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## What is grandfathering?

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Emissions grandfathering maintains that prior emissions increase future emission entitlements. The view forms a large part of actual emission control frameworks, but is routinely dismissed by political theorists and applied philosophers as evidently unjust. A sympathetic theoretical reconsideration of grandfathering suggests that the most plausible version is moderate, allowing that other considerations should influence emission entitlements, and be justified on instrumental grounds. The most promising instrumental justification defends moderate grandfathering on the basis that one extra unit of emission entitlements from a baseline of zero emissions increases welfare to a greater extent where it is assigned to a high emitter than where it is assigned to a low emitter. Moderate grandfathering can be combined with basic needs and ability to pay considerations to provide an attractive approach to allocating emission entitlements.

**Keywords:** Climate change; emission rights; grandfathering; utilitarianism; welfare

### Introduction

There is a notable divide between the allocations of emission rights selected by political actors on the one hand, and the allocations defended by political theorists and applied philosophers on the other. This divide is largely explicable in terms of *grandfathering*, the view that prior emissions increase entitlements to future emissions. Actual allocations of emissions rights, such as the Kyoto Protocol and the EU Emissions Trading Scheme (ETS), typically include a significant element of grandfathering, as indeed do more practically-orientated proposals such as Contraction and Convergence. Yet theorists are dismissive of grandfathering (Caney 2009, 2011, Moellendorf 2009, Meyer and Roser 2010), instead focusing on principles which are indifferent to prior emissions, or which treat them as decreasing entitlements (Jagers and Duus-Otterström 2008, Page 2008, Shue 2010, Duus-Otterström and Jagers 2011).

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Undoubtedly self-interest, or the perception of it, plays a major role in political decision-making here as elsewhere. But might there be something to be said for grandfathering? We need to get a clearer sense of what grandfathering actually is, for the bare notion described above can be fleshed out in many ways. For instance, theorists often seem inclined to understand grandfathering in a stronger sense than do political actors, and that might partially explain divergent attitudes towards it.

I explore grandfathering from a theoretical but sympathetic perspective, considering the various ways in which it might be construed with the aim of arriving at its most favourable formulation. While many forms of grandfathering – including those familiar from international agreements – are evidently implausible, there is a form of grandfathering that should be taken more seriously by theory than has been the case to date. The divide between theory and practice should undoubtedly be closed by practice moving closer to theory, but there is one practically small but theoretically significant regard in which theory has something to learn from practice.

I begin by considering several versions of grandfathering and the justifications that can be given for them.

### **Which grandfathering?**

#### ***Strength***

Grandfathering requires that past emissions strengthen the claim for future entitlements. More specifically, it holds that agents are entitled to emit the same *percentage* of total emissions as they previously emitted (Paterson 1996, pp. 184–185).

What, then, is the appropriate strength of the claim made by grandfathering, so construed? Consider first a *strong* version of grandfathering. Simon Caney (2009, p. 127) describes grandfathering as having two stipulations: ‘first, that the fair share of emissions for any actor should be a function of its past share of emissions and, second, that these emission rights should be handed out free of charge to these actors’. I take this as suggesting that, according to grandfathering, nothing other than past emissions should be taken into account when establishing emissions entitlements.

Strong grandfathering is evidently implausible as a distributive principle. If applied globally it would deny poor countries the development necessary to meet their citizens’ basic needs (Caney 2009, p. 128, 2011, p. 88, Moellendorf 2009, p. 117, Schuppert 2011, pp. 309–310). Furthermore, strong grandfathering has not had much impact on policy. The Kyoto Protocol is considered by Caney and others to accommodate grandfathering, as it focuses on percentage emission limitations and reductions amongst rich Annex I countries. But Kyoto only approximately ties Annex I countries’ prior emissions to future entitlements; Iceland and Australia were ‘limited’ to 110% and 108% of 1990 emission levels, while most had to make reductions to 92% of 1990 levels (United Nations 1998, Appendix B). Furthermore, it

does not place limitations or reductions on poor signatories' emissions. Kyoto thus appears to embody a view that the fair share of emissions is not purely a matter of past emissions in the way that strong grandfathering suggests. Similarly, the first two stages of the ETS required that member states hand out a large majority, but not all, of its emission allowances (at least 95% for 2005–2007, and at least 90% for 2008–2012) free of charge to emitting businesses (European Parliament and Council of the European Union 2003, Article 10). As a small but growing percentage of allowances have been auctioned, it is clear that the ETS also does not reflect strong grandfathering.

It is possible, then, to identify less strong versions of grandfathering. *Weak* grandfathering merely says that *all else being equal* prior emissions strengthen the claim to future emissions. The *ceteris paribus* clause reduces grandfathering to the status of a tiebreaker, so we can set this view aside.

