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# The Debate on the Origins of Covid-19

## A Geopolitical Perspective

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### Abstract

The chapter offers an overview of the debate on the origins of the Covid-19 in Wuhan, China, with a special emphasis on its political and geopolitical implications. The debate currently consists of two main hypotheses, the zoonotic natural origin and the lab accident pathway, none of which has found conclusive evidence. Through an account of the various stages underwent by the debate over the past 4 years, the chapter sheds light on the contextual political elements – both in the United States and in China – that have influenced the scientific and public discussion on the origin of the pandemic. The chapter also discusses efforts of scientists and public health officials in the United States to sideline the lab accident hypothesis and to influence the media to amplify the natural origin. Such efforts are presented as related to an attempt to obfuscate the significant US funding received by a research facility in Wuhan, which is at the center of the lab accident hypothesis. Lastly, the chapter also discusses the alleged involvement of both Chinese and American military and security apparatuses in coronavirus research and anticipates that a further discussion of this particular aspect of the debate might lead to a worsening in the US-China relation.

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## **Introduction: The Global Controversy on the Origins of Covid-19**

With a death toll estimated at 25 million people worldwide,<sup>1</sup> and a global economic cost calculated by the IMF at around 14 trillion dollars,<sup>2</sup> the seismic impact of the Covid-19 pandemic is hard to underestimate. An event of such catastrophic proportions has inevitably sparked a flurry of geopolitical repercussions: the disruption of international trade and of the global supply chain, the further straining of already tense diplomatic relations – especially among the United States and China – the global competition for the development of vaccines between Western democracies and non-Western autocracies, and its related initiatives of vaccine diplomacy. The pandemic has also prompted efforts by supranational organization such as the World Health Organization (WHO) to remedy the global spread of health misinformation.<sup>3</sup>

One of the aspects of the pandemic that since its onset has been clouded by misinformation and mired in political and geopolitical controversies is the debate on its origins, an issue that has not found a definitive scientific conclusion yet. The debate – pitting proponents of natural origins against those who believe that virus accidentally escaped from a research facility – has evolved from a scientific inquiry into a heated public dispute and a controversial political issue. The debate is particularly visible in the United States, but it has had global reverberations. Years after the initial outbreak in Wuhan in late 2019, the origins of Covid-19 remain a mystery, weighing heavily on the international community of scientists and public health experts working to prevent future coronavirus pandemics.

The debate has also had significant implications for American domestic politics, as well as at the geopolitical level, affecting especially the already problematic relations between the United States and China. From a purely scientific issue confined to the domain of virologists and epidemiologists, the debate on the origins of the pandemic has transformed into a highly visible and polarizing public debate, fueled by social media quarrels and scientific investigations, in some cases revealing and in other cases misleading. It has also escalated into official hearings at the US Congress in which prominent virologists were accused of scientific misconduct.<sup>4</sup> It has been, above all, a debate plagued by misinformation, disinformation, and

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<sup>1</sup>The Economist (2022, May 23)

<sup>2</sup>Gopinath (2022, January 25).

<sup>3</sup>Cosentino (2023).

<sup>4</sup>United States House Committee on Oversight and Accountability. (2023a, June 27).

obfuscation attempts, and heavily distorted by the political and cultural dynamics of the current post-truth era.<sup>5</sup>

The debate on the origins of the virus has also brought to the fore several significant issues that have a clear geopolitical relevance, especially in the context of US-China relations. It has exposed both a competition and a collaboration between the United States and China in the research on emerging pathogens and infectious diseases: viruses originating in animal reservoirs are not only becoming more frequent because of human activity, but they can also be weaponized as part of biowarfare projects, a concern that in the United States has influenced research and security agendas since 9/11,<sup>6</sup> and in China since the first SARS pandemic in 2002.

China has invested significantly in research on emerging infectious diseases, developing several laboratories – some engaged in dual civilian-military research<sup>7</sup> – aimed at devising pandemic prevention measures such as vaccines, and at strengthening its biodefense capabilities. On the other hand, the United States has invested heavily in collaborations between American and Chinese scientists, also through funding from the US Defense Department, USAID, and other federal agencies, to conduct research activities in China on bat coronavirus and other pathogens. The debate on Covid origins has brought under the spotlight the biosafety risks associated with this type of research, especially if involving genetic manipulation of pathogens.<sup>8</sup>

Among the main supporters of this type of research, a prominent role has been played by Antony Fauci, former head of US National Institute of Allergy and Infectious Diseases and member of the White House Coronavirus Task Force. Fauci has also been one of the protagonists in the debate on Covid origins, favoring a natural origin and contributing to marginalizing the lab accident hypothesis.

The debate has also revealed a widespread gatekeeping attempt by a plurality of institutional actors, both in China and in the United States, aimed at stifling the discussion on the possibility that the pandemic might have resulted from an accident in a Wuhan laboratory engaged in coronavirus research. The sidelining of the lab accident hypothesis was not only the result of the censorship or obfuscation by Chinese authorities, who are notorious for strictly controlling potentially sensitive information. It was also actively pursued by US-based scientists with vested interests in coronavirus and zoonosis research, and American public health officials who had granted US federal funding to Wuhan labs, such as Anthony Fauci.

The sidelining and obfuscations of US involvement in Wuhan research activity have inevitably triggered political reactions. In the United States, the lab origins perspective has been supported by prominent members of the Republican Party, including Donald Trump, with the amplification of the right-wing media ecosystem.

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<sup>5</sup>For an in depth-discussion of the concept of ‘post-truth’ see: D’Ancona (2017); Harsin (2018, December 20); McIntyre (2018).

<sup>6</sup>Rindsberg (2022, August 30).

<sup>7</sup>Shoham (2015).

<sup>8</sup>Lipsitch (2018).

