

Climate Change and Individual Duties to Reduce GHG Emissions

Christian Baatz, Kiel University¹

Abstract

Although actions of individuals do contribute to climate change, the question whether or not they, too, are morally obligated to reduce the GHG emissions in their responsibility has not yet been addressed sufficiently. First, I discuss prominent objections to such a duty. I argue that whether individuals ought to reduce their emissions depends on whether or not they exceed their fair share of emission rights. In a next step I discuss several proposals for establishing fair shares and also take practical considerations into account. I conclude that individuals should not always be obliged to reduce their emissions to what is their fair share for they may depend on carbon-intensive structures. Instead, they have a Kantian imperfect duty to reduce their emissions ‘as far as can reasonably be demanded of them’. In addition, they should press governments to introduce proper regulation. At the end, I further specify both duties.

1. Introduction

By now it is widely acknowledged that climate change does not only pose ethical problems but that it is fundamentally an ethical issue. During the last decade a vivid debate has evolved discussing various ethical aspects of climate change. For quite some time, the pivotal question was whether or not emissions should be reduced globally at all and if so, to what extent. The subsequent discussion on how to split the duty to reduce GHG-emissions focused almost exclusively on nation states as those agents that have to achieve certain reduction goals. The focus on nation states is warranted for two reasons. First, nation states are key actors in both

¹ baatz@philsem.uni-kiel.de

the UNFCCC and the Kyoto Protocol; the latter legally binds national governments of industrialized countries to limit their GHG emissions. Second, national governments have great influence over what happens in their jurisdiction. They are well equipped to adopt appropriate measures to decrease emissions on their territory.

However, in my point of view the exclusive focus on nation states is problematic for two reasons.² First, although the actions of governments are of utmost importance, actions of individuals do contribute to climate change to a significant extent as well, e.g. by their consumer choices, the type of mobility used etc. Given that it is usually assumed that individuals can be held accountable for their actions it seems worth investigating whether and to what extent individuals bear moral responsibility for their GHG emissions. The sole focus on nation states has been a distraction from analyzing and pointing out the duties of other relevant moral agents, especially individuals.

Second, dealing solely or mostly with nation states disguises important issues and may lead to problematic outcomes. In almost all countries citizens have contributed to and are affected by climate change to extremely different degrees. This substantially complicates the analysis of responsibility. It seems reasonable that Germany has ambitious reduction goals under the Kyoto Protocol while India has no such goals. However, it is much less plausible that a German construction worker has to reduce the emissions he is causing, while a very affluent Indian business man is not required to do so. This may be even more problematic when dealing with financing adaptation: it is usually acknowledged that high polluting and wealthy countries should support adaptation projects in poor countries vulnerable to climate change. However, if the US-government transfers financial resources to the Government of Bangladesh, it is highly questionable that those individuals contributing the most to the

² This has been stressed by Simon Caney almost ten years ago (cf. 2005, 754-756; 2006, 467-469).

problem are actually paying and those individuals negatively affected are receiving the funds. This is not to say that these problems cannot be solved.³ My point is that an analysis of responsibilities should take individuals as a starting point to avoid distorted results.

Taking the individual as a starting point one wonders whether or not individuals, too, are morally obligated to reduce their emissions. Very recently, a vivid debate concerning this question has started to develop. The paper draws on this debate and discusses important aspects not yet addressed. Before doing so, one preliminary point is in order. Although I will put aside the thorny question how to ascribe emissions to individuals (cf. Nolt 2011, 4), some remarks on what kind of emission generating activities I focus on seem required. The focus will be on emissions of individual persons, not of legal persons or any (other) collective entity. Indeed, companies, governments and the like consist of individuals, too. I do not consider the duties of these individuals *qua* office holder, that is to say their duties as congressman, governor, executive officer, employee, etc. Instead, I focus on their as well as other individuals' duties *qua* 'private person'. This might seem artificial but it is common to distinguish between the duties a particular individual has within the different tasks she is fulfilling. Person A may have quite different duties as an ordinary citizen of country X and as president of X, which she also happens to be. This is not to say that an individual *qua* (say) governor has no duties as an individual person. But this is another matter that deserves an investigation of its own and is left aside here.⁴

I will start from the premise that global emissions have to be reduced substantially and briefly discuss two prominent objections to the claim that there are individual duties to reduce GHG emissions (part 2). Arguing that the objections are unconvincing, in a second step I investigate

³ For my view on compensatory duties see Baatz (2013).

⁴ To take the example provided by an anonymous referee that rightly demanded more clarity on this matter: the owner of a power plant has a low individual carbon footprint but it is also within her power to reduce the GHG emissions of the plant. In this paper I am concerned only with her 'private' carbon footprint, not with the possibilities/duties she faces as the owner of the plant.

whether it is possible to be more specific and determine which individuals are actually obligated to reduce their emissions and to what extent they have to do so (part 3). Then, I discuss whether non-compliance by some influences the duty of complying individuals (part 4). Part 5 summarizes the findings and provides some further thoughts.

2. The Duties of Individuals

As mentioned in the introduction, I start from the premise that aggregate global GHG emissions have to be reduced considerably. This still is a contested issue though. Especially economists have argued repeatedly for modest or small emission cuts (cf. Nordhaus 1994, 2008; Tol and Yohe 2006; Tol 2010; Mendelsohn 1999). Their arguments, however, are unconvincing. The conclusion that deep cuts in current emissions decrease overall welfare is based on both (hidden) normative assumptions that can hardly be justified and on flawed methodologies.⁵ Instead of trying to calculate ‘optimal’ pollution levels by means of a global cost benefit analysis, ethical reasoning is required to determine well-grounded emission levels. A good example is provided by Konrad Ott et al. who conclude: „there is a quite remarkable convergence in between [sic] welfarists, utilitarians, deontologists, and Rawlsians to interpret Art. 2 [of the UNFCCC] in favour of low stabilization levels (450 ppmv CO₂)” (2004, 141). Steven Gardiner arrives at a similar conclusion (2004). This moral imperative cannot be overridden by means of cost benefit analysis. The task of economists, then, is not to determine the goals society should aim for but – amongst others – to investigate how goals agreed upon by society can be reached most efficiently (cost effectiveness analysis). In the following I will assume that there are convincing moral reasons for significant reductions in

⁵ To give just one example for the latter: while in their cost benefit analysis Nordhaus and Boyer include detailed calculations on the effects of a warming climate on leisure time activities in the United States, they omit all effects on agriculture in developing countries due to the lack of data (2000). Furthermore, they simply extend their estimates for leisure time activities in the States to all other countries. As Betz sarcastically remarks, at least we now know about the positive(!) effects of climate change on leisure activities in Burkino Faso such as skiing, golfing, and swimming (2008).