*Moderate* grandfathering holds that an agent's past emissions provide a *pro tanto* reason for future emissions entitlements to be granted to that agent. A *pro tanto* reason for something supports that thing, whatever (possibly stronger and countervailing) other reasons apply. If I get a thrill from every act of gambling, I have a *pro tanto* reason to accept any gamble, though all things considered there are many gambles I should decline. Moderate grandfathering is a stronger position than weak grandfathering in that it insists that grandfathering considerations are always relevant to distribution, not only when other considerations tie. But unlike strong grandfathering, moderate grandfathering does not require that grandfathering considerations are the *only* considerations that influence entitlements (except for tiebreakers).

It is moderate grandfathering rather than the strong view which appears to be assumed by the Kyoto Protocol and the ETS, as although they base entitlements to some extent on prior emissions, other considerations also influence their entitlements. It also appears to be assumed by more radical schemes. In the Contraction and Convergence model, '[t]he international sharing of this [emissions] budget as "entitlements" results from a negotiable rate of linear convergence to equal shares per person globally by an agreed date' (Global Commons Institute 2012). As prior emissions are taken as the starting point, higher emitters have greater entitlements during convergence, but not to the extent that they are higher emitters, as high emitters experience a marked decrease in emissions that low emitters do not.

Moderate grandfathering has, then, been most relevant to policy. As it lacks the obvious implausibility of strong grandfathering and the triviality of weak grandfathering, it is moderate grandfathering with which I shall be concerned.

### *The future*

The next questions concern the temporal extension of grandfathering. First, how far forwards does grandfathering go?

One might defend grandfathering as part of an ongoing state of affairs. More often it is considered as a transitional principle for moving from the status quo to some other state of affairs – most often, some more equal state of affairs considered to be fairer (Gosseries 2005, pp. 300–301, Caney 2009, pp. 128–129, 2011, pp. 88–89). The plausibility of these views depends to some extent on the level on which we intend to justify grandfathering. If grandfathering were held to be intrinsically just, there would seem to be no cut-off point at which grandfathering would cease to be relevant.

Grandfathering is, however, most plausibly construed as only instrumentally valuable (see below). In that case, grandfathering will cease to be valuable as soon as it stops serving the fundamental value that it happens to serve. But it is possible, theoretically at least, that grandfathering will *always* serve the fundamental value, in which case grandfathering will always be appropriate. Thus an instrumental justification seems to be consistent with either a permanent or transitional version of grandfathering, depending on the relevant facts.

### *The past*

The second temporal issue concerns how far back grandfathering goes. It uses some past emissions as the basis for future entitlements, but does not itself establish which past emissions. Does it consider only levels of emissions in a particular year, or emissions in the lifetimes of the individuals involved, or all emissions made during the existence of the states involved?

We can quickly dismiss the last possibility. It is not practically relevant, is not discussed in the theoretical literature, and is not appropriate. I take the cosmopolitan view that the individual is the ultimate moral unit. While, in practice, individualistic goals may be served derivatively by assigning emission rights to countries, it seems evidently unjust to base individuals' entitlements on the actions of their long-dead ancestors.

Where this issue is addressed at all, most theorists seem to assume that emissions in a particular base year are what matters for grandfathering, as international agreements also often assume (Gosseries 2005, p. 297, Moellendorf 2009, p. 117). This assumption is grounded more on customs of official data collection and presentation than on anything taken to be morally significant about years. There is no significant moral difference between what happened 364 days ago and what happened 365 days ago. Yet if the past year is the base year, the former is treated as fully distributively significant and the latter as distributively irrelevant. This could be practically significant if, for instance, a cold country emitted an unusually small amount in the base year as that year was unusually warm, and was thus given small entitlements, even though subsequent years were colder, and those entitlements thus inadequate. We should avoid a view which assigns moral weight to temporal segments arbitrarily.

As it lacks this arbitrariness, a focus on lifetime emissions has obvious attractions. There is something morally important about when individuals'

lives start and end, especially from a cosmopolitan perspective. But this view of grandfathering faces a different problem. Consider that an adult population averaging 50 years old may have emitted more in total than an adult population of the same size averaging 40 years old, even though the 50-year-old population has emitted less per year. Intuitively, grandfathering would give greater entitlements to the 40 year olds, as they are higher emitters in what feels like the relevant sense. Indeed, that is why the base year view of grandfathering seems *prima facie* plausible, because the record of the past year, *if* it is representative, will show that the 40 year olds had higher emissions. I therefore suggest that grandfathering issues entitlements in proportion to *average emissions per year of life*. This avoids the problem of the base year view, in that no arbitrary weight is placed on what happened in a particular year, without falling into the trap of treating aged low emitters as high emitters.