This front has leveled accusations of negligence and cover-up against scientists working on virology, public health institutions, politicians, and even securities agencies. The issue has also affected American security and military apparatuses. Revelations have in fact surfaced of attempts by the CIA to suppress the lab accident hypothesis.<sup>9</sup> Research and investigations have also shed light on the involvement in coronavirus research in Wuhan of the People's Liberation Army, the Chinese military, who allegedly was running a shadow project aimed at developing a coronavirus vaccine to be used in a biowarfare scenario.<sup>10</sup>

To give a thorough account of the scientific, political, and geopolitical contours of the Covid origins debate, the chapter starts by presenting a chronology of the evolution of such debate. During the past 4 years, the broader geopolitical context, as well as the US political process, have influenced the framing of the issue and have shifted the terms of the debate. For most of 2020, the natural origin hypothesis was the dominant view adopted by scientists, policymakers, and journalists. The debate changed in the spring of 2021, when Joe Biden took office as President of the United States. The lab accident hypothesis, previously associated with former President Donald Trump and dismissed as misinformation, regained scientific legitimacy, and was later considered a pathway worthy of investigation by a greater number of scientists. It also received wider media coverage and exposure. The WHO has also publicly stated that all hypotheses were to be considered valid until dispositive evidence is found. By 2023, the debate had reached a standstill. A trickle of revelations and discoveries by scientists and amateur investigators adding weight to the lab accident pathway keeps fueling the discussion, but no breakthrough nor hard evidence was found to settle it.

Because it is still an unsolved mystery that prevents a proper assessment on how to best prepare for future coronavirus pandemics, and because of its implications for both American and Chinese political and military institutions, the origins of Covid-19 still cast a long shadow over US politics and over the global geopolitical sphere. The Covid origins debate has thus the potential of becoming one of the main issues in the 2024 US Presidential election campaign, especially if Donald Trump will be the Republican candidate, and he will once again endorse the lab accident hypothesis to mobilize its base. This could be compounded by allegations on the involvement of US federal and security agencies in the funding of research in Wuhan, and of a possible government cover-up of the artificial origin of Covid-19 in the context of dual military-civilian research. Should this happen, both the political and geopolitical implications of the Covid origins debate could become even more significant, possibly determining a worsening of US democratic politics and further straining of the US-China relations.

<sup>9</sup>Rindsberg (2023, September 18).

<sup>10</sup>Calvert and Arbuthnott (2023, June 11).

## Zoonosis Versus Lab Accident: The Covid Origins Debate Between Science and Geopolitics

The debate on the origins of Covid-19 consists primarily of two opposing hypotheses: the natural origins and lab accident hypothesis. A third hypothesis, suggesting that virus was intentionally released as a bioweapon, has often been mistakenly conflated with the lab accident, and has remained more at the fringe of the public discourse. The natural origins contend that SARS-CoV-2, the virus causing Covid-19, is the result of a natural zoonotic<sup>11</sup> event in a Wuhan market trading wildlife, the Huanan Wholesale Seafood market. According to this view, the outbreak of Covid-19 follows a pattern seen in the two previous pandemics of coronavirus, SARS in 2002<sup>12</sup> and MERS in 2012,<sup>13</sup> in which a pathogen born into a bat reservoir crossed into the human species through an intermediary animal host. Proponents of this view contend that this is the most probable hypothesis, as the first cluster of cases – at least according to some of the earliest data shared by Chinese authorities – happened in the Huanan market, in a manner consistent with previous cases of zoonosis of SARS-like coronavirus.

The lab accident view contends instead that, based on abundant circumstantial evidence, discovered both by established scientists as well as amateur sleuths, the virus is most likely the result of an accidental release or contagion within one of the research facilities in Wuhan working on coronavirus. Among these, the chief suspect is the Wuhan Institute of Virology (WIV), which had been working on bat coronavirus for several years – also with the support of funding by US federal agencies – collecting thousands and samples in the southern regions of China and in Southeast Asia, to then modify them genetically for research purposes.

It should be made clear from the start that none of these theories has been backed up by dispositive evidence yet: neither an intermediary animal host necessary for

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<sup>11</sup> A zoonosis, or zoonotic disease, is an infectious disease transmitted between species, especially from animals to humans. The outbreak of SARS in 2002 brought international scientific attention to the issue of zoonotic diseases originating in bat reservoirs and transmitted to humans through an intermediary animal host. Zoonotic diseases have been on the rise in the past decades and are generally linked to both environmental changes and human activities such as logging, mining, and urbanization, as well as to population encroachment into animal habitats.

<sup>12</sup> Epidemiological evidence has demonstrated that SARS had a zoonotic origin, most likely infecting food handlers in a ‘wet market’ in the Southern Chinese city of Guangdong. Wet markets are food markets in China where slaughtered and live animals are sold in often unsanitary conditions, and that can be highly conducive to viral infections. Different species of animals are for sale at Chinese wet markets, some of them illegally traded. Under these conditions, viruses from different species can exchange genomic material in a process of natural recombination that can give them the ability to spillover to other species. After encountering the animal host environment, coronaviruses often acquire the genetic mutations that allow them to infect human cells. Skowronski et al. (2005, February 1).

<sup>13</sup> Both SARS and MERS spread into the human population via an intermediate host, which in both cases was found quite rapidly by researchers: masked palm civets for SARS and dromedary camels for MERS.

zoonosis has been found, nor hard evidence in support of the lab accident hypothesis has emerged. It should also be pointed out that the two hypotheses have received a different treatment in terms of scientific acceptance and media coverage. Also because of the dubious efforts by scientists and policymakers discussed below, the natural origin had benefitted from a far more favorable treatment than the laboratory accident pathway. Especially in the first year of the pandemic, the latter has often been dismissed as misinformation or even as a conspiracy theory, despite being scientifically plausible because of a long history of accident at research facilities.<sup>14</sup>

The debate between the proponents of these two scenarios is, however, still very much alive, especially on social media such as Twitter, now known as X. Over the course of the pandemic, the debate has undergone various stages: for the most part of 2020, the framing of the issue by most media outlets and public health officials rested on the perception that a firm scientific consensus existed on the natural origins of the virus. Such consensus was not based on actual scientific evidence, but it was rather the result of the publication of a letter in the March 2020 edition of *Nature Medicine*, a subsidiary of the prestigious *Nature* scientific journal. The letter contained some preliminary observations by five prominent virologists who stated that their analyses clearly showed that “SARS-CoV-2 is not a laboratory construct or a purposefully manipulated construct,” adding that they didn’t believe that “any type of laboratory-based scenario is plausible.”<sup>15</sup>

The letter in question, with the title “*Proximal Origins of SARS-CoV-2*,” played the single most important role in shaping the debate on Covid-19 origins in favor of the natural origin. To this date, it is the most popular scientific work on the topic – accessed online nearly 6 million times and cited by over 2000 media outlets – and it has often been reported, albeit incorrectly, as presenting unquestionable evidence on the natural origin of the virus and as an indication of scientific consensus on the matter. In support of the natural origin hypothesis the journal *The Lancet* had in February 2020 published a letter signed by various reputed scientists, who lamented that the “sharing of data on the outbreak was being threatened by rumours and misinformation around its origins,” and strongly condemned “conspiracy theories suggesting that Covid-19 does not have a natural origin.”<sup>16</sup> After the publication of this letter, the concept of “conspiracy theory” became a fixture in the highly polarized debate on the origins of the pandemic, often in the form of an ad hominem attack used to delegitimize proponents of the lab accident pathway.

