



Madrid

thackerpd@gmail.com Twitter
@thackerpd

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The covid-19 lab leak hypothesis: did the media fall victim to a misinformation campaign?

The theory that SARS-CoV-2 may have originated in a lab was considered a debunked conspiracy theory, but some experts are revisiting it amid calls for a new, more thorough investigation. **Paul Thacker** explains the dramatic U turn and the role of contemporary science journalism

Paul D Thacker *investigative journalist*

For most of 2020, the notion that SARS-CoV-2 may have originated in a lab in Wuhan, China, was treated as a thoroughly debunked conspiracy theory. Only conservative news media sympathetic to President Donald Trump and a few lonely reports dared suggest otherwise. But that all changed in the early months of 2021, and today most outlets across the political spectrum agree: the “lab leak” scenario deserves serious investigation.

Understanding this dramatic U turn on arguably the most important question for preventing a future pandemic, and why it took nearly a year to happen, involves understanding contemporary science journalism.

A conspiracy to label critics as conspiracy theorists

Scientists and reporters contacted by *The BMJ* say that objective consideration of covid-19’s origins went awry early in the pandemic, as researchers who were funded to study viruses with pandemic potential launched a campaign labelling the lab leak hypothesis as a “conspiracy theory.”

A leader in this campaign has been Peter Daszak, president of EcoHealth Alliance, a non-profit organisation given millions of dollars in grants by the US federal government to research viruses for pandemic preparedness.¹ Over the years EcoHealth Alliance has subcontracted out its federally supported research to various scientists and groups, including around \$600 000 (£434 000; €504 000) to the Wuhan Institute of Virology.¹

Shortly after the pandemic began, Daszak effectively silenced debate over the possibility of a lab leak with a February 2020 statement in the *Lancet*.² “We stand together to strongly condemn conspiracy theories suggesting that covid-19 does not have a natural origin,” said the letter, which listed Daszak as one of 27 coauthors. Daszak did not respond to repeated requests for comment from *The BMJ*.

“It’s become a label you pin on something you don’t agree with,” says Nicholas Wade, a science writer who has worked at *Nature*, *Science*, and the *New York Times*. “It’s ridiculous, because the lab escape scenario invokes an accident, which is the opposite of a conspiracy.”

But the effort to brand serious consideration of a lab leak a “conspiracy theory” only ramped up. Filippa

Lentzos, codirector of the Centre for Science and Security Studies at King’s College, London, told the *Wall Street Journal*, “Some of the scientists in this area very quickly closed ranks.”³ She added, “There were people that did not talk about this, because they feared for their careers. They feared for their grants.”

Daszak had support. After he wrote an essay for the *Guardian* in June 2020 attacking the former head of MI6 for saying that the pandemic could have “started as an accident,” Jeremy Farrar, director of the Wellcome Trust and co-signer of the *Lancet* letter, promoted Daszak’s essay on Twitter, saying that Daszak was “always worth reading.”⁴

Daszak’s behind-the-scenes role in orchestrating the statement in the *Lancet* came to light in November 2020 in emails obtained through freedom of information requests by the watchdog group US Right To Know.

“Please note that this statement will not have EcoHealth Alliance logo on it and will not be identifiable as coming from any one organization or person,” wrote Daszak in a February email, while sending around a draft of the statement for signatories.⁵ In another email, Daszak considered removing his name from the statement “so it has some distance from us and therefore doesn’t work in a counterproductive way.”⁶

Several of the 27 scientists who signed the letter Daszak circulated did so using other professional affiliations and omitted reporting their ties to EcoHealth Alliance.³

For Richard Ebricht, professor of molecular biology at Rutgers University in New Jersey and a biosafety expert, scientific journals were complicit in helping to shout down any mention of a lab leak. “That means *Nature*, *Science*, and the *Lancet*,” he says. In recent months he and dozens of academics have signed several open letters rejecting conspiracy theory accusations and calling for an open investigation of the pandemic’s origins.⁷⁻⁹

“It’s very clear at this time that the term ‘conspiracy theory’ is a useful term for defaming an idea you disagree with,” says Ebricht, referring to scientists and journalists who have wielded the term. “They have been successful until recently in selling that narrative to many in the media.”