### **Why grandfathering?**

#### ***Prudential justification***

Often grandfathering appears to be simply assumed as a component of emissions distribution schemes. Rich countries usually do not explain why their favoured schemes include significant grandfathering elements. Presumably the main rationale is national self-interest, or perhaps a more narrow self-interest in securing votes, which in turn results from high-emission path dependency. But it would be misleading to suppose that these self-interested or *prudential* rationales are the only available rationales. We can distinguish between three *moral* accounts of the justificatory basis of grandfathering.

#### ***Realist justification***

First, there is the *realist* justification of grandfathering. It suggests that, though we might prefer the world to be such that grandfathering was not required, in practice the only way to get high-emission countries to sign up to a climate change deal and bring about the required global reduction is to accommodate their self-interest by grandfathering some or all of their emissions (Posner and Weisbach 2010). The realist justification is a response to the adoption of the prudential rationale by developed countries, but unlike the prudential rationale it has significant moral content. Even the most audacious advocates of national interest do not argue that pursuit of their countries' self-interest ought morally to be a high priority for other countries. By contrast, realists can and do argue that countries are obliged to make whatever agreement they can to reduce the harmful effects of climate change.

This argument is firmly rooted in non-ideal theory, and relies upon the threat of non-compliance with the requirements of justice by major emitters. It seems scarcely credible as a general account of why grandfathering might be justified (cf. Nelson 2011). While it might be morally permissible to accept the only deal on the table for a significant reduction in emissions, that no more

establishes the legitimacy of grandfathering deals than does the permissibility of offering protection money when threatened justify extortion (Bovens 2011). The realist justification is a plausible moral justification, but only of actions taken under highly circumscribed circumstances, not of that circumscription itself (Caney 2009, p. 129).

### ***Fundamental justification***

Consider the possibility of providing grandfathering with a *fundamental* justification: of holding that grandfathering is intrinsically fair, for instance. The most commonly mentioned argument of this type is libertarian, suggesting that past emitters acquire emissions rights on account of their prior usage (Wesley and Peterson 1999, pp. 186–188, Neumayer 2000, Soltau 2009, pp. 145–146). The most developed libertarian argument is presented by Luc Bovens (2011), who first considers whether the atmosphere may be treated in the same fashion as land, as initially having the status of a commons, which no longer applies where the Lockean ‘as much, and as good’ proviso is no longer met. Just as homesteading ceases at this point, so too does the acquisition of claim rights on atmospheric absorption of greenhouse gases. However, Bovens notes that this would be clearly unfair even on the best Lockean view. The Lockean proviso should be applied continuously, he believes, and would be violated by many emissions by putative rights holders as they would prevent those without a history of emissions from having as much and as good. Furthermore, on Bovens’ account, these internal considerations are supplemented by external considerations which also tell against acquisition of emission rights through usage, such as equality and utility – as, we might add, moderate grandfathering allows.

While Bovens’ view limits the impact of the initial acquisition of emissions rights, it still makes them the ‘proper starting point’. This is problematic. Rights to initial acquisition, which have initial intuitive support because they are equally held by all, lose that support when we consider current and future generations. They are excluded from such rights because there is nothing left in common to acquire. Their entitlements are influenced by what they inherit, for which they can claim no credit. Absent redistribution to effectively undo the effects of the initial acquisition, we will not be giving ‘the same kinds of right to all individuals as were enjoyed by those licensed to make the “first moves”’ (Steiner 1977, p. 151). The (right) libertarian approach has little appeal, even as part of a pluralistic view, once its implicit assumptions are spelt out. The problem is not with Bovens’ ingenious extension of the approach to encompass emission rights, but with the very core of the approach.

### ***Instrumental justification***

A final approach holds that circumstances are such that grandfathering may be justified on account of its support of some other intrinsic value or values. These

*instrumental* views are intermediate in justificatory terms in that grandfathering is not seen as intrinsically valuable, yet the justification for it does not crucially rely on non-compliance. The basic instrumentalist idea is that it *just so happens* that grandfathering makes things better in some significant regard than any alternative.

One instrumental argument suggests that special relationships justify individuals in rich countries resisting climate change mitigation burdens imposed on compatriots that are not also imposed on poor countries' citizens (Wesley and Peterson 1999, pp. 178–179). By accident rather than design, that would give greater emission rights to those with greater historical emissions. But this grants a dubious fundamental value to special relationships (Wesley and Peterson 1999, pp. 181–186). It is, furthermore, problematic in its own terms, since it would also justify poor countries' citizens insisting upon equal emission rights for compatriots, *contra* grandfathering.

Nevertheless, providing an instrumental moral justification for grandfathering is the most promising approach. I will later spell out a specific such justification, but first mention a general consideration that puts this approach in a more favourable light than its main rival, fundamental justification.

