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Distributive Justice and Climate Change. The Allocation of Emission Rights

Abstract: The emission of greenhouse gases causes climate change. Therefore, many support a global cap on emissions. How then should the emissions allowed under this cap be distributed? We first show that above average past emissions cannot be used to justify a right to above average current emissions. We then sketch three basic principles of distributive justice (egalitarianism, prioritarianism, and sufficientarianism) and argue, first, that prioritarian standards are the most plausible and, second, that they speak in favour of giving people of developing countries higher emission rights than people of industrialised countries. In order to support this point it has to be shown, inter alia, in what ways the higher past emissions of industrialised countries are relevant for today's distribution of emission rights.

0. Introduction

Climate change policy constitutes the largest (re)distributive policy of human history. It affects on a large scale who will be harmed how much by climate change and who has to carry how many costs in order to limit this change.

The basic facts about climate change are the following. So-called greenhouse gases in the atmosphere affect the climate on planet earth. Since industrialisation, humankind has added to their concentration significantly, in particular through carbon dioxide emissions. Even though the science is riddled by large uncertainties in *some* respects, it is very probable that the effects will overall be harmful rather than beneficial. Those effects include for example an increase in temperature, rising sea-level, an increase of extreme events, droughts and floods (IPCC 2001). There are two key-features about emissions, a spatial and a temporal one. The spatial one is that as far as the harmful effect is concerned it does not matter where on the globe the emissions which cause it occurs. The temporal one is that emissions occurring today have long-term effects of up to several hundred years. As far as distributional implications are concerned, the most important fact is that even though industrialisation in the developed countries is responsible for a large part of the build-up in greenhouse gases, people of the developing countries—in particular those living in the future—will suffer disproportionately more from climate change.¹

¹ In this article we rely on a simple distinction between so-called developed (industrialised) and developing countries. We fully acknowledge that the picture would get more complex if one took into account that the correlation between being a developed country and (i) having emitted a lot in the past, (ii) profiting a lot from past emissions and (iii) being less vulnerable

In this paper we will look at the question of a just allocation of emission rights among the present generation. This is just one of the questions of justice in climate change.² To locate our question within the more general set of interacting questions of justice associated with climate change, consider the following diagram.

	Past Generations	Present Generations	Future Generations
Developing Countries	Benefit from emission gener- ating activities which cause cli- mate change (on a <i>low</i> level)	Benefit from emission gener- ating activities which cause climate change	Suffer from cli- mate change (on a <i>high</i> level)
Industrialised Countries	Benefit from emission gener- ating activities which cause cli- mate change (on a <i>high</i> level)	Benefit from emission gener- ating activities which cause climate change	Suffer from climate change (on a <i>low</i> level)

It is tremendously simplified. In particular, it suggests that the present generations are not vulnerable to climate change and that future generations will have stopped emitting greenhouse gases. But this simplification only serves to distinguish three basic questions:

The first question of justice is concerned with the duties of present generations (of both developing and industrialised countries) towards future generations in view of the fact that the present emissions affect the environmental conditions of the future. This is a question of intergenerational justice.

The second question of justice concerns the division of emission rights (given that they are to be limited as indicated by the first question) and other burdens and benefits among the present generations, in particular between developing and industrialised countries. This is a question of global justice. But it is a question which must take into account intergenerational considerations, i.e. the differing levels of past emissions and, possibly, future vulnerability of different countries.

The third question of justice concerns support for those future people who are more vulnerable than others to climate change, i.e. in particular the developing countries. This is a question of global justice but again it must take into account intergenerational considerations, i.e. the differing levels of past emissions.

The first two of those three questions are predominantly issues of justice in *mitigation*, i.e. of preventing climate change. The third one is an issue of justice in *adaptation*, i.e. of coping with that part of climate change which has not

to climate change is not perfect. Still, we think it is useful to rely on the correlation to the extent that it exists for the purpose of presenting the basic philosophical argument.

² For a survey article on climate change and ethics see Gardiner 2004.

been prevented. Of course, these three questions do not exhaust all the possible questions of justice surrounding climate change. One might want to add, for example, the fact that present generations not only cause but also suffer from climate change and future generations not only suffer from but also cause climate change. This would raise further questions of justice. However, in this paper we limit ourselves to answering the second of the three basic questions.

The distribution of greenhouse gas emission rights is a pressing issue in international politics. Until recently every country was free to emit any amount of emissions it liked. But now, the Kyoto protocol has heralded the first phase of explicit sharing of emissions among some countries. The countries that actually face binding limits, though, only constitute a minority. The split of emission rights was not based on some objective criteria but constitutes rather the outcome of a negotiation process (Depledge 2002, 37). Neither did developing countries agree to maximum levels nor did the United States and Australia. The big question now concerns how the global community will proceed after 2012 when the first phase of Kyoto ends. Will Kyoto be deepened and strengthened? If yes: How will emission rights be distributed? In particular: Will developing countries also agree to binding limits? Will emission rights be allocated in a more principled manner than in the first phase?

It is not our goal to analyze which allocation proposals accord with the national interests of important players and thus have any real chance in negotiations. Neither do we claim that the fairness of an allocation is one of the central conditions of its being accepted. Fairness will be one among other considerations in the actual policy debates but definitely not the only or the most forceful one. We only claim that identifying what can count as a just distribution is an urgent moral question which can be addressed as such. This is a plea to analytically separate the moral from the political question. Ideally, we would want to arrive at proposals that are morally valid, and have a chance of being implemented by morally acceptable means (see Buchanan/Glove 2002, 883; Rawls 1999, 11–23).³

The paper is structured as follows: The next two sections will answer preliminary questions: What amount of which good is it exactly that is to be distributed? The third section then asks whether high past emissions can justify a right to high current and future emissions. The fourth section argues that the distribution of emission rights can be regarded as a pure case in that it does not need to take additional considerations like, e.g. responsibilities, into account. The following section will discuss alternative theories of distributive justice in general and argue for prioritarianism to be the most plausible. The final three sections (6–8) will apply prioritarianism to the question of emissions allocation. Section 9 concludes.

³ Some authors blend the discussion of the moral and the political questions. See, e.g. Pinguelli-Rosa/Munasinghe 2003, 2; Grubb 1995; Singer 2002, 43.

1. ‘The Size of the Cake’ to Be Distributed

In order for distributive justice to apply, a certain amount of a given good must be available for distribution. The given good in question here is benefits from emissions—and this section presents some alternative ways of determining the *amount* of such benefits to be distributed. Figuratively speaking, the paper is concerned with splitting up a cake fairly and this section is concerned with determining the size of the cake. In the next section we will briefly explain why the cake consists, strictly speaking, not of emissions (even though we will use this expression as shorthand) but rather of benefits from greenhouse gas emissions, in particular those arising from tradable emission rights.

Nature by itself does not set a ‘natural’ stopping point for our emitting greenhouse gases. This is different in many other cases of distributive justice where the good in question is strictly (or somewhat) limited, such as land or GDP. So, if there is to be a maximum limit on emissions it has to be determined normatively—it cannot be taken as given. In this section, we will present various normative considerations for setting the global cap on emissions at a certain level for the coming years.

