

6 #Biolabs: The Spread of a Russian Disinformation Campaign to the German Social Media and Public Sphere

Jonas Ziock, Fiete Stegers and Christian Stöcker

During the Russian occupation of the Ukrainian city of Mariupol in May 2022, various internet sources reported that a high-ranking officer from a NATO country had been captured there. A Twitter post, accompanied by an alleged photograph of the arrest, stated that “Canadian General Trevor Kadier was arrested while trying to escape from the territory of Azovstal”, the steel plant held by the last Ukrainian defenders in Mariupol (aleksandraopalz 2022). The website of a self-described “independent press network” claimed that the officer named Trevor Cadieu (sic) was “currently in Moscow awaiting a trial” (Voltaire Network 2022). The General was supposedly in charge of a bio (weapons) laboratory in Mariupol, “with 18 staff working under his command”. An illustrated map of this allegedly secret research facility below the embattled industrial complex was also circulating on social media. In fact, this picture was an illustration for a board game set in a dystopian world and taken from the *Kickstarter* page. A reverse image search for the illustration proved this quickly.

The *Azovstal* illustration was just as fictitious as the alleged arrest of the Canadian General (Van’t Hoog 2022). However, these two particularly eccentric and easily debunked anecdotes are just two manifestations of a much broader narrative: the claim that Ukraine is conducting bioweapons research against Russia in secret laboratories with the assistance of Western countries and institutions. The narrative is disseminated not only by social media users, but also by Russian leaders and state media, backed up with alleged evidence.

This study examines the origins of the narrative and its dissemination in social media following Russia’s invasion of Ukraine in February 2022. It focuses on its dissemination in the German-speaking social media sphere and on the leading actors involved. The impact of the narrative in Germany was not limited to social media but extended into the German parliament and civil society.¹

1 The narrative-based study uses a combination of quantitative data analysis and qualitative review, employing ethnographic and open source intelligence (OSINT) techniques. In the context of the NOTORIOUS project, it formed a case study on the overarching research ques-

Following a brief outline of the historical background of similar disinformation campaigns, this study examines the evolution of the bioweapons narrative since 2022, its core allegations and lack of substantial evidence. The next section underlines the broad reach of the narrative in Germany. Delving deeper, the paper retraces the initial timeline, actors and dissemination of the narrative, as well as the later efforts by Russia to expand the narrative further. In the subsequent sections, our qualitative analysis illustrates the role of influential German online actors, their close cooperation and ties to Russian authorities. These findings are supported by a keyword-based collection and subsequent evaluation of frequently shared social media posts and links.

Background

The conspiracy narrative about secret US bioweapons laboratories and similar narratives around alleged bioweapons have been spread by the USSR and subsequently by Russia since the Cold War era. For example, in the 1980s, the USSR claimed that the USA had genetically engineered HIV at Fort Detrick, a military biodefense research facility (Selvage/Nehring 2019).

In the 1990s, biological research facilities situated in post-Soviet states, including Kazakhstan, Georgia, and Ukraine, were the target of disinformation campaigns, particularly the Lugar Center research facility in Tbilisi, Georgia (Jakob et al. 2022). Following Russia's initial military intervention in Ukraine in 2014, the Kremlin intensified its disinformation campaign targeting Ukraine's biological weapons capabilities. In 2017, Ukraine was accused of disseminating the Ebola virus among pro-Russian separatists on behalf of the US military (EUvsDisinfo 2017).

Russian disinformation campaigns, primarily disseminated through state-controlled media outlets such as *RT* and *Sputnik*, have previously addressed epidemics, such as avian flu, Ebola and Zika, to amplify variations of the same disinformation narratives (Selvage 2022). The discussion about the origin of the SARS-CoV-2 virus also gave new impetus to bioweapons conspiracy narratives. In this case, Chinese state-controlled media spread the conspiracy narrative that the coronavirus was a US bioweapon directed against China and produced in Pentagon-funded laboratories – mainly in response to accusations from Washington at the time. Russian

tion of Cross Platform Identification, Monitoring and Modeling of Diffusion Patterns of Disinformation. NOTORIOUS is a collaboration between the Hamburg University of Applied Sciences (HAW Hamburg, Department of Information and Media Communication), the Leibniz Institute for Media Studies / Hans Bredow Institute, and the Institute for Strategic Dialogue Germany (<http://www.notorious-projekt.de>).

media, in turn, amplified China's narrative (EUvsDisinfo 2020). Since August 2022, Russia has been making accusations that COVID-19 is a bioweapon created by the US (Russian Ministry of Defense 2022).

The Bioweapons Narrative 2022

The start of the Russian war of aggression against Ukraine was immediately reflected in the content circulating on social media platforms. Users shared news articles, official government statements and personal impressions. Some of these posts included incomplete or subsequently disproven information, as well as a variety of distorting interpretations and deliberately circulated misinformation, which can be classified as disinformation. Regarding the German social media sphere, the Center für Monitoring, Analyse und Strategie (CeMAS), a private research institution, observes:

Narratives of alleged NATO provocation are spreading, providing a rationale for Russia's military intervention. Alternatively, the war is presented as a distraction from the coronavirus pandemic. There was an alleged need for war to eliminate a supposedly fascist Ukrainian government. (...) There are already numerous conspiracy stories surrounding the Russian war of aggression in Ukraine. So far, what most of them have in common is a pro-Russian position (Lamberty/Goedeke Tor/Heuer 2022: 2).