There is nothing morally appealing about greenhouse gas emissions. Even if we were convinced by the general shape of libertarian justifications for property, Bovens' extension of that justification to carbon emissions would raise doubts about our overall allegiance to libertarianism. That pumping out carbon should, intrinsically and regardless of its effects, *increase* entitlements would be a *reductio* of that view. Emissions just do not seem intrinsically entitlement-granting.

There is, by contrast, nothing troubling about the thought that carbon emissions might increase entitlements for instrumental reasons. Suppose, for instance, that in thousands of years' time humans are threatened by a new ice age, and science says that increased carbon emissions are our best bet for averting catastrophe. In such circumstances, we might incentivise agents to increase emissions, and giving more entitlements to high emitters would be just. We are, of course, in a very different situation. But this example suggests that an instrumental justification can be made to work, if only the facts fit.

## **An argument for grandfathering**

### ***Marginal costs***

Which facts might combine with principles to generate a plausible argument for grandfathering? *Costs* appear relevant. High emitters rely on their high emissions. The industries of high-emitting countries require electricity on a huge scale, and their power stations use fossil fuels. In these countries individuals often need cars to get to work, and have developed preferences based around a high level of consumption. Thus, if high emitters are to cut their emissions, as dangerous climate change requires, they will face costs. Those costs are morally important.



Low emitters also face costs when cutting emissions. To reach an argument for grandfathering, we need a way of assessing the moral importance of costs relative to other costs. Several welfarist principles could provide the relevant assessment. On welfarist views such as utilitarianism, the relevant costs are welfare costs, rather than the monetary marginal abatement costs familiar from economics. According to utilitarianism, welfare costs are more important the greater they are.

It might be claimed that high emitters face *high marginal abatement costs*. The marginal abatement cost is the welfare cost of one extra unit of emissions reduction. Thus, the main claim of the *marginal cost argument* is:

one extra unit of emission reductions from a baseline of actual prior emissions decreases welfare to a greater extent where it is assigned to a high emitter than where it is assigned to a low emitter.

If this is correct, utilitarianism will maintain that high emitters have greater entitlements, as this will save them – and the global economy – from the severe effects of deeper cuts (cf. Wesley and Peterson 1999, p. 186).

There are two serious problems with this as an argument for grandfathering. If it succeeded, it would seem, in a way, *too* successful. It would require that high emitters had not merely entitlements in proportion to their prior emissions, but entitlements *disproportionately large* relative to their prior emissions. Suppose that a high emitter emitted 6 tonnes, a low emitter 3 tonnes, and it was agreed that they had to cut their combined emissions to 6 tonnes. Their initial welfare levels are identical. Assuming that the higher emitter has higher marginal costs, assigning entitlements in proportion to prior emissions, and thus giving the high emitter 4 tonnes and the low emitter 2 tonnes, is insufficient to maximise welfare. Though such a policy gives greater entitlements to the higher emitter, it still requires the higher emitter to make twice the cuts of the low emitter (2 tonnes versus 1 tonne). But this is at odds with the marginal cost argument, which assumes that a tonne of cuts from the higher emitter is more costly than a tonne of cuts from the low emitter. On that assumption the rational utilitarian policy is to allocate more cuts to the low emitter, where they will be less costly. The high emitter would end up with a share of entitlements greater than her share of prior emissions. Thus the argument proposes something in excess of grandfathering.

The second problem is that it is highly improbable that the argument works *empirically*. This can not be resolved simply by examining official data, as we are concerned with welfare costs, not monetary costs, and even the latter are unreliable in practice given the incentives governments have for overstating marginal abatement costs. It does not seem intuitively credible that those who emit most suffer the most from each lost chunk of emissions. Among the global rich, it is highly probable that higher emitters have more ‘low hanging fruit’ – cheap and straightforward energy efficiencies that have already been enacted by the lower emitting rich. The lower emitting rich, by contrast, would generally have to dig deeper, and suffer greater expense, to find further energy

savings. The marginal cost argument is thus very unlikely to succeed, and would not really establish grandfathering if it did.

### *Marginal benefits*

An important relative of the marginal cost argument shifts focus from the costs agents face for each unit of reduced emissions to the *benefits* agents gain from each unit of extra entitlements.

The focus on benefits, like that on costs, has the advantage of being concerned with facts that are intuitively of great instrumental importance. But these foci are far from equivalent. The baseline for the cost argument is the *prior level of emissions*, while the baseline for the benefit argument is *zero emissions*. The cost argument is concerned with cuts to its baseline, but the benefit argument is concerned with additions to its baseline. The benefit argument thus does not rely on recasting the problem as one of ‘burden sharing’, or settling on an appropriate level of reductions, as do some defences of grandfathering. It starts from a clean slate, seeing all emissions as available for distribution, and rejects an assumption commonly associated with grandfathering (Meyer and Roser 2006, p. 229). Ironically, the change to a zero emissions baseline is decisive for the effectiveness of the new argument for grandfathering.