The *Lancet's* editor in chief, Richard Horton, did not respond to repeated requests for comment but, after *The BMJ* had sent him questions, the *Lancet* expanded Daszak's conflicts of interest on the February statement and recused him from working on its task force looking into the pandemic's origin.^{10 11}

The *Lancet* letter ultimately helped to guide almost a year of reporting, as journalists helped to amplify Daszak's message and to silence scientific and public debate. "We're in the midst of the social media misinformation age, and these rumours and conspiracy theories have real consequences," Daszak told *Science*.¹² Months later in *Nature*, he again criticised "conspiracies" that the virus could have come from the Wuhan Institute of Virology and complained about "politically motivated organisations" requesting his emails.¹³

That summer *Scientific American*, one of the oldest and best known popular science magazines in America, published a complimentary profile of Daszak's colleague, Shi Zhengli, a centre director at the Wuhan Institute of Virology, which has been funded by EcoHealth Alliance.¹⁴

EcoHealth Alliance and the Wuhan Institute of Virology earned additional sympathetic reporting after the US National Institutes of Health (NIH) cancelled its grant to EcoHealth Alliance in April last year—allegedly on President Trump's order—because of its ties to Wuhan, a decision protested by 77 Nobel laureates and 31 scientific societies.¹⁵ (The NIH has subsequently awarded EcoHealth Alliance new funding.)

Efforts to characterise the lab leak scenario as unworthy of serious consideration were far reaching, sometimes affecting reporting that had first appeared well before the covid-19 pandemic. For example, in March 2020 *Nature Medicine* added an editor's note ("Scientists believe that an animal is the most likely source of the coronavirus") to a 2015 paper on the creation of a hybrid version of a SARS virus, co-written by Shi.¹⁶

Wade explains, "Science journalists differ a lot from other journalists in that they are far less sceptical of their sources and they see their main role as simply to explain science to the public." This, he says, is why they began marching in unison behind Daszak.

The U turn

By the end of 2020, just a handful of journalists had dared to seriously discuss the possibility of a lab leak. In September, *Boston* magazine reported on a preprint that found the virus unlikely to have come from the Wuhan seafood market, as Daszak has argued, and that it seemed too well adapted to humans to have arisen naturally. However, the story failed to garner much attention, similarly to a little noticed investigative report by the Associated Press in December that exposed how the Chinese government was clamping down on research into covid-19's origins.

In January this year, *New York* magazine ran a sprawling story detailing how the pandemic could have started with a leak from the lab in Wuhan. The hypothetical scenario: "SARS-CoV-2, the virus that causes covid-19, began its existence inside a bat, then it learned how to infect people in a claustrophobic mine shaft, and then it was made more infectious in one or more laboratories, perhaps as part of a scientist's well-intentioned but risky effort to create a broad-spectrum vaccine." Scientists and their media allies swiftly criticised the article.

But mainstream outlets from the *New York Times* to the *Washington Post* are now treating the lab leak hypothesis as a worthy question, one to be answered with a serious investigation. In a recent interview

with the *New York Times*, Shi denied that her lab was ever involved in "gain of function" experiments (box 1) that enhance a virus's virulence. But the newspaper reported that her lab had been involved in experiments that altered the transmissibility of viruses, alongside interviews with scientists who said that far more transparency was necessary to determine the truth of SARS-CoV-2's origins.¹⁷

Box 1: What is "gain of function" research?

After two teams genetically tweaked the H5N1 avian flu virus in 2011 to make it more transmissible in mammals, biosafety experts voiced concerns about "gain of function" research—experimental research that involves altering microbes in ways that change their transmissibility, pathogenicity, or host range.

In the *Bulletin of the Atomic Scientists* in 2012, Lynn Klotz predicted an 80% chance that a leak of a potential pandemic pathogen would occur sometime in the next 12 years. Two years later a Harvard epidemiologist, Marc Lipsitch, founded the Cambridge Working Group to lobby against such experiments.

At that time, three safety lapses involving dangerous pathogens led to a safety crackdown at the US Centers for Disease Control and Prevention. Lipsitch later argued in 2018 that the release of such a pathogen would "lead to global spread of a virulent virus, a biosafety incident on a scale never before seen."

Gain of function research was briefly paused because of these concerns, although critics debate as to when it restarted. For more than a decade, scientists at the Wuhan Institute of Virology have been discovering coronaviruses in bats in southern China and bringing them back to their lab for gain of function research, to learn how to deal with such a deadly virus should it arise in nature.