One of these narratives was based on the core claim that the USA and Ukraine are developing bioweapons in secret laboratories in Ukraine. A multitude of individual statements on this topic were disseminated during the early phase of the war in 2022. For the most part, they proved to be false or at least highly distorted (Gensing/Siggelkow 2022). No evidence confirming the allegations has yet been uncovered.

Notably, Russian government agencies, state media, as well as pro-Russian accounts, claim that the US is developing bioweapons in secret laboratories in Ukraine. In fact, the US Department of Defense was or had been supporting biological research in Ukraine, Georgia and other post-Soviet countries. However, according to US statements, this was exclusively dedicated to new infectious diseases and safeguarding former Soviet bioweapons research (Ling 2022). The US position is supported by international organizations and non-proliferation experts (Jakob et al. 2022). In the UN Security Council, Russia failed several times to initiate official investigations using the "bioweapons" narrative. Only China supported this request. The representatives of other states on the Security Council repeatedly emphasized that the alleged evidence presented by Russia had no validity (Fellmann 2022; United Nations 2022).

In Germany, “activists from the ‘Querdenker’ milieu promoted the allegations about the development of bioweapons in Ukraine”, as observed by Gensing and Siggelkow (2022). These claims combined “conspiracy legends about COVID-19 with Russian propaganda framing Ukraine as merely a client state of the USA” (Ibid.).

In some instances, documents which claimed to be obtained from Ukrainian laboratories were presented as evidence, as they supposedly proved the production of biological weapons, as well as the involvement of Western countries in the production. However, fact-checking by news outlets did not confirm these findings. As Timmermann (2022b) explains: “The documents from the two laboratories do not prove that bioweapons research was carried out in Ukraine. According to several experts, the documents list pathogens that indicate normal work processes in a microbiology laboratory.”

Social media accounts portray Victoria Nuland, Under Secretary of State for Political Affairs, as a key witness to the existence of the weapons program. However, when questioned by a US Senate committee, Nuland only confirmed the existence of laboratories dealing with defense and security against bioweapons, not a bioweapons program (Qiu 2022).

According to Russian officials, Germany is also allegedly involved in experiments with warfare agents. The shipment of samples from Ukraine to the Friedrich Löffler Institute and the collaboration between a laboratory in Kharkiv and the Bundeswehr Institute of Microbiology in Munich are cited as an example. Yet, according to the investigations by German media, neither of these served any recognizable military purposes (see dpa-factchecking 2022; Goncharenko 2022).

In addition, laboratories in Ukraine were portrayed as researching “the specifics of Slavic genotypes in order to develop selective biological weapons” (Netschajew 2022). The Bundeswehr Institute of Microbiology and independent researchers declare this “unrealistic” or at least far-fetched (Goncharenko 2022). Another allegation concerns financial links between Ukrainian laboratories and the company Rosemont Seneca Thornton, pointing to a connection to Hunter Biden, son of US ex-president Joe Biden – and the investor George Soros. A review by the *Washington Post* revealed very weak, outdated links between the companies and no evidence that these companies were controlled by the two men, who both have repeatedly been the subject of conspiracy narratives, especially by the US right (Kessler 2022).

Further accusations and rumors concerned the alleged use of drones to spray toxic substances, counterfeit money allegedly infected with tuberculosis pathogens, a Canadian General allegedly arrested as the head of a weapons laboratory (see above), and US drug experiments having caused the death of Ukrainian soldiers.

In the analysis of social media posts, the following types of shared content were particularly striking: (1) references to reporting by Russian media; (2) images of (alleged) documents; (3) maps of laboratory locations; (4) references to the statements by US Deputy Secretary of State Nuland.

Reception of the Bioweapons Narrative in Germany

In April 2022, a representative survey commissioned by the private research institute CeMAS showed the susceptibility of the German population to disinformation: when they were shown several different claims about the war, 7.84 percent of all respondents in Germany believed in the claim that the USA and Ukraine had jointly operated secret bioweapons laboratories. A further 13.90 percent considered this to be partly true. Compared to the other narratives used in this representative survey (e.g. “Putin is being made a scapegoat to divert attention from the real problems” or “Ukraine is actually part of Russia”), the level of agreement was in the mid-range (Lamberty/Goedeke Tor/Heuer 2022: 5). A follow-up survey in October 2022 showed that the narrative had subsequently gained approval: by then, a third of respondents in Germany believed the claim about the secret bioweapons laboratories to be completely (12 percent) or at least partially (21 percent) true (Ibid.: 5). The survey also revealed a similar increase for other conspiracy narratives: “A comparison of the approval ratings from October with the values from our study in April 2022 shows that approval ratings have risen significantly for all statements”, the CeMAS authors note. The level of approval among respondents in East Germany was considerably higher than in the Western part of the country (Ibid.: 6).

Regarding the political orientation of the respondents, the agreement with conspiracy narratives was the highest among supporters of the *Alternative für Germany* (AfD) party (Ibid.: 7). The survey showed 36 percent of AfD supporters considered the statement about bioweapons laboratories credible, 29 percent agreed at least in part to it and over a third of AfD supporters disagreed. This is almost the opposite sentiment when compared to overall agreement, regardless of party affiliation.

