

IDEAS

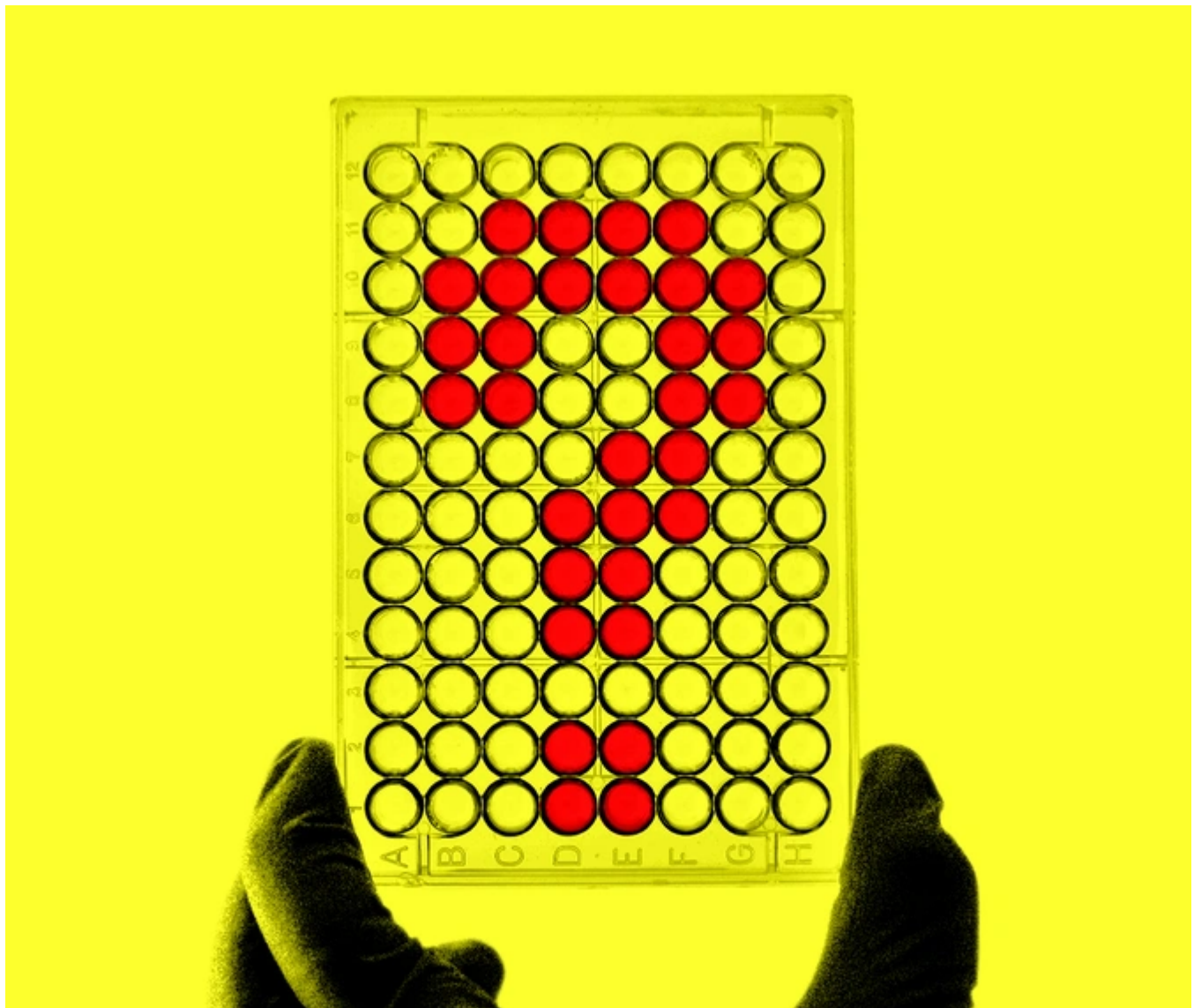
If the Lab-Leak Theory Is Right, What's Next?

