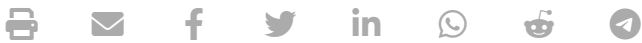


‘They should do decent science’: Report on raccoon dogs and Covid origins spurs ethics flap



Posted: March 24, 2023 by [Emily Kopp](#)



A handful of virologists has twice used unpublished China CDC data to advance the idea that COVID-19 comes from a wet market, overshadowing findings by the China CDC that the market outbreak was a superspreader event. (Photo credit: [Toshihiro Gamo](#))

By Emily Kopp and Karolina Corin

A team of Western virologists could face professional penalties for scooping data collected by the Chinese Center for Disease Control and Prevention in their rush to call attention to their own rapid reanalysis — an analysis at odds with the Chinese [team's conclusions](#).

A prominent group of Western virologists [announced](#) last [week](#) that data collected by China CDC from the Huanan Wholesale Seafood Market in Wuhan strongly suggests a zoonotic spillover there in the winter of 2019 — likely from raccoon dogs — while the China CDC scientists [concluded](#) their samples indicate a superspreader event at the market.

The Western virologists have said in press reports that they [“sleuthed” the data](#). In fact, the data was uploaded by the China CDC scientists to a genomic database as their preprint moved through peer review for consideration in the scientific journal *Nature*.

The [virologists](#) involved in the hasty analysis of the Chinese data were briefly locked out of the major genomic database where it was posted, “GISAID” — Global Initiative on Sharing Avian Influenza Data. GISAID has [alleged](#) unethical “scooping” by the Western virologists.

The virologists’ access was temporarily restored as GISAID collects more evidence, the GISAID Secretariat said in a statement Thursday.

“The review is not complete,” the statement reads.

Should the ban be reinstated, the scientists would lose access to one of the largest repositories of viral data in the world.

GISAID locked out the virologists as a “last resort” because the entire team — particularly University of Arizona professor Michael Worobey and University of Sydney professor Edward Holmes — ignored requests for clarity from GISAID, according to the statement.

“When GISAID received a recent complaint from China CDC researchers about their interaction with registered GISAID users Messrs. Holmes and Worobey, who communicated their intent to make certain use of data generated by the China CDC that

was non-compliant, GISAID opened an inquiry,” the GISAID Secretariat said. “When it becomes evident that any user ignores requests for clarity and appears reluctant to help ensure the data generators’ rights will be upheld, such measures will only be used as a last resort.”

The Chinese scientists had voiced concerns to GISAID that Holmes and Worobey were using their data in violation of GISAID’s terms of use, according to the statement.

Many of the same Western virologists, including Worobey and Holmes, had previously used unpublished China CDC data to advance contrary findings.

Worobey and Holmes did not respond to requests for comment.

Former China CDC Director George Gao said that the Western virologists’ analysis was misleading and called for the virologists to “calm down.”

“They should do decent science,” Gao said in an email to U.S. Right to Know. “Science relies on evidence and facts, NOT speculation. Especially one cannot exaggerate in media to mislead the public and politicians. Calm down for science.”

None of the coauthors of the recent report responded to inquiries from GISAID until their access to the database was revoked, according to GISAID.

The Western virologists said in press interviews that they tried to collaborate with the Chinese scientists, while the Chinese scientists told GISAID they were only contacted about the virologists’ intent to publish their data.

The statement from GISAID also underscored that the China CDC virologists were best equipped to assess their own data, and warned against “premature” analyses.

“It should be apparent to everyone that the data generators are the ones most familiar with the details surrounding their submitted data and the context in which it was collected,” the GISAID Secretariat said. “Premature discussions of the scientific data in the media risks eroding the public’s confidence in scientific research.”

The investigation may depend on whether the raccoon dog report, as well as the media blitz it spurred, counts as a “publication.” The authors have referred to the analysis as a “report” rather than a preprint.

“We respect our CCDC colleagues’ right to be first to publish a manuscript on their own data and do not plan to submit a paper that would compete with their manuscript currently undergoing review,” their report reads.

The controversy has reignited a debate about how databases like GISAID should be managed.

“The story of GISAID is not a story about petty fights between petty, sad little scientists with personal agendas. It is a story about proper governance of the world’s largest influenza and CoV dataset,” said longtime biosafety activist Edward Hammond [in a tweet](#).