The most straightforward justification of a maximum limit on emissions follows the lines of the first question of justice given in the Introduction: It applies theories of intergenerational justice to the climate change problem. Such theories aim at determining what we owe to future (and past) people (see e.g. Meyer 2006). The literature reveals a broad spectrum of possible demands, for example that future people not be worse off than we are or that we leave enough natural and man-made capital for them to satisfy their basic needs and so on. Natural and social scientists can then work on translating these demands into a global emission budget for each year by quantifying how well off *future* people will be for various levels of *current* emissions.

Even though intergenerational justice is the most natural starting point for setting an upper limit on current emissions, there are at least three other avenues for arriving at a global cap on emissions. The first two of those avenues note that the diagram in the Introduction is oversimplified—it does not take into account that many of the currently living people will feel significant negative consequences due to greenhouse gas emissions during their lifetimes themselves. Some actually already are experiencing them now. The first avenue infers from this fact that the present generation has reason to curb emissions based simply on self-interest. However, this kind of reasoning is not without problems. First, it has to specify what it means for a mitigation policy to be in the *collective* self-interest and to what extent it is a legitimate moral priority to further the so-specified collective interest. Second, since any change of climate that will affect the present generation negatively will hit future generations even harder, one would have to discount the interests of future generations fairly steeply in order for the self-interest of present generations to give us weightier reasons for mitigation than intergenerational justice. The second avenue also relies on the fact that the introductory diagram is oversimplified in not acknowledging harms from present emissions to present people. But instead of viewing this

as a problem of self-interest of the current generation it looks at it under the perspective of what nations owe to each other. The emissions of nation A can be seen as wronging nation B in that their harmful effect violates the sovereignty of nation B. Axel Gosseries (2007) has helpfully discussed this issue by comparing emissions to missiles that countries fire into each other's territory. A third avenue for arguing for a global limit relies on a less anthropocentric view of the climate change problem and posits duties towards nature which imply rapid mitigation of emissions (see e.g., Witoszek/Brennan 1999; Krebs 1997; von der Pfordten 1994).

In the following we will assume that we can set a global cap on emission on the basis of considerations of intergenerational justice. The three alternative approaches mentioned in the previous paragraph might provide us with reasons for setting the global cap even lower than what is demanded by intergenerational justice. However, we will just need to assume that the 'size of the cake' to be distributed is determined by normative considerations.⁴

2. Distribution of What?

So, what is to be distributed? Emissions, of course, is the answer. To be precise, though, we should state that what we are ultimately interested in are the *benefits* from emissions. Of course, emitting itself is not beneficial but rather the activities—such as industrial production or the flight into vacation—which have as their necessary by-product emissions. It would thus be still more precise to speak of benefits from emission generating activities. In practice, emissions can be distributed through the means of granting emission rights, or, as we will assume, *tradable* emission rights. For simplicity's sake, though, we will often use "emissions" as shorthand for "benefits from emission generating activities which are made possible through the possession of tradable emission rights".

Emissions trade is an important assumption. Without such trade, switching to proposed allocations which deviate from the current levels of emissions would have much more drastic consequences for the economy. Tradability reduces the costs of change: Countries where abatement is particularly costly can pay other countries to fulfil part of their duty. If our discussion should lead to larger mitigation claims against developed than developing countries, this will not necessarily imply a large reduction of emissions in the former. Rather developed countries might bring about the required change by buying emission rights from developing countries.

However, the legitimacy of buying and selling 'the right to pollute' is not uncontroversial.⁵ A first strand of criticism sees something wrong in emission rights themselves (and not only in *tradable* emission rights).⁶ Whereas the usual

⁴ Here, we do not discuss another topic that is also relevant to determining the size of the cake, *viz.* what the optimal mix between mitigation and adaptation is or whether it is at all legitimate to substitute adaptation for mitigation.

⁵ Besides concerns about legitimacy there are also practical worries: E.g., difficulties of implementation and the possibility of market power (Baer 2002, 399).

⁶ Interestingly the Marrakesh Accords stress that the "Kyoto protocol has not created or

policy maker sees emission rights under the aspect of changing from a situation of unrestricted freedom to pollute to one of a limited right to pollute, some environmentalists focus on the perspective of comparing a situation of no pollution to one where institutions deal out the right to pollute. They view polluting as something inherently 'sinful' which should not be considered lawful at all. In response to such a position it must be said that we can neither reasonably demand that there should be no emissions at all nor hope to determine a 'natural' level of greenhouse gas emissions without making reference to normative standards.

A second strand of criticism acknowledges the legitimacy of emission rights but criticizes trading those rights. There are various reasons for such a critique. One is a certain attitude towards nature or creation which sees selling parts of it for cold cash wrong analogously to the wrongness of selling God's grace for money as has been done in medieval times with indulgences.⁷ This can be so for ecocentric reasons. But there might also be anthropocentric reasons for such 'blocked exchanges' (a phenomenon which is also known from other goods, such as blood donations or sex): Being paid for mitigation might drive out the intrinsic motivation to do so, and we might well consider the conditions unfair under which a poor person sells all of his or her pollution permits. Such and similar criticisms of trading emission rights can be shown to rely on contentious premises (see Beckerman/Pasek 2003). Rather than arguing for the legitimacy of trading emission rights we will presuppose the legitimacy of this, by now, established practice and for three reasons: As pointed out before such trade is likely to reduce the costs of transition. Second, allowing for emissions trade has become a matter of political relevance. Under the Kyoto Protocol emissions trade is made possible in a variety of ways⁸ and it will probably feature in any future agreement on climate change. The third reason has to do with expositional simplicity. If countries were not able to buy their reductions but had to achieve them through their own effort, then additional considerations would enter the picture to make an already complex issue even more difficult. In particular, marginal abatement costs (i.e. how difficult mitigation is for a certain country) would probably have to be taken into account. And the speed of the transition towards the just allocation would become a much more important issue.

So, for the rest of the paper we will assume that the problem of justice we are confronted with is that of distributing the benefits associated with emissions by splitting up a certain given amount of tradable emission rights. The first step consists in examining whether emission rights may legitimately be dealt out

bestowed any right, title or entitlement to emissions of any kind on parties included in Annex I". (http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php, accessed 01/05/2007)

⁷ Goodin 1994 introduces the analogy of indulgences. Our discussion reflects, in part, the insights of his article as well as of Beckerman/Pasek 2003.

⁸ Besides explicit emissions trading (which also exists outside the Kyoto protocol) there are two other so-called flexible mechanisms: the Clean Development Mechanism and Joint Implementation. These two serve a similar purpose as emissions trading. The Clean Development Mechanism allows countries which have a limit on emissions (under the Kyoto Protocol these are so-called Annex I countries, i.e. industrialised countries) to count emission reducing projects in developing countries towards their own reduction budgets. Joint Implementation allows an Annex I country to credit itself with an emission reducing project in another Annex I country.

according to some distributional pattern or whether the currently high emitters may justifiably claim a right to keeping up the status quo distribution. To this we turn in the next section.