GHG emissions and will now turn to the question whether or not this obligation applies to individuals.

In important contributions Baylor Johnson (2003) and Walter Sinnott-Armstrong (2010)⁶ both denied that there are duties to cut individual GHG-emissions. Sinnott-Armstrong takes the example of driving an SUV for fun on a sunny Sunday afternoon and asks whether we have a moral obligation not to drive in such circumstances (ibid. 333). In the following he considers 15(!) possible principles to condemn the action. His conclusion is, however, that none of these principles demand not to undertake a pleasure ride on a sunny Sunday afternoon (ibid. 333-4).

First, a principle not considered by Sinnott-Armstrong is the well-known Polluter Pays Principle. Originally, it is an economic concept that has been increasingly applied to ethics. The polluters collectively bear the costs their pollution has caused, each paying an infinitesimal part of the overall cost in accordance with her infinitesimal contribution to the harm. When no scheme exists to make the polluters pay, why should it be morally permissible to continue polluting although we consider the action to be collectively harmful *and* wrongful (cf. Meyer 2004; Meyer and Roser 2006; Caney 2010a, 2010b)?

Second, Sinnott-Armstrong's reasoning rests on the common assumption that an individual's GHG emissions are negligibly small (cf. 2010, 334-335). In a recent paper John Nolt investigates whether this assumption can be justified and arrives at the conclusion that the *average* American is responsible for the suffering and/or death of one or two future people and thus, her emissions are far from negligible (2011). Although Nolt's estimate incorporates

⁶ The article was originally published as Sinnott-Armstrong (2005).

controversial assumptions (also explicitly acknowledged by him)⁷ it highlights that Sinnott-Armstrong's assumption should not be taken for granted and may turn out to be wrong.

Third and most important, it is insightful to look at the problem from a different angle. Due to the harmful effects of excessive GHG emissions the global emissions output has to be limited. This turns emissions rights (ER) into a scarce good that has to be allocated somehow. From the moral point of view, this allocation ought to be just. If it is, every individual gets a fair share of the emissions budget. In the moment we have sufficient information that and to what extent the sink capacity of the earth should be limited, we (roughly) know the total emissions budget that is to be allocated fairly. From the moral point of view, we can reason who is entitled to what part of the budget. Indeed, this step is required to judge to what extent different institutional settings allocate emissions (un)justly. This means that, from the moral point of view, even in the absence of institutions fair shares exist. Taking more than one's fair share is immoral because one contributes to a harmful activity and, in addition, deprives others of their fair share.⁸ I would like to call this the 'fair share argument'. The fair share argument as such does not answer Sinnott-Armstrong's question (it may turn out that it is still perfectly fine to drive an SUV for fun) but it is a first step towards a plausible answer. If it is possible to determine fair shares, we know in principle what an individual is allowed to emit. This would also allow specifying to what level (particular) agents have to reduce their

⁷ For a critique of the methodology employed by Nolt see Odenbaugh (2011) and Sandler (2011). Thomas Seager et al. claim that even if Nolt's methodology is sound (which they doubt) his results do not imply that individual emissions are non-negligible (2011). Although I disagree with Seager et al., I will leave this issue aside for my argument does not depend on the claim that an individual's emissions are non-negligible. For an interesting defense of the 'non-negligibility claim' from the moral point of view see Hiller (2011).

⁸ This is based on the assumption that there are not sufficient individuals taking less than their fair share to make up for the overuse of others.

emissions. Hence, an individual can undertake every activity – including pleasure rides – as long as she does not exceed her fair share of ER.⁹

Johnson's argument is more decisive because he tries to provide a *positive* reason for why there is no such a thing as an individual duty to cut emissions. Johnson argues that climate change is a collective action problem and, when undertaken only by some, individual actions are not able to solve the problem (2003, 227). Moreover, if an individual reduces her resource consumption she incentivizes others to increase their consumption due to the law of demand and supply (*ibid.*).¹⁰ In case one sacrifices one's own interest by reducing consumption such action is not only inefficacious but irrational. Therefore, when faced with a commons problem and no collective agreement in place individuals are not obligated to reduce their contributions to the problem (*ibid.* 286). Both Sinnott-Armstrong (2010, 344) and Johnson (2003, 283), however, make a strong case that individuals have a duty to work towards such a collective agreement, that is towards the establishment of institutional mechanisms governing access to the commons.¹¹

In a recent contribution to the debate, Marion Hourdequin provides convincing counter-arguments to Johnson's reasoning (2010). First, it seems odd that an individual has a duty to work for a collective solution but no duty at all to emit less GHG personally (*ibid.* 451).

⁹ In addition, Sinnott-Armstrong's argument would result in an absurd conclusion; see 'Five Mistakes in Moral Mathematics' in Derek Parfit's book 'Reasons and Persons' (1984). I am thankful to Clare Heyward and one anonymous referee for highlighting this. Recently, Elizabeth Cripps provided an excellent account of collective moral responsibility that also allows for rebutting Sinnott-Armstrong's reasoning (2011). Although she does not refer to fair shares the logic her account is based upon is similar to the approach used here.

¹⁰ The same argument is made by Seager et al. (2011). They write: "Americans who reduce consumption of fossil fuel resources will undoubtedly reduce fossil fuel prices - thereby enabling increased consumption of fossil fuels by others. The end result may not in fact be beneficial to the future people for whom they are concerned, but instead transfer the greatest benefits to those individuals or countries that do not voluntarily curb emissions" (*ibid.*, 40-41). This, however, is a highly contingent conclusion. Where price elasticity is limited, change in consumption may not significantly affect the price (*cf.* Hourdequin 2010, 459).

¹¹ This certainly is an important point that I will ignore throughout the paper for two reasons: first, my concern is with individual emission reductions, a matter complex enough of its own; second, good arguments for such a duty already exist (in addition to Johnson and Sinnott-Armstrong see Cripps (2013)). To provide a more complete picture I will nonetheless return to this point in the conclusion.