The closest known relative of the SARS-CoV-2 virus was found in a region of China almost 1000 miles from the Wuhan Institute of Virology—yet the pandemic apparently started in Wuhan. Biosafety experts have noted that lab leaks are common but rarely reported, as hundreds of lab accidents had happened in the US alone.²⁷

Two major events are probably responsible for the media's change in tune. First, Trump was no longer president. Because Trump had said that the virus could have come from a Wuhan lab, Daszak and others used him as a convenient foil to attack their critics. But the framing of the lab leak hypothesis as a partisan issue was harder to sustain after Trump left the White House.

Second, after months of negotiation the Chinese government finally allowed the World Health Organization to come to Wuhan and investigate the pandemic's origin. But in January 2021 WHO, which included Daszak on the team, returned with no evidence that the virus had arisen through natural spill-over.¹⁸ More worryingly, members were allowed only a few hours of supervised access to the Wuhan Institute of Virology.

The White House then released a statement making clear that it did not trust China's propaganda denying that the virus could have come from one of the country's labs. "We have deep concerns about the way in which the early findings of the covid-19 investigation were communicated and questions about the process used to reach them," said the statement. "It is imperative that this report be independent, with expert findings free from intervention or alteration by the Chinese government."

The following month the *Washington Post* editorial board called for an open and transparent investigation of the virus's origins, highlighting Shi's experiments with bat coronaviruses that were genetically very similar to the one that caused the pandemic.¹⁹ It asked, "Could a worker have gotten infected or inadvertent leakage have touched off the outbreak in Wuhan?" The *Wall Street Journal*, citing a US intelligence document, recently reported that three

Wuhan Institute of Virology researchers were admitted to hospital in November 2019.²⁰

To follow any US financial ties and to better understand how the pandemic started, Republicans have launched investigations of government agencies that fund coronavirus research, and one investigative committee has sent a letter to Daszak at EcoHealth Alliance demanding that he turn over documents. Meanwhile, Senate Republicans and Democrats have started to discuss an independent investigation of the virus's origins.

A hard truth to swallow

The growing tendency to treat the lab leak scenario as worthy of serious investigation has put some reporters on the defensive. After Robert Redfield, former director of the Centers for Disease Control and Prevention, appeared on CNN in March, *Scientific American's* editor in chief, Laura Helmuth, tweeted, "On CNN, former CDC director Robert Redfield shared the conspiracy theory that the virus came from the Wuhan lab." The following day, *Scientific American* ran an essay calling the lab leak theory "evidence free." And a week later a *Nature* reporter, Amy Maxmen, labelled the idea that the virus could have leaked from a lab as "conjecture."

Helmuth did not respond to questions from *The BMJ*.

Some media outlets have attempted to justify their past reporting about the lab leak hypothesis as simply a matter of tracking a "scientific consensus" which, they say, has now changed. *Vox* posted an erratum noting, "Since this piece was originally published in March 2020, scientific consensus has shifted."

The "scientific consensus" argument does not sit well with David Relman, a microbiologist at Stanford University, California. "We can't even begin to talk about a consensus other than a consensus that we don't know [the origins of SARS-CoV-2]," he recently told the *Washington Post*.²¹

A year lost

While the narrative took months to change in the media, several high profile intelligence sources had treated the lab leak theory seriously from early on. In April 2020, Avril Haines joined two other former deputy directors of the Central Intelligence Agency to write an essay in *Foreign Policy* asking, "To what extent did the Chinese government misrepresent the scope and scale of the epidemic?"²² A week later, one of the former intelligence officials who wrote that essay gave similar quotes to *Politico*.

Ignoring these early warnings led to a year of biased, failed reporting, says Wade. "They didn't question what their sources were saying," he says of the reporters who helped to sell the conspiracy theory narrative to the public. "That is the simple explanation for this phenomenon."

An impartial, credible investigation?

As the news media scramble to correct and reflect on what went wrong with nearly a year of reporting, the episode has also highlighted quality control issues at the ubiquitous "fact checking" services.

Prominent outlets such as *PolitiFact*²³ and *FactCheck.org*²⁴ have added editor's notes to pieces that previously "debunked" the idea that the virus was created in a lab or could have been bioengineered—softening their position to one of an open question that is "in dispute." For almost a year Facebook sought to control misinformation by banning stories suggesting that the coronavirus was man made. After renewed interest in the virus's origin, Facebook lifted the ban.²⁵

Whether a credible investigation will be made into the lab leak scenario remains to be seen. WHO and the *Lancet* both launched investigations last year (box 2), but Daszak was involved in both, and neither has made significant progress.