3. Status Quo Rights

The basic idea that emission rights should not be allocated according to some distributional pattern (such as e.g. equality) but should rather ensure a continuation of the proportions of the status quo distribution can be couched in several terms. One way of expressing this basic idea is through the concept of grandfathering. Grandfathering is the principle which distributes a lot of emission rights to those who emitted a lot in the past and a small amount to those who emitted a small amount (at least for some time to come). We will express the basic idea through the notion of status quo rights. Paterson (1996, 184–5) sees a hard form of such status quo rights in the position that no reductions can legitimately be demanded from the historically acquired levels of emissions. The weak form only claims that if emissions have to be reduced, those reductions have to be *proportional* to the existing emission level of each nation.⁹ Still another way of expressing the basic idea in its weak form is given by framing the climate problem in terms of burden sharing instead of resource sharing (Baer 2002, 395). The idea of distributing mitigation burdens—i.e. reductions one has to make relative to the status quo—reveals that the status quo is seen as relevant. Implicit in the language of mitigation burdens is the idea that what is to be distributed fairly are *emission reductions* and not *emissions*.¹⁰

Status quo rights (in the language of grandfathering or the language of a just distribution of burdens) loom large in the current policy debate concerning future agreements (see Baer 2002, 395). They were an important determining factor for the distribution of emission quotas among industrialised countries under the Kyoto protocol (Baer et al. 2000). They were as well one of the rationales behind US opposition to the Kyoto protocol: The US deplored the unfairness of some important emitters having no *mitigation burden*.¹¹ Of course, an important explanation for the prominence of the basic idea of a status quo distribution is that those profiting from it are the wealthy countries with a lot of negotiating power. So, any politically realistic proposal has to take note of

⁹ It is the latter weak position which has gained practical relevance. But note that if we can refute the weak form, then the hard form is automatically refuted as well.

¹⁰ Of course, as a matter of language, one can couch the resource sharing approach also in terms of the burden sharing approach and vice versa: Given that we know, first, the existing emissions of all countries and, second, the fair share of each country, one can simply calculate the reduction necessary for each country, i.e. its mitigation burden. Caney (2005) for example does not imply in any way the appropriateness of status quo rights by using the language of mitigation burdens.

¹¹ This stance was perfectly expressed by George W. Bush during his presidential campaigns: “I’ll tell you one thing, I’m not going to do it. I’m not going to let the United States carry the burden for cleaning up the world’s air, like the Kyoto treaty would have done. China and India were exempted from that treaty. I think we need to be more even-handed” (Singer 2002, 26).

it to some extent. Our question here, though, is whether status quo rights can be defended from a purely moral point of view, wholly independent from their particular force in the real-world political arena. What might be put forward to defend such rights, i.e. the rights of high emitters to freeze their current high levels in emission shares? We will hint at two strategies. And we claim that they fail.

The first and most important strategy for arguing for a status quo distribution is to claim that countries have acquired a *right* to their level of emissions (or at least to their proportional share in total emissions) through appropriating this share in the past. For this move one has to rely on historical principles of justice. The general idea of historical principles of justice has in recent times been most prominently defended by Robert Nozick (1974). He claims that many theories of distributive justice assume without much argument that the goods to be distributed just come ‘like manna from heaven’. In contrast, Nozick argues that most goods already belong to someone and are not up for distribution at all. People are entitled to goods if they have acquired them in a just way, e.g. by mixing a piece of nature with their own labour in a certain way or by receiving the good through a voluntary transfer from somebody who was entitled to it. Those goods to which someone is already entitled should not be distributed according to some pattern, whether this pattern would further equality or maximize utility or reward the hard working or whatever. According to his view, one cannot judge the justice of a state of affairs by the kind of distribution achieved in that situation but only by the historical path which led to it. Figuratively speaking, then, where property rights were legitimately acquired in the past¹² there is no cake around to split up fairly. Rather the cake is already split up and people own their pieces. Applying these principles to the climate problem we can ask: Do the high emitters somehow ‘own’ their high share because they acquired it in the past in line with a principle of just initial acquisition?

John Locke has set out criteria for the acquisition of private property—criteria that Nozick reconstructs in his principle of just acquisition. Locke thinks that by mixing my labour with a piece of nature I can thereby appropriate it as long as I leave enough and as good for others. He also claims that even if I do not leave enough and as good for others but if the whole scheme of private property makes them better off than they would otherwise be, private property can still be justified. Nozick’s *proviso* (the “as long as”) states that the position of other people after my acquisition of the good shall be no worse than their position was when the good was unowned or held in common. In particular, it is not legitimate to appropriate all of a good which is necessary for life. Singer (2002, 27–31) performs the exercise of applying Locke’s criteria to the emissions problem and easily arrives at the conclusion that the historically high emitters neither have left “enough and as good” for others nor are the countries with small shares profiting from the bigger shares of the rich countries. Equally obviously, the high emitters do not fulfil Nozick’s criteria. So, by Locke’s and Nozick’s

¹² A problem with Nozick’s view is that goods were very often not acquired in accordance with his principles—and Nozick cannot tell us how historic violations of his principles should be rectified in practice.

tradition of thought, historically established high emission quotas can definitely not be justified.¹³

Peterson/Wesley (1999) consider another strategy to justify status quo rights in emission shares. High emissions are a necessary part of the life plans of people in the developed countries. Requiring a dramatic decrease in emissions would frustrate their legitimate expectations of being able to carry out their important projects in life since these projects are often inextricably embedded in the whole technological and economic surrounding which currently is fossil fuel based.¹⁴ Even though it is not impossible for such expectations to play a legitimate role in ascribing rights to people¹⁵, it is difficult to invoke them for the specific problem of emissions allocation. There are two reasons. First, with emissions trade taken into account even harsh cuts in the emission quotas of industrialised countries would not radically destroy the life plans of people. Second, most people in industrialised countries know—or can be held liable to know—that they cannot legitimately expect to keep up emitting as much as they used to into the indefinite future. Besides these two points it should be noted that if relying on legitimate expectations were a successful strategy, it could not justify keeping up the status quo into the indefinite future anyway but only for some time to come.

We conclude that both strategies of arguing for status quo rights to emissions fail: the argument that applies a theory of just acquisition of property rights as well as the notion of legitimate expectations to continue one's way of life. Besides that, it is also informative to look at precedents. Our atmosphere is a common pool resource like many others: The use of it by one agent affects all agents while it is difficult to exclude any one from using it. Baer et al. (2000) claim that common pool resources that exist outside the legal control of individuals or nation states have been codified so as to ensure equal rights. This is exemplified by the U.N. Convention on the Law of the Sea which requires common ownership of deep sea resources for the benefit of all humanity. Baer et al. (2000) go on to cite examples from American legislation where egalitarian principles were applied to resource rights even in the face of large pre-existing claims:

“[T]he Public Trust Doctrine, a powerful part of Anglo-American common law, ensures access to inland water resources based on egalitarian principles. In addition, the acid rain title of the U.S. Clean Air Act Amendments of 1990 allocated emissions according to egalitarian rules.”

Even though one could start the search for counterexamples to those given by Baer et al. (see Grubb 1995, 487), the authors are probably right in interpreting some policies as revealing an underlying intuition that from an ethical perspective disparate claims to common pool resources need special justification.

¹³ Ott (2003, 189) similarly rejects ‘squatter’s rights’ on the ground that the utilization of the atmosphere as a sink cannot be seen as the appropriation of an unowned good (“res nullius”) but must be seen as the utilization of a collective good (“res communis”).

¹⁴ This stance could not have been better expressed than by George H. W. Bush before the Rio Summit of 1992: “The American way of life is not up for negotiation”.

¹⁵ For a detailed discussion, see Meyer 2000.

