the enjoyment of some of these benefits is justified—benefits necessary to the satisfaction of basic needs, for example. This beneficiary pays approach also appears to have some troubling implications. Imagine two societies, one of which (*G*) developed through the use of geothermal energy, whilst the other (*F*) only had access to carbon-based energy sources. Furthermore, imagine that although *F*’s wealth places it safely over any sufficiency threshold identified by one’s preferred theory of global justice—and that it could contribute to the costs of climate impacts without being pushed under this threshold—it is significantly poorer than *G*. Perhaps *G* grew rich through its abundant access to geothermal energy and other valuable natural resources (perhaps,

even, fossil fuels that it sold for profit because it did not have much need for them itself); whilst F only possessed very inefficient technology that created high emissions in the production of its lesser benefits.

It is not clear how it can be fair to insist that the current members of F owe a greater debt to those burdened by climate change—particularly if we assume that their benefits were, otherwise, innocently acquired. To say as much appears to impose greater burdens on current members of F purely due to the bad luck of being descended from a previous generation which only had access to a form of energy production that, unbeknownst to them, contributed to a problem that all countries are now exposed to—but which G is much better placed to deal with than F (due to its higher income and superior access to renewable energy sources).

Note that this worry is somewhat different to one raised by Caney, who points out that the closely related polluter pays principle (PPP)—according to which those who emit more than a fair share of GHG emissions should be held accountable for the costs of climate change—may impose burdens on the impoverished. As Caney points out, this worry could be obviated by combining the PPP with a rule that the poor should not have to pay (Caney 2005, p. 763). But in my imagined case, the worry is not that F is impoverished—I have stipulated that it is not. The concern is rather that present members of F have already inherited fewer economic benefits from historical use of the Earth's natural resources; that they are merely unlucky that the natural resources their predecessors *could* use in order to create those benefits turn out to have contributed causally to negative climate impacts; and that F 's receipt of these benefits therefore does not appear to be the right kind of feature on which to base special rectificatory duties.

The idea behind the beneficiary pays approach would appear to be that the benefits and burdens of historical climate sink use should be distributed in a compensatory manner purely because they 'share common origins' (Page 2012, p. 313); but this proposal instantiates an strangely *resource-specific* breed of egalitarianism.¹⁷ There is no obvious reason to think that benefits and burdens derived from the climate sink *in particular* should be distributed in a specific way, independently of the global distribution of other goods. As outlined above, many of the benefits that can be derived from the use of climate sink capacity (agricultural products and energy) can be provided by other means, using alternative natural resources and technologies, and less or no GHG assimilative capacity. It thus appears particularly strange to bracket off the benefits of climate sink use and place them in a different sphere of distribution to equivalent benefits that have simply been produced in other ways.

¹⁷ This terminology is adapted from Gosseries who, in his own discussion of historical emissions, describes 'an *action-specific* redistributive approach' as one having a logic 'akin to the rejection of arbitrariness present in egalitarian theories', but with its scope restricted to deal only 'with benefits and harms that are causally related' (Gosseries 2004, p. 50). Bell argues that this approach should be rejected because 'we should not focus on the distribution of the benefits and burdens resulting from particular actions (or sets of actions)', but should instead 'focus on the overall distribution of benefits and burdens' (Bell 2010, p. 437). I claim that we should reject the resource-specific beneficiary pays interpretation of HED for the same reason—because we should focus on the overall distribution of the benefits and burdens derived from use of the Earth's resources.

Even those who hold that the totality of natural resources should be distributed in an egalitarian manner will think it justifiable for some individuals and collectives to be in receipt of a greater share of the benefits of historical use of climate sinks if they possess fewer benefits from other natural resources (see Blomfield 2013, p. 299). Similarly, those burdened by climate impacts could be compensated with benefits derived from natural resources other than the climate sink (for example, they could be compensated using income drawn from the sale of fossil fuels or precious minerals). Problematically for HED, then, we still seem to lack sufficient justification for adopting a fair shares principle applied to historical use of climate sink capacity, or the benefits derived from such use, considered in isolation.¹⁸

In order to engage in a normative assessment of historical use of climate sink capacity, it thus appears that we must refer to a broader theory of global justice. In light of this conclusion, the following section will discuss how we might draw on some such theory to explain what exactly was unjust about historical use of the climate sink.

