

Bringing Politics into SAI^{*}

Sikina Jinnah and Douglas Bushey

In “Carbon Emissions, Stratospheric Aerosol Injection, and Unintended Harms,” Christopher J. Preston argues that the moral culpability for unintended harms related to deployment of stratospheric aerosol injection (SAI) could be equal to, or possibly even less than, the moral culpability associated with unintended consequences of greenhouse gas emissions. He uses the doctrine of double effect (DDE) to parse the role of intent in evaluating culpability in both situations. Specifically, he argues that DDE may shield both the climate engineer and the greenhouse gas emitter from a degree of moral culpability because (a) the intended final end is “good” in both cases; (b) assuming “it is deemed legitimate to use advanced technological means to solve intransigent social problems,” the intended means of achieving that end are “morally acceptable” in both cases; (c) no negative consequences are intended in either case; and (d) the good end is important enough to justify the bad outcomes in both cases, if we assume the climate engineer has knowledge about relative benefits and harms (pp. 485–6).

In advancing this argument, Preston calls into question an argument advanced by some scholars in the climate engineering ethics literature that climate engineers face an increased moral burden for their actions because they *intend* to modify the climate. To the extent that he seeks to illustrate that this increased culpability does not necessarily follow from intent in all situations, he is effective and we are sympathetic to his argument. However, in order to advance a neatly deductive argument, Preston makes a number of assumptions and framing decisions that exclude important practical points from the scope of his analysis. We understand his rationale in doing so, as it allows him to advance a concise argument about an ethically

^{*}This essay is in response to Christopher J. Preston’s “Carbon Emissions, Stratospheric Aerosol Injection, and Unintended Harms,” *Ethics & International Affairs* 31, no. 4 (2017). The opinions expressed in this response are those of the authors personally, and do not reflect the views of the Environmental Protection Agency or the U.S. government.

complex subject. However, as scholars of politics and law, we are interested in what this ethical argument means—and does not mean—for the messy politics of climate engineering. Accordingly, in our response we unpack the political implications of some of Preston’s assumptions and framing decisions in an effort to add a layer of practical richness to the abstraction of his analysis.

Before unpacking some of Preston’s core assumptions, we would note that our initial intuition about comparative culpability was different from that which he sets up. That is, Preston positions his analysis as a response to a baseline intuition that intention increases the moral burden associated with actions that result in negative outcomes. He uses examples from criminal law, highlighting the differing degrees of culpability among murder, voluntary manslaughter, and involuntary manslaughter, and points out that insanity and duress may decrease culpability. Although we appreciate the utility of these examples for showing in familiar terms why intent matters for assigning blame, we came to a different intuitive conclusion, in a way that can also be illustrated through analogies to legal principles. Although the hierarchy of murder, voluntary manslaughter, and involuntary manslaughter may in many instances reflect decreasing intentionality, in many common law jurisdictions one may be guilty of murder even without intent to kill. A person acting with an “abandoned and malignant heart,”¹ for example, can be found guilty of murder for acting with such callous disregard to the negative consequences of one’s actions that the law treats such a person as culpable to the same degree as an individual acting with an intent to kill. Conversely, in many jurisdictions so-called Good Samaritan laws diminish an individual’s liability for a harm caused if that individual was acting with intent to assist another person in distress.

Against this backdrop, our initial intuition about the comparative culpability of the climate engineer differs from Preston’s in that we believe that as climate science advances, the emitter may be approaching a degree of recklessness that borders on the culpability associated with intent, whereas the well-intentioned climate engineer, seeking predominantly to benefit others, faces an instinctually lower degree of culpability. As with Preston’s argument, this should not be read as an assertion that SAI is itself desirable or morally permissible.