We have now looked at two strategies one might use to ground the claim that emissions are not up for distribution according to some pattern because the shares are already owned by the historically high emitters. We saw that both strategies fail to ground status quo rights in emission shares. All of this is not to say that there is *nothing* wrong with a totally abrupt departure from the status quo. It might for example bring with it such a tremendous perturbation of the global economy that it was in hardly anybody's interest. But: A *right* of the historically large emitters to the status quo cannot be justified. So, if keeping up the status quo to some extent is proposed in real-world negotiations, this will be mainly due to existing power relations and not on the ground of its moral appeal. Indeed: It might be fairly commonsensical to most people's moral intuition that having emitted a lot in the past speaks in favour of a duty to emit less than others in the future rather than a right to emit more.

4. Emissions: A Pure Case for Distribution

Political philosophers have proposed various principles and patterns for determining desirable distributions of goods. The distribution of emissions seems ideally suited to apply these theories in a pure form to the real world. Why? First, as just shown in the last section, there are no pre-existing rights to the emission shares (grounded in historical acquisition or legitimate expectations). Second, there are two other issues which usually complicate a straightforward application of simple principles of distributive justice to practical problems: responsibility and incentives. Neither of those, though, interferes in a significant way with the distribution of emission rights.

First, the topic of responsibility is usually brought up to allow people the freedom to gain some goods through their own voluntary choices. For example, those willing to work longer hours should be able to receive more salary and those who take the pains to educate themselves well deserve to claim the fruits of their discipline. But nothing of this kind is in operation when it comes to emissions. The absorptive capacity of the atmosphere for our emissions is simply 'a gift of nature'—nobody can increase the 'size of the cake' through his own choices or effort. Responsibility of course comes into the picture through the choice of selling or keeping emission rights or through the choice of using emission intensive or emission efficient technologies, but as far as the basic allocation of the emission quota is concerned, there is nothing much to consider in terms of responsibility.

Second, neither are there significant incentive problems. Incentive problems are usually brought up in contexts where the implementation of the desired distribution creates an incentive structure which has indirect effects that are undesirable or undermine the proposed distribution altogether. Examples are the equalizing of salaries which takes away work incentives and might thus lower the salary of almost everybody in the long run or the guaranteed satisfaction of basic needs to everybody in a state's territory which might attract people into the territory in an uncontrollable manner. There are hardly any such incentive

problems with distributing emissions, though. If the emission quota of a country is made to depend ultimately on its numbers of inhabitants or the size of its GDP then other factors than the emissions quota will be much larger incentives to change the size of its population or its GDP. There are some worries in the literature that governments might actually be seduced to foster population growth in order to receive larger emission quotas. But Baer (2002, 407) claims—correctly, in our eyes—that this problem of population growth is mostly mentioned by proponents of per capita solutions because it can so easily be refuted. One way of dealing with it is pronouncing it to be too insignificant to be relevant: Many more pressing issues affect a country's population policies than the benefit of receiving more emissions. A second way of dealing with it is to tie emission distributions to the population size of a base year. Summing up: The case of splitting up emissions fairly is unique in that we can apply theories of distributive justice in a very clear and simple way.

5. Alternative Understandings of Distributive Justice

We will focus on those theories of distributive justice that have been prominently discussed in recent debates: egalitarianism, sufficientarianism and prioritarianism (see for example Holtug/Lippert-Rasmussen 2007; Krebs 2000). In the next three sections we will discuss the appeal and problems of each of those principles and we will argue that prioritarianism is the most appealing among them.

The three most important questions for theories of distributive justice typically are: Distribute what, how, and among whom? Our discussion will be focussed on the 'how'-question. The 'what'-question was briefly discussed in section 2. However, we have not specified what constitutes a benefit and for simplicity's sake we will use well-being as the measure for benefits, but the reader is free to insert something else. Concerning the 'among whom'-question we are ultimately interested in the emission shares that individuals receive. But our discussion will mostly proceed in terms of *nations* receiving shares—this is meant to serve as a proxy for distributing emissions to individuals.¹⁶

5.1 Egalitarianism

We will start with the ideal of equality since to many this ideal seems to be the most straightforward and common sense principle of justice in distribution. We are interested in the kind of egalitarianism which sees equality as a value¹⁷: There is something bad about situations in which some people have less than other people. In particular, we are interested in the egalitarianism which sees equality as an intrinsic value. Almost anybody accepts that equality has *instrumental* value (see for example Brighouse/Swift 2006; Gosepath 2004), but our egalitarian

¹⁶ Under the Kyoto protocol emission quotas are handed out to *nations* which then have to decide themselves how to reach their given target. That nations will internally distribute their emission shares to individuals and do so fairly is a simplifying assumption, of course.

¹⁷ This is in contrast to deontic egalitarianism (Parfit 1997, 207).

values equality *for its own sake* (see for example the contributions by Marmor and Steiner in Meyer et al. 2003). Of course, it need not be the only thing the egalitarian values. Typically she will value such things as average well-being or autonomous choices besides equality. Indeed, such a ‘pluralist egalitarianism’ is likely to be the only plausible version.

Still, even a pluralist egalitarianism is vulnerable to the so-called levelling down objection. This objection notes that in a world populated by the blind and the sighted, the egalitarian would have to claim that there is something good about blinding the sighted. The reason is that there is more equality after the sighted have been blinded. Of course, any sensible egalitarian will weigh both the loss of well-being and the intrusion into personal liberty such a blinding would imply as much graver than the increase in equality which is thereby gained. So, all things considered an egalitarian will not endorse the blinding. But, and this is the problem, the position is committed to the view that *in at least one respect* there is something better about the state of affairs where everybody is blinded. The value of equality really does give a reason to blind the sighted—a reason which is outweighed, to be sure, but it is a reason.

The disturbing thing about the fact that achieving equality by blinding the sighted is in one respect good is not that something horrible should have, *inter alia*, a good aspect. After all, even the most brutal wars have some aspects which, when taken *for themselves*, are valuable (such as the joy of the victors or the solidarity among the oppressed population). The really counterintuitive sting of the levelling down objection is the following: The egalitarian claims that a situation that is better for no one and worse for some is in some respect better. If one accepts the position that anything which is good must be good *for someone* (a so-called person-affecting principle) then the levelling down objection is decisive since blinding the sighted is good for no one.¹⁸

Even though the person-affecting principle has some problems of its own—for example, it gives rise to the so-called non-identity problem (Parfit 1984, ch. 16)—there is something very plausible about it. Invoking it reveals a central feature of egalitarianism. Egalitarianism is not primarily concerned with the well-being of individuals in absolute terms. Rather, egalitarianism is fundamentally about relations: how individuals fare *compared* to each other. It is not at all obvious that such comparative facts should have prime importance. We can feel this especially strongly when we imagine two persons (or societies) that are not equally well off living totally isolated on two islands. How they do in comparison to each other does not seem to matter much to us. What we are really concerned with is their being well off, particularly if one of them or both of them should be in misery.

In response to the levelling down objection, there are some philosophers who

¹⁸ One could object and say that the property of the state of affairs exhibiting equality is good *for someone*, so that blinding the sighted is not a case of only pulling down the sighted but also of benefiting the blinded and the sighted through increased equality. But this would not help, since we could easily construct cases where, in addition, everybody was deafened so that—even if the increased equality were good *for* the worse off (and the better off)—all things considered they would be worse off. The egalitarian would still have to claim that there is something good in one respect about this blinding and deafening even if it is good for nobody.

bite the bullet, for example Temkin (1993, 282). Others acknowledge the strong intuitions behind egalitarianism but attempt to channel those intuitions so as to support other theories of distributive justice. To two of these, sufficientarianism and prioritarianism, we now turn.