‘Leaked’ data

This is not the first time Holmes and Worobey have used data connected to the unpublished China CDC [preprint](#) to publish conflicting findings.

In late 2021 or early 2022, Holmes and Worobey accessed an early copy of the China CDC preprint through a “leak,” Worobey said in a [2022 podcast interview](#).

“We have been working behind the scenes, particularly Eddie Holmes, who knows some of the coauthors on that paper,” Worobey said. “We have been aware of that work in part because we got this leaked version of much of that, that we used for our study, that was then confirmed from the Gao et. al preprint.”

When asked whether the peer review process for the China CDC preprint had been compromised, GISAID referred questions to *Nature*.

“In our instructions to reviewers we state that the content of the manuscript must be kept in strict confidence, and that the reviewers should not make use of it in their own research before it is published,” a spokesperson for *Nature* said in a statement.

When asked whether that protocol had been breached in this case, *Nature* declined to comment.

“We cannot comment on individual cases,” the spokesperson said.

In their 2022 paper, as with the raccoon dog report, Worobey, Holmes and other virologists came to different conclusions than their counterparts in China.

They argued in a February 2022 [preprint](#) that the wet market in Wuhan was the “unambiguous epicenter” of the pandemic and that the data supplied “dispositive” and “incontrovertible” evidence of COVID-19’s origin.

That conflicted with the findings of the China CDC, which said that an intermediate animal host could not be inferred, and that the market may have been a superspreader site that amplified the virus.

The Western virologists’ 2022 preprint published the day after the Chinese CDC [preprint](#) published.

The media [splash](#) that followed the Western virologists’ claims outshone the more muted conclusions of the Chinese scientists who collected the data.

The Western virologists’ manuscript was [published in Science](#) in July 2022, though its claims that the findings constituted “dispositive” and “incontrovertible” evidence were withdrawn.

In contrast, the Chinese scientists have faced a lengthy peer review process.

An anonymous peer reviewer said in [an August 2022 press report](#) that they would hold up the peer review process of the Chinese team’s paper until all of the data describing the genetic evidence in the market was made publicly available.

Holmes is quoted in the same report saying that this metagenomic data could hold important clues.

Conflicting findings

Last week, the team of Western virologists [presented their findings to the World Health Organization's team](#) investigating the pandemic's origin, according to [press reports](#). They argued that genetic material from COVID-susceptible animals found in samples that tested positive for SARS-CoV-2 swabbed at the wet market's wildlife stalls constituted strong evidence of a zoonotic spillover there.

News of the meeting spilled out into the press, spurring an avalanche of headlines about a connection between raccoon dogs and the pandemic.

The Atlantic, which [broke](#) the story, headlined it as the “strongest evidence yet” for an animal origin of SARS-CoV-2.

The [report](#) by the Western virologists was published on a research repository four days later, revealing the extent of their work: For a few frenzied days, the virologists had analyzed an incomplete portion of the China CDC samples that tested positive for SARS-CoV-2.

The report's analysis confirms that a variety of mammals including Malaysian porcupine and bamboo rats were sold in the market — but the virologists focused on one sample in particular.

That sample had a high level of raccoon dog genetic material and a low level of human genetic material. The sample tested negative for SARS-CoV-2 by PCR according to Gao's preprint, but further metagenomic sequencing revealed SARS-CoV-2, suggesting low traces of the virus. This sample was taken in the same area of the market where Holmes photographed a raccoon dog five years earlier.

By contrast, the China CDC team, which sampled the market multiple times from January to March 2020, found that zero of 457 animal samples across 18 species tested positive for COVID-19. In an analysis of both positive and negative samples taken from swabs of surfaces around the market like countertops, cages and vents, they found positive samples were correlated with human genetic material.

Outside scientists have not had the opportunity to examine the new claims concerning raccoon dogs or the competing claims of the China CDC. After the Chinese team voiced their concerns to GISAID, the data was taken offline.

Gao said in an email that the data would be updated and reposted, but did not reply to a request for more details.

Holmes dismissed the concerns about “scooping” on his Twitter page, pointing to the three-year delay researchers faced in accessing the data.

“All this moaning is a bit rich given that these metagenomic data were generated three years ago. The real question is why they were not released until now given how important they are,” he [wrote](#).

