Title: Geoengineering Tensions

Author: Adrian Currie

PII: S0016-3287(17)30169-6
DOI: https://doi.org/10.1016/j.futures.2018.02.002
Reference: JFTR 2278

To appear in:

Received date: 10-5-2017
Revised date: 10-2-2018
Accepted date: 12-2-2018

Please cite this article as: Adrian Currie, Geoengineering Tensions, Futures https://doi.org/10.1016/j.futures.2018.02.002

Geoengineering Tensions

Adrian Currie,

Centre for the Study of Existential Risk David Attenborough Building, Pembroke Street Cambridge, CB23QY UK

Ac2075@cam.ac.uk

Highlights

- Geoengineering research is a challenging scientific and engineering prospect, which clashes with features of scientific practice which make it conservative.
- Arguments pertaining to moral hazard and the international cooperation required for geoengineering governance are important (but defeasible).
- Attempts to rebrand geoengineering, or to decouple geoengineering research from the deployment of technologies, either turn on questions scientists are not qualified to answer, or factors outside of their control.
- Attempts to govern geoengineering via intervening on actual scientific research (via stage-gating, for instance) are of limited use given the nature of the objections to that research.
- Governance relating to geoengineering must be sensitive to (1) the conservative nature of scientific research, (2) the need for governance to extend beyond the traditional boundaries of scientific research itself.

Abstract

There has been much discussion of the moral, legal and prudential implications of geoengineering, and of governance structures for both the research and deployment of such technologies. However, insufficient attention has been paid to how such measures might affect geoengineering in terms of the incentive structures which underwrite scientific progress. There is a tension between the features that make science productive, and the need to govern geoengineering research, which has thus far gone underappreciated. I emphasize how geoengineering research requires governance which reaches beyond science's traditional boundaries, and moreover requires knowledge which itself reaches beyond what we traditionally expect scientists to know about. How we govern emerging technologies should be sensitive to the incentive structures which drive science.

1. Introduction: Two Balloons

The trajectory of technological development is not foreordained, and is sometimes shaped by particular—contingent—events (see various papers in Soler, Trizio & Pickering 2015). Such events can motivate flurries of research, but can also constrain, block and warp investigation. I'm going to consider how a particular event, the SPICE (Stratospheric Particle Injection for Climate Engineering) group's decision to cancel a balloon launch, potentially affected the development of geoengineering. In reflecting on the case, I'll bring out two tensions that a successful science of geoengineering must navigate. The first tension is much discussed: between the moral and prudential arguments in favour of developing or researching such technology, and the worry that there might be problematic consequences for mere research (let alone deployment). Second, there is a tension between the kinds of factors which make science productive, and factors pertaining to the governance of geoengineering research. Specifically, geoengineering research involves speculative examination of the possibility of large-scale interventions, research which to some extent depends upon field