Perhaps Al Gore's flying around the world is excusable as long as he does so to work for a global climate treaty and/or to convince people to cut their GHG emissions. But we would be much more inclined to call him a hypocrite, if his excessive emissions result from frivolous activities such as Sinnott-Armstrong's SUV ride. According to Hourdequin, such behavior violates the value of moral integrity, which requires a synchrony between political and personal action. That is, an individual should harmonize their commitments at various levels so that they are embodied in the various spheres she inhabits (ibid. 449). Second, by adopting a Confucian conception of morality and personhood she points out the relational and symbolic dimension of human action. She concludes that personal choices are effective and morally important because they have a communicative and social function: "individual consumer decision, personal communication about such decisions, and similar small-scale, local actions may turn out to be important catalysts for emerging collective agreements" (ibid. 457). Note also that Johnson's demand and supply argument has no force against the fair share argument: if others increase their emissions due to my reductions, this is legitimate if they thereby do not exceed their fair share. If they do exceed their fair share, they act unjustly. Usually, I cannot justify my unjust action by reference to others acting in this way (cf. section 4).

In a reply to Hourdequin's article Johnson states that he has changed his mind and agrees that there *are* moral obligations to reduce individual emission output (2011).¹² He insists, however, that there is a "fundamental difference" between individually harmful actions and overuse in a tragedy of the commons, such as climate change (ibid. 147). While the former are harmful no matter what others do and are thus morally objectionable acts as such, the latter are only harmful when done excessively and/or by a large number of agents (ibid. 152). This is an important point also made by Sinnott-Armstrong (cf. 2010, 335). However, the

¹² Disagreement between Johnson and Hourdequin persists regarding the efficacy and the communicative power of individual actions. See also Hourdequin's reply to Johnson (2011).

distinction may be less sharp when framing the commons problem as one of fair shares. As argued above, taking more than one's fair share is immoral because one contributes to a harmful activity and deprives others of their fair share. I therefore think that Johnson overstates the *fundamental* difference between 'paradigm moral problems' and 'commons problems' (cf. Hourdequin 2011, 162). He is right though in pointing out that there nevertheless *is* a difference, namely that actions of the former category are *always* morally objectionable and the latter are not.

To highlight this point Johnson adopts Immanuel Kant's concept of perfect and imperfect duties and argues that making unilateral reductions is an imperfect duty "meaning that the amount of reduction cannot be specified and is left to the judgment of the individual" (2011, 151). He goes on: "The reason is that the burden on individuals doing this unilaterally is too great given the odds against their sacrifice achieving much in the absence of collective action" (ibid.). I think it is indeed helpful to adopt Kant's distinction and will come back to this at the end of the next part. But is the claim that the amount of reduction cannot be specified and is left to the judgment of the individual all we can say?¹³ Obviously, not every human being on the planet has such a duty (think of poor people in LDCs). Likewise, it is overly simplistic to assume that e.g. all Americans have such a duty. It is quite obvious as well that the sacrifices involved in individually reducing emissions vary extremely among individuals. Therefore, it would be helpful to know *who* has to reduce *how much* (what about Sinnott-Armstrong's SUV drive, for instance?). In what follows I will investigate whether one can be more specific or whether Johnson's claim is all we can hope for.

¹³ To avoid misunderstandings: what is meant here – and what Johnson seems to mean – is that an individual has to make the *judgment* herself because only she has the relevant information to do so. It does not mean that she can do as she likes.

3. Specifying the Duties

3.1 The Difficulty to Define a General Threshold

Various proposals for establishing fair shares of emissions rights (ER) exist. I will start with a notion that has gained considerable support during the last decade, namely the principle of equality, meaning that every individual has the right to emit the same amount of GHG (equal per capita emissions rights - EPCER). According to this principle the calculation of every person's fair share of ER is simple: the total amount of available emissions is divided by the world population. A plausible EPCER threshold currently amounts to roughly 2-3t CO₂ (cf. WBGU 2009). In consequence, according to the EPCER approach every human being that is above the threshold has the moral duty to lower her emissions until she reaches the threshold.

A *prima facie* justification for EPCER runs as follows (cf. Ott 2007, 18-9): The atmosphere is a global sink for GHG and a precondition for life; people cannot and must not be excluded from using the atmosphere as a sink. Thus, the sink has to be regarded as being a global common pool good. It is not adequate to zone the atmosphere (as zoning oceans) or to model it as distinct bubbles for it does not matter where GHG are emitted. If this is the case, and every individual is allowed to emit GHG, we lack the morally relevant criterion to justify why some (e.g. Europeans) are allowed to emit more than others (e.g. Indians). Hence, it stands to reason that the *presumption in favor of equality*, embodied in most theories of distributive justice, can be applied to the case of common pool goods. Under this presumption, the burden of proof falls on the side of unequal distribution of emission entitlements. Unless the burden can be met by argument, egalitarian principles hold.

Naturally, a number of scholars tried to meet this burden of proof. Eric Posner and Cass Sunstein argue that fairness in terms of equality (or at least equal consideration) demands that

burdens *and* benefits are distributed equally; more precisely they argue in favor of distributing equally all burdens and benefits resulting from global efforts to mitigate climate change, that is to say from a *global climate treaty* (2009, 81). Their proposal is deeply problematic for it takes the status quo as given. Equalizing cost and benefits of solving an existing problem assumes that the status quo is just, but it is not.¹⁴ Consider two distinct but interrelated aspects. First, some have appropriated large shares of the sink capacity of the atmosphere not leaving sufficient capacity for others. This is acknowledged as a problem of overconsumption and *therefore* the aim now is to establish fair shares of the atmospheric sink capacity. The proposal to equalize costs and benefits of solving the problem (i.e. the costs of a climate change treaty) is implicitly based on the premise that those having appropriated large shares are rightfully entitled to their *de facto* ER. This is a dubious premise and has to be justified. Unfortunately, Posner and Sunstein provide no reason in defense of their view.

Second, those responsible for excessive GHG emissions in the recent past have knowingly displaced costs on others without their consent.¹⁵ This gives rise to issues of compensation. Then, contemporary individuals exceeding their fair share of ER not only have to reduce their emissions but also have to provide compensation to those harmed. Equalizing costs and benefits of solving a problem is even less convincing when some have contributed to and are benefiting from this problem to a much larger degree than others. Posners and Sunstein's claim would lead to the implausible conclusion that those agents having to undertake the greatest mitigation efforts – and at the same time benefiting less from the mitigation than others – should be rewarded for doing so (cf. *ibid.* 82). That is to say, poor Bangladeshis

¹⁴ Their proposal would make more sense, if climate change were a natural phenomenon not caused by mankind. But even then we would assume that capable agents bear a larger burden and that (very) poor agents do not have to take over any costs. In consequence, not even then would an equal distribution of the costs and benefits be considered as just.