The AfD is the only political party in Germany to endorse this narrative publicly. On March 25, 2022, Steffen Kotré, a Member of Parliament representing the AfD, delivered a speech in the German Bundestag on the purported existence of “bioweapons laboratories in Ukraine” and the alleged “complicity of the West” (Deutscher Bundestag 2022). Norbert Kleinwächter, a fellow AfD parliamentarian, distanced himself from these statements but was reprimanded by the AfD parliamentary group for this public criticism (Joswig 2022).

It is not surprising that an AfD politician took up this narrative: members of the AfD have repeatedly appeared as agitators in the dissemination of disinformation narratives. In addition, high-ranking members of the party, such as Petr Bystron and Maximilian Krah, were suspected of maintaining close and allegedly illegal contacts with Russia and China (Capellan 2024). Kotré was interviewed by Russian state and propaganda broadcasters on multiple occasions (RedaktionsNetzwerk Deutschland 2022; RT DE 2024).

General Timeline, Actors, and Dissemination

The narrative of bioweapons laboratories in Ukraine represents one of the key elements of the official Russian war propaganda apparatus, serving to justify the attack on Ukraine. It was advanced by state representatives, including President Vladimir Putin, Foreign Minister Sergei Lavrov, the spokesperson of the Ministry of Defense, and the head of the bioweapons defense forces. Russia also presented the narrative in the UN Security Council.

Similar claims about purported US biological weapons laboratories had been in circulation for years and intensified in the months preceding the Russian invasion (Ling 2022). On February 21, 2022 – just a few days before Russia's 2022 invasion of Ukraine – documents were published on a Russian propaganda channel on Telegram that allegedly proved that the Ukrainian military was planning to use biological weapons (@XMAPA_COM 2022). The documents show alleged correspondence between Ukraine and a Turkish drone manufacturer, including the question of whether the drones could spray aerosols. Russia accused Ukraine of making these inquiries to use biological weapons against the people in the occupied regions of Eastern Ukraine.

After the start of the invasion on February 24, 2022, some English-language accounts on Twitter (displaying support for Donald Trump) posted conspiracy narratives and the maps of the alleged bioweapons laboratories in Ukraine, which other users further distributed. After *Infowars*, a well-known US conspiracy website published an article summarizing many of these claims (Salazar 2022), it gained widespread attention. The Facebook post, linking to the article, was shared more than 76.000 times.

On February 26, 2022, the Bulgarian journalist Dilyana Gaytandzhieva claimed that the US Embassy in Kyiv had “deleted all documents on the biolaboratories financed by the Pentagon in Ukraine from its website” in view of the Russian advance (2022). However, a fact check by the news program *Tagesschau* (Gensing/Siggelkow 2022) was unable to establish a clear temporal connection. The documents in question had been published earlier than claimed and dealt with non-military research activities.

A few days later, on March 2, 2022, the documents about Turkish combat drones previously published by @XMAPA_COM were picked up by the Russian propaganda website *RIA FAN* (RIA FAN 2022). The article reiterated accusations that Ukraine and the USA were preparing a biological and chemical attack on the Russian population in the occupied territories of Donetsk and Luhansk. In this context, *RIA FAN* justifies Russia's war of aggression against Ukraine as a “special peacekeeping operation”.²

2 RIA FAN belonged to Yevgeny Prigozhin's Patriot Media Group and was known for its “strongly nationalist, pro-Kremlin editorial line” (Reuters 2023).

On March 6, Russian state news agencies *Ria Novosti* and *TASS* reported for the first time on alleged evidence presented by the spokesperson of the Russian Ministry of Defense, Igor Konashenkov (TASS 2022). This subject was repeatedly highlighted in the TV program hosted by the Fox News presenter Tucker Carlson, who labeled the US government's denials as "lies". In addition, he referred to the questioning of Under Secretary for Political Affairs Nuland before a US Senate committee on March 8, 2022. The Russian accusations were also repeatedly raised by Chinese government officials and media. When the Russian narrative was presented to the UN Security Council on March 11, 2022, China called for clarification of the allegations (Fellmann 2022; The Russian Ministry of Defense 2022; Russian President's official website 2022; Global News 2022).

Expansion of the Narrative

During the survey period (March 2023), it can be observed, particularly regarding the Ministry of Defense of the Russian Federation, how the narrative was refined and expanded by introducing new alleged evidence that emerged during the war. For example, in July 2022, the ministry asserted that newly discovered documents appeared to substantiate claims that the USA had conducted research on Ebola in Ukraine. In this context, the USA and other NATO states, namely Germany, were accused of having previously tested biological weapons in Ukraine (The Russian Ministry of Defense 2022). The ministry made similar statements on different occasions. For example, in August 2022, the accusation that the novel coronavirus of 2019 was an American biological weapon was repeated. The operation of the alleged bioweapons laboratories in Ukraine, therefore, posed an existential threat to Russia, according to the ministry (Ibid.).

In December 2022, the US pharmaceutical company Pfizer was also accused of involvement in the production of bioweapons and of having profited from alleged experiments in Ukraine. In March 2023, further accusations blamed mRNA technology (used in the vaccines against COVID-19) as an American bioweapon. The main narrative of bioweapons laboratories, justifying the aggressive war against Ukraine, was linked to other disinformation narratives disseminated from Russia to the West. Furthermore, the Russian leadership has endeavoured to situate the biolab narrative within the context of international politics. In September and December 2022, the purported activities of the USA and Ukraine were deliberated at two meetings of the UN Biological Weapons Convention initiated by Russia. However, no consensus was reached at these meetings. According to media reports, Russia presented no new alleged evidence (Schwarz 2023).

