

## Comments on Garrett Cullity's 'Acts, Omissions, Emissions'

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Overall, I found this to be a very clear and interesting presentation of an important problem. My comments attempt to challenge some of the empirical assumptions upon which Cullity's arguments against 'the duty to join in on what we should be doing' are based.

### **The Setup of On Not Joining in on What We Should be Doing**

*Cullity's set up:*

"I may be unable to join effective worldwide action on the scale that is needed to solve the world's climate change problem. But I can still join the many individuals worldwide who are living carbon neutral lives. Their collective action is on a smaller scale than is required to avert the dangers of climate change fully. But they are still contributing towards averting those dangers, so I should join in, rather than opting out and leaving that work to them."

*I would change the setup as follows:*

"I may be unable to join effective worldwide action on the scale that is needed to solve the world's climate change problem. But I can still join the many individuals worldwide who are *actively trying to reduce their carbon footprint (or by their own choice only emit a sustainable amount of carbon already)*. Their collective action is on a smaller scale than is required to avert the dangers of climate change fully. But they are still contributing towards averting those dangers, so I should join in, rather than opting out and leaving that work to them."

This change still identifies real groups, but the groups are bigger and so the impact on carbon emissions will be much greater. (I don't think there are very many voluntary carbon-neutralers).

## **Argument 2**

*The argument (with my amendments):*

“[Those who are actively trying to reduce their carbon footprint] are preventing harm to vulnerable people... They ought to do that for reasons of beneficence, and my refusal to join in is wrong in the same way as refusing to join the lifeboat crew would be.”

*Cullity's response to Argument 2 (with my amendments):*

“Moral requirements of beneficence are generated when someone could be greatly helped at small cost to the beneficiary. “Greatly helped” and “small cost”, of course, are both scalar and vague. So requirements of beneficence come in degrees, and admit of indeterminacies. But there are clear cases: saving someone's life by exerting yourself for an hour is morally required; offering a free cup of coffee to every tired-looking commuter you see is not. Whatever rules of thumb we employ to assess requirements of beneficence, there will be no such requirements when the benefit produced is actually smaller than the cost to the benefactor of producing it. If so, the case against (1) is also fatal to (2).”

“The key problem for [Arguments 1 and 2] is the modest size of the benefit involved. Admittedly, the data is not available from which one could try to quantify this. What would be needed is to measure the difference that self-imposed [carbon reduction] makes, overall, to other people's welfare. To do that, one would need to assess how much the [carbon-reducing] group would have emitted had they not imposed this constraint on themselves”

*My defence of Argument 2:*

I want to argue that people can be “greatly helped” for just a “small cost” to individuals.

Small cost: People can cut down their emissions at no cost to themselves (except the minor cost of inconvenience) by making a suite of lifestyle changes. The suite includes: switching to the power company with the most renewable energy generation, getting (possibly government assisted) insulation and solar heating, buying low-power using lights and appliances, switching off appliances at the wall when they are not in use, installing and more effective windows and curtains and using them properly, using public transport more, driving more smoothly (less accelerating and breaking), eating less beef and dairy, reducing food miles intake, buying some things second hand, recycling aluminium, reducing air travel etc. Note that some of these things are more expensive, but because savings are made on the others, those costs are more than offset. Undertaking a selection of these changes should mean an annual reduction in emissions of at least 1.5 tonnes<sup>1</sup> for just a minimal inconvenience cost and no (long-term) financial cost.

Great benefit: Carbon-reducers (who have followed some of the kinds of suggestions above and reduced their emissions by about 15% per year) might be at least 15% of the population of developed countries.<sup>2</sup> If so, the benefits of this group are about 300million metric tonnes of

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<sup>1</sup> Examples based on households, not individuals: Draft-proofing your home saves up to 127Kg CO<sub>2</sub> per year, increasing your roof insulation could save up to 1600 Kg CO<sub>2</sub> per year, Installing wall cavity insulation could save 1120Kg CO<sub>2</sub> per year, installing a complete set of low-energy bulbs could save 165 Kg CO<sub>2</sub> per year, reducing, reusing, and recycling could save 69 Kg CO<sub>2</sub> per year, reducing food waste and composting could save 214 Kg CO<sub>2</sub> per year, switching to a renewable energy supplier could save 2153 Kg CO<sub>2</sub> per year, installing an air-source heat pump could save 2600 Kg CO<sub>2</sub> per year (there are many more!). See <https://wirral.cred2.co.uk/CRed/Index.action>.

<sup>2</sup> I can't find direct data on this, so this estimate is based on a study in which two thirds of the respondents from developed nations wanted global emissions reductions targets of 50-80% by 2050. [http://www.earthwatch.org/hcp/hcp\\_news/news-copenhagendeal](http://www.earthwatch.org/hcp/hcp_news/news-copenhagendeal). If 2/3 want us to reduce carbon emissions, then at least 15% can be assumed to be taking steps in that direction.