The *Nature Medicine* correspondence and the letter on *The Lancet* were both embroiled later in serious controversies, the former for allegations of cover-up and suppression of scientific discourse,<sup>17</sup> which will be discussed in depth in the next

<sup>14</sup>Baker (2021, January 4).

<sup>15</sup>Andersen et al. (2020, March 17).

<sup>16</sup>Calisher et al. (2020, February 19).

<sup>17</sup>Committee on Oversight and Accountability, ‘Wenstrup to Hold Hearing with “Proximal Origins” Authors’, 27 June 2023, <https://oversight.house.gov/release/wenstrup-to-hold-hearing-with-proximal-origins-authors/>

section, and the latter for undisclosed conflict of interest.<sup>18</sup> Emails obtained through Freedom of Information Act (FOIA) requests revealed that *The Lancet* letter, which ostensibly appeared as representing the voice of the scientific community, had instead been authored by Peter Daszak and other staff members of *EcoHealth* Alliance, an organization who had received millions of dollars in public funds from US institutions to conduct research activity in collaboration with the WIV for several years, including research involving the genetic manipulation of coronaviruses. Genetic modification of pathogens for research purpose, also known as “gain-of-function,” represents a controversial type of research that part of scientific community deems highly hazardous for the potential of causing pandemics. In 2014, the Obama administration had imposed a moratorium in the form of a funding pause on this type of research, resulting from a heated debate among scientists in the field.<sup>19</sup>

Before the Covid-19 pandemic, most of the media and the public opinion in general were unfamiliar with this type of research in virology, nor did they know about past controversies on the topic. In early 2020, the two letters above were taken by most media outlets and by public health officials as authoritative statements, contributing to the emergence of a polarized scientific and public discourse on the origins of the virus: on the one hand, there was an apparently firm consensus on the natural origin of the virus, supported by highly respected scientific opinions; on the other hand, there were rumors and conspiracy theories circulated by misinformed or politically motivated actors, both mainstream and fringe, on the research activities conducted in Wuhan.

In the earliest phase of the pandemic, such a rigid gatekeeping by the scientific community on the origins of the virus was successful at sidelining the laboratory accident narrative. Recent revelations have cast doubts on the motivations of such gatekeeping,<sup>20</sup> but at the time it could be understood as a response to pre-existing tensions around scientific expertise, challenged by various forms of denialism and pseudoscience, typical of the recent post-truth era in both western and global politics. The pressure on framing the pandemic origins as a natural event, thus shielding scientific research on coronavirus from public scrutiny, came not only

<sup>18</sup> Suryanarayanan (2023, April 5).

<sup>19</sup> On the one hand, some scientists deemed these experiments safe, as the probabilities for lab-engineered viruses to infect humans are usually minimal when strict safety measures are respected, while the benefits of the research aimed at predicting virus mutations far outweigh the associated risks. However, not all scientists agreed, primarily because the risk-to-benefit ratio is difficult to assess, and because it is considered more prudent to avoid creating enhanced organisms that can escape from the controlled space of laboratories, and then behave unpredictably in the environment. See: Collins (2014, October 16).

<sup>20</sup> According to a *Newsweek* report, Daszak drafted the letter and then reached out to fellow scientists to sign it, and worked behind the scenes to make it seem that the letter represented the views of a broad range of scientists: “This statement will not have the EcoHealth Alliance logo on it and will not be identifiable as coming from any one organization or person” he wrote in his pitch to the co-signatories. Prominent scientists whose work had overlapped with the WIV agreed not to sign it so they could not be associated with it. See: Jacobsen (2021, June 18).

from the general lack of awareness about the research activity happening in Wuhan, but also from the exceptional conditions within which the debate on Covid origin started. The world was faced with a pandemic caused by a lethal and previously unknown pathogen, spreading like wildfire around the world, taking lives and wrecking economies in the process, whose mitigation strategies required public trust in the medical-scientific community. Scientists, public health officials, policymakers, and journalists likely shared the same apprehension expressed by the WHO about the threat posed to public health during the pandemic by a parallel and dangerous “infodemic” of health misinformation and skepticism against science.<sup>21</sup>

The WHO identified the “infodemic” not just as being linked to a health crisis, but also to a security crisis. It warned against politicizing aspects of the Covid-19 pandemic, including the debate on its origin, as such politicization could have had a geopolitical fallout, especially for US-China relations. Geopolitical and security apprehensions were also compounded by emerging nationalisms, populist challenges to political and scientific establishments, and by the broader crisis of the democratic Post-Cold War global order, facing mounting competition by autocracies and authoritarian governments. “In our fractured and divided world,” the head of the WHO Tedros Ghebreyesus argued at the 2020 Munich Security Conference, “health is one of the few areas in which international cooperation offers the opportunity for countries to work together for a common cause.”<sup>22</sup>

Furthermore, as also emphasized by the WHO, containing the spread pandemic required international cooperation, which could have been jeopardized by disputes on the origin of the virus, especially if it had entailed an accident at a high-profile facility such as the WIV. If proven, it could have been a source of embarrassment for China, as well as for the US institutions funding its research. International cooperation during the pandemic rested also on good diplomatic relations which, especially between the United States and China, had been strained by the disputes over trade and tariffs under the Trump administration,<sup>23</sup> as well by an increasingly assertive Chinese foreign policy pursued by President Xi Jinping. Also, memories of a cover-up and poor management by Chinese authorities during the SARS outbreak in 2002 and 2003 still lingered among international public health experts and epidemiologists, thus good relations with China were deemed essential in containing the pandemic.

Despite all these understandable concerns and efforts to control the narrative on the pandemic origin, rumors about a possible involvement of a research center in Wuhan could not be contained. Some had appeared on Chinese social media as early as the first cases were made public in late 2019.<sup>24</sup> Suggestions of an accident at the Wuhan Institute of Virology (WIV), the foremost research facility in virology and

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<sup>21</sup> Cosentino (2023).

<sup>22</sup> World Health Organization (2020, February 15).