5.2 Sufficientarianism

A starting point for sufficientarianism¹⁹ is the observation that what might truly be moving us about inequality is the misery of the worse off and not inequality itself: “What is important from the point of view of morality is not that everyone should have the same, but that each should have enough. If everyone had enough, it would be of no moral consequence whether one had more than others” (Frankfurt 1987, 21). The basic feature of this stance is its stress on non-comparative facts: Each individual should reach some absolute level (the threshold of sufficiency) and the value of reaching this level is independent of whether other individuals are above or below this threshold.

The distinctive feature of this view is that there is a threshold and that benefiting people below the threshold has (absolute) priority compared to benefiting people above the threshold. Within this general description, sufficientarianism includes a whole family of views depending on the following features:

- How does it propose to distribute benefits below the sufficiency threshold? Does it aim at minimizing the aggregate distance from the sufficiency threshold? Or does it give lexical priority to benefiting the worst off first? Or does it propose a prioritarian weighting (Crisp 2003, 757)?
- How does it propose to distribute benefits above the sufficiency threshold? Different views are compatible with the basic idea of sufficientarianism. One possible claim is that benefits to people above the enough level have no further moral value whatsoever. More plausible is a simple utilitarian principle above the sufficiency threshold (Crisp 2003, 758).
- We might be faced with the alternative of (i) raising the level of two totally miserable individuals so much that they are just below the sufficiency level, or (ii) raising one individual who was just below the sufficiency threshold above it. Sufficientarianism has to decide how to value (i) ameliorating the distribution below the sufficiency threshold compared to (ii) minimizing the number of people below the threshold.
- Sufficientarianism has to specify whether there is one threshold or whether there are multiple thresholds.

Sufficientarianism clearly has something to say for itself. It corresponds strongly to our intuitions about the importance of benefiting the badly off.

¹⁹ Note that some important contributions to the debate about climate justice and inter-generational justice more generally invoke sufficientarian ideas: See Shue’s (1993) distinction between subsistence and luxury emissions and see also Rawls’ (2001, 159–60) Just Savings Principle.

Crisp (2003) even uses compassion for the determination of the threshold level. Also, it can be argued that people behind a veil of ignorance would choose a social structure that guarantees some sort of minimum as a safety net. This actually seems to correspond to the real world attitudes of people (see Miller 1999). Also, Rawls argues that his first principle of equal basic rights and liberties might be useless to people if their basic needs are not met and that this implies a lexically prior principle (i.e. lexically prior to his other principles) to meet basic needs (Wolf 2006).

But sufficientarianism also has its drawbacks. Most importantly, a *strict* threshold giving people below the threshold absolute priority is difficult to justify. What if we had to choose helping one person just below the threshold a tiny bit and helping millions of people just slightly above the threshold tremendously? Would we not go for the latter? The basic problem is that our moral intuitions seem to exhibit a certain continuity, while sufficientarianism wants them to exhibit a strict kink at a certain point (see Roemer 2004; Arneson 2000). A second problem is connected to the first. Since the threshold is so important it better be set in some very principled way with strong reasons supporting exactly this or that point as the decisive level. But, sufficientarians will have difficulties in spelling out our everyday notion of a threshold of ‘enough’ in a sufficiently clear-cut and convincing way so that it could carry the weight it has to. A third problem concerns benefits above the threshold level: Do inequalities above the threshold really not matter? Such a claim would only be plausible if the threshold were set very high: Getting Warren Buffett and Bill Gates to become equally well off really does seem to have no value (assuming for the sake of the argument that Gates’ greater wealth makes him slightly better off than Buffett). But not too far below them, the scope for justifiably giving the less well off some priority over the better off does not seem to be exhausted. (And even in the case of Buffett one might wonder whether it has strictly zero moral value to make him as well off as Gates or only so little value that it can not be easily detected).

These are real problems for sufficientarianism. We will now turn to a position which is able to share the concern of sufficientarianism with the *absolute* level of the agents’ well-being and its concern for the *priority* of the badly off while avoiding its problems. This appealing position is prioritarianism.

5.3 Prioritarianism

Prioritarianism is the view that benefits matter and that they matter more the worse off the person is to whom the benefits accrue (Parfit 1997, 213).²⁰ It can also be stated as follows: We should maximize moral value where moral value increases at a declining rate with well-being (and aggregate moral value consists in the addition of the moral value of the well-being of individuals).

The contrast between prioritarianism and other views can be captured nicely

²⁰Or in a more detailed statement by Crisp 2003, 753 (‘the *weighted* priority view’): “Benefiting people matters more the worse off those people are, the more of those people there are, and the greater the benefits in question.”

by graphical representation. The following three graphs portray the moral value of benefiting a person in dependence of her well-being. The first graph represents prioritarianism, the second—for purposes of comparison—utilitarianism and the third (one version of) sufficientarianism. Egalitarianism cannot be represented graphically as easily (this is so in virtue of the importance it attaches to relations between different person's well-being and its non-person-affecting aspect).

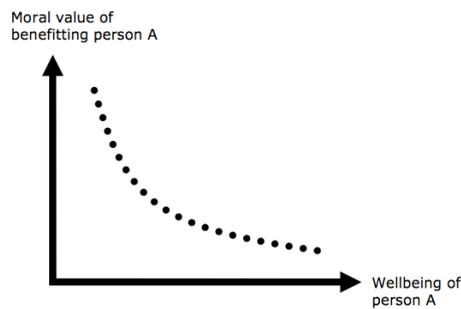


Figure 1: Prioritarianism

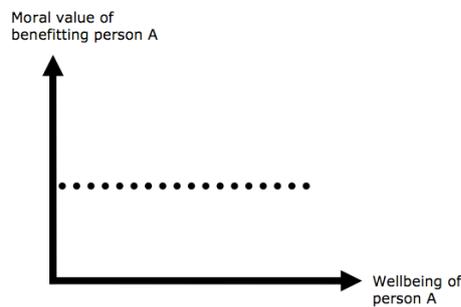


Figure 2: Utilitarianism

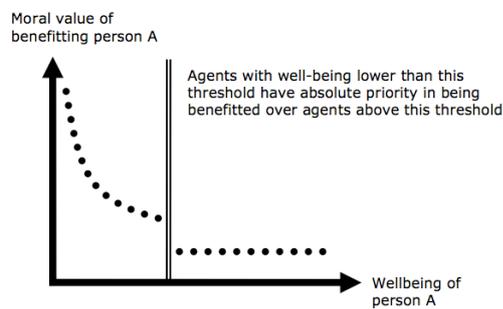


Figure 3: Sufficientarianism (Crisp's version)

Prioritarianism can be seen as a kind of utilitarianism with a bias towards equality. Because it says that a benefit is more valuable in the hands of a worse off person it will usually prescribe giving it to the worse off—the consequence of this is a drift towards equality. Superficially, then, prioritarianism may look very similar to egalitarianism. But the reasons for favouring equal distributions are very different in the two theories. Prioritarianism only cares about the absolute level of well-being of individuals and in no way about their relative standing. Favouring equality is only a *by-product* of ascribing higher priority to benefits to the badly off. Prioritarianism is a person-affecting view: There are no goods which do not accrue to someone. This is in contrast to egalitarianism: When seeing a worse off individual receiving benefits egalitarianism is fond of the increased equality and not of the increased well-being of the worse off. Prioritarianism always values benefits and does not value equality for its own sake and these features make it immune to the levelling down objection. If benefits can be distributed only to some but not to all, then it should be done, even if it generates inequality. Note that prioritarianism also approves of inequality which comes about by letting big gains to well off persons outweigh small losses to badly off persons.