Where the baseline is the prior level of emissions, the bulk of those emissions is taken for granted, so the cost of losing it is not considered. The cost argument only appeals to the cost to high emitters of losing one unit of emissions; as we have seen, that cost is not high enough to generate a good case for grandfathering. By contrast, where the baseline is zero, prior levels of emissions are not assumed as the starting point, so the cost of losing the majority of emissions is foregrounded. Thus the benefit argument can appeal to the cost to high emitters of losing many units of emissions – a potentially very high cost.

The claim made by the *marginal benefit argument* is this:

one extra unit of emission entitlements from a baseline of zero increases welfare to a greater extent where it is assigned to a high emitter than where it is assigned to a low emitter.

This claim is that high emitters have higher marginal benefits from entitlements than do low emitters. How plausible is this? What reason is there for thinking that high emitters would gain more from entitlements than would low emitters?

The reason is the basic idea referred to earlier: high emitters’ reliance on their high emissions. Low emitters are also reliant on their own emissions, but their emissions are lower. So from a baseline of no emission entitlements, there is good reason for thinking that high emitters would benefit more from each available entitlement. This means that they get more entitlements on a utilitarian scheme.

Reconsider two variations on the example where a high emitter emitted 6 tonnes, a low emitter emitted 3 tonnes, and they had identical initial welfare levels. In the first variant, it is agreed that combined emissions must be reduced not to 6 tonnes, as in the original case, but to 5 tonnes. Assuming that emission entitlements are not tradable after the initial allocation, the high emitter will typically have a stronger interest in securing each extra tonne of entitlements than will the low emitter. This is not as obvious for the first few tonnes of entitlements to be assigned, as the low emitter is also concerned to secure a certain level of emission entitlements. But if each agent has 2 tonnes of entitlements, the welfare benefit of securing the fifth and final tonne is greater for the high emitter than for the low emitter because, if that tonne is not secured by the high emitter, they will have to reduce their emissions from 6 tonnes to 2 tonnes, a massive two-thirds cut which is likely to impose a severe welfare penalty. If the low emitter does not secure that tonne, they will only have to reduce their emissions by a more manageable one-third from 3 tonnes to 2.

A similar but even clearer result is recorded in the second variant of the case, in which combined emissions are a more generous 7 tonnes. Assuming that 3 tonnes have been assigned to each agent already, the low emitter has a very weak interest in securing the final tonne – they can carry on emitting as they could before even without it, so it offers little or no benefit. But the high emitter has a strong interest even in the final tonne, which entails cutting their emissions by one-third, rather than by half without it. The utilitarian is sensitive to differences in the magnitudes of benefits that individuals get from extra emissions, and so will generally assign greater emission rights to higher emitters.

There is not necessarily a linear relationship between the level of prior emissions and the benefits from increased entitlements – indeed, higher emitters can usually make cuts more easily than low emitters. Emissions are likely to have diminishing marginal returns. The upshot is that, while high emitters will generally benefit from extra emissions to some greater extent than low emitters, this extent falls short of the extent to which they are higher emitters. This is sufficient for moderate grandfathering to be justified, as it allows for grandfathering considerations to be balanced against other considerations, such as those to do with high emitters' 'low hanging fruit'.

The marginal benefit argument actually implies that, pace the marginal cost argument, a unit of cuts has greater cost for low emitters than it does for high emitters. If the high emitter of the previous case were allowed 4 tonnes of emissions, and the low emitter 3 tonnes, that is a cut of 2 tonnes for the high emitter and no cut at all for the low emitter. For it to be sensible to assign all the cuts to the high emitter, it must be the case that each unit of cuts for her is less costly than each unit of cuts for the low emitter. The marginal benefit argument holds that (relative to prior emissions) cuts are less costly for high emitters, but that (relative to a baseline of zero entitlements) entitlements bring greater benefits to high emitters. It thus rejects the implausible empirical claim

made by the marginal benefit argument, and relies on a much weaker and more credible claim.

Some major welfarist principles other than utilitarianism can also support moderate grandfathering. In the foregoing case, it seems highly probable that the high emitter will need to be assigned more emissions than the low emitter in order for the former's welfare level to be as high as that of the latter. Since they started with identical welfare levels, leaving the low emitter's emissions unchanged while making radical cuts to the high emitter's would almost certainly make the high emitter worse off than the low emitter. Thus, welfare egalitarianism, which is concerned with minimising welfare inequalities, and welfare prioritarianism, which is concerned with maximising the position of the worst off, can serve in place of the utilitarian component of the marginal cost argument.