¹⁵ It is usually acknowledged that mankind has sufficient knowledge to tackle anthropogenic climate change at least since the 90s (see e.g. Müller et al. 2007, Gosseries 2004, Caney 2006a, Shue 1999).

should compensate rich US citizens for lowering their emissions.¹⁶ In game theory that might be a correct observation. Here, we are not concerned with rational self-interested players in a moral-free zone but with ethical theories indicating what agents are required to do. Posner's and Sunstein's case for equalizing costs and benefits of a global climate change treaty is thus unconvincing.¹⁷

I will now turn to more serious concerns with EPCER. One obvious aspect is that people living in different areas have different energy needs and different possibilities to apply renewable energies. Eric Neumayer found that both factors are statistically significant determinants of emissions (2004). Since geographical factors are hardly under the control of individuals, perhaps they should be incorporated in the EPCER approach to reflect the needs of people living in different areas.

But there are more reasons to modify the EPCER approach. One reason is to take the temporal extension into account as done by Lukas Meyer and Dominic Roser (2006, 2010). If equality of ER is demanded, we can either equalize ER at each point in time or over the whole lifespan of individuals (2010, 234). They go on arguing that the latter option is more plausible to the majority of egalitarians. If so, current high-emitters have already used up a substantial amount of their fair share (perhaps all of it) and accordingly will get much less ER in future than current low-emitters. Moreover, Meyer and Roser rightly point out that emissions as well as ER are only means to an end and what ultimately matters in the face of justice are not emissions but rather the *benefits of emissions*. Hence, to determine present fair shares we should equalize benefits of emissions and not emissions and ER respectively (ibid). Current

¹⁶ As Demuijnck (2004, 67) points out in a different context such a conclusion is absurd; although Posner and Sunstein try to formulate it in a way that makes it sound less fallacious (2009, 82).

¹⁷ They also argue that agreeing on a global regime that rests on EPCER would discourage economic growth, because affluent countries will fear that in any future regime their wealth will be given to poor countries and thus, they would undertake less efforts to get wealthy in future: "A redistributive principle such as the per capita approach implicitly punishes states that do well economically, while rewarding states that do poorly" (ibid. 2009, 78). I do not think that it is necessary to comment on this position.

wealthy people are not only enjoying the benefits of their own emissions but also those of past generations, more or less since industrialization took place. They benefit from these to a much greater extent than poor people, not knowing the many promises of industrial products (cars, planes, washers, air conditionings, etc.). Equalizing the *benefits of emissions* would mean to give more present ER – perhaps all – to the poor (ibid, 235). This line of reasoning does not only take into account those past emissions that occurred during the lifetime of currently living individuals, but all past emissions since the beginning of the industrial revolution (insofar as they create current benefits).

To sum up, there are reasons to further depart from EPCER. While geographical factors would provide more ER to some high emitters, Meyer's and Roser's considerations would endow all high emitters with substantially less ER. Hence, even if one believes that EPCER should be modified as discussed above, high emitters would still have to cut back their emissions drastically. All views stated so far are egalitarian regarding ER or related goods (benefits of ER, energy needs). As long as we are concerned with distributing ER in isolation from other goods, it is hard to think of any reasonable distributive principle that does not pass for such a modified EPCER approach. In the remainder of this section I will deal with a more general objection questioning the implicit assumption that ER should be treated in isolation from other goods.

The case for a modified EPCER approach becomes less persuasive once the broader picture is taken into account. Derek Bell argues that the right to emit a certain amount of GHG should be embedded in a full theory of climate justice or even in a general theory of global justice (2008). The same point is made by Simon Caney (2005, 2009). According to Caney and Bell what matters in the face of justice is not the distribution of a certain good, but bundles of goods. "Why not consider someone's entitlements as a whole, taking into account their access

to all the relevant ‘primary goods’ (Rawls) or ‘resources’ (Dworkin)? [...] Why single this [emissions rights] out for special (equal) treatment? Why not put it into the general pot of all goods to be distributed and then have a distributive rule applying to the whole package of goods contained therein?” (ibid. 130; see also Bell 2008). Indeed, some goods should be treated in isolation from the distribution of other goods (e.g. civil liberties) but according to Caney ER do not have this special kind of “social significance” (ibid.).

In drawing on Amartya Sen’s and Martha Nussbaum’s Capability approach both Bell (2008, 249) and Caney (2009, 131) further argue that it is wrong for theories of distributive justice to focus on ‘resources’ or Rawlsian ‘primary goods’ because the attention is on what has value only as a means to an end. Instead, what matters is people’s ability to achieve their goals and to enjoy their functionings (cf. Sen 2000, 2009). They make the point that applying the capability approach leads to the conclusion that it is implausible to distribute emissions equally if doing so will leave people unequal in their ability to pursue various goals. Apparently, not only geographical factors influence people’s need for emissions. Some may need to emit more because they are physically disabled, sick, etc. “A regime of equal emissions is thus unfair on those with unequal needs” (Caney 2009, 131).

Steve Vanderheiden’s “modified equal shares model” considers Bell’s and Caney’s critique to some extent by accounting for people’s different needs due to geographical factors. However, his model fails to fully address their criticism. Since people in different regions have different needs of emissions, according to Vanderheiden, everybody has a right to emit as much as necessary to guarantee subsistence (2008, 226-7). The remaining ‘luxury emissions’ should be distributed on an equal per capita basis (ibid). Though the model partially takes into account different needs of people, Caney points out that the “modified equal shares model” maintains the “fetishistic character” of focusing on means (resources) instead of ends (capabilities)

(2009, 132). Moreover, it treats emissions in isolation from other goods, which – according to Caney – is not convincing. Instead, one should treat the ascription of climate responsibilities in conjunction with considerations about global justice in general (Caney 2012, 258-9; Bell 2008, 254). One alternative way of allocating ER that would correspond to Caney's and Bell's integrationist proposal is to auction ER globally (cf. Caney 2009, 140). Caney draws on an idea first developed by Peter Barnes (2001, 2006) and recently adopted by Oliver Tickell (2008). The authors propose that an international body determines a global GHG emissions level (a global carbon budget) that decreases annually to prevent dangerous climate change. Permits to emit GHG are sold at an auction and all those agents that want to emit GHG must purchase ER to do so. The revenues of the auction are used to fund mitigation projects, fostering technological development and to finance compensational measures (ibid. 97-112).

As such, the auctioning scheme would be extremely unfair to the poor because they have no means to pay for increasing energy costs leaving millions of people unable to fulfill their basic needs. To circumvent this major drawback Caney proposes that either subsistence emissions are exempted from the auction system or revenues are distributed to the least advantaged (ibid. 140). Caney does not comment on either option. In case of the former it is not clear how to exempt subsistence emissions from the auction scheme and it will also be complicated to determine (let alone agree on) subsistence emissions level for every individual or at least for every region around world. The latter option seems more promising though much less money will be available to spend on the purposes stated by Caney (see above) and several specifications are required to determine how to distribute the funds.