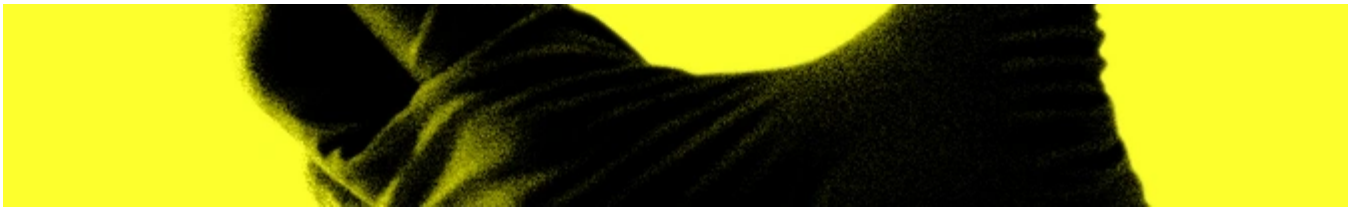
We know enough to acknowledge that the scenario is possible, and we should therefore act as though it's true.

6:05 PM ET



Daniel Engber





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LAST SUMMER, MICHAEL Imperiale, a University of Michigan virologist and 10-year member of the National Science Advisory Board for Biosecurity, published an essay on the need to “rethink” some basic research-safety practices in light of the coronavirus pandemic. But he and his co-author—another biosecurity-board veteran—did want to make one thing clear: There was no reason to believe that sloppy or malicious science had had anything to do with the outbreak of the SARS-CoV-2 virus; to suggest otherwise was “more akin to a conspiracy theory than to a scientifically credible hypothesis.”

Nine months later, Imperiale has a somewhat different view. “In my mind, the preponderance of the evidence still points toward a natural origin,” he told me earlier this week. “But that delta between the *nature* evidence and the *lab-escape* evidence appears to be shrinking.”

[*David Frum: The pro-Trump culture war on American scientists*]

Indeed, the slow sedimentation of doubts about COVID-19’s origin—whether the virus that causes it jumped directly from bats or other wild animals, or made a pit stop on a lab bench in Wuhan, China—has lately turned into a flood. In just the past two weeks, deltas have been in flux not just among the nation’s leading biosafety experts but also among public-health officials, pundits, and journalists at major dailies. The assertion by World Health Organization investigators in February that a lab-leak origin for the pandemic was “extremely unlikely” has since been challenged by the WHO director general, Tedros Ghebreyesus; a May 14 letter to *Science* magazine, signed by 18 scientists, called for “a proper investigation” and “dispassionate science-based discourse on this difficult but important issue”; David Frum suggested last week in *The Atlantic* that the Biden administration should “take possession of the truth about the virus”; and the election forecaster Nate Silver declared on Sunday that his estimated likelihood of a laboratory origin had increased by half, to 60 percent. Today, President Joe Biden said that the United States intelligence community still hasn’t decided which hypothesis is

likelier, and that he wants to get “closer to a definitive conclusion” by the end of August.

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This shift is all the more remarkable for its lack of any major associated revelations. Arguments in favor of the “lab-leak hypothesis” remain grounded, as they ever were, in the mere and highly suspicious fact that a coronavirus likely borne by bats, likely from a cave in southwest China, emerged 18 months ago, quite suddenly, in a city very far from southwest China—where researchers had assembled an archive of cave-bat-borne coronaviruses. Much of the rest is window dressing. That the lab-leak hypothesis is gaining currency even as the facts remain the same has a useful implication, though. It suggests that definitive proof is not an absolute requirement. The SARS-CoV-2 outbreak has killed millions of people. It might have started in the wild, or it might have started in a lab. We know enough to acknowledge that the second scenario is possible, and we should therefore act as though it’s true.

ACCORDING TO THE MAY 14 letter to *Science*, the one demanding “a proper investigation” of COVID-19’s origins, “knowing how COVID-19 emerged is critical for informing global strategies to mitigate the risk of future outbreaks.”

Just about every magazine story, Substack post, and piece of commentary about the lab-leak hypothesis includes a line like this, dropped like a smoke bomb, right up near the top. Did COVID-19 emerge from wildlife or might the virus have slipped out from a lab? “That urgent question is key to preventing the emergence of a SARS-CoV-3 or a COVID-29,” began one feature from March. “It matters a lot, because knowing how a virus-driven pandemic begins focuses our attention on preventing similar situations,” another article said in April. And “it matters a great deal which is the case if we hope to prevent a second such occurrence,” the science journalist Nicholas Wade wrote in a widely read essay earlier this month.