A map put together by the China CDC of its sampling of the Huanan Wholesale Seafood Market was [leaked](#) to the *South China Morning Post* nearly a year after the samples were taken.

It’s unclear why the metagenomic data was not published earlier.

Gao’s team’s data “could have—and should have—been shared three years ago,” WHO director general Tedros Adhanom Ghebreyesus said at a media briefing on March 17. “We continue to call on China to be transparent in sharing data, and to conduct the necessary investigations and share the results.”

Meanwhile, Gao rejected the accusations from Holmes that he was hiding evidence of a zoonotic spillover. Gao has [plainly acknowledged](#) that there was illegal wildlife in the market.

“How can you hide something like this?” he wrote in an email. “Let’s come back to science!”

Other scientists have been critical of the actions of the Western virologists as well.

“When non-originator groups proactively moved into pushing an apparently contradictory re-analysis of an under-review data, the originator group logically pull out their data,” said Gustavo Palacios, a professor at the Icahn School of Medicine at Mount Sinai, in [a tweet](#).

A record of exaggeration

For years, many of the authors of the raccoon dog report have been vocal in their stance that the pandemic originated in the wet market.

Four of the co-authors also [authored](#) a [controversial 2020 letter](#) that marginalized the lab leak theory as a conspiracy theory without acknowledging the drafting of the letter was encouraged by leaders of the National Institutes of Health, which funded high-risk virology at the pandemic’s epicenter.

“The researchers who reported the data have a documented track record of exaggerating their findings, concealing doubts about their findings, and hiding major conflicts of interest,” said Justin Kinney, an associate professor at Cold Spring Harbor Laboratory and co-founder of Biosafety Now, a non-profit that advocates for increased regulation of pathogen research.

While many virologists have embraced the new findings, other scientists have contested them. Though the presence of genetic material from wildlife like raccoon dogs suggests that these animals were present in the market, many scientists say that no conclusions about COVID-19 can be made.

“There is no evidence that this raccoon dog started the COVID-19 pandemic. In fact, there is no evidence that this raccoon dog was even infected with SARS-CoV-2, as there was also human DNA in the sample, and the viral material could just as easily have come from an infected human,” said Kinney.

Sergei Pond, a biology professor at Temple University, echoed Kinney [stating](#) that “the data are consistent with animal-human transmission, human-human transmission, [and] human-animal transmission.”

Jesse Bloom, a computational biology professor at the Fred Hutchinson Cancer Center, agreed.

“Overall, [the] main thing we learn is details of which animals or products (eg, meats) were in [the] market before it closed on Jan-1-2020,” [tweeted](#) Bloom. “This doesn’t tell us if any [were] infected.”

The preprint authors acknowledged in their conclusion that “we cannot identify the intermediate animal host species from these data.”

Timeline: The raccoon dog finding

January 1, 2020: China CDC employees begin sampling the Huanan Wholesale Seafood Market. They would visit the market many times, sampling 457 animals spanning 18 species from the market, and more from suppliers of the market. [None](#) tested positive for SARS-CoV-2. They also took samples from the environment, taking care to sample around the wildlife stalls.

May 23, 2020: China CDC Director George Gao [states](#) that the pandemic began earlier than the market outbreak, saying that the market was “another victim.” The intermediate host cannot be determined from the investigation of the market, he said.

“Scientists, researchers, and public health workers have worked hard on it, but at the current stage we can’t tell specifically which animal is [the host],” said Gao. “I hope the public can give scientists more time for us to understand this virus.”

December 15, 2020: A map put together by the China CDC of its sampling of the Huanan Wholesale Seafood Market leaks to the [South China Morning Post](#), nearly a year after the samples were taken.

Mid-2021: Holmes begins lobbying the China CDC for metagenomic data from environmental samples that could confirm which animals were sold in the market, he said in a [podcast interview](#). The Chinese team communicates with Holmes, but says the data is messy and not ready to be released.

Late 2021 or early 2022: University of Arizona virologist Michael Worobey and University of Sydney virologist Edward Holmes received a “leaked” copy of the China CDC paper describing samples taken in the Huanan Wholesale Seafood Market, according to a [podcast interview](#).

February 25, 2022: The China CDC [preprint is published](#). The China CDC scientists describe a correlation between positive SARS-CoV-2 samples and human genetic material. They write that an intermediate host cannot be inferred and that the market was likely an amplification point.