However, these questions should not bother us here. The general idea behind the auction proposal is to allocate ER according to a general distributive principle that applies to a higher-ranking class of goods or resources instead of singling out ER and distributing them according

to a distinct principle. Caney dubbed the former approach 'Integration' and the latter 'Isolation' (2012, 259). What is important for our discussion is the fact that an integrationist approach lacks a clear threshold that indicates which agents exceed their fair share and therefore stand under a moral obligation to reduce their emissions. To be clear, the integrationist approach does not lack the concept of a fair share. But an agent's fair share of ER depends on the overall bundle of goods she has at her disposal. High emissions can be justified as compensation for a lack in other goods. Disposal of comparatively high amounts of ER *and* of other goods (in terms of money, wealth, or capital) at the same time is not justified though. As a consequence, the integrationist approach cannot provide a straightforward answer whether or not certain agents exceed their fair share of ER. In each case the answer depends on which other goods an agent does (not) possess. But then, how can someone make the claim that certain agents are emitting too much? This is an important point and needs further elaboration.

Within an integrationist approach anybody is entitled to an emissions level that guarantees subsistence. In most cases this level will be rather low. That is, I assume that many activities now common for average 'Western' citizens will not qualify as safeguarding subsistence (see below, 3.2). But the approach does not require individuals to reduce their emissions to the level of mere subsistence. Agents are allowed to emit (much) more emissions as long as they pay a price that adequately reflects the scarcity of the good (remaining intake capacity of the atmosphere). In the absence of such a scheme, however, neither is the total amount of emissions limited nor is there a price for emissions. In this case, it is not clear which part of the emissions above the respective subsistence threshold are justifiable and whether they are at all. In order to make such a judgment Caney proposes a five step procedure (in detail cf. 2012, 291-299). The pivotal idea is to first identify what people are entitled to as a matter of

justice and, second, to determine the amount of ER that is required to fulfill these entitlements. This process, however, must be reiterated until the total amount of ER allocated to each individual does not exceed the overall carbon budget. If too many ER are allocated negative environmental effects will occur that violate peoples entitlements and “[w]hat we need is an account of justice that does not have environmental impacts that undercut its ability to realize its own principles” (Caney 2012, 295).¹⁸ The upshot is that it will be complicated and controversial to determine what an individual is entitled to in terms of ER.

As I will try to demonstrate in the next section, even within an EPCER approach evidence of who has to reduce emissions to what extent is less straightforward than suggested so far. Indeed, both the integrationist and the isolationist approach run into the same problems when identifying how much *particular* individuals have to reduce their emissions. I will investigate these problems in the following.

3.2 Individual Emissions Reductions as an Imperfect Moral Duty

Consider the EPCER approaches as discussed above. The reasoning in the previous part suggests that in principle every individual has to make sure that her emissions are below this threshold (2-3t CO₂ per year). However, ‘in principle’ is more than just a linguistic twirl; it is of importance. Actually, it may not be that easy to undertake the required cuts in individual emissions (cf. Gardiner 2010). Why? To reach this threshold the average European citizen has to reduce her emissions by more than 80% minimum (six fold reduction) and for the average US-American citizen it would be 90% minimum (tenfold reduction). For all those that emit more than the national average the cuts have to be even deeper. Thus, it is not about taking the bike instead of the car once in a while, not traveling another continent for vacation, buying energy efficient domestic appliances, local food, and a fuel efficient car, etc. It is about a low

¹⁸ Caney calls this the “sustainability condition” (2012, 293).

carbon and hence completely different lifestyle. Within current carbon dependent structure in industrialized countries, leading such a lifestyle may be connected with very high economic, social and psychological costs; it would have rather fundamental impacts on the lives of these individuals.

A general principle in ethics is ‘ought implies can’ (cf. Seager et al. 2011, 40). A moral imperative that cannot be met is not valid. But what does ‘can’ precisely mean in this case? For sure, individuals are cognitively and physically able to substantially lower their current high emissions. Therefore, do individuals have to take these steps and give up their current life? What can morality reasonably demand? Ultimately, they wrongfully take part in a harmful activity. Still, morality should not demand that individuals lower their emissions to a level so as to give up leading a decent life.¹⁹ This intuition is acknowledged by the prevalent term ‘subsistence emissions’ and not in need of justification. However, the concept of ‘subsistence emissions’ is usually applied to poor people living in developing countries. But that does not necessarily have to be the case.

Consider an (elderly) person living in a rural area in the US who depends on her car to buy food and to participate in social and cultural activities because no public transport system is available or she is not able to use it.²⁰ Let us further assume that she lives in a poorly insulated house, lacks the means to invest in improved insulation and there are no governmental programs subsidizing credits etc. Lowering her emissions e.g. below 2 t CO₂/a would have harsh consequences on her life. Taking into account the burdensome hardship connected to the reductions it seems like asking for too much. My claim is that her life would not be decent anymore. To use the language of Nussbaum: she would lack some capabilities, for instance the ‘capability for love and friendship’ (cf. 2007, 2011). Therefore, I am

¹⁹ See also Anders Schinkel (2011, 37).

²⁰ Another illuminating example is provided by Lauren Hartzell (2011, 15-16).

cautioning against a too narrow application of the concept of subsistence emissions that focuses solely on poor people in the developing world. In carbon dependent structures subsistence emissions can be rather high.

However, there are other examples where it is less clear whether or not one depends on certain emission. Think of an academic, perhaps one working on the ethical dimension of climate change. To foster his career and to increase chances that he will be hired again after his current funding ends, he has to participate in conferences, more often than not far away from where he works. Other academics are in positions where it is simply required to fly a lot. To make the argument that these emissions are necessary to safeguard existence seem far-fetched. At least they are required to guarantee a very important part of life (in Western cultures): work. Now, one can argue that the problem is western lifestyles as such and there might be a duty to change that. I do not want to go into this discussion here. But I think it has become clear that to just give up flying is not as easy as one might think at first. Of course, in many occasions emissions do qualify as what Henry Shue labeled 'luxury emissions' (cf. 1993) and Sinnott-Armstrong's sunny Sunday afternoon drive is clearly among them (more on that below). I do not think it is necessary to give more pertinent examples of luxury emissions. In any case, the contested issue is where to draw the line, i.e. what can we reasonably expect people to do within given social and economic structures. This is a 'moral gray area' and it will be a difficult task to shed light on it in order to identify more white and black (or at least light and dark grey) areas.

