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Jim Fleming

### Excuse Us, While We Fix the Sky: WEIRD Supermen and Climate Engineering

As the alarm over global warming spreads, a radical idea is taking hold. An emerging breed of so-called “geoengineers” thinks that voluntary compliance with emissions reductions is highly unlikely and that invasive techniques to cool the planet will be necessary. Shoot sulfates or reflective nanoparticles into the upper atmosphere, turning the blue sky milky white. Make the clouds thicker and brighter. Fertilize the oceans to stimulate massive algae blooms that turn the blue seas soupy green. Suck CO<sub>2</sub> out of the air with hundreds of thousands of giant, artificial trees. Store the captured CO<sub>2</sub> safely underground or in the oceans for millennia. While these proposals for climate engineering seem edgy and exciting, they are often fraught with hubris, test the limits of scientific, technological, and institutional possibility, and tend to overlook the political, ethical, and social consequences of managing the world’s climate.

Weather control, especially rainmaking, has traditionally been practiced by women across world cultures. But for the past two centuries, surrounded by an aura of science and technology, nearly 100 percent of those proposing such interventions have been men.

To be more precise, advocates of climate engineering, with very few exceptions, are Western, Educated, Industrialized, Rich, and Democratic (WEIRD) males with superman complexes (Henrich et al. 2010). Their views are shortsighted, dangerous, and “barking mad” (Pierehumbert 2015). This is a bold claim, and I make it intentionally to be provocative. But it is also based on my recent experience as a coauthor of two US National Academy of Sciences reports: “Climate Intervention: Reflecting Sunlight to Cool Earth” and “Climate Intervention: Carbon Dioxide Removal and Reliable Sequestration,” both published in 2015. Historical support for this contention comes from my book, *Fixing the Sky: The Checkered History of Weather and Climate Control* (Fleming 2010).

The literature on gender and environment is vast, but the analytical literature on masculinity is much thinner, with works specifically on masculinity and science and mas-

culinity and the environment thinner still.<sup>1</sup> Traditionally, most histories of science and technology have engaged with the accomplishments of elite men, treating them as a normative, dominant, unmarked social category, but recent treatments of traditionally male-dominated fields are more socially sensitive and are at least taking note of female accomplishments while asking: Why did male scientists think the way they did? (see, for example, Fleming 2016). What drives their quest to control nature, the climate, to fix the sky? Informed by feminist readings of the roots of the masculinist domination of nature in Baconian scientific ideals, my aim here is to give a brief sketch of the current state of male-dominated climate engineering proposals (specifically solar radiation management) and to provoke among environmental humanities and social science scholars an urgently needed, critical discussion of the gendered (read: masculine) nature of climate intervention.

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Since the seventeenth century, the expectation that increasing knowledge would lead to new technologies “for the common good” has been widely applied to all scientific fields, including, notably, meteorology and climatology. For several centuries, planners, politicians, scientists, and soldiers have proposed schemes for the purposeful manipulation of weather and climate, usually for commercial or military purposes. In the dedication to *The Great Instauration* (1620), Sir Francis Bacon (1561–1626) encouraged his “wisest and most learned” patron, James I, to regenerate and restore the sciences. Bacon’s program involved “collecting and perfecting” natural and experimental histories to ground philosophy and the sciences “on the solid foundation of experience of every kind” (Bacon in Spedding et al. 1990, 23–24). His wide-ranging catalog of particular histories included aerial and oceanic topics that are relevant here: lightning, wind, clouds, showers, snow, fog, floods, heat, drought, and ebb and flow of the sea. The ultimate goal was to replace Aristotelian natural philosophy—with the proximate goal dedicated to rapid progress in science and technology, and eventual control of nature.

1 See, for example, Meade and Wiesner-Hanks (2004). There are important exceptions regarding scholarship on the scientific revolution and the masculine domination of nature, nearly all of which are written by feminist academics. See for example Evelyn Fox Keller (1985) and Carolyn Merchant (1990). Handelman and Allister (2004) link men’s studies and ecocriticism in a collection of interdisciplinary essays.

