



Public conceptions of justice in climate engineering: Evidence from secondary analysis of public deliberation



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ABSTRACT

Secondary analysis of transcripts of public dialogues on climate engineering indicates that justice concerns are an important but as yet under-recognised dimension influencing public reactions to these emerging techniques. This paper describes and explores justice issues raised by participants in a series of deliberative public engagement meetings. Such justice issues included the distribution of costs and benefits across space and time; the relative power and influence of beneficiaries and others; and the weakness of procedural justice measures that might protect public interests in decision making about climate engineering. We argue that publics are mobilising diverse concepts of justice, echoing both philosophical and practical sources. We conclude that a better understanding of conceptions of justice in this context could assist exploration and understanding of public perceptions of and attitudes towards climate engineering and the different technologies involved. Such detailed public engagement would appear essential if sound, well-informed and morally justifiable decisions are to be made regarding research or development of climate engineering.

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1. Introduction

Questions of justice are central to climate change, and issues of ethics have been repeatedly raised in considerations of climate engineering as a policy response (Gardiner, 2010; Preston, 2012; Burns 2013). Yet questions of ethics and justice with respect to publics remain as yet relatively unexplored, despite increasing interest in climate engineering following the Paris climate accord in 2015 (e.g. Nicholson and Thompson, 2016; Williamson, 2016). This paper aims to establish whether justice implications are a significant factor in public reactions to climate engineering and to consider which conceptions of justice public expressions of concerns regarding climate engineering might reflect. It proceeds

with a brief review of justice issues as arising in climate engineering and related literature to establish the context. After outlining the methodology applied, the paper then turns to examination of four justice issues prevalent in a series of deliberative public engagement meetings (moral hazard, environmental dumping, vested interests and fair procedures). Finally, we discuss the different ways justice is expressed and underlying conceptions are mobilized indicating important implications for policy and fertile lines of future investigation.

2. Climate engineering and justice in the literature

Climate engineering encompasses a diverse group of emerging technologies and techniques that seek to directly intervene in the planetary climate system to counter or reduce the negative effects of climate change (Royal Society, 2009; NAS, 2015a,b). It is commonly divided into methods that reduce the warming from incoming sunlight (solar radiation management or SRM) and methods that remove carbon dioxide from the atmosphere (carbon dioxide removal or CDR). The deployment of SRM is highly controversial, but CDR, on the other hand, is assumed in some form in most decarbonisation pathways which would limit global

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temperature rises to below 2 °C (UNEP, 2015). SRM and CDR share some ethical characteristics: for example both raise serious concerns regarding the prospect that their apparent future availability justifies continued delay to mitigation and adaptation. Although they can raise distinctive issues for policy (NAS, 2015a,b), this paper highlights public concerns that are largely common to both sets of technologies.

The unevenly distributed nature over space and time of both the impacts of climate change and the burdens of mitigation and adaptation has strongly shaped international negotiations – most recently at Paris – and domestic policies in many nations (Adger et al., 2006; Pickering et al., 2012; Schlosberg, 2012). At the same time, public responses to potential mitigation technologies such as nuclear power and carbon capture and storage have been shaped by environmental justice concerns such as the dumping of wastes on vulnerable communities (Bickerstaff et al., 2013; Shrader-Frechette, 2002; Walker, 2012; Taebi and Roeser, 2015). Given the prominence of justice concerns related to climate change mitigation and adaptation amongst academics and policy-makers, we believe it is important to scrutinise the justice implications of climate engineering as a response to climate change.

There are sound reasons to anticipate significant justice implications, both from the potential outcomes (intended and unintended) and from the power and scope of the technologies involved. Ethicists and philosophers (e.g. Gardiner, 2010) engaging with climate engineering have raised multiple issues including serious justice concerns as well as questions over whether the levels of interference with – or control over – nature implied by climate engineering are ethically acceptable and whether climate engineering may result in new injustices, and not simply act to mitigate the likely injustices of climate change. Gardiner (2010) suggests climate engineering would exacerbate the ‘moral corruption’ problem, adding to disincentives for the wealthy current generation to take effective action. Gardiner argues that in such situations those who have gained from business as usual will be tempted to support partial or inadequate responses that justify maintaining their present advantages. He suggests this is an acute problem in climate change because of the simultaneous separation of those responsible from those most affected in both time and space. This results in a form of ‘moral hazard’ in which apparent insurance against damage leads to riskier behaviour, which typically imposes costs or risks on others (Krugman, 2009). Preston (2012) suggests climate engineering might further compound the injustices of climate change by adding new uncertainties over rainfall patterns, for example, to which the poorest are most vulnerable. In addition, Burns (2013) emphasizes the intergenerational risks of rapid warming should a climate engineering programme be abruptly terminated, while Smith (2012) sees climate engineering as an unacceptable domination of future generations by present generations.