February 26, 2022: The next day, a [preprint](#) is published by prominent Western virologists, including many of the same authors on the raccoon dog report with Worobey and Holmes. It claims to all but settle the origin of COVID-19 debate: the wet market. The [New York Times](#) describes it as a “significant salvo” in the COVID-19 origins debate, and many other media outlets follow. The newspaper describes the Western virologists as having obtained data from a “leaked” copy of the China CDC preprint, but offers no details. Western virologists cast the Gao preprint as being in alignment with their findings, rather than in contradiction. Gao and his colleagues are not interviewed by the media.

June 2022: Pei-Pei Liu of the China CDC uploads the metagenomic data to GISAID, a genomic database, but it is not available to all GISAID users.

July 26, 2022: The Western virologists’ paper is [published](#) in *Science* and receives a new wave of headlines. The Gao paper is still under peer review.

August 2022: A [news report in Science](#) sheds light on why the Gao paper has languished in peer review. One of the peer reviewers is quoted anonymously as saying they won’t allow the paper to move forward until the researchers publish the raw metagenomic data.

“I said you cannot publish this unless they release the raw data,” the reviewer told *Science*.

Holmes is quoted in the same story saying that he believes that Chinese authorities are concealing evidence of a wildlife origin, and that the metagenomic data could hold clues.

March 4, 2023: Someone with the Worobey team notices metagenomic data uploaded to GISAID, according to [their account](#).

March 9-14, 2023: Sometime during these few days the Gao paper status was changed from “posted” to “under review at *Nature Portfolio*” on the preprint server, according to the [WayBack Machine](#).

March 9, 2023: Florence Débarre, a virologist at Sorbonne Université in France, and her collaborators realize that the sequences correspond to the Gao paper and reflect samples the China CDC took in the wet market, according to [their account](#).

March 9-11, 2023: The Worobey team contacted the Gao team on March 9, [March 10](#) and [March 11](#), according to their account. In their report, the Western virologists say they received permission from an unnamed coauthor to do an independent analysis. But Worobey contacted Gao and Liu and did not receive a reply, according to [emails obtained](#) by CBS News.

The Gao team, whose unpublished data had been used by the Worobey team the year prior, only to see their own paper be overshadowed in the U.S. media, submitted a complaint to GISAID. The data was taken offline.

March 13, 2023: GISAID alerted each of the Western virologists who downloaded the data that they had received a complaint about possible “scooping,” according to the [emails obtained](#) by CBS News. The Chinese virologists contend that the Western virologists did not ask to collaborate, but only informed them of their intent to publish their data. None of the authors of the eventual report replied to GISAID.

March 14, 2023: The Worobey team and Gao team meet with the WHO’s Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) on Zoom. Worobey said he shared his email addresses and phone numbers in the “chat” of the Zoom meeting with the Gao team, again hoping to collaborate, according to the [emails obtained](#) by CBS News.

March 16, 2023: A [story](#) in *The Atlantic* spotlights the Worobey team’s interpretation of the Gao team’s data, saying it provides strongest evidence yet for a zoonotic spillover at

the Huanan Wholesale Seafood Market. Stories in dozens of other Western media outlets follow.

March 20, 2023: The virologists' [preprint](#) is posted to a research repository. It shows that the team reviewed an incomplete set of the samples taken by the Gao team. The preprint spotlighted one sample in particular with raccoon dog genetic material.

GISAID learns about the preprint, according to their statement. A reporter (not U.S. Right to Know) had inquired if the “authors of this preprint violate GISAID’s terms of service.”

March 21, 2023: GISAID suspends the access of virologists who coauthored the preprint and did not respond to GISAID’s concerns about scooping, according to the [emails obtained](#) by CBS News.

Later that day, GISAID hears for the first time from one of the coauthors of the raccoon dog report. Worobey states that he tried to contact Liu and Gao.

“Responsiveness has always paved the way to efficient outcomes for all parties involved. Which is why we had hoped to hear back from you or a member of your authors last week to assist us in addressing the complaint,” the GISAID Secretariat responds.

The virologists’ access is temporarily restored as an act of goodwill given Worobey is cooperating with the investigation.

Tagged [Primary Article](#)

[« How pesticide companies dominate Google News searches](#)

Get our newsletter | Weekly updates in your inbox

Email Address

subscribe