Prioritarianism is a very attractive theory: It explains our intuitions about the importance of equality well and it also explains when and why we approve of aggregate gains which imply inequality. It also explains our intuitions about the importance of giving priority to the badly off and, in addition, explains why equality among the very well off has little importance. It does all this without a strict threshold or without ascribing intrinsic value to equality. As a result, we will take prioritarianism to be the most appealing principle of distributive justice.

Of course, there are very different versions of prioritarianism depending on the weight they give to benefits to the badly off (and to the very badly off). At the one end, if hardly any priority is given to the worse off prioritarianism is very similar to utilitarianism. At the other end, maximin is the limiting case of a prioritarianism that attaches tremendous weight to benefits to the worse off. In order for prioritarianism to account for a large part of the intuition behind sufficientarianism it has to assume that at a certain level (which corresponds to the sufficiency threshold in sufficientarianism) the weights start to increase rapidly. We will now turn to applying the prioritarian theory of distribution to the question of fair emissions shares.

6. Applying Prioritarianism to Emissions Allocation I: The Present

We want to determine a fair allocation of emission rights in two steps. First, in this section, we look at a fair allocation leaving out any historical considerations of a supposed ‘natural debt’ piled up by the developed countries through their high past emissions and by leaving out any consideration of the higher vulnerability to climate change of the developing countries. These considerations will

be taken up in a second step (in the following two sections). For now, we will only look at the present.

It is not entirely straightforward how to apply prioritarianism to the distribution of a single good in the real world. This can be called a problem of ‘local justice’²¹, i.e. the problem of a just distribution within a certain slice of the whole universe of goods. We will frame the problem as one where emissions are the *only* good to be distributed and we do not take into account the pre-existing (unequal) distribution of other goods. Note that this way of looking at the problem of justice concerning a single good is not uncontroversial. If one applied this procedure to every single good in the world one would not necessarily arrive at an overall distribution which would satisfy prioritarian standards because the different goods might interact with each other and such interaction might produce more or less beneficial results for different people. Other ways of applying prioritarianism to the problem of distributing one single good are to assume either a fair background distribution of the other goods or their presently existing (unfair) distribution as a background. This would have an impact on the determination of the ideal distribution of emissions since prioritarianism makes the distribution of goods dependent on how well off recipients already are. Especially the last option—i.e. to distribute the good with the existing distribution as the background—seems attractive.

Still, we will not take this approach. There are two reasons. The first and main reason is pragmatic: The problem of good-specific justice becomes much more *tractable* if we focus our attention on this one good alone rather than taking into account all the connections its distribution has with the existing unjust distributions of other goods. Gosseries (2004, 51) also notes how we are used to such good-specific or sector-specific thinking concerning distribution in practice: Even though a state might have a general redistributive scheme, it might still keep up sector-specific redistributive measures such as cheaper tickets for senior citizens for public transport. The second reason is that if we did take the existing distribution of the other goods into account this would, we believe, only strengthen the conclusion we draw anyway.

What, then, does prioritarianism demand concerning the distribution of emission rights (without taking past emissions or present and future vulnerability into account)? It would basically call for an equal distribution of emission rights. There are two possibilities why prioritarianism might in principle justify an unequal allocation of some good. First: It is possible that some people profit more from the good than others. In that case the ‘sum-maximizing’ aspect of prioritarianism will justify giving those people more of the good. Second: It is possible that inequality makes everybody better off. In that case, too, the prioritarian will justify inequality.²²

Does one or both of these possibilities apply to the case of emission rights? Here the assumption of emissions trade becomes relevant: Because those people

²¹ See Gosseries’ remark on this issue in Gosseries 2007 as well as similar remarks in Gosseries 2004, 51.

²² Prioritarianism can also justify inequalities for a third reason, *viz.* by incorporating an element of responsibility.

who cannot make good use of the rights allocated to them in the initial fair allocation can simply turn their rights into money, there is hardly any scope for these two possibilities.²³ And so, prioritarianism simply and plainly demands an equal per capita distribution.

If there were no emissions trade, then it would of course be possible for these two possibilities to demand an unequal distribution. It might be said that some countries make much better use of their emission rights (i.e. the first possibility). An indication of making good use of emissions might be seen in a low emission intensity, i.e. the fraction of emissions to GDP (see Singer 2002, 39). Interestingly, there is no very clear picture concerning the connection between the wealth and the emission intensity of a country. Developed countries do not have a lower carbon dioxide emission intensity. They do have a lower emission intensity when all greenhouse gases are taken into account. But even in the latter case there are many exceptions with Australia for example having a much higher emission intensity than Brazil (Baumert et al. 2005, 25–26). Another indication for a more valuable use might be seen in their serving subsistence needs instead of luxury desires (see Shue 1993, 54–55).

It might also be said that in the long run *everybody* will profit from the progress which is trickling down from those countries which make good use of their emissions in terms of generating prosperity (i.e. the second possibility). This second possibility suffers from the empirical weakness of the trickling-down-argument. It is difficult to see how some countries would profit more from *giving* their emission rights to other countries and then living off the trickled down economic growth rather than using their emission rights themselves (see Singer 2002, 38–40).

7. Applying Prioritarianism to Emissions Allocation II: The Past

Developed countries have had much higher emissions in the past than developing countries. Between 1850 and 2000, the U.S. emitted about fifteen times more carbon dioxide than India (Baumert/Pershing 2004, 13; note that this is *not* per capita). Should this not be taken into account? Many think it is obvious that it should lead us to deviate from equal per capita shares and give higher shares to people in the developing world than to people in the industrialised world. The most prominent policy proposal for taking into account historical responsibility is the so-called Brazilian Proposal (La Rovere et al. 2002, 157–173). But there are also disagreeing voices. Frequently named objections are: First, the intuition that there is something wrong about making currently living persons responsible for emissions of the past which were not under their control and, second, the fact that people in the past were ignorant about the harmful effects of their emissions

²³ Of course, in the short run too abrupt of a change from the existing to the desirable distribution of emissions might harm basically everybody because of the perturbation this would cause to the world economy. Such an argument would constitute an appeal to the second possibility.

and, third, the non-identity problem. We will present three ways of taking past emissions into account for the purpose of determining a fair share of emissions for presently living people. None of those three ways is open to criticism from the three objections.

A first way of taking the past into account turns on one aspect of spelling out prioritarianism. What is the unit of well-being to which prioritarianism is applied: Should the shares of emissions be equalized among persons, for example, *every year* or over the *whole lifetime* of persons? In the latter case a certain part of the historically high emissions in developed countries enters very naturally into the determination of presently just shares, i.e. the part of historical emissions which has occurred during the lifetimes of presently living persons. So, if we want to equalize emission benefits—as demanded by the version of prioritarianism under consideration—then we have to note that people of developed countries already *are* possessors of a lot of emission benefits. In order to balance this, people of developing countries can demand a higher share of benefits from *current and future* emissions during their lifetime.