[Shadi Hamid: China is avoiding blame by trolling the world]

That’s a simple, unconvincing notion. The project to identify the source of the coronavirus pandemic surely has moral, legal, and political significance; but with regard to global public health—and to the crucial project of pandemic-proofing for the future—its outcome matters only at the margins. To say that we’ll need to know the exact origin of SARS-CoV-2 in order to set policies for staving off SARS-CoV-3 commits us to the path of hindsight bias: It’s a pledge to keep on fighting the last war against emerging pathogens, if not a blueprint for constructing the next Maginot Line.

What information, really, would we get from a “proper investigation”? At best, we’ll have identified one more place to look for natural spillovers, or one more type of catastrophic accident: useful data, sure, but in the broader sense, just another case study added to a paltry set. Of the smattering of pandemics in the past century, one—the 1977 Russian flu—has been cited as the possible result of a laboratory accident. Whatever we might discover about the genesis of COVID-19 (and whether we discover anything at all), this historical record is bound to look more or less the same: Nearly all pandemics appear to have a natural source; possibly one or two have emerged, and more might do so in the future, from research settings.

Instead of calling for a new and better inquiry into origins, let’s stipulate that pandemics can result from natural spillovers or from laboratory accidents—and then let’s move along to implications. One important question has already gotten airtime (from right-wing media, at least): Should scientists be fiddling with pathogenic genomes, to measure out the steps they’d have to take before ascending to pandemic-level virulence? Should the National Institutes of Health be funding

them? This was the subject of a fierce, unresolved debate among virologists that started back in 2012; it still isn't clear to what extent such research helps prevent devastating outbreaks, and to what extent it poses a realistic risk of creating them.

Other questions include: Should coronavirus samples gathered from the wild be studied at moderate biosafety levels, as appears to have been the case at the Wuhan Institute of Virology? Is there any significant cost, in terms of preparing for the next pandemic, from slowing down surveillance work with more demanding safety regulations? And should China end the practice of transporting virus-laden guano from sparsely populated regions to population centers, as appears to have been the case in Wuhan? (One might also ask: Should studies of Ebola, or other outbreak-ready pathogens, be carried out in Boston?) As Alina Chan, a molecular biologist at the Broad Institute, told me this week, we may yet discover that the COVID-19 story is a variation on “a small-town virus brought to the city, and suddenly becoming a star.”

Or we might be due for a far more substantial inquiry into the risks of scientific research. If we're ready to acknowledge that a lab-induced pandemic is possible, and that we may be seeing the result, then “we'll need to understand that the next major threat to public health could come from something else in biology—something that destroys crops, or changes the ocean, or changes the atmosphere,” Sam Weiss Evans, a biosecurity-governance scholar, told me. “This could be a moment of reckoning for the much wider biological community.”

For the moment, though, these discussions are on hold, while scientists chase—probably in vain—a full vetting of the lab-leak hypothesis.

They are not so process-obsessed when it comes to the “spillover” hypothesis, which, after all, is also wanting for direct evidence in the case of COVID-19. The Stanford University microbiologist David Relman—one of the organizers of the *Science* letter, and a former colleague of Michael Imperiale's on the National Science Advisory Board for Biosecurity—told me this week that the research community already accepts that natural spillovers occur, and that they can cause dangerous outbreaks, so it doesn't need any further proof. Scientists are bound to push ahead with efforts to prevent and anticipate human encounters with animals that harbor potentially dangerous viruses, he said. “That will happen almost regardless of what we learn now.”

Relman isn't expecting a similar approach to laboratory safety. The idea that a lab accident might cause a pandemic "is a very difficult, uncomfortable scenario for many scientists to accept," he said. Without more specific evidence in favor of the lab-leak hypothesis, "people will wring their hands and talk about it, just as they have since 2012, but I don't think a lot will change to reduce the risk."

[*Karl Taro Greenfeld: We may never know the full story of COVID-19*]

More specific evidence may never arrive, however, even after further study by the CIA or the WHO. A "proper investigation" might, at any rate, prove counterproductive. What happens if it drags on into the future, and never lands on anything concrete? (What if no one can agree on what constitutes substantive evidence?) Or what if researchers discover that SARS-CoV-2 really *did* begin in bats, or pangolins, or frozen meat? These outcomes wouldn't make the risk of lab leaks go away, yet they'd surely shrink the scientific community's inclination to address it.

"There's a possibility of a lab escape," Imperiale told me, and we should act on it, no matter what. "We don't want to be asking these same questions again 10 years from now." At this point, calls for further investigation are as likely to become an instrument of delay as of persuasion.



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