Again, in the aftermath of the meeting in Geneva in December 2022, Russia attempted to use the bioweapons accusation as a vehicle for further disinformation

narratives. In the final statement, the Ministry of Defense repeatedly accused American politicians (exclusively from the Democratic Party) of being involved in the operation of the alleged bioweapons laboratories. The Russian Ministry of Defense also substantiates its accusations against Pfizer in the statement. In March 2023, a parliamentary commission in Russia that investigated the work of American biolaboratories in Ukraine concluded, despite the failed hearings at the United Nations, that US biological programs served for military purposes (TASS 2023). Despite the lack of evidence, Russia maintains these narratives and attributes the lack of international support to the West and NATO (Telegra.ph 2022).

After numerous attempts to promote it internationally, the Russian leadership has continued to adhere to this narrative to legitimize the war. But it is also part of the Russian strategy on the information and propaganda battlefield against the West. The biolabs issue has a particularly high potential for creating divisions in society. Russia deliberately raises such issues to undermine public trust in political institutions at the national and international levels. Among other functions, the narrative is intended to strengthen Russian influence in Europe and weaken international alliances, such as the European Union and NATO (Goertz 2023). There are similarities to earlier polarizing discourses in the German public sphere. For example, “in 2021 – shortly before the long-planned war of aggression against Ukraine – the COVID-19 and the German government’s measures against the pandemic were in the focus of the Russian state media” (Goertz 2023). To achieve these goals, such narratives are disseminated not only via official channels but also through clandestine social media operations (Ibid). The amplification of the narrative by relevant local actors is pivotal reaching a wider and more receptive audience.

Main Online Actors in Germany

In Germany, the narrative was promoted by blogger Thomas Röper on his website *Anti-Spiegel*. Röper had a history of spreading conspiracy theories and disinformation, particularly concerning the COVID-19 pandemic. He has published articles such as “The networks that created the pandemic” and “A concrete example: How the Pandemic was Prepared and by Whom.” Located in St. Petersburg, Russia, he translates Russian government statements, posts and articles from Russian news sites to make them accessible to a German(-speaking) audience.

Röper picked up the subject of biolaboratories following the publications by XMAPA and RIA FAN (Röper 2022b, c). In addition to sharing the RIA FAN article on his blog on March 2, 2022, Röper disseminated it via his Telegram channel. At that time, approximately 75.000 accounts followed him. The post was viewed over 100.000 times in total, as it was reposted through multiple influential channels associated with right-wing populist ideologies and criticism of public health in-

terventions, such as that of Eva Herman (a former prominent German newscaster with around 200.000 followers).

While Röper may have a smaller reach than Herman, he and Alina Lipp play a pivotal role in the German-speaking world regarding the bioweapon laboratory narrative. Alongside Röper, Lipp is the most important German-speaking actor in spreading the disinformation narrative about Ukrainian bioweapons laboratories. The German Russian who emigrated from Germany to Russia in 2021, Lipp describes herself as a peace journalist. Like Röper, she runs a Telegram channel with around 181.000 followers. Through this channel, Lipp spreads pro-Russian propaganda, whereby her “reporting” is almost exclusively limited to the topic of Russia and the war against Ukraine (known as the “special military operation” in Russian media). Röper and Lipp have been working closely together since Lipp launched her Telegram account on November 5, 2021. When the narrative of the bioweapon laboratories became more widespread, this dynamic intensified, and both forwarded each other’s posts at least once a week. Röper first referred to Lipp’s post on his blog on November 15, 2021.

Unlike Lipp, Röper has been promoting the rhetoric of the purported bioweapons laboratories for an extended period. Before the Russian incursion, Röper had already published several articles on this theme on his blog. A few weeks before Russia’s invasion, on January 27, 2022, Röper published a German translation of a Russian report on the alleged research by Gaytandzhieva (originally published on January 25, 2022), accusing Ukraine and the USA of conducting potentially lethal biological experiments on Ukrainian soldiers. This subject allegedly involved the development of biological weapons against people of certain ethnic origins – specifically, bioweapons targeting humans with “Russian DNA”. Even if this is untenable from a scientific point of view, this narrative revived the narrative of bioweapons laboratories just a few weeks before the start of the Russian attack on Ukraine (Röper 2022a).

In Lipp’s Telegram channel, the narrative about the bioweapons labs first appeared on March 6, 2022. She posted documents published by the Russian Ministry of Defense on the same day as evidence of bioweapons research in Ukrainian laboratories. The documents included an alleged instruction from the Ukrainian side to destroy all dangerous substances so that they would not be released if an attack occurred. However, this claim was refuted in several fact-checking reports (Timmermann 2022b). In addition to Lipp and Röper, the Kopp publishing house, known for disseminating content of conspiracy ideologies, and the Austrian website *Report 24* have also promoted the bioweapons narrative in German-speaking countries (Timmermann 2022a).