The key issue is that individuals depend on the (energy and mobility) structures they live in and have a very limited power to alter them. Within these structures a low carbon life can be associated with high economic, social and psychological costs. Therefore, the conclusion that *every* individual around the world has the moral duty to reduce her emissions below a

threshold as discussed above is overly stringent. What matters from the moral point of view are the options and possibilities of particular agents, but these can differ considerably. To make a sound judgment on what an individual can reasonably be expected to do, we have to take into account their respective situation. That is, on the level of abstract analysis we cannot say more than that individuals have the moral duty to reduce emissions as far as can *reasonably* be demanded of them. What ‘as far as can reasonably be demanded of them’ means depends on the circumstances and has to be decided on a case by case basis.²¹

Interestingly, the above conclusion holds true for an integrationist approach as well. At the end of part 3.1 I concluded that within an integrationist approach it is more complicated to determine how much people are allowed to emit in the absence of a regulative scheme. But obviously one does not have to stop at this point. Recall, the fair share of ER depends on how much other goods an individual possesses, i.e. to make a judgment about the duty of particular individuals to mitigate, information about their overall endowment with goods is required. This fact allows for some specifications. Imagine a counterfactual or hypothetical world B in which there is a cap on total GHG output that turns emissions into a scarce good. In consequence, goods and services that involve the generation of GHG get more expensive. Thus, rising costs for emissions will lead to a decline in the overall endowment with goods as long as the goods consumed are not available for the same price in a less carbon-intensive version. Compared to our contemporary world A, the people of B will either maintain their consumption level using less ER or they reduce their consumption. That is to say, the B-people are not able to possess as much ER and consumer goods at the same time as people do in A. This is so because in A ER are free of charge, while they are not anymore in B. Since B is obviously a proxy for what would happen if measures according to Caney’s integrationist

²¹ A tentative specification of the term ‘as far as can reasonably be demanded’ is provided in the conclusion.

approach were adopted, high levels of ER *and* consumption are not justified within such an approach.

The upshot is that individuals both responsible for high GHG emissions and well endowed with other goods (money in particular) very likely exceed their fair share of overall goods and ER respectively. Due to the still relatively close correlation between GHG emissions, consumption and wealth, people with the former usually also possess the latter. Hence, the bundle of goods the average ‘Western’ individual has at her disposal is not justified. In the absence of governmental regulation individuals are morally obligated to reduce emissions because they are exceeding their overall fair share. Whether and to what extent they ought to undertake reductions – analogous to the reasoning in case of an isolationist approach – depends on the circumstances, in this case their overall endowment with goods.²²

To conclude, on a more abstract level of analysis within an integrationist approach it seemed (much) more complicated to determine whether and to what extent individuals have to reduce their emissions. However, in both cases (Integration and Isolation) the respective circumstances of particular agents matter and have to be accounted for when determining the moral duty to reduce emissions. Therefore, no general conclusion is possible regarding *how much* particular individuals have to reduce their emissions output. Since the particular circumstances have to be taken into account, the general conclusion is that individuals are morally required to reduce their emissions ‘as far as can *reasonably* be demanded of them’.

As mentioned at the end of section 2, Johnson argues that individual GHG reductions are an imperfect duty *sensu* Kant. The above discussion shows that he is right. Indeed, there should

²² To highlight the different perspectives of both approaches consider the example of a small-scale rice farmer responsible for high levels of GHG due to the farming method employed. A proponent of isolation would argue that the farmer has no moral duty to reduce her emissions because no alternative income sources are available and she thus - *ex hypothesi* - depends on her farming method. In contrast, the proponent of integration would argue that there is no such a moral duty because the farmer does not exceed her overall fair share – what she currently possesses is required to guarantee subsistence (she has no possibilities for substitution because of a lack in other goods – e.g. money, or knowledge, or natural resources etc.).

be no *general* obligation to reduce one's emissions unilaterally to a level that would prevent harm if everyone else did so. But only then individual reductions would pass for a perfect duty. At this point, two important remarks on the imperfect duty to individually reduce GHG emissions are required.

First, Johnson concludes that the amount of reduction is left to the judgment of the individual (2011, 151). I do not agree with this statement and want to caution against a too generous interpretation of Kantian imperfect duties. In the *Metaphysics of Morals* Immanuel Kant writes with respect to imperfect duties: "hence this duty is a *wide* one; the duty has in it a latitude for doing more or less, and no specific limits can be assigned to what should be done" (1996, 156). How to act is not completely left to the judgment of the individual but only in a threshold range. Ethics cannot determine when *exactly* it is complied with a duty. Therefore, moral agents have a certain freedom of action in case of imperfect duties, whereas they do not in case of perfect duties. Once we know about the circumstances individuals or groups of individuals are in, a rough judgment about their duty to cut GHG-emissions is possible. That is to say, with sufficient information a third party can determine how much each group roughly owes. A third party cannot, however, specify the exact amount that is owed due to insurmountable epistemic obstacles. As explained at end of part 2, this is left to the judgment (not to the convenience) of the individual that possesses the relevant information to do so.²³ Although it is not possible to determine exact amounts of reductions required or a specific threshold that must be reached, the findings allow for some general conclusions regarding consumerist lifestyles.

Recall Sinnott-Armstrong's SUV example. From the perspective of the fair share approach he had such difficulties answering his question ("is it morally wrong to drive an SUV for fun?")

²³ I am indebted to an anonymous referee for requesting more clarity in this respect.

because he asked the wrong one. Driving an SUV for fun may not be wrong at all. As long as I stick to my fair share, I can drive as much as I please. It is important to note, though, that in our current world the situation is different. In all likelihood, those having the possibility to undertake joy rides do not stick to their fair share. Due to the carbon-intensive structures most people depend on, those exceeding their fair share have an imperfect duty to reduce their emissions as far as possible. Thus, to make the case that is *not* morally wrong to drive an SUV for fun one would have to argue that giving up joy rides cannot reasonably be demanded. This seems extremely dubious. Besides joy rides, a lot of current practices of the global consuming class are not justifiable. Though many individuals are not able to reduce their GHG emissions to a level in line with their fair share, several possibilities for substantial reductions exist at present.²⁴ This holds true for affluent elites in developing countries as well, may it be the factory owner in China, the banker in India, or the ‘sugar baron’ in Brazil.

Typically, the duty of the very wealthy is much greater than the duty of an ordinary worker or middle-class person. Individuals that do not undertake available emission reductions fall short of their moral duty. To put it in the words of Paul Harris: “just because one cannot change one’s national system or because the international climate change regime does not yet encourage or enable individual responsibility, there is no excuse to live like most Americans or Australians. To do so, at least in a material sense, is immoral; it is a violation of cosmopolitan justice and a recipe for climate disaster” (2010, 187).

