

**John Broome**

*Climate Matters: Ethics in a Warming World.*

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As a former economist, the current White's Professor of Moral Philosophy at Oxford and lead author on Working Group III of the UN's International Panel on Climate Change (Mitigation of Climate Change), Broome's perspective and authority on the ethics of climate change could not be better. His book aims to describe and evaluate the moral problems that will surface as global temperatures rise, rainfall patterns change, sea levels increase, and so on. It is targeted at policy-makers, activists and ordinary citizens rather than professional ethicists. Environmental philosophers will find Broome's positions clear and challenging even though the book does not dive into the small details and sometimes skips over rather large issues for the sake of brevity and not losing the target audience. In part for these very reasons, the book would spark good discussions in undergraduate philosophy and general education classes.

The reasonably foreseeable climate impacts of increased atmospheric carbon dioxide and other greenhouse gases are likely to produce bad consequences for humans, both as individuals and societies. The areas of the world that will be most adversely affected are, tragically, those that are least able to afford to deal the consequences and least responsible for the emissions that caused the problems.

Given these facts, Broome is interested to know what our moral obligations are—to adapt, to mitigate, to compensate, and so on. Broome draws a sharp distinction between the moral obligations of individuals versus those of governments. Although the consumption of individuals is mostly to blame for the past, current and future emissions of greenhouse gases, the problem is so big that the actions of individuals to reduce and offset emissions are not at all likely to make any significant difference to the outcomes of climate change. The greatest moral responsibilities therefore fall on nations, governments and the international community.

The obligatory chapter on the science of anthropogenic global climate change is well done: The main ideas are presented for non-experts both clearly and persuasively. Near the beginning of that chapter and elsewhere in the book, however, Broome appears to buy into the climate deniers' rhetoric that the science is "uncertain." While it is true that the global climate system is immense, complex, non-linear, and incompletely understood, that does not mean that there is any reasonable doubt about the morally relevant scientific conclusions or that the science is unworthy of belief and action. The task of inspiring individuals and governments to swift action is not helped by overemphasizing the uncertainty of the details when the broad strokes (even the medium strokes) are absolutely clear and unquestionable. Later in the chapter, Broome does make the point that there are no grounds for reasonable doubt about the main conclusion of climate science, but he sets the wrong tone by emphasizing the uncertainty of the science.

Readers might not expect an emphasis on economics in a book about ethics, but Broome makes the case that 'much of the damage [climate change] does to the human world is channeled

through the economy' (37). This economic orientation is helpful in many contexts (for example, Broome explains why setting a price on carbon is actually economically optimal and not just an artificial tool for reducing emissions), but it does mean that many factors often thought to be morally relevant are not included. For example, the consequences of climate change for animals, populations, ecosystems, landscapes, and the globe itself are simply left out of consideration. Since the economic analysis does suggest strong action to limit and mitigate climate change perhaps this is not a great failing, but many readers will feel that these omissions leave the discussion incomplete.

Contrary to the typical opinion that those most responsible for emissions should have to sacrifice something (money, lifestyle, etc.) in order to meet their moral obligations with regard to climate change, Broome argues that emitters should be compensated for the costs they incur in reducing emissions—and moreover, that the compensation should be provided by those who are most impacted by the emissions even though they did not cause them. This flies in the face of the dominant view that those who suffer the involuntary, uncompensated harms and are least able to afford to pay should not be asked to pay more. Broome's is, though, a practical proposal: Compensating for the losses incurred will more likely lead to significant emissions reductions than if we 'encumber the task of fixing climate change with the much broader task of improving the distribution of resources' (47). We should focus on the emergency survival situation now, and worry about the global economic injustices later. (Humanity has not addressed this yet, so why do we have to do it together with fixing climate change?) Moreover, if we pursue compensation for emissions reductions and mitigation, the worst off will still be better off than they would have been had there been no reduction and mitigation. Although it might appear that the worst off cannot afford to contribute anything to this effort, Broome advocates an economist's mechanism: simply transfer less wealth from this generation to the next.