Mutual Support on Telegram

Although Röper has been active on Telegram longer, Lipp has surpassed him in terms of followers. The qualitative research indicates that Lipp's forwarding enhances the visibility of posts on Röper's channel. Röper's Telegram posts generally receive between 90.000 and 125.000 views, if reposted on Lipp's Telegram channel. Röper's channel had approximately 70.000 followers in mid-2022. Röper's posts that were not reposted by Lipp typically received approximately 50.000 views.³

These findings were corroborated by data obtained using *Telemetr.io*. This monitoring tool can examine how often different Telegram channels have been linked to each other over a specified temporal interval. The examination of the links between the channels reveals that Lipp shared Röper's posts on 217 occasions. Only four other channels shared Röper's posts with a higher frequency. With the number of followers between 900 and 2100, these accounts are significantly smaller than Lipp's audience. Lipp's account appears to be particularly relevant for disseminating Röper's disinformation, as Lipp frequently shares Röper's posts with a larger audience.

Conversely, Röper's account is one of the most forwarded by Lipp. There are only two channels whose content she shared more often than his: a pro-Russian German-language channel (230 forwards) and an anti-American, anti-Western and partly pro-Russian channel claiming to be associated with the peace movement (more than 1000 forwards).⁴

Röper's Close Ties to Russian Authorities

In the wake of the prohibition of RT in Germany and the EU in February 2022, Röper's blog *Anti-Spiegel* emerged as a prominent German-language platform for disseminating official statements from the Russian Ministry of Defense, often presented in a favorable light. Röper incorporates misinformation and conspiracy theories into his translated reports. The importance of Röper's publication for Russia is illustrated by his regular appearances on Russian television.

Röper's role took on a new dimension on 2 June, 2022 with his participation in the conference of the Civic Chamber of the Russian Federation on the alleged bioweapons program in Ukraine – a “panel of experts” from the fields of politics, law, science and media. This meeting was used to repeat and compile statements and details related to the conspiracy narrative of the alleged Ukrainian biological weapons laboratory, as the Russian-language website *Berliner Telegraph* reported (Naidionova 2022). The conference had a clear objective: to present the most important “facts” on this topic and to spread this information to the public. The deputy chairman of the

3 Status June 2022

4 Status June 10, 2022

chamber himself spoke of “propaganda – in the positive sense of the word” (Public Chamber of the Russian Federation 2022), arguing that media and law enforcement needed to be educated on this matter.

This example shows the dedication of the Russian government to the narrative and its attempts to intensify the mechanisms that support it. In addition to Röper, self-declared media representatives from other countries were also present at the conference, including American John Mark Dougan, who resides in Russia. Dougan, a former police officer and soldier who now identifies as a journalist, published an article on the bioweapon lab narrative on his website in March 2022 (Dougan 2022).

Finally, in July 2023, Röper declared in his blog that he was now officially co-financed by Russian state television RT (Röper 2023). The Russian Federation has been actively attempting to influence and enhance the polarizing discourse in Germany in a manner advantageous to it. Germany’s domestic intelligence agency, the Federal Office for the Protection of the Constitution, sees this as a clear strategy: Russia employs internet channels such as Röper’s blog for this purpose. They “deliberately disseminate narratives in alignment with the interests of the Russian leadership and obfuscate their activities by presenting themselves as an ‘autonomous, non-profit organization’ or as a medium with a ‘different perspective’, thereby attempting to portray themselves as operating ‘openly and fairly’” (BMI 2022).

Data Collection on Social Media Platforms

The analysis of social media communication on the narrative was conducted using the keyword-based approach to the collecting posts between February 1, 2022 and March 31, 2023. These posts were collected from four social media platforms: Telegram, Twitter, Facebook, and Instagram. The selection of platforms was influenced by several factors, including the general distribution of Facebook and Instagram in Germany (ARD/ZDF-Onlinestudie 2022). Twitter was included due to its significance as a news-driven platform. Telegram was deemed relevant because it is the platform of choice in Germany for actors who want to avoid content moderation by other platform operators, and it has a strong Russian user base.

For Twitter, the Hans Bredow Institute/Leibniz Institute for Media Research began collecting data immediately after the start of the Russian attack in February 2022. The data from the remaining three platforms was subsequently gathered. It should be noted that the posts that may have already been deleted or removed at the time of data collection were not included in the recorded data set. The monitoring tool *CrowdTangle*, provided by Meta (which has since been discontinued), was utilized for Instagram and Facebook. For Telegram, the scraping was based on a snowball list of German-language channels with a wide reach.

The postings were selected based on the following criteria: a) address bioweapons research; b) have a substantive connection with Ukraine; c) German language, if possible.

The following query was used for this purpose: (*"biolab OR "biowaffen-labor" OR "biowaffen labor" OR bio-labor OR "bio labor" OR "biowaffen" OR "biologische forschungseinrichtung") AND Ukraine"*)

Following a pretest, the query was narrowed down to keep the number of false positives as low as possible. Where possible, the platform's language coding was also used to filter out non-German postings.

The keywords are inadequate for interpreting the contents of posts. For example, the data sets also contain postings on reporting by traditional media and fact checks on the topic. In the next step, disinformation narratives and actors were examined individually based on particularly popular postings and URLs.