Box 2: Timeline

2019

September Weeks before the pandemic erupts, Jeremy Farrar (Wellcome Trust) and Anthony Fauci (US National Institutes of Health; NIH) help oversee a World Health Organization report highlighting an "increasing risk of global pandemic from a pathogen escaping after being engineered in a lab"

November Three researchers from the Wuhan Institute of Virology are admitted to hospital, says a previously undisclosed US intelligence document reported by the *Wall Street Journal* on 23 May 2021

31 December China notifies WHO of "cases of pneumonia of unknown aetiology" in Wuhan City

2020

1 February Jeremy Farrar holds a teleconference with Anthony Fauci and others to discuss the outbreak's origins

6 February A commentary from Chinese researchers based in Wuhan, arguing that "the killer coronavirus probably originated from a laboratory in Wuhan," is posted and later removed from ResearchGate (the user account "Botao Xiao" is also deleted)

19 February An open letter is published in the *Lancet* from 27 scientists including Peter Daszak and Jeremy Farrar, who "strongly condemn conspiracy theories suggesting that covid-19 does not have a natural origin"

19 February *Science* magazine reports: "Scientists 'strongly condemn' rumors and conspiracy theories about origin of coronavirus outbreak," quoting Daszak as saying, "We're in the midst of the social media misinformation age, and these rumors and conspiracy theories have real consequences, including threats of violence that have occurred to our colleagues in China."

22 February *New York Post* publishes an article by a China scholar arguing that "coronavirus may have leaked from a lab"—subsequently censored by Facebook

6 March Kristian Andersen (Scripps Research Institute) thanks Jeremy Farrar (Wellcome), Anthony Fauci (NIH), and Francis Collins (NIH) "for your advice and leadership as we have been working through the SARS-CoV-2 'origins' paper." The paper is published on 17 March in *Nature Medicine* and states, "Our analyses clearly show that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus."

24 April NIH abruptly cuts funding to EcoHealth Alliance, allegedly on President Trump's order

28 April Three former US intelligence agents write in *Foreign Policy* asking whether the virus emerged from nature or escaped from a Chinese lab

21 May *New York Times* depicts the Wuhan Institute of Virology as a victim of "conspiracy theories"

27 May *Nature* reports the lab leak hypothesis as "coronavirus misinformation" and "false information"

8 June The science magazine *Undark* reports that the lab leak is a conspiracy theory "that's been broadly discredited"

30 December Associated Press investigation finds documents from March 2020 showing how Beijing has shaped and censored research into the origins of SARS-CoV-2

2021

February Facebook places warning on an article by Ian Birrell about the origins of covid-19. Facebook says that these warnings reduce article viewership by 95%

13 February Jake Sullivan, US national security adviser, expresses "deep concerns" about WHO's covid-19 investigation, calling on China to be more transparent

March *Washington Post* calls for serious investigations of the lab leak hypothesis

30 March WHO releases a report on its investigation into the origins of covid-19, listing the lab leak as least likely of the possible scenarios

considered. Hours earlier, WHO's director general, Tedros Adhanom Ghebreyesus, acknowledged that the lab leak hypothesis should "remain on the table" and called for a more extensive probe

30 March The US, Australian, Japanese, Canadian, UK, and other governments express concern over WHO's investigation and call for "transparent and independent analysis and evaluation, free from interference and undue influence"

26 May Facebook lifts its ban on posts referencing the lab leak hypothesis

In recent weeks, several high profile scientists who once denigrated the idea that the virus could have come from a lab have made small steps into demanding an open investigation of the pandemic's origin.

The NIH's director, Francis Collins, said in a recent interview, "The Chinese government should be on notice that we have to have answers to questions that have not been answered about those people who got sick in November who worked in the lab and about those lab notebooks that have not been examined." He added, "If they really want to be exonerated from this claim of culpability, then they have got to be transparent."²⁶

But the nature of this investigation has still not been decided.

Competing interests: I am paid by various media outlets for journalism stories and consult part time for a non-profit institute focused on brain disorders. I run a newsletter called the *Disinformation Chronicle*.

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