Broome distinguishes Goodness (beneficence) and Justice (doing no harm to others) and argues that the obligations for individuals and governments are different under each. For individuals, the duty of justice requires that one not cause harm through one's personal emissions. To achieve this, Broome recommends purchasing carbon offsets from reputable companies. (He says that Greenpeace-type objections to offsetting apply to governments but not to individuals and that anyway, offsetting transfers wealth from rich to poor countries, thus reducing economic inequality.) To purchase offsets that exceed one's personal emissions in order to fulfill the duty of goodness constitutes a bad strategy, since the same amount of money could do much more good in other ways (for example, preventing malaria). The best estimates are that individual lifetime emissions amount to about 800 tonnes (for an average person born in a rich country in 1950), which WHO has calculated to cause death and disease equal to the loss of six months of healthy life. The Stern Review calculated the "social cost of carbon" at \$25 to \$85/tonne. Taking the high end, this means that an individual's emissions cause about \$2 of harm every day. If you add that up for your neighborhood, city, and country, you will see that the collective harm from individual CO<sub>2</sub> emissions is great indeed. But \$2/day is a level most people can comfortably afford to offset in order to prevent committing injustice.

Goodness on the climate change issue has to do, for Broome, with public rather than private morality. The kinds of large-scale, long-term, probabilistic risk-benefit assessments required go beyond the ability of ordinary citizens to carry out (99); governments, moreover,

have the power to affect the behavior of collections of individuals through regulation and taxation (100). Especially in the context of evaluating goods and harms for future generations, Broome thinks that market-based “revealed preference” economic models are inadequate. He therefore proposes that we need moral and technical experts to help determine things such as the correct discount rate to use in economic models. Since expert opinion is still opinion, Broome suggests that the proper role for these experts is to inform the public debate, not to act by fiat. Insofar as he sees himself in this role, he explains at several points that he is offering arguments and opinions for readers to evaluate for themselves. This also means that he leaves the reader without conclusions on many crucial topics.

The question of the discount rate arises because we generally think that a good now is worth more (now) than the same good in the future. Calculating exactly what the discount rate should be makes a huge difference to policy prescriptions with regard to climate change, and experts disagree about it. The Stern Review (2007) sets the discount rate at 1.4% p.a., whereas Nordhaus (*A Question of Balance*, 2008) sets it at 5.5%. On the former, ‘1,000 kilos of rice a hundred years from now is worth the same as 247 kilos of present rice’; on the latter, that future rice ‘is worth the same as 4 kilos of present rice ... Those who discount at 5.5% find it a lot less urgent to do something about climate change’ (141).

About half of the book is devoted to questions related to how human goods can be aggregated to perform cross-generational cost-benefit analyses, which we need to do to be able to make reasonable, moral choices about current policies impacting climate change. Determining the correct discount rate is just one of the issues here; Broome (correctly, in my view) holds that this is a moral rather an economic question. He also discusses the limitations of economists’ attempts to utilize proxies for things that cannot be directly valued in cost-benefit analyses (for example, using consumption of market commodities as an indicator of human well-being). The thorny issues of how to place an economic value on human death and disease, including for people who are not yet alive, get extensive treatment.

While Broome does discuss the competing arguments surrounding these issues and often takes a meaningful position, there are many crucial topics whose full discussion would go beyond the scope of the book and others for which Broome prefers to let the reader draw the conclusions. As he puts it, ‘It is probably better to keep the difficulties in the open, to make clear that in the end the decision needs to rest on judgment rather than calculation’ (168). This is an unsatisfying conclusion for those who hope for simple, clear answers to the most pressing problem facing humanity. It is, however, a realistic position, given the scale, scope and vital importance of the scientific, economic, political and philosophical questions that humanity needs to answer in order to adequately address global climate change. Broome’s book makes a valuable contribution to this project.

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