Observations on Different Social Media Platforms

The vast majority of the 24,334 social media posts originated from Twitter (64.15 percent) and Telegram (33.57 percent). Only 2.16 percent of the posts originated from Facebook, and an even smaller percentage (0.14 percent) came from Instagram. The posts originated from over 7000 distinguishable user accounts. Again, Twitter accounts constitute the majority (83.57 percent). The greater number of Twitter posts compared to the other platforms can be attributed, at least in part, to how the platform functions and how the data is available. In contrast to Instagram, Twitter (now X) is a more text-oriented platform, resulting in a high density of posts and an intense exchange. The tweets that are replies to the posts by others were also recorded, whereas comments on the posts constitute a separate category on Facebook and Instagram.

The comparison of the platforms shows that the ratio of posts to accounts on Telegram is more than three times higher than those on Twitter, with an average of 9.29 posts per account. This finding can be interpreted as evidence that Telegram accounts in the data set were more intensively engaged in the topic of "biolabs" than the accounts on the other platforms.

Twitter

Between February 1, 2022 and March 31, 2023, the keyword search collected a total of 15,611 Twitter posts. The graph illustrating the volume of posts over this time shows that the topic 'biolabs' was already present in February (*Figure 1*). There is a rapid increase, starting with the beginning of the Russian invasion on February 24, 2022, reaching a peak in tweet volume at the beginning of March. This development is almost parallel to the corresponding data from Telegram.

Figure 1: Posts volume over time per platform, weekly (February 1, 2022 - March 31, 2023)



At the time of data collection, only one of the platforms (Telegram) provided public data on the reach of individual posts. As an indicator of the potential resonance of a post, this study employed an alternative approach by examining the frequency with which other users actively shared the post within the respective platform (Facebook: shares, Telegram: forwards). For Twitter, both retweets and quotes of a post were included in the analysis.

The most shared post on Twitter (240 retweets and quotes) was one that sought to portray Ukraine in a negative light. The post referred to the country as a “cesspool of corruption” and “a hub for human trafficking”. The narrative of the alleged existence of bioweapons plays a relatively minor role in this post.

Table 1: The ten most shared posts on Twitter

username	RT + quotes	disinformation	category
vonGammCom	240	yes	Alternative media
AnonymCov2	169	yes	blocked
jaegerthomas2	165	no	Science
Starwalker999	69	yes	other
de_rt_com	68	yes	Alternative media
lugeration	50	no	activists
george_orwell3	40	yes	blocked
krassdiane	39	yes	blocked
SpiegelAnti	38	yes	Alternative media
CarloMasala1	38	no	Science

In total, seven of the ten most shared Twitter posts contain disinformation narratives. It should be noted that three of these disinformation posts were posted by accounts later removed by the respective platform. Two accounts can be classified as “alternative media”, including *Anti-Spiegel*. The sub-narrative regarding documents on biolabs allegedly removed from the website of the US Embassy in Kyiv after the Russian invasion belongs to the top ten posts. This includes a posting from the German-language channel of the Russian state media RT. In fact, the documents were no longer available on the server for some time and did not relate to biological weapons research (Gensing/Siggelkov 2022).

However, the opposing views are also represented, with three of the ten most frequently shared posts offering a critical analysis of the biolabs narrative or referencing the representative survey on the proliferation of conspiracy theories about the war in Ukraine. These posts originate from the accounts of two scientists and an activist critical of Russia who uses the moniker “Lying embassy of the Russian Federation”.

The cumulative sharing reach can be calculated by aggregating the shares of all posts associated with a given account. This metric reveals that the accounts with the highest cumulative sharing reach and minor fluctuations are mainly consistent with those that have disseminated the most shared tweets.

Telegram

In terms of the number of posts, Telegram is the second most popular social media platform, trailing only Twitter. The review of the most frequently shared posts (forwards) on Telegram revealed that these were shared significantly more than on Twitter and Facebook. The ten most shared posts on Telegram were shared 148.010 times in total, while on Facebook and Twitter, they were shared 3486 and 916 times, respectively. The Telegram posts were shared more than 2.4 million times. On Telegram, all top ten posts, according to the number of forwards, contain disinformation. In fact, all of the top 50 posts based on the forwards can be classified as transporting disinformation.

Additionally, the most shared Telegram post refers to drones that spread genetically modified insects and their pathogens. The second most shared post detailed purported contents of a phone conversation between Russian head of state Putin and former US President Donald Trump. According to this report, Russian soldiers had discovered and destroyed several trucks carrying deadly weapons from biolaboratories in Ukraine. The third most shared post reported on an alleged NATO bioweapons laboratory in an “armored bunker system” below the embattled Azovstal industrial complex in Mariupol; residents of the Ukrainian city are said to be abused as “guinea pigs” for bioweapons experiments. It was posted by the account “Neues

aus Russland” of Alina Lipp (April 10, 2022, 16.974 forwards). As evidence confirms, Lipp translated this post from another source.

Table 2: Telegram: The ten most shared posts

Username	forwards	disinformation
akasha_tv	23069	Yes
Qplusplus	17445	Yes
Neuesausrussland	16974	Yes
Qlobalchange	14652	Yes
alles_kommt_ans_licht	13621	Yes
Qbavaria	13209	Yes
Bioclandestine	12548	Yes
Qlobalchange	12521	Yes
Ddddoftziell	12179	Yes
Ddddoftziell	11792	Yes

Moreover, Lipp reached to the top 50 posts by forwards with another post. In this instance, she refers to a text by Röper reporting from the Russian-occupied Donetsk region in Ukraine about the existence of “US biolabs” and the activities of Western pharmaceutical companies in Ukraine (6624 forwards, the 39th place). The most successful post by Röper himself (*Anti-Spiegel*) is not included in the top 50, ranking at position 90 with 4318 shares.