<sup>23</sup> Swanson (2019, September 1).

<sup>24</sup> Cosentino (2023)

infectious diseases in China, as a possible source of the pandemic had also circulated in the United States, as well as in the United Kingdom, early in 2020, stirring anti-China reactions in conservative circles. In January 2020, British newspaper *The Daily Mail*<sup>25</sup> had published an article discussing concerns by international scientists, dating to a few years prior, about the poor biosafety standards at the research facilities in Wuhan. Another report<sup>26</sup> had later revealed that US embassy in Beijing had sent diplomats with scientific expertise to inspect the WIV in January 2018, who had observed “a serious shortage of appropriately trained technicians.” The conservative American publication *The Washington Times*<sup>27</sup> had interviewed an Israeli biowarfare expert who argued that the Wuhan outbreak could be linked to China’s covert biowarfare program, which involved also the WIV.

Amplified in right-wing circles, such report also contributed to the conflation of the lab accident hypothesis with the biowarfare narrative, which are adjacent in the context of dual research, but also are based on different premises: one posits an accidental release of a pathogen, the other an intentional release. Republican senator Tom Cotton, an outspoken critic of China, was the first high-profile politician in the United States to openly discuss the possibility that the virus might have escaped from a Wuhan lab, also hinting to Chinese research into biowarfare.<sup>28</sup> While he attempted to clarify the distinction between accidental and intentional release, his statements were often misconstrued in the media, contributing to public confusion on this matter.

The debate on the origins of the virus became even more embroiled in partisan politics in April 2020, when then President Donald Trump claimed to have seen intelligence suggesting that the virus had come from a Wuhan laboratory and requested supporting evidence by the intelligence agencies. Such evidence, however, failed to materialize.<sup>29</sup> Having built a political career by often pushing misinformation and circulating conspiracy theories,<sup>30</sup> even on matters of public health,<sup>31</sup> and with little credibility outside his base of supporters, Trump was not taken as a reliable source on this matter. His endorsement of the laboratory accident hypothesis backfired, and further relegated it to the status of misinformation.

Meanwhile, in China the outbreak in Wuhan was brought under control by March 2020. The domestic criticism that had flared up against the local and national authorities at the onset of the pandemic was reined in through tested authoritarian methods of information control such as censorship<sup>32</sup> and public opinion

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<sup>25</sup> Rahhal (2020, January 25).

<sup>26</sup> Rogin (2020, April 14).

<sup>27</sup> Gertz (2020, March 26).

<sup>28</sup> Firozi (2020, February 16).

<sup>29</sup> Mazzetti et al. (2020, April 30).

<sup>30</sup> Cosentino (2020).

<sup>31</sup> Stolberg and Weiland (2020, September 30).

<sup>32</sup> Zhong (2020, February 5).

manipulation.<sup>33</sup> The Chinese government then began a propaganda campaign aimed at regaining control of the narrative on Covid-19, targeting both domestic and global audiences.<sup>34</sup> Chinese authorities aggressively rejected any rumor that a laboratory accident might have been the cause of the pandemic, and especially any allegation of the involvement of the WIV.

To counter the laboratory accident speculations, China promoted multiple explanations: initially, it supported the zoonotic spillover in the Huanan market in Wuhan. Later in 2020, as the intermediary host necessary for the entry of the virus into the human population couldn't be identified among the samples from the market, this hypothesis lost traction in China. The former Director of China's Center for Disease Control and Prevention, George Gao, publicly stated that the Huanan market had more likely been the site of a super-spreader event, which amplified the spread of a virus that had previously entered the human population. Alternative pathways were suggested by Chinese authorities: the trade to Wuhan of wildlife farmed in Southern China and sold in Wuhan, such as minks, as well as the so-called cold chain, that is the transmission of the virus via contaminated frozen food sold at Wuhan markets and coming from outside China. However, none of these natural origins hypotheses has found definitive scientific support.

Some Chinese officials, such as the former spokesperson of Minister of Foreign Affairs, Lijian Zhao, made much more controversial claims, suggesting that the virus might have originated as a bioweapon allegedly imported into China by American agents and spread during the 2019 Military World Games in Wuhan.<sup>35</sup> Such rumors, originally circulated in Chinese social media and amplified by news outlets such as *Global Research Canada* – which often relays Russian disinformation – suggested that the virus had been engineered at Fort Detrick, the research center for bioweapon and infectious diseases of the US Army.<sup>36</sup> No evidence was, however, provided to back up such contentious claim.

Speculations that the new virus originated as the result of research conducted by the Chinese military were put forth by Chinese whistleblower Li-Meng Yan, a virologist previously employed at the University of Hong Kong's School of Public Health. Her allegations were given amplification by the right-wing media ecosystem in the United States, but were strongly rejected by most scientists and failed to enter the public discourse. The origins of the virus as bioweapon circulated also in communities of supporters of the QAnon conspiracy theory, which were instrumental in the further amplification of the narrative.<sup>37</sup> Suggestions of secret military activity conducted at the WIV in collaboration with the People's Liberation Army have also been raised by the US State Department in the final days of the Trump

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<sup>33</sup> Zhong et al. (2020, December 19).

<sup>34</sup> Smith (2021, May 9).

<sup>35</sup> Westcott and Jiang (2020, March 13).

<sup>36</sup> Digital Forensic Research Lab (2022, February 23).

<sup>37</sup> Ibid.

administration.<sup>38</sup> Studies<sup>39</sup> had previously demonstrated that the WIV was in fact engaged in research activity in collaboration with the Chinese military.

The WHO-convened mission to Wuhan to study the origins of Covid-19, which took place in February 2021 after a complex process of negotiation with the government in Beijing, was a turning point in the development of the broader discourse on the topic. The mission findings presented various natural origin hypotheses as more likely than a laboratory accident, which was labeled as “extremely unlikely.” Such ranking of different pathways was, however, met with widespread criticism for its methodology, which was deemed inadequate by multiple scientists.<sup>40</sup>

The mission was also criticized for including among its members Peter Daszak, who had an obvious conflict of interest on the matter, and for giving priority to the zoonotic hypothesis.<sup>41</sup> The mission – which was not an independent investigation but a mere review of the preliminary studies conducted by Chinese scientists – focused its work primarily on natural origin scenario, giving the lab accident pathway just a perfunctory attention. Several international scientists, including prominent virologists, rejected the report of the WHO mission. Major international publications such as *Le Monde* and *The Wall Street Journal* published open letters requesting a new and independent forensic investigation on the origins of Covid. The director general of the WHO acknowledged the criticism and stated that all options, including that of a laboratory accident, remained on the table.