In *New Atlantis* (1624), Bacon describes the scientists of Solomon's House practicing both observation and manipulation of the weather: "We have high towers . . . for the view of divers meteors—as winds, rain, snow, hail, and some of the fiery meteors also. And upon them in some places are dwellings of hermits, whom we visit sometimes and instruct what to observe . . . and engines for multiplying and enforcing of winds to set also on divers motions" (399). In great experimental spaces, researchers imitate and demonstrate natural meteors such as snow, hail, rain, thunder, lightning, and "some artificial rains of

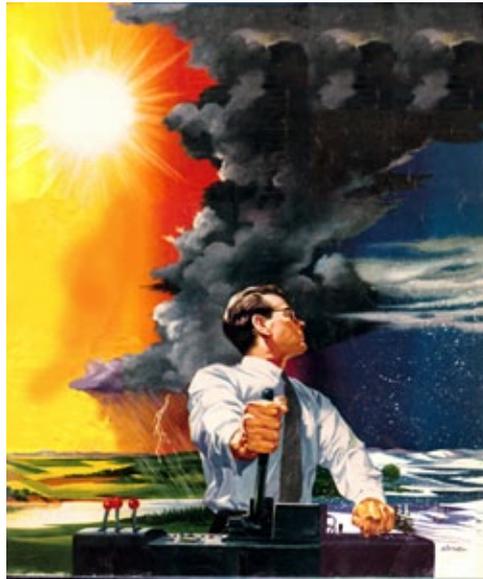


Figure 1:  
Cover illustration of  
James Fleming, *Fixing  
the Sky* (New York, NY:  
Columbia University  
Press). Used with per-  
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bodies and not of water" (400). Three so-called mystery men are in charge of expanding the repertoire of practices not yet brought into the arts, and three pioneers or miners try new experiments "such as themselves think good" (410); that is, they manipulate nature without further review or oversight, a task requiring perfect virtue and vision in the experimentalist. Bacon was conversant with a venerable humanistic tradition that divided history into three parts—ancient, medieval, and modern—but his valuation of the three eras was asymmetric. He granted grudging respect to the ancients, denigrated the Middle Ages, and elevated modern accomplishments to equal or soon-to-be-greater status than those of antiquity. For Bacon, the rise of modern science was due to "the true method of experience . . . commencing . . . with experience duly ordered and digested, not bungling or erratic, and from it educing axioms, and from established axioms, again new experiments" (115). "New discoveries," Bacon argued, "must be sought from the light of nature, not fetched back out of the darkness of antiquity" (154). He elaborated at length, of course, on his new method, the important point being that, in his view, the sciences were about to enter a period of great fertility because of his new method. Bacon's communitarian campaign was taken over by innumerable practitioners in the seventeenth century. His greatest legacy, without doubt, was institutional, in that his outlook was absorbed by the Royal Society of London and by many other scientific societies that dominate the field to this day.

Bacon has long been known as both the founder (father) of the scientific method and as a chauvinist and misogynist who excluded women from the study of nature (Merchant 1980). He employed sexualized language to describe what a “new science” should look like. He claimed that the goddess of wisdom Minerva was born straight from Jupiter’s head, without female conception. For Bacon, knowledge is masculine power over nature, and “science is a chaste and lawful marriage between Mind and Nature that will bind Nature to man’s service and make her his slave.” Nature’s enslaved children include natural resources—mineral, vegetable, animal—and other humans, i.e., everything. In his fragmentary essay, “The Masculine Birth of Time” (1603), Bacon called for a “blessed race of Hermes and Supermen” who could “hound,” “conquer and subdue Nature,” “shake her to her foundations,” and “storm and occupy her castles and strongholds” (Fox-Keller 1985, 48–54). Today’s Baconian “Supermen” are the weather and climate engineers.

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Armed with alarmist rhetoric about climate change and with military metaphors about climate engineering, those suggesting geoengineering research with the potential for full-scale deployment can sometimes be heard as proposing lifeboats for a sinking planet that has been torpedoed by the effluvia of modern civilization. In my experience, it is often difficult to differentiate the reasonable scientists who are concerned about climate change (of which there are many) from those who are deluded by the notion that technology alone can be its silver bullet solution. Noah Bonnheim (2011) contextualizes the complicated issue of geoengineering by exploring the similarities between geoengineers and a different, if fictional, breed of planetary saviors—comic book superheroes. He examines the archetype and psychological appeal of the hero as delineated by Sigmund Freud, Otto Rank, Carl Jung, Joseph Campbell, and others. There are scientists—typically ultra-alpha males—who advocate geoengineering because they believe that climate change is a planetary emergency that cannot be addressed adequately by conventional methods. These geoengineers, seemingly in the role of illustrious warriors, have declared war on the destructive forces of global warming to save the planet from disaster. The military metaphor is literal, evoking military mindsets and military equipment. One popular method proposed to deliver aerosols into the stratosphere is firing rockets or cannons at the sky. By suggesting that they can create super-technologies to control global climate and avert catastrophic climate change, these geoengineers pre-

sent themselves as heroic saviors of a dying planet.