Turning to Preston’s assumptions and framing decisions, we see four of them as ripe for exploring the practical boundaries of his analysis. First, a central assumption undergirding his analysis is that the question of whether SAI will result in a net benefit is “satisfactorily answered” in the affirmative. Although this assumption is necessary in order to allow the author to argue that DDE condition (d) is

satisfied for SAI, it is unclear what this assumption would mean in practice. To whom must the answer be satisfactory? To the climate engineer? To a domestic or international group of experts? To a particular polity? To some sort of global public?² The answer to this question matters a great deal when evaluating the culpability of the climate engineer. Given the centrality of this assumption to Preston's analysis, we feel it is important to fully reckon with the fact that any such attempt at a satisfactory answer is not just a question for scientific experts but one that will require mobilizing international institutions of knowledge-building and securing some sort of epistemic buy-in from the affected communities.³

Second, and closely related, Preston says that "SAI would presumably not be undertaken without a broad consensus that there is a very high probability that it would lead to greater benefits than harms overall" (p. 480). We certainly hope this would be the case, but are wary about what this condition would actually mean empirically. In fact, we can easily imagine a nation or other actor deploying SAI unilaterally absent a consensus about a net global benefit. Accordingly, this assumption again raises a host of political questions about *how* the climate engineer's decision to deploy SAI is made. Will stakeholders be involved? Who is included in the "broad consensus" about relative risks and benefits of deployment? Scientists? Nation-states? Civil society actors? Does "broad consensus" about net social benefits include those who will likely bear the largest projected impacts? All of these questions matter for the determination of culpability in democratic societies. There is a big difference, in our view, between a well-intentioned climate engineer who deploys unilaterally or without public input and a well-intentioned climate engineer who deploys on the basis of a social contract to do so.

This point cuts to the heart of Preston's decision not to make a case for or against DDE's condition (b), which relates to the moral acceptability of SAI. We are sympathetic to Preston's point that, for the goals of his argument, it is reasonable and useful to sidestep any assumptions about SAI being inherently wrong. However, analysis of condition (b)'s "intended means" should include not only the "moral acceptability" of the technology itself but also of the *political* means by which any decision to deploy it is taken. We would argue that a participatory democratic process is central to evaluating the moral acceptability of any policy or political decision with broad or potentially negative impacts. In short, the question of *who* defines what constitutes a "good" end or what is "morally acceptable" lurks in the background of Preston's ethical analysis, yet is central to any political evaluation of culpability.

Third, although Preston acknowledges that the *distribution* of harms and benefits resulting from SAI and continued carbon emissions are aspects of culpability, his framework largely draws them outside the bounds of his analysis. In particular, Preston passes quickly over the application of points (a) and (b) for the emitter. He assumes a “well-meaning” carbon polluter, motivated by creating increases in wealth and wellbeing, and notes that there does not appear to be anything inherently wrong with burning fossil fuels (p. 485). Although we understand Preston’s motivation for making conservative assumptions about emitters’ culpability, these assumptions may elide an important aspect thereof. If an emitter is burning fossil fuels primarily to secure a benefit for him or herself, and externalizing the costs of his or her actions onto others, the distribution of the benefits and harms has additional moral weight. Even if we assume that the emitter’s action is Pareto-improving—that is, the benefits secured by the emitter are greater than the collective harm imposed, thus fulfilling point (d)—in the absence of some sort of mechanism for dispensing other benefits to those harmed, the culpability of the emitter is arguably heightened by the self-interest motivating his or her action.

In the case of the climate engineer, the distribution of benefits and harms is quite different. The benefits of slowed warming would presumably accrue to a broad segment of the global population, and not just be concentrated in the hands of the intentional actor. Just as the distribution of benefits should weigh into our comparison, so to should the distribution of harms. With respect to harms, the negative impacts of SAI would also be externalized to diffuse subsets of the global populace. The distribution of harms under SAI, however, is less predictable, with substantial scientific uncertainty concerning, for example, the impact on regional rainfall. Preston points to the possibility of deploying SAI in a way that deflects negative impacts away from those least able to cope with them. This possibility remains, however, largely in the realm of science fiction. If, for example, the harms associated with SAI when compared to climate change were to fall more disproportionately on the world’s most vulnerable populations (and absent control over distributional impacts, or some method for compensating those who are harmed), the climate engineer may face a heightened responsibility to avoid such negative impacts. Again, Preston acknowledges the role of distribution, but draws it outside the bounds of his analysis to avoid overcomplicating his core argument. We seek to highlight its role here both because of its moral import and because the politics of climate change are often more about distribution than they are about abstract notions of net benefit.⁴