## Challenges

### *Basic needs*

In my examples, the welfare levels of high emitters and low emitters were equal. The *basic needs challenge* suggests that assigning greater emission entitlements to higher emitters is a recipe for injustice in the real, unequal world. These entitlements will only allow them greater access to luxuries, to which they have no right, while increased entitlements for low emitters may allow them to secure basic needs (Agarwal and Narain 1991, Shue 1993). There can be no utilitarian, egalitarian, or prioritarian basis for denying some bare necessities for the sake of others' extravagance.

The marginal benefit argument suggests only that high emitters have more entitlements than low emitters, by virtue of being high emitters. It does not justify the present massive inequality in emissions. High emitters could be given more entitlements than low emitters without any threat to the latter's basic needs. If rich countries massively reduced their emissions to a little above the global average, that would leave plenty of room for growth in developing world emission while giving high emitters the higher entitlement that the marginal benefit argument seemingly supports.

Furthermore, the marginal benefit argument does not actually require that high emitters have greater entitlements than low emitters at all *where they differ in other regards*. It says that higher emissions increase entitlements, but allows that, on other grounds, high emitters are due decreased entitlements. In particular, higher emitters tend to be richer than lower emitters, and it is likely that their entitlements will be reduced on that account. One reason for this is implicit in the objection: luxuries are less morally important than basic needs. Moderate grandfathering can recognise this. Securing basic needs is more morally important than providing luxuries according to egalitarianism, prioritarianism, and, on account of diminishing marginal utility, utilitarianism (see Singer 2010, p. 194). The marginal benefit argument, which appeals to these theories, says only that the final allocation of entitlements should reflect

one sort of often overlooked welfare consideration, a consideration which supports the claims of high emitters. It does not deny that there may be other, weightier considerations which mean that, all things considered, *wealthy* high emitters are due less than *poor* low emitters.

### *Luxuries*

I mentioned that emissions are morally unappealing, and this is especially true of luxury emissions. Although my argument has the advantage of providing only an instrumental basis for past emissions increasing future entitlements, it may still seem objectionable that prior luxury emissions get legitimated or rewarded at all, especially given that in the real world these emissions might endanger basic needs. Call this the *luxuries challenge*.

In response, the marginal benefit argument does not legitimate prior luxury emissions. It takes no stance on the legitimacy of prior emissions. As Garret Cullity (2004, p. 254, n. 7) has remarked in the related context of the rich engaging in expensive activities against the backdrop of global poverty:

it could be defensible to continue pursuing activities that it was indefensible to have embarked on. Presumably, for *all* of us there were alternative, cheaper ways of structuring our lives that would have been no worse for us had we chosen them when we were younger. But although it would not have been substantially worse for us to have chosen a different path in the past, it may be substantially worse for us to do so now.

Likewise, it might be defensible to *ease the transition* from prior high-emitting activities, given that high emitters will suffer significant costs from a sudden transition.

Similarly, by the logic of the marginal benefit argument, it does not reward previous emissions. The argument takes welfarism as its starting point, and if one is a welfarist, one does not think that providing an agent with an above-average level of emission entitlements in order to sustain an average level of welfare is any reward: the agent receives only as much of what matters as somebody with a below average level of emission entitlements and the same average welfare level. The critic might object that welfare is not really what matters, and that on the measure that matters here (resources, or some subset of them, such as emission permits) high emitters are rewarded, but by that point the critic has burdened themselves with a much stronger and less obviously appealing notion than the simple anti-luxury emission intuition they started out with.

### *Inequalities*

The arguments I have presented for grandfathering assumed equal welfare levels. While it may seem true that, from a zero baseline, an extra tonne of emissions will typically promote welfare best where assigned to the higher

emitter *among those initially equal in welfare levels*, it does not follow that an extra tonne of emissions will typically promote welfare best where assigned to the higher emitter *among those initially unequal in welfare levels*. According to the *inequalities challenge*, the marginal benefit argument is practically irrelevant, given the present scale of global inequalities, as it does not apply in unequal circumstances.<sup>1</sup>

There are two effective responses to the inequalities challenge. If, where emissions are allocated in a situation of initial welfare equality, an unequal distribution to the benefit of the higher emitter best promotes welfare, where we introduce a third agent, who is very low in emissions and welfare, we still have good reason, when it comes to *distribution between high welfare agents*, to assign more emission entitlements to the higher emitter. Suppose that the high emitter emits 6 tonnes and the low emitter 3 tonnes as before, but that in addition the third agent emits 1 tonne and has much lower welfare. Overall emissions are to be cut to 9 tonnes. Let us suppose that the third agent would benefit from and is due 2 tonnes of entitlements, but would not benefit from having more than 2 tonnes of entitlements. We are still left with the question of how to allocate the remaining 7 tonnes of emission entitlements between the two equally well-off parties. As the lower emitter can emit as much as they ever have with only 3 tonnes, it seems clear that the higher emitter is due greater emission entitlements, as grandfathering suggests.