In general, the most successful posts were published by accounts that are characterized by Russia-friendly content, media-sceptical statements and the promotion of conspiracy narratives. Some channels can be classified as belonging to the QAnon spectrum based on their names. While some label their content as alternative media, many are primarily limited to reposting or translating content from third parties. The Telegram accounts affiliated with news media or other entities are absent from the top 50 posts, according to the forwards. The distribution of cumulative shares by the forwards per account also exhibits a similar pattern, with Lipp, Röper and Eva Hermann ranking among the top ten.

Facebook

A total of 526 posts on the topic were collected from Facebook between February 1, 2022 and March 31, 2023. These posts can be differentiated according to the account

type. Most of the posts (300) originated from 204 public pages. 224 posts were made by accounts in 150 different discussion groups.⁵ Two posts were published by verified personal profiles.

The first post was made on February 25, 2022, at the outset of the Russian invasion. This was significantly later than on Telegram and Twitter. As with Twitter and Telegram, the posts markedly increased from March 8, 2022 until the peak on March 11, 2022. This tendency coincides with Carlson's TV segments, Nuland's appearance in the Senate and the UN Security Council session (Figure 1).

The most widely disseminated post during the period was from an account named *Captain Futura* whose owner presents himself as a graphic artist from Hamburg who regularly comments on socio-political issues. His post, shared 415 times, offers a general criticism of Russia's policies, warfare, and propaganda. In particular, he criticizes the Russian leadership's frequent references to alleged "American biolaboratories", which he sees as a possible indicator that Russia itself may be planning to use poison gas or biological weapons.

The content analysis of the ten most liked Facebook posts revealed that eight contained disinformation. Three of these posts originated from the page *Prüfe alles, glaube wenig, denke selbst* operated by an individual who describes himself as a journalist. However, the account's posts are typically limited to brief or non-commented text excerpts, summaries, or videos from other traditional or alternative media sources. In addition to this account, six of the ten most shared posts were posted by alternative media accounts.

A post from the official website of the Russian Embassy in Berlin is also among the ten most shared posts. The embassy states that criminal proceedings have been initiated due to the alleged development of biological weapons in Ukraine.⁶ One post was in a Facebook discussion group of Russia supporters who say they have been organizing annual "German-Russian Friendship and Peace Rides" since 2005.

Table 3: Facebook: The ten most shared posts

page/group	shares	disinfo	category
Captain Futura	415	no	Other
Prüfe alles, glaube wenig, denke selbst.	412	yes	Alternative media
Volksverpetzer	403	no	Journalism/Media
ExoMagazin.tv	395	yes	Alternative media
C-trojaner	366	yes	Alternative media

5 CrowdTangle only recorded the name of the group, not the individual accounts.

6 <https://www.facebook.com/148358141991151/posts/2080999725393640>

Prüfe alles, glaube wenig, denke selbst.	363	yes	Alternative media
Prüfe alles, glaube wenig, denke selbst.	349	yes	Alternative media
Freundschaftsfahrt Russland	159	yes	Activists
Russische Botschaft in Deutschland/ Посольство России в Германии	144	yes	Politics
exxpress.at	143	yes	Alternative media

The *Prüfe alles, glaube wenig, denke selbst* page displays the highest total number of shares per account. The German-language Facebook page of the Russian foreign broadcaster *RT* and the Facebook page of the Russian Embassy in Berlin are also included in the top ten by this metric.

Instagram

The observations regarding the posts collected on Instagram clearly differ from the data obtained from the other platforms. Only 35 posts were recorded using keyword selection. More than half of all posts (20) came from the accounts of (news) media, including public broadcasters *SRF News* from Switzerland (3 posts) and *Tagesschau* from Germany (2 posts).

As Instagram does not provide data on the number of shares per post, the ranking was based on the number of likes as a proxy for user approval. Of the twenty most liked posts, nineteen are from media outlets and contain news reports about the Russian accusations of alleged bioweapons in Ukraine. Furthermore, there is a notable disparity in user approval, as reflected in the number of likes. The two *Tagesschau* posts occupy the top two positions in the ranking, with 57.173 and 44.331 likes, respectively. These two posts account for over 60 percent of total likes. Considering this, no further analysis of the Instagram posts was relevant.

The dominance of news media on Instagram and a low total number of posts were also evident in another analysis conducted as part of the NOTORIOUS project. This study examined social media responses to the large-scale raid conducted by German investigators in December 2022, prompted by suspected plans to overthrow the federal government (Stegers/Ziock/Stöcker 2024). It remains unclear whether this result is due to the methods applied in both studies (recording of posts, not stories; no data on shares, keyword selection, subsequent data collection via Crowd-Tangle) or whether the respective topic is genuinely less prevalent on Instagram.

Frequently Shared URLS and Domains

A total of 11.179 posts (46 percent) of the 24.334 posts collected from all platforms were categorized as containing at least one link, for example, an active reference to another website. The data was adjusted by removing the URLs of embedded videos or photos in the Twitter posts that initially included them. The posting of such links serves a variety of purposes. They may be included to promote a specific post on one's website or domain, substantiate a claim made in the original post, or express criticism of the linked URL's content.

