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We Can't "Fix" the Planet

There's no easy solution for climate change. It's a symptom of our man-made world.

By Brad Allenby

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This piece arises from Future Tense, a collaboration among Arizona State University, the New America Foundation, and Slate. A Future Tense conference on geoengineering will be held at the New America Foundation on Monday, Sept. 27. (For more information, please visit the .) Read more of 's special issue on geoengineering.

It's time to reframe the debate over geoengineering. Proponents argue that we have no other choice than to consider schemes like salting the skies with sulfate particles or peppering the ocean with algae. The negotiators failed at Copenhagen, they say, and cap-and-trade seems moribund in Congress—all while the climate warms unabated. Opponents of a technological quick fix worry that a large-scale deployment of geoengineering might only make things worse and that the very mention of it could erode the world's resolve to change our habits and reduce consumption of fossil fuels. These are relatively simple arguments, pro and con, and easy to understand. But that's the problem: Neither side grapples with the complex natural, technological, and social systems

that are in play.

The traditional views of geoengineering assume that climate change is a problem that can be solved by appropriate remedies—whether the Kyoto Protocol or deployment of geoengineering technologies—and that any such solution can exist apart from its context. In other words, it's classic reductionism: Isolate a problem, analyze, and solve. But this approach would only make sense if two core assumptions were valid: first, that climate change is a problem amenable to a simple and direct intervention (whether it's legal or technological); second, that climate change can be separated from everything else.

Neither of these assumptions can withstand serious scrutiny. Climate change is not a problem to be solved; it is

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a condition arising from a vast network of built, natural, and social systems that reflect the desires of 7 billion people for a better life. They want food, including more meat as they can afford it; they want clean water, which takes energy to produce; they want material goods that will help them, and their children, lead full and worthwhile lives. Look at the Earth from space at night, and you see our energy and radiation shining in the dark; look at it during the day, and you see cities, agricultural regions, skies full of airplanes, and roads full of cars. You see, in other words, a world in which human activity affects everything. Climate change is a symptom of a fundamental and complex reality: the evolution of the anthropogenic Earth.

We cannot simply disconnect the climate from other Earth systems, like the global economy, or from competing cultural values, like the importance of equal opportunity, freedom to travel, and the just distribution of wealth. Change global patterns of incoming solar energy, and you don't "fix" global climate change so much as modify the atmosphere again, in a different way. Any serious attempts at fighting global warming are bound to have effects that ripple through overlapping domains: Corn ethanol, for example, was supposed to help curtail carbon emissions; not only did it fail in that regard, but the subsidized glut of

production distorted food markets and starved poor people around the globe. A childish refusal to perceive such linkages won't make them go away.

More than other proposed responses to climate change, geoengineering buys into the myth that we're dealing with an independent, solvable problem. It is, in essence, a proposal to justify the deployment of technologies that are powerful enough to affect the fundamental climate cycle of an entire planet—all based on the assumption that average temperature is the only thing that matters. Stratospheric balloons could indeed reflect some sunlight back into space, but they might also disrupt Asian monsoons, resulting in widespread famine. We might try to create reflective clouds by injecting sulfur particles into the air, but we might also end up acidifying rain all over the world. The point is not that these geoengineering

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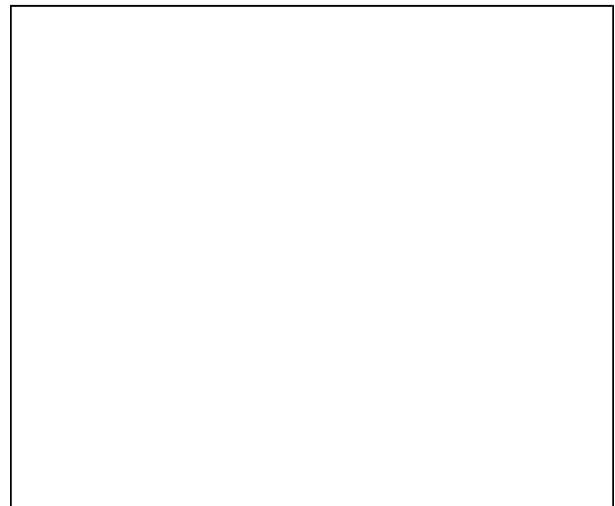
technologies (and others) are unsafe: It may indeed be worth the risk to deploy them one day. The point is that unless we think about them as multidimensional interventions that affect the world in many different ways and at many different scales, we're simply ignoring reality (willfully or not). Any technology of sufficient power will have profound and unpredictable impacts across economic, cultural, and political systems—think of the railroads, of cars, of the Internet, of Google.

The root problem here is psychological, not technical; it's a deliberate retreat from complexity into fantasy and whimsy. Geoengineering should not be rejected out of hand, but rather redefined so it can be taken more seriously. First, we shouldn't limit the discussion to those schemes or technologies that make the adjustment of the climate their primary or "intentional" goal. More mundane research programs or policies that might ameliorate global warming as a side effect should be considered alongside the Pinatubo Option and . For example, growing beef in factories rather than in cows would have substantial climate-change benefits, since each living cow emits some 50 kg of methane a year. (Some estimate that shifting away from livestock agriculture could reduce greenhouse-gas emissions by more than 15 percent.) Factory meat would also

reduce soil erosion and nitrogen loading, and free up land for other uses, such as growing biofuels. And that's just one example. There are lots of other things we could do that would meet a broader, more reasonable definition of geoengineering.

Geoengineering should be thought of not as a set of wild proposals fit for a mad scientist, but as a portfolio of viable technologies that may or may not be conceived as silver bullets for climate change on their own terms. Rather than simply laying plans for the deployment of one or another, we should make available a suite of possible approaches, each with its own costs and benefits, that could be combined as needed in this complex, confused, and unpredictable world of ours. We have made this an anthropogenic planet; now we have to take responsibility for it.

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