Second, Kant’s discussion of perfect and imperfect duties may generate the impression that they are analogous to positive and negative duties. This, however, is not necessarily the case.

All moral agents have *negative duties* e.g. not to harm another individual or violate her rights.

In addition, an agent sometimes has the *positive duty* to remedy situations not caused by her if

²⁴ A further possibility could consist in carbon offsets. The question if that is a legitimate form of lowering one’s emissions is a contested issue I will not discuss in this paper.

she has the ability to do so (cf. Pogge 2008, 70-3). In contrast, the distinction between perfect/imperfect duties corresponds to whether or not ethics can specify when the duty is fulfilled. In fact, there are many cases where positive duties fall together with imperfect duties and negative with perfect duties (perhaps even in most cases). Two paradigm examples are providing aid to the poor²⁵ in case of the former and murder in case of the latter. However, other combinations are possible as well (see figure 1). An example for a perfect positive duty is the famous child-drowns-in-pool-case. Since the innocent bystander *ex hypothesi* is able to rescue the child without risking his own life or anything else of comparable moral value, he has no freedom in action: he must rescue the child *whatsoever*. An example for imperfect negative duties are individual GHG-reductions: people have certain room for maneuver to comply with their negative duty not to participate in collectively harmful activities (as discussed above). Of course, there are many less clear-cut examples. In principle, a duty can be located anywhere in the matrix. Before providing some final thoughts on the duties of individuals in the conclusion (part 5), I will discuss the case of non-compliance, which seems of great practical importance.

4. The Case of Non-Compliance

It is part of our non-ideal world that some or even most individuals do not comply with their moral duty to reduce their individual GHG emissions appropriately (as specified above). Therefore, a subsequent question of rather fundamental practical importance arises: does non-compliance by other individuals affect the duty of complying agents? Non-compliance is a major question within so called non-ideal theory (cf. Murphy 2003). It is important to note, at this point, that some ‘non-ideal considerations’ already have entered the picture. In a situation

²⁵ As discussed by Singer (1972). If we want to account for Pogge’s considerations who focuses on institutional reasons for poverty (2008), the example should be rephrased as ‘fighting world poverty’ or the like and would move up towards or even into the upper left box (see figure 1).

of ideal justice everybody would stick to her fair share and no harm would be caused. Due to unfavorable circumstances some are allowed to emit more than what is their fair share. Thus, even in case of full compliance harm is done. The demands of ideal justice cannot be met without sacrificing interests that are at least equally important from the moral point of view.

If non-compliance is taken into consideration, another element of non-ideal justice is introduced. The situation, therefore, is different from the ‘standard case’ of non-compliance in which full compliance would result in a just outcome.²⁶ Therefore, some important arguments that have been discussed at length within non-ideal theory do not apply here (see below). Due to the special case considered even a couple of brief thoughts are insightful, though they cannot do justice to the complexity of the existing debate.²⁷ Of course, a detailed investigation of non-compliance in case of individual emission reductions is warranted and required.

There is an extensive debate whether non-compliance by some agents increases or decreases the duty or whether non-compliance does not impact the duty of complying agents. Regarding the first option, both Liam Murphy (2003) and David Miller (2008, 2011) argue that compliers do not have to take up the slack, i.e. non-compliance does not increase the duty. Although this seems intuitively plausible, Zofia Stemplowska provides excellent counter-arguments and argues that in certain cases there is a duty to take up the slack (2010).²⁸ Her reasoning is based on the premise that compliers are able to take up the slack. The conclusion of part 3.2 (one has to reduce emissions as far as can reasonably be demanded) already contains that asking for more is asking for too much. Thus, the premise that further reductions are possible without bearing unreasonable costs does not apply. However, one may think that

²⁶ It is usually assumed that several agents are under a duty to contribute their share in order to establish a just state. In a second step it is assumed that some agents do not comply with their duty. The question, then, is what the others are obligated to do.

²⁷ For a fuller treatment of noncompliance see e.g. Simmons (2010) and the contributions in *Social Theory and Practice* (34,3).

²⁸ For an argument that there is a duty to tack up the slack regarding emissions reductions see Caney (2005, 766-7, 769-72).

I have overemphasized the moral importance of the social and economic structures individuals depend on; in other words that I especially have let affluent individuals off the hook too easily. Therefore, the argument continues, individuals have a duty not to exceed their fair share *whatsoever*. Even then, I do not think that compliers have to take up the slack and further cut their emissions. Why? Due to the massive emissions generated in the past – especially during recent decades – and a projected further increase in future emissions the remaining intake capacity of the atmosphere is declining more and more. In consequence, any future global emissions level that does not threaten life and livelihoods of millions has to be extremely low compared to present levels. Likewise, fair shares of ER that individuals are entitled to will be equally low. Thus, it is highly unlikely that there will be individuals who are able to further reduce their emissions without bearing unreasonable costs. Since our current concern is much more with how to achieve these huge emission reductions at all, the above considerations do not seem to be of practical relevance at present.

There is an additional reason why the first option (duty increases) is not convincing in the case at hand. Stemplowska also assumes that it is a given fact that non-compliers do not comply, or at least that compliers have no influence on the behavior of non-compliers. But this is not always true. It seems odd to ask compliers to make additional reductions instead of enforcing the duty of existing non-compliers. Thus, instead of reducing even more individually compliers should take action to enforce compliance (cf. Caney 2005, 769).²⁹ This means to pressure governments to regulate GHG emission properly (see part 5).

²⁹ I leave it open whether or not this is just another way of taking up the slack. Although this is a relevant question, the point I wish to make is that no additional emission reductions are required. Thanks to Sabine Hohl for pointing out to me this possibility.

Let us now consider whether non-compliance decreases the duty. Here, too, several intuitively plausible arguments have been made that non-compliance does not decrease the duty.³⁰ But for the particular account developed above other considerations are more important. In the previous part I argued at length that the particular circumstances of individuals affect the duty to reduce emissions. Thus, if non-compliance affects an individual's options to reduce emissions, it may also affect the respective duty. Presumably, individual reductions are most constrained by carbon dependent structures, which are not affected by non-compliance. But to some extent, non-compliance by others can make reductions harder to achieve and the other way around. If most people in my rural community try to use their car as little as possible, for example, it is easier to organize some form of car sharing. In consequence, non-compliance decreases the duty if and only if it increases the costs of certain reduction measures beyond the point where these can be reasonably demanded. This, however, does not change my general conclusion that individuals have to reduce their emissions as far as can reasonably be demanded of them. Interestingly, it is very likely that we live in a world with widespread non-compliance. To some extent, reductions are so burdensome due to the non-compliance of others. This further strengthens the case for institutions supporting and enforcing compliance.