After the controversial WHO mission and the election of Biden to the US Presidency, the discourse around the laboratory accident hypothesis started to change. The so-called lab leak narrative began to gain more traction in scientific circles, and the research activity on coronavirus in Wuhan began to be more closely scrutinized. As more scientists around the world started to probe into the microbiology of the virus and into early epidemiological trends, a growing dissenting opinion emerged. This happened primarily via social media such as X, but also thanks to some media coverage by scientific journalists. It also received discussion in scientific literature,<sup>42</sup> with some researchers arguing that a laboratory accident should be considered a probable pathway.

Some scientists began also to speculate that the striking high level of affinity between the virus and the human physiology as it first appeared in Wuhan, and its relative stability since the initial outbreak, might indicate its engineered nature as

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<sup>38</sup>United States Department of State (2021, January 15).

<sup>39</sup>Shoham (2015).

<sup>40</sup>Pezenik (2021, March 31).

<sup>41</sup>Open Letter, ‘Calls for Further Inquiries into Coronavirus Origins’, *The New York Times*, 7 April 2021, <https://www.nytimes.com/interactive/2021/04/07/science/virus-inquiries-pandemic-origins.html>

<sup>42</sup>Segreto and Deigin (2020, November 17).

part of “gain-of-function”<sup>43</sup> experiments, which scientists at the WIV had been conducting for several years, often in collaborations with US scientists.<sup>44</sup> It should be pointed out that WIV scientists, especially Shi Zhengli, the head of research in bat coronavirus, have been less than forthcoming about the research activities at the institute. Some examples of such lack of transparency were the restriction of a public database of pathogens collected by the WIV, which went off-line in the few months before the pandemic, and scientific misinformation on previous research conducted on a virus genetically very similar to SARS-CoV-2.<sup>45</sup>

The political confrontation on the matter became even more heated as, starting from late 2021, revelations surfaced that the authors of the already mentioned *Proximal Origins* letter had privately expressed concern that the virus might have an artificial origin. In late January 2020 Kristian Andersen, one of the authors of the controversial letter, had an email exchange with then NIAID director Anthony Fauci, in which Andersen said that some features of the new virus looked “potentially engineered.” Andersen was relaying the concern of other virologists, who had contemplated the possibility that laboratory activities had inadvertently led to release of the virus. Such email exchange<sup>46</sup> was followed a few days later by a conference call, on February 1, 2020, between Fauci, the former Director of the National Institute of Health Francis Collins, and several prominent virologists, including some of the authors of the *Proximal Origins*. The meeting had been convened to midwife the drafting and publication of the letter, that in the words of Collins, would settle the matter in favor of a natural origin and put down “destructive conspiracy theories that could do harm to international harmony.”<sup>47</sup>

We know about this conference call following a Freedom of Information Act request by *Buzzfeed* and *The Washington Post*, which revealed that Andersen and other virologists had been initially puzzled by unusual features of the new virus<sup>48</sup>

<sup>43</sup> Gain of function identifies a type of research in virology that artificially enhances pathogens through various techniques, such as serial passaging, to predict their possible future mutations, their ability to cause spillover infections and thus pandemics, their infectiousness potential and thus also the need to devise appropriate vaccines and treatments in advance.

<sup>44</sup> Menachery et al. (2015, November 9).

<sup>45</sup> Cosentino (2023).

<sup>46</sup> The documents related to the exchange between Fauci, Collins and the scientists had initially been released in heavily redacted form. After a long litigation with the news organization *The Intercept*, the NIH releases the records in the original form.

<sup>47</sup> Ridley (2022, January 12).

<sup>48</sup> Scientists were particularly puzzled by the presence of a feature called Furin Cleavage Site. Furin is an enzyme present in human lungs cells. The presence on the virus characteristic Spike protein of the Furin Cleavage Site greatly enhances the virus’ human-to-human transmissibility. The anomaly of this sequence, which led the scientists such as Farrar to first consider it inconsistent with natural evolution, is the fact that this feature has not been found in any other SARS-like coronavirus. In the fall of 2021, a whistle-blower leaked a grant proposal that EcoHealth Alliance had submitted to DARPA, a division of the US Defense Department. The proposal, which was rejected on accounted that it posed the dangers associated with gain-of-function research, involved the insertion of a Furin Cleavage Site into SARS-like coronaviruses.

and considered the possibility of laboratory manipulation – for example via a technique called serial passaging<sup>49</sup> – only to publicly dismiss the artificial origin of the virus a few days later as a “crackpot theory.” Robert Garry, a scientist at Tulane University and one of the authors of the *Proximal Origins* paper later stated that, after the call with Fauci and Collins, some of the other scientists had requested for the paper not mention a possible lab origin as it might “add fuel to the conspiracists.”<sup>50</sup> The call also included Jeremy Farrar, director of the *Wellcome Trust*, an influential health organization based in the United Kingdom, and Ron Fouchier, a prominent Dutch virologist whose experimenting with the H5N1 influenza virus has sparked controversy in the past,<sup>51</sup> leading to the already mentioned US funding pause on gain of function research.

During the discussion with Fauci, Fouchier warned his colleagues that revelations on the possibility that SARS-CoV-2 may have been engineered “would do unnecessary harm to science”.<sup>52</sup> The emails also revealed an awareness by the scientists that the debate on Covid-19 origin was emerging via the media, especially on social media, and they felt the pressure to “get ahead of the narrative” by quickly releasing an authoritative opinion that would restrict the terms of the scientifically accepted public discourse on the matter. The record of the conversation also shows that the early draft of the paper, which dismissed the possibility of a lab accident, was drafted the same day of the call. However, the scientists involved never revealed what information or data made them change their opinion so quickly on the plausibility of the artificial origin of the new virus, raising suspicion of scientific misconduct and of a cover-up.<sup>53</sup>

In July 2023, the paper above was the subject of a hearing at the US Congress, in which Andersen and Garry testified in front of the House Subcommittee on the Coronavirus Pandemic. The members of the subcommittee argued that former NIAID Director Anthony Fauci and Former NIH Director Francis Collins were “directly involved in the drafting, publication, and public promotion of Proximal Origin,” and that the letter was “written to suppress a scientific discourse on the lab accident hypothesis.”<sup>54</sup>

The natural hypothesis had a further moment of popularity in early 2023, when news reports relayed the findings of a paper published on the online research repository *Zenodo* – which is not peer-reviewed – suggesting dispositive evidence had been found that raccoon dogs may have played the role of animal host in the emergence of Covid-19. Such paper – written, among others, by scientists who had been involved in the already mentioned *Proximal Origins* – had analyzed raw data

<sup>49</sup> Serial passage entails artificially growing a virus through repeated steps across different cellular environments.

