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Wednesday, March 27, 2013

The Truth About Geoengineering

Science Fiction and Science Fact

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The failure to make much progress at the UN Climate Change Conference in Doha, Qatar this winter was yet another reminder that the world might soon face extreme climate shifts. In response, it is becoming increasingly likely that governments will adopt risky strategies, known as "geoengineering," to rapidly cool the planet. Four years ago, in order to raise awareness about geoengineering, we published "[The Geoengineering Option](#)"^[1] in *Foreign Affairs*. Almost nobody thought that such tactics -- which included spraying particles into the upper atmosphere to make the earth more reflective, akin to how big volcanoes cool the planet -- were a particularly good option. The risks were simply too great and the unknowns too many. Still, if reliable data and specific models showed that climate change was about to get out of hand, we wrote, such drastic measures might start to look more appealing. The world could no longer ignore the geoengineering option, and we argued that a major science program should begin to explore it.

These days, barely a month goes by without new research that shows that the planet's climate could be more sensitive to global warming than experts previously thought. For example, some ice sheets now appear a lot less stable than scientists had imagined. And new estimates of how much the sea will rise when ice sheets melt far surpass the best estimates of just a few years ago. It is clear that, unchecked, climate change won't just menace natural ecosystems; it will also cause severe harm to humans and could even threaten national security. And, because governments have made barely any progress in controlling the emissions that cause global warming -- the 2000s saw the most rapid growth in emissions of carbon dioxide and other warming gases since the 1970s -- it's not so crazy to imagine that some nation will launch an emergency geoengineering scheme, perhaps before its viability and consequences are understood.

Since we wrote our essay, press coverage of geoengineering

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