Injustice and Historical Use of the Climate Sink

As Thomas Nagel famously says, that ‘we do not live in a just world... may be the least controversial claim one could make in political theory’ (Nagel 2005, p. 113). Though it is much disputed what exactly the demands of justice are at the global level—with theorists debating, for example, whether they are egalitarian or sufficientarian in nature—it is clear that these demands are a long way from being met. I do not want to defend (or assume) a particular understanding of what global justice requires in what follows, so will instead aim to appeal to acts and states of affairs the injustice of which is relatively uncontroversial (in that they could be deemed unjust on the basis of a number of theories of global justice). It is hard, for example, to see what could justify the severity of the relative disadvantage to which many individuals worldwide are subjected by global inequalities of wealth and power. It is even more difficult to imagine a justification for the fact that in our current global circumstances, many individuals worldwide are unable to satisfy their most basic needs for adequate food and water, shelter, a safe environment, basic healthcare or access to education.

Against this background, it is possible to see much historical use of the climate sink as either deriving from or contributing to global injustice. For example, though nobody has been physically prevented from accessing climate sink capacity itself, its unequal consumption is to a significant extent a result of injustice concerning other natural resources: namely, fossil fuels. Access to these latter resources, which are the major instruments via which appropriation of climate sink capacity takes place, has been determined by luck at best (and thus may be deemed unjust by certain global egalitarians). At worst, it has been established by war and oppression,

¹⁸ Schuppert (this volume) mounts a similar objection to views that take an excessively narrow focus when addressing the ethics of climate sink *conservation*, arguing that such questions must be situated within a wider analysis of the requirements of climate justice.

and should therefore be deemed unjust even by those who advocate national ownership of natural resources.

A number of contributors to this volume note the importance of powers of collective self-determination and their link to natural resource rights (see Banai, Schuppert). Legitimate claims to self-determination appear to be one of the major justifications for assigning natural resource rights in any given way; whether to collectives with a claim to exercise self-determination on the territory containing the natural resources in question, or to those outside the territory who require some access to those resources in order to exercise their own self-determination. If this is the case, then entitlements to natural resources should be allocated in a way that supports legitimate powers of self-determination; a principle clearly violated by repeated ‘might makes right’ acquisitions of and appropriations from fossil fuel reserves. Control over oil, for example, has often fallen to colonial authorities, victors in unjust war, or authoritarian regimes propped up by the international resource privilege¹⁹; who violently compromise or devastate the self-determination of local peoples and ignore the legitimate claims of resource-poor outsiders. A significantly unjust allocation of fossil fuels and their benefits therefore underlies historical use of climate sink capacity.

There may, in addition, be reason to believe that the uneven uptake of industrialisation that made the GHG emissions of different countries so disparate resulted from historical injustice. Daron Acemoglu, Simon Johnson and James Robinson argue that the failure of many countries to take advantage of the industrial revolution was the result of colonial legacies of injustice: in particular, the persistence of state institutions controlled by autocratic elites, who had reason to fear that industrialisation could undermine their position of power (Acemoglu et al. 2002, p. 1273; Acemoglu and Robinson 2012, pp. 250–273). Whether or not unequal historical consumption of climate sink capacity is unjust *in itself*, then: this inequality appears to have been borne of injustice.