5. Conclusion

Sinnott-Armstrong's and Johnson's arguments against individual duties to reduce GHG emissions are not convincing. Such a duty exists. On a general level of analysis, however, it is not possible to specify to what level individuals must reduce their emissions. This is so because the specific circumstances of each individual have to be taken into account to make a sound judgment. Even then, it will be very hard to reach agreement on what exactly particular

³⁰ Miller, for instance, has cautioned against the undesirable consequences of this option (2008, 153). Another straightforward argument is that wrongful actions cannot be justified by reference to other agents acting in this way.

agents are required to do from the moral point of view. The core of the problem is that agents are constrained by the social and economic structures they rely on, and that collective action is required to change these structures. My conclusion, therefore, is that individuals have the imperfect moral duty to take already available measures to reduce emissions in their responsibility as far as can *reasonably* be demanded of them. In a first approximation emission reductions ‘can reasonably be demanded’ if an action generating GHG emissions either a) has no moral weight or b) an alternative course of action (that is to be considered as an adequate substitute) causing less emissions exists. This means that there is a duty to avoid what is usually referred to as ‘luxury emissions’ and already allows for ruling out many activities undertaken by the global consuming class at present.

But, another aspect is of importance and should not go unmentioned in order to complete the picture. Due to the importance of social and economic structures first and foremost national governments are obligated to take action so as to allow their citizens to adopt morally defensible lifestyles. As I made clear, this fact does not warrant inaction by individuals. Moreover, without proper lobbying governments presumably will not introduce structural changes at all, or do so only insufficiently. The fact that this has hardly happened, although the necessity *and* urgency is generally recognized, speaks for itself. Thus, besides the duty to lower personal emissions individuals *qua* citizens must press legislative and executive bodies to a) adopt regulative measures that effectively limit emissions caused within their jurisdiction and b) alter the economic system in order to allow for low-carbon lifestyles and business opportunities. Here, I completely agree with Johnson and Sinnott-Armstrong that it is an important (but imperfect) moral obligation to get governments to do their job (cf. also Gardiner 2010).

Let me make a final remark on this – again quite general – duty and introduce the following gradation. First, there is a duty to lobby for appropriate governmental regulation. This, however, presupposes resources (cognitive, financial, temporal, etc.) not every individual has at her disposal. Again, it may be asking for too much in some cases. Where this is true, lobbying is best conceived as supererogatory action. Second, there is a stronger and more inclusive duty not to object to or counter-lobby attempts to introduce, agree on, or implement proper regulation. For sure, there is no duty to quietly accept bad regulation and counter-lobbying can be legitimate. Those who do so bear the burden of proof that their objections are *valid* and not motivated out of narrow economic self-interest.³¹ Third, in case individuals truly believe that there are valid reasons to counter-lobby governmental regulation they at least have to stick to moral, legal and democratic principles.³² In sum, while governments are under a duty to effectively limit GHG emissions and bring about the required structural changes, individuals are responsible for lobbying their respective government and undertaking those emission reductions already available to them.

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³¹ Some corporations and business associations – represented by individuals – all over the world have left no stone untouched to prevent effective regulation, precisely because of their economic self-interest. This pressure caused the current stagnation in international climate policy negotiations and is also responsible for weak national plans or inaction as in case of the US. Those corporations, organizations, and individual persons involved in lobbying against climate policy blatantly fail to live up to their moral duties.

³² Especially in the US many cases exist where agents even violate step three. Donald Brown has argued recently that the most malicious of these actions should be regarded as crimes against humanity (2010).

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7. Annex

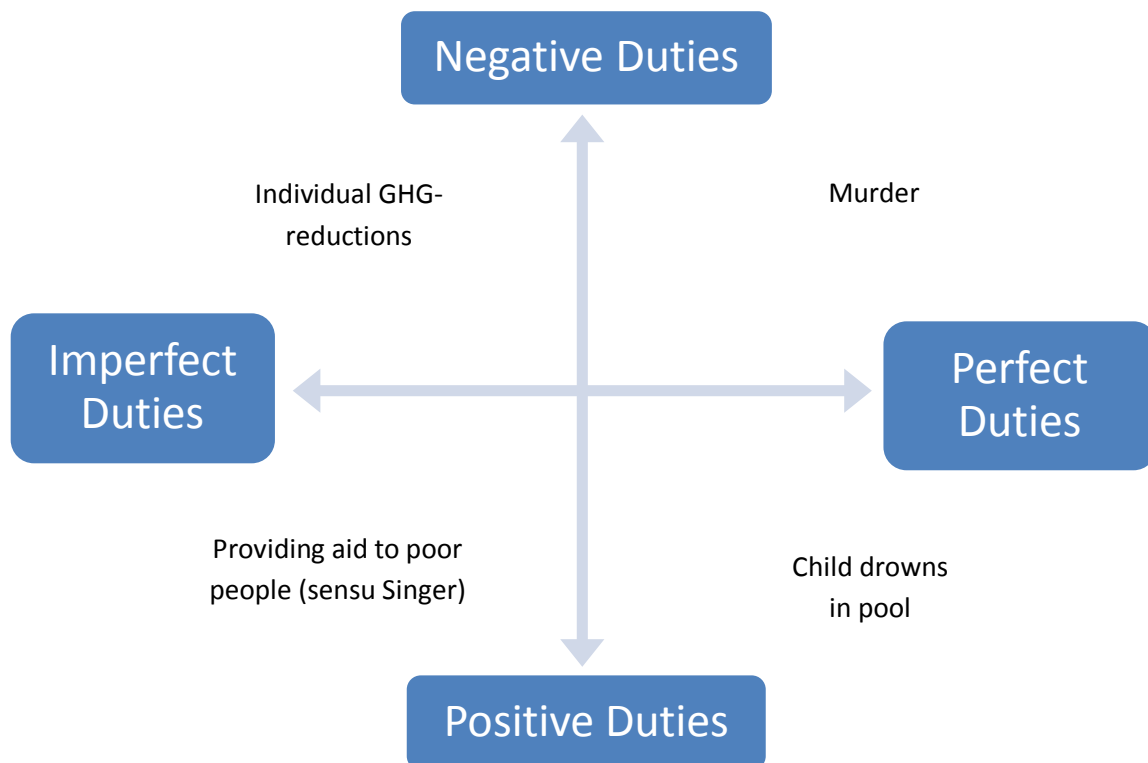


Figure 1: Different types of duties and their possible combinations (source: own illustration).