The second response involves *distribution between high and low welfare agents*. Suppose the high emitter is temporarily removed from the picture. Our question is then how to allocate entitlements between an agent low in emissions (3 tonnes) and high in welfare, and an agent very low in both emissions (1 tonne) and welfare. Total emissions are to be reduced to 3 tonnes. As before, we assume that a second tonne of emissions for the worse-off agent would benefit them, but we stipulate that this is only a modest benefit and will not secure basic needs, as they are already secured. Our question, then, is whether to assign the third and final tonne to the worse-off agent, allowing them to double their emissions, but from a very low initial welfare level, or instead assign that tonne to the better-off agent, so they only have to cut emissions by one-third, instead of two-thirds.

The correct course of action here will depend on further facts. What is important, though, is that this choice is relevantly different from that in a case in which we replace the low emissions (3 tonnes), high welfare agent with the high emissions (6 tonnes), high welfare agent. The results of assigning the third and final tonne to the worse off are, in the previous case, a modest benefit for the worst off and a two-thirds emissions cut for the better off, and in this case, the same benefit for the worst off but a more extreme five-sixths cut for the better off. As the better off are equally well off in both cases, it seems clear that the case for assigning the third and final tonne to the better-off agent is stronger where that agent is a high emitter. All else being equal, we have more reason to avoid imposing a five-sixths cut than we do a two-thirds cut, and here all else (of moral relevance) is equal. Thus, even where two parties have

different welfare levels, the marginal benefit argument, fully applied, strengthens the claims of each of them insofar as they are high emitters.

### *Economies*

In the *economies challenge*<sup>2</sup> the focus is on the ‘basic idea’ that high emitters are reliant on their high emissions. The marginal benefit argument accepts that, in light of this, some special accommodation for high emitters is appropriate. The economies challenge disagrees. It says the appropriate response to high emitting economies is not to reinforce their existing carbon ‘lock in’, as grandfathering would, but to free them from it. The innovation and change of national mindsets required for successful transition to low-carbon economies would be undermined were high emitters *qua* higher emitters to receive increased entitlements.

In response, moving to a low-carbon economy is an objective, but not a road map. In the short term, the cuts have to fall somewhere. It is fanciful to suppose that cuts, which must be large if we are to achieve our objective, will not have short-term negative impacts, notwithstanding longer-term benefits. From a baseline of zero, high emitters will typically benefit most from each extra unit of emissions, so if we are concerned with promoting welfare (or the interests of the worst off), we will give high emitters *qua* high emitters more emission entitlements. There is then an argument for grandfathering, at least as a transitional principle, even if we assume that, in the long run, we would be better off in a low-carbon economy.

### **Application**

#### *Scope*

The above argument suggests that higher emitters are, in one regard, due higher emissions entitlements than lower emitters under any future emissions deal within the United Nations Framework Convention on Climate Change (UNFCCC) architecture. However, ascertaining the proper scope of this proposal, even if it is accepted in principle, is not straightforward.

One question is whether, as a referee asked, ‘[t]he conditions of the world currently are such that even though we have a *pro tanto* reason to grandfather it is swamped by other considerations, and thus not applicable’. This question may seem to arise quite naturally from part of my response to the basic needs challenge, which was, in essence, to accept that utilitarian or other welfarist reasoning will treat basic needs considerations as generally outweighing grandfathering considerations. Indeed that response does impose restrictions of scope. In particular, it follows that moderate grandfathering is unimportant when it comes to setting the global level of emissions and the emission entitlements of poorer countries. In considering these, basic needs are paramount.

This is not, however, the end of the story. My response to the basic needs challenge takes many emissions off the table, as they are needed to satisfy basic

needs, but there are others which are not needed to satisfy basic needs. This second group of emissions is within the scope of grandfathering.

### **Distribution**

Even non-subsistence emissions are not *only* subject to grandfathering. Favouring those monetarily worse off seems justified by utilitarianism, egalitarianism, and prioritarianism. This is a version of the *ability to pay principle*, though the appeal of that view is often described as fundamental (Shue 2010, p. 105). By contrast, income per capita is here relevant instrumentally. Richer countries can be expected to have higher welfare levels (though, importantly, not to the full extent that they are richer), and to be less efficient converters of resources into welfare. Thus, for different instrumental reasons, a country's future non-subsistence emissions entitlement is greater the greater its prior per capita emissions (as per the grandfathering consideration), and the lower its per capita income (as per the ability to pay consideration).

