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The Climate Crisis Will Be Just as Shockingly Abrupt

The coronavirus isn't a reason to put climate policy on hold. It's a warning of the calamities ahead.

By **MELODY SCHREIBER**

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As governments around the globe debate how to respond both to the coronavirus itself and the economic chaos it has unleashed, a theme that's come up over and over is how to prioritize what makes it into spending packages. In the United States, right-left fault lines have emerged over the question of bailing out emissions-heavy industries versus a greener stimulus. On Thursday, the Environmental Protection Agency announced a large-scale rollback of environmental regulations as a response to the pandemic—allowing many emitters to police themselves when it comes to pollution.

While some argue that the oxygen in the climate debate should be taken up by the pandemic instead, the two issues aren't mutually exclusive, experts say. In a warming climate, more diseases are likely to emerge and spread, making climate change action an important part of addressing future health crises. Moreover, the perception that climate change isn't as urgent as other crises may rely on misunderstandings about how climate-related changes will happen. The rate isn't constant: Instead, there's reason to believe everything from Arctic melt to Amazon deforestation might experience what's known as "tipping points," where small changes in nature shift into rapid and irreversible damage.

Greenland and Antarctica are melting six times faster than they were in the 1990s, according

to a new study in the journal *Nature.* Between 1992 and 2017, Greenland and Antarctica lost 6.4 trillion tons of ice. This falls under the worst-case scenario projected by the Intergovernmental Panel on Climate Change, and the effects are already being felt in many parts of the world. The IPCC predicts that by the end of the century, 400 million people around the globe could be at risk of coastal flooding every year from sea-level rise alone.

Ice sheets "may already be in an irreversible retreat," going past their tipping point, Timothy M. Lenton, director of the Global Systems Institute at the University of Exeter, told me. "The more we warm things up, the faster the ice melts and the sea rises." Even if we take aggressive action to curb emissions and halt rapid change, he said, some of these effects are already locked in. And once ice begins to melt, it's hard to re-form it without another Ice Age. Lenton recently sounded the alarm in *Nature* on how close we're getting to altering the planet permanently—and how the timeline on saving lives on climate change may be tighter than many people realize.

Other tipping points include rain forest loss in places like the Amazon, monsoon shifts in Africa and Asia, changes to ocean circulation patterns, and coral reef die-offs. For example, the Amazon is, for now, a major source of carbon sequestration—it pulls carbon from the air and stores it in the soil. Burning or cutting down trees to convert the land into agricultural fields, which comes with its own emissions, can turn it from a carbon sink to a carbon emitter. What may seem like a manageable rate of deforestation could suddenly trigger a mass die-off within the rain forest's ecosystem. The atmosphere above the rain forest has already become drier in the past 20 years, NASA has found, "increasing the demand for water and leaving ecosystems vulnerable to fires and drought." With all of these changes, much of the Amazon could look more like a savannah in a few decades, another recent study concluded. Many ecosystems around the globe could be vulnerable to this kind of phenomenon, passing an invisible inflection point that suddenly and irreversibly accelerates the rate of change, as a system is thrown off balance.

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However, Lenton and others point out that positive tipping points exist as well—for instance, when society organizes into action in order to avert crises.

Rapid decarbonization, as Ilona M. Otto, a researcher at the Potsdam Institute for Climate Impact Research in Germany, and other researchers recently wrote in a research article for the *Proceedings of the National Academy of Sciences,* will mean "activating contagious and fast-spreading processes of social and technological change within the next few years." Coincidentally, the coronavirus response, she told me, shows that this kind of rapid government action is possible. "All the things that we were writing in the article, it's actually happening right now," Otto said. "If there is a real crisis situation, people do expect government to be strong and somehow take quick decisions, and also change the law or introduce new laws."

Unfortunately, with the associated economic fallout of the pandemic, some governments seem to be enacting the exact opposite of the "social tipping interventions" Otto's group identified—for example, "removing fossil fuel subsidies." The Trump administration, instead of removing the long-standing support system for the unprofitable fracking industry, has moved to prop it up further. But the pandemic, Otto argues, still represents proof of concept for swift government action, if people are able to accurately perceive the crisis in front of them.

As with the pandemic, responses to climate change have often emphasized individual action—traveling less, eating more sustainably, switching to more efficient energy sources. But both crises require the kind of large-scale structural interventions produced by national and international policies, like designing more sustainable infrastructure and transportation and alternate work arrangements, as well as creating emergency responses and strengthening social safety nets for the most vulnerable. That's not to mention government's regulatory role. "We need stronger regulations," Otto said.

With national governments and the European Union rolling out subsidy programs for industries hit hard by the virus, Otto proposes attaching sustainable strings to this aid. For instance, the aviation industry is strongly dependent on fossil fuels, she said. "Why not ask them for plans [on] how to decrease the emissions within, like, 50 percent within the next 10 years and maybe become carbon neutral by 2050 or so? I think this could be used as an incentive to encourage companies to make plans [for] how they want to achieve carbon neutrality." Otto argues against re-creating the systems countries had before the pandemic. "If we don't build a more resilient system right now, we will, in a way, lose this opportunity," she said. In addition, investments in green initiatives, like renewable energy, could boost the economy.

The coronavirus pandemic has reshaped the way we live, work, and interact in a matter of weeks. It has also shown that governments are able—and in many cases are expected—to take swift, significant action on crises. "Under these extraordinary circumstances, there can be quite decisive action from governance and policy that changes the way we're all living day to day," Lenton said. "It is possible to change large-scale patterns of human behavior, pretty quickly."

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The question is whether governments, and voters, can appreciate the true urgency of the task. In reality, the climate crisis cannot be solved incrementally, Lenton said, because it's taken too long to spur action: Many warming-related changes are already underway. Global greenhouse gas emissions must be dramatically reduced and eventually eliminated. "If we're going to avoid the worst of bad climate tipping points, then we're going to need to find some positive tipping points in society and ourselves to transform the way we live—in a generation—to a more sustainable but also perhaps a more flourishing kind of future," Lenton said.

Pandemics like this are expected to rise as the climate changes. The SARS-CoV-2 virus causing the disease known as Covid-19, scientists suspect, may have originated in a wild animal, like a bat, and transferred through an intermediate animal to people. Zoonotic spillovers like these, as well as illnesses carried by mosquitoes, ticks, and other animals, will likely increase on a hotter planet. It's not just because more people are pressing into areas where wildlife lives; as their habitats change in new climate conditions, more animals are adapting to new environments and seeking relief in places where people live, thus increasing the chance of contact between people and animals.

"We are really messing up with the natural world, and with the climate system, and things like this can be expected to happen more often," Otto said. "It's one reason to think that climate change is actually a permanent threat and we have to think of fixing the whole system, not only the economy."

The coronavirus is a real and urgent threat. But there's also a pressing danger in failing to address climate change in policies and funding, both now and in the future. What's happening to the planet, experts agree, isn't going to stop just because we're dealing with another crisis, and this is no time to ease up on the climate fight. In fact, because of the ways climate change contributes to poor health, it makes action even more urgent.

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