The most frequently referenced domain in the dataset was t.me (2468 times), which includes links to posts, groups or channels within the Telegram platform. Twitter follows at a considerable distance (1679 times). 1033 links referred to domain *anti-spiegel.ru*, therefore ranking as the third. In total, more than 1000 distinct posts are linked to Röper's blog. Apart from Telegram and Twitter, the 25 most frequently linked domains also include other social media, especially YouTube, but also less common publication platforms for personal content, such as Odysee and Rumble. These are used by the right-wing extremists and conspiracy believers, due to the less strict content moderation policies (Oswald 2022; House et al. 2021).

Ten of the 25 most frequently linked domains can be classified as "alternative media", including *Anti-Spiegel*, while just four represent legacy news media. Regarding its usage in Germany, Russian state media *RT.com* was also classified as alternative media for the purpose of this study. The alternative media outlets *Uncutnews* from Switzerland and *Report 24* and *Wochenblick* from Austria, which also have links to right-wing scene, according to Röttger/Echtermann/Eckert (2021), were also frequently linked. Only four of the top 25 domains originate from traditional journalistic outlets.

Table 4: Top 25 of the linked domains

Domain	count	distinct posts	category
t.me	2468	1451	Social media
twitter.com	1679	1463	Social media
anti-spiegel.ru	1033	1006	Alternative media
youtube.com /youtu.be	680	647	Social media
archive.org	478	74	Other
rt.com	440	431	Alternative media
uncutnews.ch	367	323	Alternative media
report24.news	222	218	Alternative media

wochenblick.at	218	206	Alternative media
rumble.com	205	160	Social media
odysee.com	201	183	Social media
thegatewaypundit.com	182	169	Alternative media
substack.com	151	144	Social media
focus.de	150	148	Journalism/Media
n-tv.de	142	134	Journalism/Media
usembassy.gov	137	105	Politics
nypost.com	120	117	Journalism/Media
thenationalpulse.com	100	98	Alternative media
tkp.at	97	97	Alternative media
tagesschau.de	96	90	Journalism/Media
locals.com	95	88	Social media
apolut.net	94	85	Alternative media
bit.ly	91	74	Other
journalistenwatch.com	89	88	Alternative media

Limitations

It is often impossible to determine whose personality is behind a specific account or who posted a particular message. Interactions may also be driven by inauthentic or automated (bot) accounts, which cannot be properly detected without access to the platform operators' internal data.

Moreover, this qualitative research work cannot fully clarify the origin or the first mention of specific narratives. This task would require a systematic recording of all the platforms used by the various actors.

The qualitative research indicates that forwarding posts to other Telegram groups significantly increases the views. However, it is not possible to track the composition or development of the following or which other accounts this following also follows. Ultimately, tools like *Telemetr.io* can only be used to track the development of the pure number of followers.

As previously stated, additional constraints apply regarding the selection of platforms and the specific data that could be extracted from each. Additionally, the keyword-based approach may have constrained the scope of the research. The keywords utilized for the research were selected without a systematic, quantitative and preliminary investigation. Consequently, it is certainly plausible that pertinent postings

or reports on this narrative may have been overlooked. Similarly, the posts that had already been blocked or removed by the author or the platform operator at the time of data collection were not included. Furthermore, the precise functioning of Telegram's keyword search remains uncertain. Some posts did not appear in the list of search results if the keyword appeared only as part of another word within a post.

Conclusions

The narrative surrounding the purported secret weapons laboratories comprises a series of untrue and exaggerated claims, distorted facts, and documents taken out of context or falsified. This observation is consistent with the typical characteristics of disinformation. The primary narrative is continually diversified and augmented with additional details, posing additional challenges for detailed fact-checking efforts.

In contrast to other instances of misinformation and disinformation, whose origin is often unclear, the Russian leadership is a discernible actor that officially represents the narrative, supports it with purported evidence, and seeks to establish it internationally. In Germany, the narrative is primarily disseminated through pro-Russian social media channels and personalities, with other users actively sharing it. Röper and Lipp are among the leading bloggers who disseminate this narrative and operate within the alternative media sphere. According to this analysis, the biolabs narrative was shared particularly widely, more than 2.4 million times in total, via social media posts on the Telegram platform by channels associated with conspiracy ideologies. Analyzing which individual posts were shared the most, the prevalence of disinformation was especially striking among those obtained from Telegram. However, most of the top 10 shared posts on Twitter and Facebook contained disinformation, too.

Unlike in the USA, where presenter Tucker Carlson picked up the narrative in multiple segments of his Fox News TV show, which generated a social media echo, no similar high-reach event could be observed in German media based on this analysis. The traditional German media addressed the narrative in news reporting only to a very limited extent, either as an illustration of Russian justification propaganda or in the context of explicit fact-checking. The presentation of the narrative by AfD parliamentarian Steffen Kotré in the German Bundestag is remarkable, yet the event did not receive prominent attention in the social media data set.

Given the considerable approval rating for the narrative among the German population, subsequent research could examine the efficacy of such narratives when disseminated through social media and investigate whether other pertinent dissemination channels have remained unnoticed in this study.

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