

Many other empirical questions emerge while reading this volume. For example, while the book covers cross-issue interactions, authors provide only a glimpse of *how* all these shifts might interact with each other. Do coalition shifts, for example, influence the role that science is given in MEA processes? Do definitional arguments create or limit opportunities for secretariat influence?

Broader systemic trends are on display throughout the book, raising yet another series of productive research questions. The notion of regime envy—IPCC envy, climate envy, and Montreal Protocol envy—points to the fact that participants are well aware of other MEA processes. Similarly, the International Treaty on Plant Genetic Resources uses the Basel Convention implementation mechanism, and the Nagoya Protocol on Access and Benefit Sharing draws lessons from other environmental and human rights regimes. These cross-institutional adaptations raise questions about how ideas are (or are not) transmitted across negotiating processes.

The Roads from Rio provides an excellent starting point for future research. As a global community of scholars, we clearly have our work cut out for us to meet the challenges laid down by this book.

Reference

Gerring, John. 2012. Mere Description. *British Journal of Political Science* 42 (4): 721–746.

Preston, Christopher, ed. 2012. *Engineering the Climate: The Ethics of Solar Radiation Management*. Plymouth: Lexington Books.

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In the preface to *The Human Condition*, Hanna Arendt describes the launch of the first satellite in 1957 as marking a “new and yet unknown age,” which she speculates will prompt humanity’s “fateful repudiation of an Earth who was the Mother of all living things.”³ Arendt worries that unreflective utilization of new technologies will inadvertently transform the human condition, which is embodied in our relationship to the Earth. Today, the likelihood that solar radiation management (SRM) will be deployed as a technological fix for climate change raises diverse normative and ontological questions and suggests a literal dénouement to Arendt’s speculation. *Engineering the Climate* is a significant collection of articles that unpacks many of these issues. Preston’s introduction, which offers an admirably balanced primer and careful overview of ethical concerns, seeks to establish the subject matter’s importance by claiming that deliberate geoengineering takes humanity into new “moral terrain,” as we will intentionally assume “responsibility for the very skies under which all life on earth

3. Arendt 1958, 2.

lives, an endeavor with repercussions impacting everyone—and everything—on the planet” (p. 1).

SRM technologies aim to cool the planet by blocking the earth’s absorption of some solar energy. Although there are many potential forms of SRM, the most likely to be implemented—dispersal of sulfate particles into the stratosphere—is relatively simple. Studies of cooling following volcanic eruptions demonstrate that stratospheric sulfates can effectively negate anthropogenic warming. A world cooled through SRM, however, would also experience changed rainfall, temperature, and weather patterns, as well as continuing ocean acidification and potential damage to the ozone layer. While this scenario is dystopic, the continuing failure of mitigation efforts is generating increasing interest in SRM. For example, the Intergovernmental Panel on Climate Change’s Fifth Assessment Report will cover geoengineering.

This volume contains thirteen diverse chapters that Preston describes as offering a “generous sampling” of views (p. 10). This diversity, with many chapters arguing at cross-purposes, means that no reader will agree with every contribution. This discordance is valuable, as it forestalls premature closure of inquiry in a volume that is arguably the first major exploration of the ethics of SRM. The book is organized into five sections. The first builds an ethical case against SRM through chapters exploring the ethics of solidarity and moral risk, of imposing invidious dilemmatic choices on future persons, and of dominating future generations. While these chapters are solid and persuasive, they primarily seek to enumerate SRM’s ethical shortcomings. Clearly SRM would have no place in an ideal world, as rapid reductions in GHG emissions would be ethically preferable. Yet humanity is a stubbornly non-ideal species, so later chapters that interrogate questions of political feasibility and meaning, or that scrutinize the assessment methods and consultative arrangements that should guide SRM research, are more engaging.

The second section investigates the inclusion of indigenous people, vulnerable populations, and nonhuman species in decision-making. These chapters, together with Holly Jean Buck’s exploration later in the book of the potential for social development to be integrated into assessment of climate remediation, will be useful to anyone involved in SRM research or governance. If this volume has a simple take-home point, it is that that wide consultation and integrated analysis of potential social co-benefits should inform the development of any SRM research agenda.

On a critical note, some chapters seem to cut a few corners in order to consolidate critiques of SRM. For example, in an otherwise impressive chapter, Ronald Sandler seeks to dismiss the possibility, prior to any scientific assessment, that SRM might protect some species. He develops an entirely plausible argument that the “complexity and uncertainty” of “dynamic and integrated systems” mean that direct interventions will likely have unanticipated consequences (p. 106), but arguably overstates the practical implications of this insight. In contrast, the papers in the third section criticize dogmatic rejection of

SRM. Ben Hale demonstrates that if moral hazard arguments are to be persuasive, they must identify the specific changes in anticipated behavior that will flow from SRM and specify why these changes are problematic. Buck develops a tight yet lyrical analysis of the potential for assessment of SRM to promote social transformation rather than absolution for “organized irresponsibility” (p. 148). Section four builds on this political analysis and explores the ethical implications of rhetorical frames and the dynamics of public ethical concerns.

The concluding three chapters zoom out to develop a sustained reflection on the historical rupture evident in SRM; they examine conceptions of the good life, religious implications, and civilizational transformation. Maialen Galarraga and Bronislaw Szerszynski’s stimulating concluding chapter explores alternate ideas of poiesis (human making) in relation to making climates. They argue that transformative “world-making” technologies cannot be judged against criteria established in advance because a new kind of society with different values and meanings will emerge in a geoengineered world. It is too early to assess whether these arguments overstate the importance of SRM—perhaps, as with satellites, familiarity will reduce SRM’s perceived significance. The prospect of intentional climatic intervention calls for sustained ethical reflection, however, and this engaging and challenging collection makes a valuable contribution to the task.

Reference

Arendt, Hanna. 1958. *The Human Condition*. Chicago: University of Chicago Press.