How, then, to apply these considerations? First, grandfathering plays a major role in settling the appropriate levels of emission reductions for countries that are *similarly well off*, and above the level of subsistence. It suggests that the United States (18 tonnes of CO<sub>2</sub> per capita in 2008) and Canada (16.3 tonnes) are due greater per capita entitlements than the United Kingdom (8.5 tonnes) or France (5.9 tonnes) (World Bank 2012). While this may seem controversial, that impression is mitigated by the fact that there is no linear relationship between emissions and entitlements. Thus, double emission levels do not equate to double entitlements. This is especially so where the higher emitter could reduce emissions simply by adopting many of the same practices as the lower emitter, which would seem to be the case when comparing North America and Europe. On reflection, there is nothing counterintuitive about maintaining that North Americans are due *some* higher level of per capita emissions than Europeans, at least in the medium term. The former would have to bear a burden that the latter would not were they assigned identical emission entitlements.

When it comes to settling the above entitlements, grandfathering is especially significant because the main non-grandfathering consideration – ability to pay – has less of a role. That consideration is crucial, however, when considering the second role in international negotiations which grandfathering may have, namely, that of settling the appropriate levels of emission reductions for countries that are *differently well off*, but all above subsistence level.

Consider, then, how we should distribute emissions between the United States (\$47,020 gross national income (GNI) per capita purchasing power parity (PPP) in 2010, 18 tonnes), the United Kingdom (\$36,580, 8.5 tonnes), the Russian Federation (\$19,190, 12 tonnes), and Poland (\$19,020, 8.3 tonnes) (World Bank 2011, 2012). Grandfathering suggests that the United States should be assigned the greatest emissions per capita, the Russian Federation the second most, and the United Kingdom and Poland least. But this should be



adjusted to account for ability to pay. The entitlements of the Russian Federation and Poland should be increased to account for the fact that they have much lower per capita income. This is certainly sufficient for Poland to have a significantly greater per capita emissions entitlement, all things considered, than the United Kingdom, and will narrow or eliminate the gap between the all-things-considered per capita emission entitlements of the United States and those of Russia. Again, this pattern of distribution is, on reflection, intuitively plausible. Asking Poland to decrease her emissions to the same extent as the UK reduction would fail to acknowledge that economic benefits for the former, less rich country have more impact on welfare than do economic benefits for the richer country. This all suggests that grandfathering can play a role in a future emissions treaty by complementing the more traditional climate ethics considerations of basic needs and ability to pay.

### **Conclusion**

I have argued that grandfathering should be moderate, allowing that grandfathering considerations are to be balanced against other moral considerations; either transitional or permanent, depending on its justificatory basis and pertinent facts; concerned with average emissions per year of life, such that an agent's percentage share of these equals the appropriate percentage share of future entitlements; instrumentally justified, on the basis of its empirically contingent support of intrinsic values; specifically justified on the basis that it promotes overall utility by assigning more entitlements to higher emitters who benefit more from each unit of entitlements than do low emitters, and/or promotes egalitarian or prioritarian goals by assigning more entitlements to higher emitters, who would otherwise be worse off; and applied to international negotiations alongside basic needs and ability to pay.

These six claims are largely independent of each other. One might accept any or all of the first four without accepting the more controversial fifth, which relies on the marginal benefit argument, and the sixth, which relies on some further contentions. I hope, therefore, to encourage political theorists and applied philosophers to think about more appealing ways in which grandfathering might be formulated, even if they do not accept the specific argument I present for it, or my specific application of it.

We are now in a position to return to the claim in the introduction that, though theory has much to teach practice, it also has a little to learn. Both actual agreements and proposals that are designed to be a realistic basis for agreement contain a significant amount of grandfathering. By accident or design, that feature reflects an important moral consideration that climate ethicists almost invariably overlook. But this one advantage should not be overstated. I do not, of course, endorse Kyoto as all justice required, nor do I wholeheartedly subscribe to Contraction and Convergence. Both fail to give sufficient weight to the non-grandfathering consideration of ability to pay (even Contraction and Convergence gives the global poor only a fraction of the

rich's entitlement for many years), and Kyoto was too weak even to secure the basic needs of those threatened by climate change.

What I suggest, then, is a meeting of theory and practice. The present global pattern of emissions is patently unjust, and any plausible political theory will recommend a major reduction in rich countries' emissions. But the most just distribution would retain slightly increased entitlements for high emitters on account of their high emissions, even though those same agents are due far fewer entitlements all things considered on account of their wealth and the great need of others. Grandfathering properly construed is the friend of climate justice, not its enemy.

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### Notes

1. This challenge was inspired by a referee.
2. This challenge was inspired by John Barry.

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