<sup>50</sup> Hibbett (2022, January 12).

<sup>51</sup> Marc Lipsitch (2018).

<sup>52</sup> Tobias (2023a, January 19).

<sup>53</sup> Grim (2023, July 13).

<sup>54</sup> United States House Committee on Oversight and Accountability (2023b, July 12).

from environmental swabs taken at the Huanan Market, which had only become available to international scientists in early 2023. The *Zenodo* pre-print received widespread coverage by popular publications such as *The Atlantic* and *The New York Times*, creating the impression that dispositive evidence for the natural origin of Covid-19 had actually been found. However, later in the spring of 2023, a study by a prominent American virologist on the pre-print repository *Biorxiv* called into question the *Zenodo* pre-print and the news reports that amplified its findings. The study showed that the data from the swabs provided no significant evidence about whether raccoon dogs or other animals at the market were infected with SARS-CoV-2.<sup>55</sup>

Also in March 2023, US President Biden signed a bill to declassify intelligence on the origins of Covid-19,<sup>56</sup> a topic on which he had requested intelligence report in the Spring of 2021.<sup>57</sup> The original request by Biden came after a US intelligence report found that several researchers at WIV had required hospitalization upon falling ill with symptoms compatible with Covid-19 and seasonal influenza in November 2019.<sup>58</sup> The US intelligence community is currently divided on the origins of the pandemic: the Department of Energy and the FBI have recently said they lean toward the lab accident hypothesis, the former saying it had low confidence in its assessment, while the latter said its confidence level was moderate.

Other agencies, including the CIA, support the natural origin theory. However, in September 2023 the CIA became embroiled in a political controversy after the US House Select Subcommittee on the Coronavirus Pandemic<sup>59</sup> revealed that they had received the testimony of a senior-level CIA officer. The whistleblower alleged that “of the seven members assigned to the CIA team tasked with analysing COVID-19 origins, six officers concluded that the virus likely originated from a lab in Wuhan.” According to the testimony, the CIA offered significant “financial incentives to six of the experts involved in the investigation to change their conclusion in favour of a zoonotic origins.”

This latest twist in the debate on Covid origins indicates that US securities agencies might have played a role in the sidelining of the laboratory accident hypothesis in favor of the zoonotic one. It remains to be understood why the CIA might have an interest in obfuscating, or covering-up, a possible responsibility of a Chinese research facility in accidentally triggering the pandemic. According to some opinions,<sup>60</sup> the most likely reason for such cover-up is the need to conceal the role of US federal agencies – especially USAID, which has a history of collaboration with the CIA – in funding the research activity in Wuhan. The involvement of the CIA in this matter also sheds further light on the geopolitical profile of the Covid origins debate, placing it squarely at the center of US-China relations.

<sup>55</sup>Tobias (2023b, May 10).

<sup>56</sup>Paun (2023, March 20).

<sup>57</sup>Sullivan et al. (2021, May 26).

<sup>58</sup>Gordon et al. (2021, May 23).

<sup>59</sup>United States House Committee on Oversight and Accountability (2023c, September 12).

<sup>60</sup>Rindberg (2023)

## The Post-Truth Context of the Covid-19 Origins Debate

In western liberal democracies, especially the United States, the debate on the origins of Covid-19 has occurred within an already deeply fraught and polarized public opinion, pitting progressives and conservatives against each other. From a global perspective, the debate occurred within an equally split global geopolitical arena, in which democratic and authoritarian countries have been increasingly in competition for global hegemony (Cosentino, 2023).

In democratic countries, the political and cultural context that set the terms of the debate was characterized by a concomitance of factors – political polarization, spread of misinformation and disinformation, and fact-checking efforts by media and digital platforms – all characteristic of the post-truth era. The debate also took place against a backdrop of mistrust in scientific expertise and institutional authorities, challenged by fringe discourses such as denialism and pseudoscience, features of contemporary populist movements and political cultures (Nichols, 2017; McIntyre, 2018).

As discussed in the previous section, the United States is where the debate on Covid origins has been more intense. The history of involvement of US federal funding and US-based organization in the research taking place in Wuhan is arguably the main reason why the topic has received so much attention. The direct participation of US scientists and health officials in the publication and promotion of articles framing the debate – with a clear bias toward zoonosis – and the subsequent trail of political controversy, is another reason.

As outlined in previous sections, we can describe the discourse in the United States as consisting of two fronts. On the one hand, a more prominent and mainstream front supporting the zoonotic hypothesis is under the helm of scientists and public health officials with an history of experience and vested interests in the field of virology and infectious diseases. The natural origin hypothesis also resonated with a growing awareness on the human role in the emergence of type of infectious diseases. Zoonosis is in fact linked to human impact on the animal habitat, and as such it fits with the political sensibility of the so-called liberal or progressive media – such as *The New York Times*, *The Atlantic*, and *The Los Angeles Times* in the United States and *The Guardian* and the *BBC* in the United Kingdom.

These publications often dedicate ample coverage to environmental issues, such as climate change or the illegal trade of endangered wildlife. Progressive politicians and media in the United States have thus been more inclined to support this perspective. They also have tended to align with the scientific establishment, also as a form of opposition to the anti-scientific positions expressed by far-right political movements in the past decade. Popular scientific publications such as *Scientific American* and *Science* also have amplified the natural hypothesis. Also, since the laboratory accident hypothesis had been endorsed by Trump and more generally by the right-wing media ecosystem in the United States, most liberal media and progressive politicians have steered clear of the issue for fear of being associated with Trump.

Conversely, the laboratory accident theory has been more popular in right-wing and conservative circles, as seen in the statements by Republican Senator Tom Cotton and in the later championing of the issue by Senator Rand Paul.<sup>61</sup> This side of the debate reflected primarily geopolitical anxieties related to the ongoing Sino-American competition for global hegemony, and to the growing influence of China in the global arena. Media outlets traditionally aligned with the Republican Party such as *Fox News* have dedicated ample coverage to the debate and to investigation on the laboratory accident pathway. The support for this hypothesis, the critique of the involvement of US funding in Wuhan research, and the allegations of a cover-up leveled against public health officials such as Anthony Fauci are also coherent with a tradition of skepticism within the Republican base toward government authority.