However, as a whole, as Oldham et al. (2014) show, the climate engineering literature is dominated by natural sciences with a focus on assessment of the potential and practicalities of climate engineering technologies, often using modelling techniques to explore climatic implications. Some modellers have examined the distribution of certain climate impacts likely to arise in the presence of climate engineering (Irvine et al., 2010; Ricke et al., 2010; Moreno-Cruz et al., 2012). But these modelling approaches are in a minority, limited in their approach, and typically, and implicitly, assume liberal utilitarian and distributional concepts of justice – in the forms discussed by Lamont and Favor (2013) – with simplistic portrayals of public interests and vulnerabilities in which publics are invisible, or at best imagined (Walker et al., 2010).

Justice considerations are also largely absent in the dominant climate engineering media discourses. Content analyses of climate

engineering discourses (such as Nehrlich and Jaspal, 2012; Scholte et al., 2013; Anselm and Hansson, 2014) rarely mention justice. In her commentary on media analyses Buck (2012) reports that “the justice issue is seldom considered; [and] even when it was present, it was rarely the dominant frame” (p176). McLaren (forthcoming) suggests that the dominant discourses around climate engineering have acted to frame justice considerations out of the debate, through a combination of ‘post-political’ technological optimism and catastrophic portrayals of climate change.

In contrast, justice features more strongly in the findings of public engagement studies on climate mitigation technologies such as carbon capture and storage (CCS) (McLaren, 2012). While other ethical concerns such as ‘messing with nature’ have been reported in some detail (Corner et al., 2013), questions of justice appear occasionally in brief mentions of distributional concerns and most often obliquely in discussions of governance and authority. Parkhill et al. (2013) note that participants in their dialogues raised questions about governance, accountability and transparency, as do Bellamy et al. (2014) who note participants’ demands for informed consent. Macnaghten and Szerszynski (2012) suggest their deliberative groups reveal a deep scepticism about climate engineering technologies and their potentially undemocratic nature. Wibeck et al. (2015) also note lay concerns raised in Swedish focus groups about governance, the locus of power, and the prospect of Southern nations being further disadvantaged. Such reports of public deliberation, then, only offer tantalising hints at wider justice concerns.

This paper aims to start to fill this lacuna – the lack of systematic exploration of the dimensions of justice related to climate engineering, as articulated or intimated by various publics – through a secondary analysis of a series of public deliberative events held in the UK. We seek to explore whether this gap represents a lack of concern or salience; or is a product of ways in which the topics were framed and discussed; or – as we believe – that the issues are influential, yet taken for granted and rarely directly expressed. In addition, we aim to begin to explore the nature and sources of the issues raised and the conceptions of justice mobilised in public deliberation.

Our identification and analysis of justice concerns is informed by a broad-based understanding of both scholarly and movement-based conceptions of justice (Schlosberg, 2007; Sen, 2009; Stumpf et al., 2015). The recognition of vulnerability, and resulting movement-based claims of justice rooted in lived experience are particularly significant in environmental justice approaches (Schlosberg, 2007; Walker, 2012). We consider justice concerns to extend to domains of distribution, procedure and correction, and include approaches based in human rights, capabilities, and recognition (Caney, 2010; Honneth and Fraser, 2003; Schlosberg, 2012). Justice concerns also arise in virtue ethics, where concern for others and for fairness is an indication of good character or a ‘virtue of justice’ (Slote, 2014). This broad understanding acknowledges the prospect of diverse motivations for justice and diverse sources of public interpretations of justice. Public interpretations might arise from abstract philosophical theories (ranging from egalitarian to libertarian in orientation), or from assessments of the characteristics of the technologies or procedures under consideration (Cotton, 2014), but in practice we might expect real world experience and analogues, and political and social movement claims to be more influential in shaping lay concepts. Different conceptions are important influences shaping the ways in which justice can be understood and promoted in practice. Cosmopolitan concepts that suggest equal treatment of all people regardless of their relatedness or proximity to us (Caney, 2010) might recommend different practical policies than communitarian approaches (Sandel, 2009), especially in international and intergenerational contexts.

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