**Calculation:**

Developed Nations Population = 1/5 of total population <http://seekyt.com/different-kinds-of-economies/>

Global population = 6,993,993,000 <http://www.worldometers.info/world-population/>

Therefore, Developed Nations Population = 6,993,993,000/5

Therefore, Developed Nations Population = 1,398,798,600

carbon per year less put into the atmosphere (equivalent to the annual emissions of Spain, or 10 x New Zealand's, or 1% of global emissions). How much benefit/harm reduction will come from a 1% annual reduction in global carbon emissions? It's not clear exactly, but it seems very likely that a lot of people's lives are at stake. Based on figures from John Nolt<sup>3</sup> that take into account how long CO<sub>2</sub> emissions remain in the atmosphere, 4 billion people will be caused to suffer or die from the anthropogenic climate change caused up to 2040 (i.e. from about the 20<sup>th</sup> Century to the 30<sup>th</sup> Century. If this is correct, then a 1% annual reduction in global carbon emissions (when occurring every year) might be expected to reduce the number expected to suffer or die by somewhere in the vicinity of 40million people. These are sketchy calculations, but they seem to show that the benefits likely to be caused by carbon-reducers are easily 'great'.

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Global annual carbon reduction caused by 15% of population of developed nations being active carbon-reducers (1,500Kg CO<sub>2</sub> per year less) = 1,398,798,600 \*0.15\*1,500 Kg CO<sub>2</sub> per year less

Therefore, Global annual carbon reduction caused by 15% of population of developed nations being active carbon-reducers (1,500Kg CO<sub>2</sub> per year less) = 314,729,685,000 Kg CO<sub>2</sub> per year less

<sup>3</sup> John Nolt claims that we might expect the carbon emitting of an individual American who lives from 1965-2040 to account for half a billionth of the total anthropogenic carbon emissions up to 2040. When coupled with his further claim (based on the IPCC report: "Climate Change 2007: Synthesis Report", p. 65) that 4 billion people will be caused to suffer or die from the anthropogenic climate change caused up to 2040, Nolt concludes that the average American is likely to cause the suffering and/or death of two future people. Nolt, John (2011). Greenhouse gas emission and the domination of posterity, in *The ethics of global climate change*, Ed. by Denis Arnold, Oxford University Press, pp. 60-76.

**Calculation:**

So, if developed nations' active carbon reducers, reduce global emissions by 1% per year, then, collectively (individual membership might change), they will reduce global emissions from 1965-2040 by about 1% (assuming that the % of developed nation's active carbon reducers started lower than 15% in 1965, but will be higher in 2040 – so that they average 15% over the 1965-2040 period).

So the group of developed nation's active carbon reducers from 1965-2040 will reduce the damaged caused by at least 1% (probably more assuming exponential damage to emissions ratio, but assuming linear relationship for simplicity).

1% of 4billion is 40million. Therefore, the actions of the group of developed nation's active carbon reducers from 1965-2040 will likely prevent the suffering and death of 40million people.

Even if the active carbon reduction by the group of developed nation's active carbon reducers was only a 1-year, one-off, effort, they would still save  $40,000,000/75 = 533,333$  (over half a million) people from suffering or dying.

So it seems that ‘great benefit’ is likely to occur because of the mild costs of inconvenience that carbon-reducers endure. I think that the wellbeing or lives of millions of people vs. mild inconvenience to participating individuals results in a duty of beneficence (albeit a questionable one due to the uncertainties) in this case.

### **Argument 3**

*The argument (with my amendments):*

“While the high-emitting members of the world’s population are using a greater share of the earth’s resources than they are prepared to leave to future generations, [those who by their own choice only emit a sustainable amount of carbon already are] not. This group’s actions are not responsible for leaving the world in worse shape than they found it: they ought to perform those actions for reasons of fairness. So there is a derivative requirement of fairness on me to join in, rather than leaving to others the work of doing what we ought.”

*Cullity’s response to Argument 3 (with my amendments):*

“Argument (3) faces a different problem. While it may be true of [purposeful sustainable carbon emitters] that they are not responsible for leaving the world in worse shape than they found it, there is a sense in which that is true of any other similarly-sized group. It is plausible that for any group of high-emitters of a similar size, the extra emissions they put into the atmosphere do not themselves significantly impair anyone’s welfare. What is true is that if *everyone* adopted the same practice of [purposeful sustainable carbon emitting], there would be no problem of anthropogenic climate change. However, the question is how that observation supports the claim that the [purposeful sustainable carbon emitters] ought to be acting as they do. Deriving the latter claim from that observation would itself amount to a participatory derivation: it would be citing a fact about what the entire global population ought to do in support of a claim about what some subset ought to do by way of contribution. But we have seen that there is no participatory derivation of the first type if the global action is not being performed.”