When Trump stepped out of office in January 2021, the topic of the laboratory accident became less politically “toxic,” allowing more scientists and journalists to approach it in a more objective way. As a more scientifically sound perspective on the lab accident scenario started to emerge – distanced from the conspiratorial bioweapon narrative – it gradually breached into the mainstream of public discussion and was eventually covered by established news outlets such as *The Washington Post*, *The Wall Street Journal*, and, to a lesser degree, *The New York Times*. The lab accident pathway gradually lost the “conspiracy theory” label that it had carried since the onset of the pandemic.

The debate on Covid origins was thus clearly influenced by changes in the US political context. A strictly scientific issue with significant implications for global public health suffered from the very beginning from major interference by scientists and health officials, who appeared more concerned with political and geopolitical considerations than with establishing the truth. It also showed how the political partisanship had seeped into the scientific community, altering the normal course of the scientific process. The polarization of the debate also made it difficult to achieve a widespread consensus on the topic, both in scientific circles and at the institutional level. Finally, the obfuscation attempts described in the previous sections didn’t help the emergence of a sound and objective debate.

The search for Covid origin was also hampered by efforts to combat health misinformation put in place by social media platforms, often in coordination with the WHO. For most of 2020, main social media platforms such as Facebook had labeled the lab accident hypothesis as misinformation, and so did several fact-checking initiatives (Cosentino, 2023). Most of these initiatives have provided a useful service in countering dangerous health misinformation during the pandemic. However, they also developed a rejection against any information related to Covid-19 that didn’t come from established scientific sources, which led to the premature and unjustified dismissal of the lab accident hypothesis. Fact-checking measures ostensibly put in place to combat misinformation ended up stifling a legitimate

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<sup>61</sup> Schreiner (2022, May 1).

avenue of scientific inquiry, a further example of the distortions on this debate caused by the post-truth environment within which it occurred.<sup>62</sup>

At a geopolitical level, important shifts in the global arrangement of power between Western democracies and non-Western authoritarian countries – and more generally in the Post-Cold War global order – have had a stifling effect on the emergence of a cooperative scientific discussion on this matter, and in the establishment on independent investigation. The geopolitical context of the Covid-19 pandemic differed significantly from that of the SARS pandemic. In the early 2000s, China's membership to the World Trade Organization had just been finalized, and the country was still actively seeking acceptance within international community as a reliable trade and financial partner. The United States was at the time arguably the most powerful country in the world and the dominant geopolitical force.

After the collapse of the Soviet Union in the 1990s and the decline of the communist ideology, the United States hailed its liberal democratic model – based on elective representation and the protection of individuals' rights and freedom – as the ultimate form of governance, and the most suited to deliver economic growth and political stability for the rest of the world. The United States also championed the neo-liberal globalization process in global trade, finance, culture, and technology as a way to establish a world order for the twenty-first century.

Twenty years later, however, the leadership of the United States is in a more precarious state, and so is the notion of a world that has become 'globalized' according to Western political, economic, and cultural values. The trauma of 9/11, the debacle of the 2003 Iraq War and the consequent rise of Islamic fundamentalism in the Middle East and elsewhere, as well as the authoritarian backlash against the democratic uprisings of the Arab Spring, most notably in Egypt and Syria, have challenged the supremacy of the American-led Western hegemony. The 2008 financial crisis and the recession it triggered in the following years undermined faith in finance-driven market capitalism, driving a deep rift between working classes and political establishments, and sparked hostility to the globalized economy in both the industrialized and the developing world. The economic and cultural backlash against liberal democracy and Western-driven globalization has fueled the rise of populist and ethnonationalist political movements, which have made significant electoral gains in various world regions, shaking the foundation of the global liberal democratic order.

The crisis of Western liberal democracies has also emboldened autocratic and authoritarian leaders to present their model of governance as a viable alternative. Over the course of the past two decades, China has demonstrated a surprising ability at maintaining social and political order while strengthening economic growth and spearheading technological advancements in multiple sectors, including the crucial

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<sup>62</sup>The post-truth and populist political era have seen a proliferation of fact-checking and media literacy initiatives, launched with the goal of remedying misinformation and disinformation. Fact-checkers have responded to the circulation of misinformation around Covid-19, with the number of English-language fact-checks rising more than 900% from January to March 2020.

sector of mobile communications and electric vehicles. China's role within the international community has also grown significantly, and its clout within international institutions has also become more prominent. The anti-Western rhetoric of China's President Xi Jinping and Russian President Vladimir Putin has also escalated in recent years.

The geopolitical backdrop within which the debate on Covid origins occurred is thus characterized by the declining power of the United States, a rising global of China, and a growing rift between Western democracies and non-Western autocracies. The pandemic has significantly contributed to the worsening of this political and ideological divide, with the war in Ukraine further pushing the world apart in opposing blocs. As expressed by some observers in the aftermath of Russian invasion of Ukraine, "geopolitics is moving away from globalization".<sup>63</sup> Countries which were economically interrelated are now decoupling, as in the example of the many Western companies who have pulled out of Russia as a backlash against its military intervention in Ukraine.

Such a divided geopolitical landscape impaired the necessary scientific and political consensus to properly investigate the origin of Covid-19. In the early 2000, at the time of SARS, despite the initial cover-up and delay in acknowledging the outbreak, Chinese authorities felt the pressure of the international community and of the WHO, and eventually cooperated in containing the pandemic and detecting its origin rather quickly. In 2020, China is a much more assertive global power, and is less willing to cave in to the international influence. Xi Jinping ambitious plan to turn China into a hegemonic global force could not allow the admission of a major blunder such as an accident at a research facility, or even a failure of its pandemic surveillance mechanisms.

China has repeatedly rejected requests for an independent international investigation in Wuhan to determine the origin of Covid, it has withheld essential epidemiological data from the early months of the pandemic, and has not allowed a forensic analysis of the research facilities in Wuhan. Such a consistent stonewalling and censorship of relevant information and testimonies about the initial outbreak has significantly diminished the chance to identify the original source of the pandemic. The authoritarian nature of the Chinese government – which stands also accused of having delayed important information about the human-to-human transmission and lethality of the virus at the onset of the pandemic – has arguably worsened the course of the pandemic.