As far as the contribution that historical emissions have made to global injustice is concerned: according to a 2005 report by the World Resources Institute, the US and the group of 25 countries that then composed the EU were responsible for an estimated 55.8 % of cumulative CO₂ emissions from fossil fuels and cement manufacture between 1850 and 2002; by which point they together possessed 43.5 % of world GDP, despite accounting for only 12 % of the world population (Baumert et al. 2005, pp. 110, 113). We do not need to invoke any fair shares principle for climate sink capacity (or the benefits of its use) in particular in order to state that the economic wealth of these industrialised nations—wealth that is ‘inextricably tied’ to the historical use of climate sinks (Singer 2010, p. 189)—could have been (and should be) shared more widely. Such redistribution could have significantly reduced the number of individuals worldwide that are unable to satisfy their basic needs. It would also have mitigated the severe global inequality that use of the climate sink instead appears to have enhanced. In our current situation, many countries with relatively high historical emissions also possess significant

¹⁹ This privilege has received a fair amount of attention in the philosophical literature. See Pogge (2002, 112–114, 162–166), Wenar (2008).

advantages of economic wealth, military might, and political influence. By increasing the income and furthering the development of these states (thereby enhancing global inequalities of power) historical use of the climate sink appears to have contributed to the creation of the particular unjust circumstances in which we now find ourselves; circumstances in which many collectives and their members are subject to domination by powerful external agents.²⁰

It is important to note that these worries about past use of the climate sink cannot be defused by arguing that historical emissions have, in some sense, made *everybody* better off. Some argue that claims of historical accountability for climate change are undermined insofar as there is reason to think that the industrial revolution also benefitted countries that did not industrialise, or that industrialised later.²¹ Mathias Risse, for example, argues that ‘the benefits of industrialization spread across the world’ in the form of trade, inventions, and scientific understanding; the development of which ‘was possible only in industrialized societies’. Other benefits of ‘global reach’ that Risse claims cannot be ‘detached from industrialization’ include improvements to ‘longevity, child mortality, and literacy’.²² Furthermore, one might point out, countries that are currently developing have access to superior energy producing technology, invented in earlier periods of industrialisation (Risse 2012, pp. 198–199); technology that should allow ‘more value to be extracted from a given level of emissions’ (Grubb 1995, p. 486, fn.46).²³

However, *even if* the benefits of the industrial revolution have been globally dispersed in this way, historical use of the climate sink still appears to have failed to live up to some minimal demands of justice. Firstly, it has not benefitted some individuals *enough*; given that the income extracted from this global resource could undoubtedly have been (and still could be) used to better promote the universal satisfaction of basic needs. Secondly—and admittedly more controversially—it appears to have benefitted some individuals, corporations and collectives *too much*; by enhancing global socioeconomic inequalities that engender problematic power relations at the global level.²⁴

Thus, even if improvements brought about since the industrial revolution—in technology, food production, medicine and communication—‘have originated mostly in those countries that have imposed the global order’ (Risse 2005b, p. 370);

²⁰ Though I have focused on states, the wealth and influence of fossil fuel corporations is similarly an important concern.

²¹ See the argument to this effect in Grubb et al. (1992, pp. 316–317); and the discussion in Shue (1999, pp. 534–535).

²² Bovens (2011, pp. 132–133) also suggests that the industrial revolution initially appeared to result in ‘a sharp drop in poverty indicators’ in Africa and Asia as well as the West.

²³ As Grubb (1995, p. 486, fn.46; emphasis added) points out, this means that equal per capita emission rights will not amount to ‘equal *benefits* over time’.

²⁴ By locating a problem with historical use of climate sink capacity in its *contribution* to global inequalities—rather than the fact that some but not others are benefitting from historical GHG emissions—we also avoid a problem faced by the BPP; namely, how to assign historical accountability if it turns out that *nobody* has benefitted from historical emissions overall, as a consequence of the resulting of climate impacts (see Caney 2006, p. 476; Page 2008, p. 563).

the fact that this global order was *imposed* by those at the top end of global inequalities of power and wealth remains troubling. As Risse says, ‘developed countries *became rich* because they industrialized’ (Risse 2005a, p. 14; emphasis added). Insofar as historical use of the climate sink has helped industrialised countries obtain a problematic position of dominance at the global level, such use may be considered to have contributed to injustice.²⁵

As a global environmental resource of significant value to all human beings, one might think that the climate sink should ideally have been placed under some form of global jurisdiction as soon as its capacity became subject to significant use—jurisdiction that could have determined, via a fair political process, how this resource would be used and shared. Throughout most of history, of course, climate sink capacity was not recognised as an exhaustible natural resource on which all human beings depend, and the global institutions necessary to govern it collectively were not available. But though this presents a significant challenge for those who wish to assign debts to currently advantaged beneficiaries of historical emissions that exceeded some ‘fair share’ of climate sink capacity; this does not prevent us from objecting to the fact that some parties are presently benefitting from a position of unjust advantage in an unfair global distribution of wealth and power, to which use of the climate sink has contributed.