*My defence of Argument 3:*

If 0.01% of the world's population (~677,000 people) are purposeful sustainable carbon emitters, then we can see that an equivalent group of high emitters do cause significant harm. If 677,000 *average* Americans became sustainable carbon emitters, then about 13million tonnes of metric CO<sub>2</sub> less per year would be emitted (more than Sri Lanka's emissions or 0.04% of annual global emissions). Using Nolt's 4 billion figure, this group is likely to cause approximately 1.6million people to suffer and/or die if they do not join the purposeful sustainable carbon emitters.<sup>4</sup>

Bill Gates is estimated to use 10,000 times the energy of normal Americans (20 metric tonnes per year).<sup>5</sup> Assuming he lives for 75 years and assuming he emits at this level for the last 50 years of his life (and negligibly before that), Bill gates, by himself, kills and/or causes to suffer 17,844 people. That means he causes 1 person to suffer and/or die for every day of the last 50 years of his life!<sup>6</sup>

Therefore, the claim that "any group of high-emitters of a similar size, the extra emissions they put into the atmosphere do not themselves significantly impair anyone's welfare" does not seem plausible. Even 1 person can have a significant impact on the welfare of others through their carbon emitting. Therefore, there is a derivative requirement of fairness on me to join in with the [purposeful sustainable carbon emitters], rather than leaving to others the work of doing what we ought.

#### Argument 4

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<sup>4</sup> Sources used: [http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_carbon\\_dioxide\\_emissions](http://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions), [http://www.manicore.com/anglais/documentation\\_a/greenhouse/quota\\_GHG.html](http://www.manicore.com/anglais/documentation_a/greenhouse/quota_GHG.html)

<sup>5</sup> <http://www.tgdaily.com/trendwatch-features/37159-bill-gates-uses-10000-times-the-energy-of-the-average-american-mit-says>

<sup>6</sup> **Calculation:**

Gates's carbon use = 10,000 times the average American. Therefore, Gates' carbon use = 10,000\*20 metric tonnes of CO<sub>2</sub> per year = 200,000 metric tonnes of CO<sub>2</sub> per year.  $100 * \text{Gates's annual use} / \text{global annual emissions} = \text{Gates's \% of total global emissions} = 100 * 200,000 / 29,888,121,000 = 0.000669162\%$ . Assume Gates emits at this percentage of global emissions throughout 2/3 of his life and that he lives from 1965-2040 (he was born in 1955). Therefore, Gates is responsible for  $0.000669162\% * 2/3 = 0.000446108\%$  of global emissions from 1965-2040.  $0.000446108\% \text{ of } 4\text{billion} = 17,844$  people killed or caused to suffer throughout his life. 17,844 people spread over (last two thirds) 50 years of his life means that he causes  $(17,844/50 = 357)$  1 person to suffer and or die for every day of the last 2/3 of his life!

*The argument (with my amendments):*

“The large-scale action that is needed in relation to climate change is effective regulation of the global economy to contain carbon emissions. When that is not happening, we face the question what we ought to do to encourage it to happen. If the lifeboat is not being launched, I should not simply walk off the beach; I should see whether there is anything I can do to gather a group to launch it. By leading [carbon-reducing] lives and encouraging others to do so too, we can send [political and social signals] that makes effective global regulation [and emissions reductions] likelier. So we ought to do that, and again I ought to join in rather than leaving the work to others.”

*Cullity’s response to argument 4:*

“Argument (4) makes an important point. The absence of effective global action should raise the question what we are prepared to do to secure it. However, two problems arise here. One is that it is fanciful to think that simply reducing energy consumption itself sends an effective political signal. Joining a political lobbying movement that includes a personal commitment to carbon neutrality might be a way of participating in the sending of effective political signals; but simply turning the lights off is not. Governments can monitor energy usage, but they do not use that as their source of information about people’s opinions concerning climate action. The other point is that an argument of this kind ultimately depends on a claimed requirement of collective prudence, beneficence or fairness. Why ought we to be engaging in effective political lobbying? Because it is a means to global action to address climate change. Why ought that to be pursued? For one (or more) of those three reasons. But if so, it inherits the problems we have found with arguments (1)-(3). The cost of personal carbon neutrality needs to be compared to the benefit produced by incorporating personal carbon neutrality into political lobbying. And the implausibility of thinking that that benefit outweighs the cost undermines an argument of any of those types for thinking that it is morally required.”

*My defence of Argument 4:*

First, it’s not just political lobbying, but social lobbying too. If we discuss our carbon-reducing strivings we might influence our friends and associates to follow our lead. It’s not just lowering our emissions, it’s also voting for emissions-lowering parties and protesting

emissions legislation failures. – Could be not relevant to current argument, as it's just about whether it's immoral for us to not lower our emissions.

Second, since Arguments 2 and 3 are reasonable, then this argument seems reasonable too. Either social or political lobbying should be engaged in because, at the (mere) cost of mild inconvenience to ourselves, we can make it easier for people to become carbon-reducers. This, in turn, will bolster the group of carbon-reducers and thereby make the benefits to others of our minimal efforts very significant indeed – we could help prevent the suffering and/or death of millions of people. It's unfair for us not to play our part.

### **Conclusion**

If the empirical claims I make here are roughly correct, then we have good reason to doubt some of Cullity's responses to (slightly amended versions of) his own arguments in favour of there being reasons to join in on what we should be doing. But, the empirical claims are hard to establish with a lot of confidence. Therefore, it seems as though an empirical debate might settle whether those of us who are not carbon-reducers are acting immorally by not joining in with the carbon reducers. And, thereby, whether moral requirements on agents can be derived from those agents' potential participation in a group.