Climate engineering—or more accurately climate intervention—involves a set of wildly speculative claims about controlling the planetary environment in response to global climate change (NRCNA 2015). It is an exceedingly dangerous discourse involving heavy-handed interventions to “fix the sky.” Climate engineering is no longer merely rhetorical. It is currently seeking respectability within national and international environmental policy circles, which are also male dominated. What is to be done? I argue that discussion and decision making regarding climate intervention need to include both interdisciplinary (including the humanities and social sciences) and gender-critical perspectives involving a broad and inclusive array of international and intergenerational participants. In fact, the field’s current lack of diversity indicates that some of the most critical questions have probably not even been posed. For example, what gendered assumptions inform the practice? How would climate engineering alter fundamental human relationships with nature? How is climate engineering perceived in different cultures? Who will make decisions on behalf of the planet? How should any “losers” be compensated and how would any nonmarket goods, which may be irreplaceable, be valued? Is this even the right framing? A large-scale environmental technological fix framed as a response to undesired climate change could be seen as an act imposed on the multitude by the will of the few, for the primary benefit of those already in power. Many would undoubtedly interpret it as a hostile or an aggressive act. Isn’t climate engineering in the category of “Western male solutions to global problems”?

Here are my final conclusions: The two fetishes of the weather and climate interventionists do not work. Silver iodide can be used to intervene in a cloud, but it does not convey to scientists the power to control the cloud, to dictate when and where it will rain, or when the cloud will dissipate. Computer models, an even greater fetish, do not predict the future. Meteorologists can emulate weather conditions in their computer models for no more than five to seven days in advance. This is the so-called chaotic limit introduced by Ed Lorenz. Regarding climate models, the so-called infinite forecast provided by general circulation models returns no information at all about specific conditions but generates the statistical features of an unperturbed climate system. There is indeed no way to forecast the future with any specificity (Fleming 2016, 226). Joni Mitchell was right: “We really don’t know clouds (or climate) at all.” How can we wrest the future of the planet from the hands of WEIRD, barking mad, and poten-

tially dangerous men with superhero complexes? We can begin by treating them as a marked category.

### Further Reading

Bacon, Francis. Ca. 1900. *The Works of Francis Bacon*. Translated and edited by James Spedding, Robert Leslie Ellis, and Douglas Denon Heath. 15 vols. Boston, MA: Houghton Mifflin.

Bonnheim, Noah. 2011. "The Psychological Appeal of Geoengineering." Typescript thesis, Colby College.

Fleming, James Rodger. 2010. *Fixing the Sky: The Checkered History of Weather and Climate Control*. New York, NY: Columbia University Press.

———. 2016. *Inventing Atmospheric Science*. Cambridge, MA: MIT Press.

Fox Keller, Evelyn. 1985. *Reflections on Gender and Science*. New Haven, CT: Yale University Press.

Handelman, Alvin, and Mark Allister, eds. 2004. *Eco-Man: New Perspectives on Masculinity and Nature*. Charlottesville, VA: University of Virginia Press.

Henrich, Joseph, Steven J. Heine, and Ara Norenzayan. 2010. "The Weirdest People in the World?" Working Paper Series of the German Data Forum (RatSWD), no. 139.

Meade, Teresa A., and Merry E. Wiesner-Hanks. 2004. *A Companion to Gender History*. New York, NY: Oxford University Press.

Merchant, Carolyn. 1980. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco, CA: Harper & Row.

National Research Council of the National Academies (NRCNA). 2015. *Climate Intervention*. 2 vols. Washington, DC: National Research Council of the National Academies. <http://nas-sites.org/americasclimatechoices/other-reports-on-climate-change/climate-intervention-reports/>.

Pierrehumbert, Raymond T. 2015. "Climate Hacking Is Barking Mad." *Slate*, 10 February. [http://www.slate.com/articles/health\\_and\\_science/science/2015/02/nrc\\_geoengineering\\_report\\_climate\\_hacking\\_is\\_dangerous\\_and\\_barking\\_mad.single.html](http://www.slate.com/articles/health_and_science/science/2015/02/nrc_geoengineering_report_climate_hacking_is_dangerous_and_barking_mad.single.html).