Conclusion

In this paper I have presented a significant challenge for the historical emission debt view; namely, that of formulating and justifying the adoption of a fair shares principle applied to historical use of climate sink capacity, or the benefits derived from such use, considered in isolation. One might worry that my argument undermines our ability to make sense of, and justify, the common intuition that many present day duties to bear the costs of climate change (in particular, those of the advantaged) are rectificatory in nature. However, I have also gestured in the direction of an alternative explanation of this intuition by suggesting that historical use of climate sink capacity can instead be deemed problematic in the sense that it is the result of, and a significant contributor to the perpetuation of, a global order characterised by severe injustice.²⁶ Thus, whether or not historical consumption of climate sink capacity can be deemed wrongfully *excessive* and thus in need of rectification; there are many other injustices surrounding the use of this resource that plausibly *do* call for rectification in the present.

Climate change would be a very different problem in a world less afflicted by historical, enduring and contemporary injustice. Many of these injustices are more

²⁵ One might claim that current global economic inequalities have been enhanced not only by past use of the climate sink in the form of GHG emissions, but also in the form of deforestation. As Narain argues, ‘conventionally, the only way regions can develop is by cutting forests and building all that is known as infrastructure and signifies economic growth. This is what all of us living in non-forested zones have done. We have cut forests, then cultivated land and built factories and cities. *We are rich because we have cleared the forests*’ (Narain 2011; emphasis added).

²⁶ For some further efforts in this direction, see Blomfield (2015).

difficult to quantify and monetize than those which the historical emission debt view purports to identify, but this in no way undermines the importance of attempting to understand and rectify such wrongs. Providing climate assistance to those who have been disadvantaged by historical injustice (and rendered more vulnerable to climate change as a result) would be one way in which the perpetrators and beneficiaries of such injustices could try to start making amends.

Acknowledgments Early versions of this argument were presented at the ECPR Joint Sessions of Workshops 2014 and the ALSP Annual Conference 2014, and I am grateful to the organisers and attendees of those events for their helpful feedback. Thanks are also due to Chris Bertram, Joanna Burch-Brown, Simon Caney, Stephen Gardiner, Fabian Schuppert and participants of the Stanford postdoc seminar for their comments on previous written versions; and an anonymous reviewer from *Res Publica* for suggesting a number of important improvements to the penultimate piece.

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References

- Acemoglu, Daron, and James A. Robinson. 2012. *Why nations fail*. New York: Crown Publishers.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2002. Reversal of fortune: Geography and institutions in the making of the modern world income distribution. *The Quarterly Journal of Economics* 117: 1231–1294.
- Agarwal, Anil. 2002. A southern perspective on curbing global climate change. In *Climate change policy: A survey*, ed. Stephen H. Schneider, Armin Rosencranz, and John O. Niles, 375–391. Washington, DC: Island Press.
- Anchorage Declaration. 2009. Indigenous Peoples' Global Summit on Climate Change, April 24. <http://unfccc.int/resource/docs/2009/smsn/ngo/168.pdf>. Accessed 2 November 2015.
- Athanasiou, Tom, and Paul Baer. 2002. *Dead heat: Global justice and global warming*. New York: Seven Stories Press.
- Baer, Paul. 2002. Equity, greenhouse gas emissions, and global common resources. In *Climate change policy: A survey*, ed. Stephen H. Schneider, Armin Rosencranz, and John O. Niles, 393–408. Washington, DC: Island Press.
- Baumert, Kevin A., Timothy Herzog, and Jonathan Pershing. 2005. *Navigating the numbers: Greenhouse gas data and international climate policy*. Washington, DC: World Resources Institute. http://pdf.wri.org/navigating_numbers.pdf. Accessed 30 March 2014.
- Beckerman, Wilfred, and Joanna Pasek. 1995. The equitable international allocation of tradable carbon emission permits. *Global Environmental Change* 5: 405–413.
- Bell, Derek. 2010. Justice and the politics of climate change. In *Routledge handbook of climate change and society*, ed. Constance Lever-Tracy, 423–441. London: Routledge.
- Bell, Derek. 2011. Global climate justice, historic emissions, and excusable ignorance. *The Monist* 94(3): 391–411.
- Blomfield, Megan. 2013. Global common resources and the just distribution of emission shares. *Journal of Political Philosophy* 21: 283–304.
- Blomfield, Megan. 2015. Climate change and the moral significance of historical injustice in natural resource governance. In *The ethics of climate governance*, ed. Aaron Maltais, and Catriona McKinnon, 3–22. London: Rowman & Littlefield International.
- Bovens, Luc. 2011. A Lockean defence of grandfathering emission rights. In *The ethics of global climate change*, ed. Denis G. Arnold, 124–144. Cambridge: Cambridge University Press.