Fourth, Preston presents a number of arguments aimed at “pushing back” against the potential for DDE to reduce the culpability of the climate engineer. Here, he discusses the “closeness thesis,” wherein unintended consequences that are both foreseeable and close enough in type to the intended consequences might effectively count as intended consequences. Preston posits that the unintended impacts of SAI (“a harmful change in Earth’s climate”) may be close enough to the intended impacts (“a beneficial change in Earth’s climate”) that the harmful change should also count as intended. He argues that this is not the case for the intended effects of fossil fuel burning (“increases in standards of living”)⁵ and its unintended effects (“anthropogenic warming”), which he says are clearly distinct. Although we see the author’s point here, we would argue that the intended and unintended effects of fossil fuel burning are actually becoming increasingly “close.” As we progress further into the Anthropocene, it may become increasingly outdated to think of the climate system as distinct from the global economy. With a more robust and complete collective understanding of the impact of our actions on the global climate, it may become outdated to speak of interventions into the economy affecting the climate, and vice versa. Instead we may view these all as interventions into a single complex economic-climatic system. Thus, as our shared understandings reframe the boundaries of these systems, we may come to see increasing closeness between the intended and unintended impacts of the climate polluter, and an attendant erosion of the climate polluter’s culpability shield.

Preston is clearly not attempting to conduct a comprehensive analysis of the comparative moral culpability of the emitter and the climate engineer, but rather to push against what he sees as an insufficiently examined intuitive conclusion about their relative culpabilities. We welcome Preston’s analysis, and the comparative approach it takes. By pushing back on some of Preston’s key assumptions and framing decisions, we seek to connect Preston’s abstract analysis with the complex realities of climate politics, and to further enrich the comparative moral picture it paints.

NOTES

¹ See, for example, California Penal Code § 188 (passed 1872). Available at [leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PEN§ionNum=188](http://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=PEN§ionNum=188).

² This question is complicated by the fact that different publics utilize different systemic practices by which a nation’s citizens come to know things in common and to apply their knowledge to the conduct of politics. See Sheila Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton, N.J.: Princeton University Press, 2005).

- ³ See Clark Miller, “Democratization, International Knowledge Institutions, and Global Governance,” *Governance* 20, no. 2 (2007), pp. 325–57.
- ⁴ In the context of the United Nations Framework Convention on Climate Change, discussions about responsibility for the distributional impacts of climate change and of responses thereto are often framed in terms of the principle of Common but Differentiated Responsibilities. See Douglas Bushey and Sikina Jinnah, “Evolving Responsibility? The Principle of Common but Differentiated Responsibility in the UNFCCC,” *Berkeley Journal of International Law, Publicist* 6 (2010).
- ⁵ We note that the intended effects of SAI are also likely to produce “increases in standards of living”—just mediated through the climate system as opposed to the energy provision system.

Abstract: In order to advance a neatly deductive argument, Christopher J. Preston must make a number of assumptions and framing decisions that exclude important practical points from the scope of his analysis. We do not criticize him for doing so, as these simplifications allow him to advance a concise argument about an ethically complex subject. However, as scholars of politics and law, we are interested in what this ethical argument means—and does not mean—for the messy politics of climate engineering. Accordingly, in our response we unpack the political implications of some of Preston’s assumptions and framing decisions in an effort to add a layer of practical richness to the abstraction of Preston’s analysis.

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