A second way of taking the past into account relies on the insight that what we are really interested in are the *benefits from emissions* and not the *emissions* themselves and that the high past emissions of the developed world are much more beneficial to a currently living person in the developed world than to a currently living person in the developing world. To see this (and also to see why this point is not affected by the non-identity problem) look at it as follows: Someone who was conceived by parents who have been brought up in a developed country has benefited since her conception from the conditions of her upbringing, i.e. in particular from the stage of industrialisation realized in the developed world. Those beneficial conditions are constituted by the inheritance of goods which past industrialisation has made possible (such as streets, hospitals, and schools). The production of these past goods was possible only by generating emissions as a side-effect. Thus a person from a developed country has indirectly benefited since conception from the activities associated with past emissions, i.e. from the history of industrialisation in the region into which she was born and has been brought up. Had she been removed as a baby from the developed world and, say, been brought up in a slum of the developing world, she would have been worse off. At the same time it is true—as we learn by the non-identity problem—that the history of industrialisation is among the likely necessary conditions of this person's existence and identity. Thus this person—whether brought up in a developing or developed country—cannot be said to be better off than she would have been had there been no industrialisation. But note that this fact does not undermine our argument. All that is needed is the premise that people of the developed countries are in possession of a lot of goods—goods which come from the emission generating industrialisation of the past—from which they presently reap benefits and that people of the developing countries possess less of those goods. As a response to this, people of the developing countries can demand to gain more benefits from *current and future* emissions, i.e. they can claim higher emission rights.²⁴

²⁴ For an analogous argument concerning the normative significance of the non-identity

This second argument might be undermined with reference to the fact that currently living people have not freely accepted the goods produced by their ancestors' emissions. The benefits associated with past industrialisation have been *imposed* on the presently living people in industrialised countries. In response to this fact, we take the tough bargaining over present emission quotas by all countries as an indication that people are actually more than eager to possess the goods which past emissions have made possible and would have accepted them freely if they could have done so. Note also that in contrast to other contexts in which imposed benefits are being discussed we do not claim that benefits which were not voluntarily accepted generate obligations to contribute something in return. All we claim is that if you already received a certain share of the cake this should be taken into account when it comes to splitting up the rest of the cake regardless of whether the original piece was 'imposed' on you or not.

These two ways of taking the past into account are fully consistent with normative individualism, i.e. taking the individual and not any kind of community as the central unit of concern for morality. Normative individualism is a plausible position to many. It should be noted, though, that within the limits of normative individualism only *part* of the inequality in historical emissions can be taken into account for the determination of the just current emission shares, i.e. those past emissions which either occurred during the lifetimes of the presently living or those emissions which are associated with past production of goods which are still beneficial to presently living people. If someone were prepared, however, to defend a theory which acknowledged special ties between the different generations of the same nation (or some other community), then past emissions could be taken into account more directly and to a larger extent. Insofar as a nation—interpreted as a transgenerational community²⁵—can be understood as analogous to a 'person', the emissions of the past really *are* seen as those of the same 'person'. In such a case and when the dimension of time is taken into account, equalizing emissions would give even higher current shares to the developing countries since developed countries taken as transgenerational communities have already used up such a large part of their fair quota.

We will now turn to the three objections against taking past emissions into account. The first objection says: Past people may have wronged future people by emitting gases which cause climate change damages. But—this first objection says—even if our ancestors committed all kinds of wrongs, why should we, today, be responsible for these historical injustices? Why should we have to provide measures of compensation even if we were strictly unable to do anything about what our ancestors did? Surely one cannot be responsible for the actions of others which one cannot possibly influence. (Note that this first objection only applies to the second way of taking the past into account, because, in the first and third way the present agent was able to do something about his past behaviour and thus can be made responsible for it.)

The second objection even denies that past people can be said to have

problem with respect to past wrongs and their harmful effects, see Meyer 2004b (sec. I) and Sher 2005.

²⁵ See Meyer 2005, chs. 4 and 5.

wronged anybody since they were unaware of the harmful effects of the greenhouse gas emissions they caused. Their emissions may harm people, but there is nobody who is to be blamed. If we blame a person for his actions we presuppose *inter alia* that he is liable to know of the harmful consequences of his actions. So, the second objection concludes: Nobody did any wrong in the past. Thus descendants do not stand under a duty to rectify their predecessors' wrongdoings. (Note that the second objection attacks all three ways of taking into account the past, as long as the emissions occurred before the time when one could be held liable to know about their problematic nature.)²⁶

The third objection denies not only that past emissions can be said to *wrong* but even that they can be said to *harm* anybody. The reason is the non-identity problem. The non-identity problem, very briefly, is this²⁷: If climate policy A is pursued this not only influences the state of the climate in the future but also—through causal ramifications—who in society will meet and mate and also at which point of time they will do so and thus who will finally be born. Let us assume that climate policy A has the two consequences, first, that the environment is devastated and, second, that individual A is born. Assume that with climate policy B the environment would be protected and individual B would be born. The problem now is that individual A cannot claim to be harmed by climate policy A in the sense that it would be better off if climate policy B had been pursued. If climate policy B had been pursued, individual A would not be better off but rather not exist at all. Thus, it is not harmed by policy A in the sense of being made worse off than it would otherwise be. The third objection then concludes that since no harm occurred, no compensation is to be paid. (Note that this third objection only applies to emissions sufficiently far in the past for the non-identity problem to apply.)

It might be obvious by now that the three objections have no bite against our three ways of taking the past into account.²⁸ The problem with the objections is that they falsely assume that giving higher emission shares to the current population of the developing world must be grounded in the idea of the industrialised world having to provide measures of compensation for past harms or wrongdoings. But we do not assume this. All three ways of relying on the past are only concerned with distributing *benefits* associated with greenhouse gas emissions fairly among the presently living. For the purpose of discussing this question we disregard any harm, wrongdoing or identity-fixing effects associated with these emissions. Of course, the (possibly wrongful) harm that these past emissions cause *is* an urgent problem—but we can consider it to be a separate problem.

We frame the climate justice debate in such a way that we have two completely distinct issues: On the one hand, the problem of dealing with the benefits associated with emissions in a fair way (a problem of justice in mitigation) and, on the other hand, the problem of dealing with the negative consequences of

²⁶ Plausible suggestions for such a date are given by Gosseries 2004. A particularly prominent date is for example 1990 when the first IPCC report was published.

²⁷ For a treatment of the non-identity problem see for example Meyer 2003.

²⁸ But see section 8 for a discussion of the relevance of these objections with respect to claims to compensation for the lasting impact of emissions.

emissions in a fair way (a problem of justice in adaptation). The first issue is the one we are concerned with. The second issue is the one the three objections are concerned with. They note the difficult issues that arise when considering the question whether persons living in nations which are historically high emitters ought to provide measures of compensation to the largest sufferers of the consequences of those emissions. The former are people of the developed countries, the latter are people of the developing countries. To determine whether compensation for harms or rectification of wrongdoings are owed, a careful answer to the three objections must be crafted. But: This is not the issue we are concerned with here. Our argument does not focus on the harmful effects of emissions but on the benefits associated with emissions. It notes that present people of the developed countries are already quite rich in terms of possession of goods whose production was made possible through emissions, in particular those goods they have inherited and those goods they have produced themselves. And so, if total current emission benefits are to be equalized, larger emission shares have to be given to the developing countries. We argue for this conclusion purely on grounds of distributive justice without invoking compensatory justice.²⁹ Our focus is on the fact that presently living people of the developed countries already *are* in possession of emission benefits—it is wholly irrelevant for our argument whether they inherited these goods (they might as well have dropped from heaven, as long as their production involved emissions), whether the emissions which accompanied the production of these goods also give rise to harmful effects, and whether the past emission generating activities are among the necessary conditions of the identity of currently living persons. So, the three objections do not apply.