- Caney, Simon. 2005. Cosmopolitan justice, responsibility, and global climate change. *Leiden Journal of International Law* 18: 747–775.
- Caney, Simon. 2006. Environmental degradation, reparations, and the moral significance of history. *Journal of Social Philosophy* 37: 464–482.
- Caney, Simon. 2009. Justice and the distribution of greenhouse gas emissions. *Journal of Global Ethics* 5: 125–146.
- Caney, Simon. 2012. Just emissions. *Philosophy & Public Affairs* 40: 255–300.
- Cripps, Elizabeth. 2011. Where we are now: Climate ethics and future challenges. *Climate Law* 2: 117–133.
- Duus-Otterström, Göran. 2014. The problem of past emissions and intergenerational debts. *Critical Review of International Social & Political Philosophy* 17: 448–469.
- Eckersley, Robyn. 2015. The common but differentiated responsibilities of states to assist and receive ‘climate refugees’. *European Journal of Political Theory* 14: 481–500.
- G77. 2000. Declaration of the South Summit. Group of 77 South Summit, Havana, Cuba, April 10–14. http://www.g77.org/summit/Declaration_G77Summit.htm. Accessed 2 November 2015.
- Goeminne, Gert, and Erik Paredis. 2010. The concept of ecological debt: Some steps towards an enriched sustainability paradigm. *Environment, Development and Sustainability* 12: 691–712.
- Gosseries, Axel. 2004. Historical emissions and free-riding. *Ethical Perspectives* 11: 36–60.
- Gosseries, Axel. 2005. Cosmopolitan luck egalitarianism and the greenhouse effect. *Canadian Journal of Philosophy* 35: 279–309. (**Supplementary Volume 31**).
- Grubb, Michael. 1995. Seeking fair weather: Ethics and the international debate on climate change. *International Affairs* 71: 463–496.
- Grubb, Michael, James Sebenius, Antonio Magalhaes, and Susan Subak. 1992. Sharing the burden. In *Confronting climate change: Risks, implications and responses*, ed. Irving M. Mintzer, 305–322. Cambridge: Cambridge University Press.
- Halme, Pia. 2007. Carbon debt and the (in)significance of history. *Trames* 4: 346–365.
- Hayward, Tim. 2007. Human rights versus emissions rights: Climate justice and the equitable distribution of ecological space. *Ethics & International Affairs* 21(4): 431–450.
- Hayward, Tim. 2008. On the nature of our debt to the global poor. *Journal of Social Philosophy* 39(1): 1–19.
- IPCC. 2013. *Climate change 2013: The physical science basis. Contribution of working group I to the fifth assessment report of the intergovernmental panel on climate change*. Ed. T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley. Cambridge: Cambridge University Press.
- Jones, Tim, and Sarah Edwards. 2009. The Climate Debt Crisis. http://climate-debt.org/wp-content/uploads/2009/11/climatedebtcrisis06112009_01.pdf. Accessed 2 November 2015.
- Kartha, Sivan. 2011. Discourses of the Global South. In *The Oxford handbook of climate change and society*, ed. John S. Dryzek, Richard B. Norgaard, and David Schlosberg, 504–518. Oxford: Oxford University Press.
- Klein, Naomi. 2009. Climate rage. *Rolling Stone*, 12 November. <http://www.rollingstone.com/politics/news/climate-rage-20091112>. Accessed 2 November 2015.
- Knight, Carl. 2011. Climate change and the duties of the disadvantaged: Reply to Caney. *Critical Review of International Social & Political Philosophy* 14: 531–542.
- Martinez-Alier, Joan, and Stephen Naron. 2004. Ecological distribution conflicts and indicators of sustainability. *International Journal of Political Economy* 34: 13–30.
- Matthews, H. Damon. 2015. Quantifying historical carbon and climate debts among nations. *Nature Climate Change*. doi:10.1038/nclimate2774.
- Meyer, Lukas H. 2013. Why historical emissions should count. *Chicago Journal of International Law* 13: 597–614.
- Miller, David. 2008. Global justice and climate change: How should responsibilities be distributed? *The Tanner Lectures on Human Values*. http://www.tannerlectures.utah.edu/lectures/documents/Miller_08.pdf.
- Nagel, Thomas. 2005. The problem of global justice. *Philosophy & Public Affairs* 33: 113–147.
- Narain, Sunita. 2011. Rethink growth with forest capital. Centre for Science and Environment blog, May 16. <http://www.cseindia.org/content/rethink-growth-withforest-capital>. Accessed 29 March 2014.
- Navarro, Angelica. 2009. ‘Climate Debt: The Basis of a Fair and Effective Solution for Climate Change’. Presentation for the AWG-LCA Technical Briefing on Historical Responsibility as a Guide to Future