On the other hand, the United States have been plagued by political polarization for several years, and in the early phase of the pandemic have suffered under the poor leadership of Donald Trump. Polarization and political instability reached a dramatic escalation in the January 6 assault on Capitol Hill. The controversy around US involvement in research in Wuhan have undermined trust in the US scientific establishment. It also has made it more difficult to have a balanced assessment of

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<sup>63</sup> Micklethwait and Wooldridge (2022), March 24).

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the risk-to-benefit ratio of *gain-of-function* research activities on emerging pathogens, such as the ones funded by US agencies in Wuhan.

The growing division and competition between democratic and authoritarian countries has not only reduced their ability to cooperate in containing the pandemic and determining the cause of its origin, but it has also exacerbated inherent issues with both models of governance. China has become more authoritarian after the pandemic, and the United States more polarized, further complicating their relations. The consequences for global security and for public health could be severe, especially for a world which is still reeling from the humanitarian and economic devastation caused by the Covid-19 pandemic.

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## **Conclusions: A Military Origin?**

There is a further explanation for the fact that, despite all the scientific advancements, the existence of pandemic surveillance networks, the decades-long research in the field, the efforts by the WHO, and the collaborative work via social media by scientists and sleuths, the origins of Covid-19 remain a mystery. Of course, the various forms of obfuscation, censorship, and manipulation recounted have played a significant role. And the responsibility of scientists and public health officials in side-tracking the debate is not to be discounted, and stands as a serious precedent of scientific misconduct. But there might be a further layer to this scientific mystery, which only in 2023 entered the public discourse.

Recent revelations<sup>64</sup> have corroborated the notion that there is in fact a long history of military involvement in coronavirus research, both in the United States and in China. This is not a confirmation of the theory, often presented in conspiracy form, that the virus was released intentionally as a bioweapon. It simply represents an acknowledgment that the research on deadly emerging pathogens has had implication for biodefense program for several years. This awareness is clearly present in a statement made by Ralph Baric, arguably the most important scientist in *gain-of-function* research on SARS-like coronavirus, and a long-time collaborator of the WIV. In 2006, Baric warned that modern science had developed “the tools to modify the genomes for increased virulence,” and that these genomes could become bioweapons that “could be targeted to humans, domesticated animals or crops, causing a devastating impact on human civilisation”.<sup>65</sup>

An investigation by the US State Department had discovered that a covert military project was being conducted at the WIV in the months and years before the pandemic. According to revelations by US investigators to the British newspaper *The Times*, these experiments included the same type of gain-of-function manipulation and serial passaging of SARS-like coronavirus discussed in the previous sections, which were deemed risky by parts of the scientific community. In their

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<sup>64</sup> Calvert and Arbuthnott (2023).

<sup>65</sup> Ibid.

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report, the State Department investigators stated that: “Despite presenting itself as a civilian institution, (...) the Wuhan Institute of Virology has collaborated on publications and secret projects with China’s military. The Wuhan Institute of Virology has engaged in classified research, including laboratory animal experiments, on behalf of the Chinese military since at least 2017.”

Prior to the pandemic, the WIV frequently worked on SARS-like coronaviruses together with the Academy of Military Medical Sciences, the research arm of the Chinese Military. The military also held positions of responsibility at the WIV. A 2015 publication by the People’s Liberation Army, the Chinese military, discusses how SARS viruses could be developed into “new genetic weapons” that could be “artificially manipulated into an emerging human disease virus, then weaponised and unleashed.”<sup>66</sup> A scientist working for the Academy of Military Medical Sciences had filed a patent for a coronavirus vaccine shortly at the onset of the pandemic, before dying in mysterious circumstances, allegedly on the premises of the Wuhan Institute of Virology.<sup>67</sup>

US investigators suspect that the Chinese military had taken an interest in developing a vaccine for SARS-like coronaviruses, in the prospect that these could become potential bioweapons. The rationale from a defense standpoint is that if a country could inoculate its population against a weaponized virus of its own making, it might have a significant military advantage over an enemy.

China is not the only major country whose military apparatus have an interest in coronavirus research as part of biodefense programs. Especially after the anthrax terrorist attacks in the aftermath of 9/11 attacks, and following the first SARS outbreak, the United States also began to see the importance of funding work combating bioterrorism and pandemics.<sup>68</sup> In the early 2000s, the Bush administration had biological weapons and infectious disease as part of its security agenda, to address what was then perceived as lack of a coherent biodefense strategy. According to an observer, Anthony Fauci has been for several decades playing an important role in America’s biodefense infrastructure.<sup>69</sup>

Advanced research in virology such as the one on SARS-like coronavirus does not clearly distinguish between the results of a scientific experimentation and what could potentially constitute a bioweapon. This type of dual use research could simultaneously produce advances capable of serving civilian and military ends. The involvement by US security agency in this type of research in Wuhan is demonstrated by the fact that funding to the WIV had come from both the US Defense Department, as well as from USAID, which has a long history of connection to the CIA. The Covid-19 pandemic has indeed showed that vaccines are of primary importance to a country national security apparatus. In the absence of an effective

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<sup>66</sup>Ibid.

<sup>67</sup>Ibid.

<sup>68</sup>Rindsberg (2022)

<sup>69</sup>Ibid.

vaccine, a nation is susceptible to an attack that not only dramatically impact the population's health, but also disrupts its economy and tears through its social fabric.

The likely involvement of both Chinese and American military and security agencies in the research on pathogens with pandemic potential is arguably the main reason behind the various forms of censorship, obfuscation, and cover-up of the possible accidental origin of Covid-19 as part of a dual civilian military project. The high sensitivity and secrecy of such research project explains why authorities both in China and the United States have resisted any independent scientific investigation on this highly consequential matter.

Despite the tension and growing rift among the two countries, on this subject they appear to be inextricably entangled. None of the two governments could seriously accuse the other of a cover-up without exposing its own involvement. In an almost ironic example of the Thucydides' Trap, China and the United States – the rising power and the declining ruling power – might have inadvertently created the conditions for a future conflict between them, while collaborating at research programs aimed at strengthening their defense capabilities. The scientific and political debate on Covid origins might not have uncovered the truth about the cause of the pandemic yet, but it has at least exposed this paradox. Such revelation, if further amplified in the 2024 US Presidential elections, might have serious geopolitical repercussions.

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