It is of course a crucial question whether it is legitimate to separate the distributive issue of how emission shares are to be fairly distributed from the compensatory issue of who owes compensation to whom, namely, due to the damages these emissions cause. Many authors intertwine the two issues in their discussion of climate justice.³⁰ Should it be legitimate to separate the two issues, this separation helps to make the topic of climate justice more tractable.

To sum up: Prioritarianism basically demands an equal share of emission benefits among the presently living. We have seen three ways of taking past emissions into account when determining such an equal share of benefits. All of those ways speak for an inequality of the current distribution of emission rights in favour of developing countries. The first two of these three ways are very plausible in that they operate within the confines of normative individualism. Their drawback is, however, that they can only take account of a part of the past emissions. The third way is much broader in scope but assumes strong and normatively relevant transgenerational community ties. The three objections—powerlessness of the present people to do anything about their ancestor's behaviour, past ignorance of the harmful effects of emissions, and the non-identity problem—have been shown to be irrelevant to both taking past emissions into

²⁹ For an illuminating discussion of distributive vs. compensatory justice in environmental ethics see Leist 2005.

³⁰ Examples are: Gosseries 2004 and Caney 2005.

account in these ways and our proposed understanding of fairly distributing benefits from current emissions. However, these objections are relevant to both rectifying wrongful past emissions and providing measures of compensation for the harmful *effects* of past emissions.

8. The Vulnerability to the Effects of Emissions

Even though our topic is the fair distribution of emission rights, to round off our discussion we throw a quick glance at the topic of how the negative effects of emissions should be taken into account—and: how this might, after all, also affect the fair shares of emission rights.³¹

In a first step, let us imagine that over the whole course of history people have always only emitted their fair shares. Even though the total amount of emissions was shared fairly, this amount taken all together still has a negative impact on climate quality (and non-anthropogenic factors might add to this). And, science tells us that the negative impact is not evenly distributed across the planet. Rather, some countries—the developing countries—suffer more. How should this uneven distribution of climate impacts be dealt with? Above we proposed to understand this problem as being distinct from the question of a fair distribution of benefits associated with emissions. If prioritarian standards are applied in a cosmopolitan fashion to those climate damages then the unequal current (and future) suffering from them will call for redistribution. One natural way to practically implement such a redistribution would involve the less severely affected countries (which happen to be the industrialised countries) paying money into an adaptation fund which can be used by the seriously burdened countries (which happen to be the developing countries) for coping with the hardships.

Note that another ‘currency’ besides money would also be very natural for this redistribution: emission rights. The idea behind this would be to have the good-specific approach to justice fleshed out *not so fine-grained* as to treat the good of emission benefits as one good and the good of climate damages (which is more appropriately termed a bad) as another good, but rather to have a more overarching approach for all climate change related goods counted as *one* kind of good. In that case one could balance the higher climate impacts of the developing world by giving them a larger share of emission rights. If one favoured such redistribution in the form of emission rights instead of in the form of money for an adaptation fund, then this would serve to make our basic conclusion about higher emission shares for developing countries even stronger.

Let us now assume in a second step that people *not* always adhered to their fair shares. This of course was the case in reality and most surely always will be. How does the picture change in such a case? The climate change caused by past emissions *which exceeded the fair quota* can be seen as a wrongful harming which calls for compensation. Whether those past emissions beyond the fair share not only *can be* but are *correctly* seen as harming present and future people and

³¹ To do so, let us drop the simplifying assumption made in the Introduction that people do not suffer from the emissions they themselves produce.

whether they really are correctly seen as *wrongful* harming—this is a thorny issue. Concerning *this* issue the three objections to taking the past into account that we introduced in section 7 become relevant and careful answers to those three objections must be crafted. If answers can be given and so some emissions really can be regarded as wrongfully harming currently living or future people, then we leave the territory of purely distributive justice and enter the realm of *compensatory and rectificatory* justice. We will then have to give an answer to who it is that should pay compensation. Answers to these questions are given by Meyer (2004a), Caney (2005) and Gosseries (2004).

Note that again a natural currency for compensation besides money would consist in emission rights. This would add even further to the justification of an unequal distribution of current and future emission rights in favour of developing countries.

9. Conclusion

Given that a cap on emissions is enacted, emission rights have to be shared in some way. In this article we asked what theories of distributive justice can tell us about a *fair* way of splitting up emissions. We did this in particular by taking into account unequal past emissions.

There seems to be no sound argument from a moral point of view to justify a right to higher emission quotas for past high emitters. The continuation of the status quo is not an option. Given this, we looked at three prominent theories of distributive justice and highlighted how prioritarianism is flexible enough to best take into account our intuitions. Applying prioritarianism to the problem of distributing emission rights leads to the conclusion that *equal benefits from emissions* for the currently living are demanded—and thus *higher shares of emission rights* for the less developed countries. The reason is that people living in developed countries have benefited more from emissions up to now: First, they have benefited more from their own past emissions during their lifetimes; second, they have, since their conception, benefited more from the (products of the) emission generating activities (i.e. industrialisation) of the past; and, third—should one be ready to embrace the controversial assumption of normative collectivism—transgenerational groups have benefited insofar as previously living members benefited from past emissions. By looking at three objections often brought up against taking the past into account we brought to attention that the higher emission quotas for developing countries can be justified, first, without our relying on the fact that emissions cause a deterioration of climate quality, and, second, without any reliance on the notion of compensatory justice. Our argument has only relied on the notion of fairly distributing benefits to currently living persons. In the last section, though, we note that if one took the unequal vulnerability to climate change as well as measures of compensatory justice into account, one might possibly justify even higher emission quotas for the developing world. It is a lucky coincidence that in questions of climate justice all the different considerations seem to point into the same direction (i.e. the

assignment of more demanding duties to the developed countries). In particular it should be noted, that a simple ‘Ability to Pay’ principle—i.e. those with the most resources should shoulder the burdens of mitigation and adaptation regardless of their past contributions to the problem—points in the same direction as well.

The most important feature of our result is that it speaks against there being a ‘tragic choice’ in climate policy. A dilemma of climate policy seems to be constituted by the following two propositions: First, given the harmful effects of climate change a drastic limitation of global emissions, including those of developing countries, is morally demanded. Second, given the justified hope developing countries put into industrialisation as a way out of poverty it would be tremendously harsh to cut off their prospects by limiting their emissions drastically. Our conclusion questions whether we do in fact face such a dilemma: For giving higher emission shares to people of the developing countries would attenuate the problem. If the choice does seem tragic, this is because the rich countries limit the range of options by excluding the possibility of accepting sufficiently low emission quotas for themselves which would leave at least some room for the developing countries to fairly realize benefits from emission generating activities, too.

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