- Action to Address Climate Change, June 4. <http://unfccc.int/bodies/awg-lca/items/4891.php>. Accessed 2nd November 2015.
- Neumayer, Eric. 2000. In defence of historical accountability for greenhouse gas emissions. *Ecological Economics* 33: 185–192.
- Page, Edward. 2008. Distributing the burdens of climate change. *Environmental Politics* 17: 556–575.
- Page, Edward. 2011. Climate justice and the fair distribution of atmospheric burdens: A conjunctive account. *The Monist* 94: 412–432.
- Page, Edward. 2012. Give it up for climate change: A defence of the beneficiary pays principle. *International Theory* 4: 300–330.
- People's Agreement of Cochabamba. 2010. <http://pwccc.wordpress.com/2010/04/24/peoples-agreement/>. Accessed 2 November 2015.
- Pickering, Jonathan, and Christian Barry. 2012. On the concept of climate debt: Its moral and political value. *Critical Review of International Social & Political Philosophy* 15: 667–685.
- Pogge, Thomas W. 2002. *World poverty and human rights*. Cambridge: Polity Press.
- Risse, Mathias. 2005a. Do we owe the global poor assistance or rectification? *Ethics & International Affairs* 19: 9–18.
- Risse, Mathias. 2005b. How does the global order harm the poor? *Philosophy & Public Affairs* 33: 349–376.
- Risse, Mathias. 2012. *On global justice*. Princeton: Princeton University Press.
- Shue, Henry. 1994. After you: May action by the rich be contingent upon action by the poor? *Indiana Journal of Global Legal Studies* 1: 343–366.
- Shue, Henry. 1999. Global environment and international inequality. *International Affairs* 75: 531–545.
- Sinden, Amy. 2010. Allocating the costs of the climate crisis: Efficiency versus justice. *Washington Law Review* 85: 293–353.
- Singer, Peter. 2010. One atmosphere. In *Climate ethics: Essential readings*, ed. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue, 181–199. New York: Oxford University Press.
- Smith, Kirk R. 1991. Allocating responsibility for global warming: The natural debt index. *Ambio* 20: 95–96.
- Wenar, Leif. 2008. Property rights and the resource curse. *Philosophy & Public Affairs* 36: 2–32.
- Zellentin, Alexa. 2015. Compensation for historical emissions and excusable ignorance. *Journal of Applied Philosophy* 32: 258–274.