

# Unhealthy communication on health: Discursive and ecosystemic features of opinion cumulation in the anti-vaccination discourse on Russian Telegram<sup>1</sup>

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## Abstract

With the advent of social networking sites, the so-called health dissidents have received unprecedented possibilities for online community building and spreading their views. In particular, the combination of social uncertainty and the platform affordances that bordered antivaxxer communities from outer communication led to formation of (allegedly) closed-up online milieus where vaccination denialists' ('antivaxxers') irrational views resided and grew.

The deliberative counter-productivity of such communities needs to be investigated. In this respect, Russia is a special case, characterized by low trust in the public sphere as a ground for the spread of conspiracy theories, and by 'mixed' trust to the healthcare system, thanks to highly-reputable Soviet-time medical services but negative attitudes to the current ones. We look at @anti\_covid21, the largest Russian pandemic antivaxxer community on Telegram, to explore by what means destructive opinions accumulate in this community. We investigate the combination of three discursive elements usually studied separately in research on COVID-19 denialism: 1) distrust, including its addressees, and interconnectedness of the destructive features of the antivaxxer discourse, namely distrust, aggression, and conspiracy thinking; 2) the patterns of micro-opinion cumulation that lead to general growth of distrust; 3) content

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sourcing that supports ‘the discourse of distrust.’ We follow the conceptual framework of cumulative deliberation; it implies that micro-acts of opinionated participation matter both *en masse* and in deliberative micro-patterns. Our sample includes all posts and comments from *@anti\_covid21* of six months of 2021, with 1,185 posts and 282,000+ comments altogether.

Out of this sample, three datasets were formed. In particular, Dataset 1 was received by semi-automatedly reducing from 282,000+ to 12,188+ texts and then coded by 28 coders. Dataset 2 comprised comment threads of three most active days in terms of commenting, of 411 comments altogether, that were coded as continuous samples by 6 additional coders. Dataset 3 consisted of the 1,185 posts in which the available attracted content (text, photo, or video) was coded by 4 coders on its formal belonging to certain media types and countries of origin.

Our results show that *@anti\_covid21* was a reactive community centered around one-sided anti-vaccination content that left no room for multi-view discussing. Content sourcing united user-generated evidence, criticized mainstream media pieces, and publications of blurred origin of many countries, making the community open to world experience but of highly biased nature. The ‘discourse of distrust’ that emerged in response was politicized, distrust to national and global actors potentially being a mediator to vaccine distrust. We identified two stable micro-patterns of accumulation of distrust triggered by both the published content and user behavior. Altogether, our conclusions differ from other countries’ experiences and call for pre-emptive resolution of the multi-faceted issue of social distrust before new health crises erupt.

## Keywords

COVID-19, anti-vaccination, distrust, conspiracy theory, information sourcing, cumulative deliberation, Russia, Telegram.

## Introduction

With the advent of social networking sites, health dissidents have received unprecedented possibilities for online community building, creation of echo-chamber-like communication milieus, and spreading their views beyond those communities and milieus. Dissident and often highly dangerous views of disease denialists and adepts of alternative treatment of deadly diseases have found additional chances for cumulation online (Jamison et al., 2020; Mari et al., 2021). In particular, vaccination denialists (often called ‘antivaxxers’; Benoit, & Mauldin, 2021) have found multiple opportunities for aggregation and

cumulation of their opinions during the COVID-19 pandemic when the socially suspicious and politically conspiracist views were on the rise. The pandemic has brought along an unprecedented amount of social fear and uncertainty, which spurred the spread of distrust to elites and their rationality (Bodrunova, & Nepiyushchikh, 2022), as well as an outburst of conspiracy theories around the world much beyond the health denialist communities.

The combination of social fear and uncertainty, on one hand, and of the platform affordances that could border fearful and conspiracist communities from more rational communication creating echo chambers of distrust, on the other, has led to formation of closed-up online communities/milieus where non-rational views, including conspiracy theories and denialist argumentation, reside, accumulate, grow, and spread from there to the outer Internet. This was especially true for technically arranged communities on Telegram where user groups of thousands of users could be platformically delineated from the outer, more pluralist and rational discourse.

Several studies have explored the content in COVID-19 denialist and antivaxxer communities in order to see how distrustful discourse works. However, major multi-platform research papers are dedicated to ‘openspace’ platforms where polar views have all chances to meet (as an example, see Puri et al., 2020, on eight platforms, all ‘openspace’-like). Some other studies have tried to reconstruct the ecosystems of information sources that such communities deploy to support their views, both for the pandemic and beyond it, including the radical political communities in Europe. However, it is rare enough that research focuses on interlinkages between the most dysfunctional elements of dissident discourses (distrust, incivility, and conspiratorial mindset) and the ecosystemic features of platforms and external content. In both cases, though, distrust is what critically mediates suspicion to vaccination and, finally, non-use of vaccines. Our main goal, ergo, is to explore how distrust accumulates and works in multiple forms within a COVID-denialist community.

This is why we unite these two research goals, linking the connections between aggression, distrust, and conspiracy thinking in content of a COVID-denialist community within the patterns of distrust to exploring the information sourcing that supports the distrust. By it, we aim at reconstructing the major discursive elements of the unhealthy communication on health issues, as we see exploring them individually as insufficient for the overarching understanding of how the anti-vaccination discourse constructs alternative visions of the present and the future of a particular health issue. As for now, though, practically no research is dedicated to analyzing the addressees of social distrust during the

pandemic; we add this element to the analysis of patterns of distrustful discourse.

We also focus on patterns of distrust accumulation in time that we see as crucial for formation of stable distrust within a conspiracist community. So far, this has not been a focus of attention in research on conspiracy theories-related communication online. We are guided by the conceptual framework of cumulative deliberation that sees cumulative patterns as primary for opinion formation but largely under-researched. We focus on two levels of opinion formation – namely, on the levels of the dataset and of a single post, in order to trace how distrust relates to other discursive features that, according to earlier research, spur the intensity of discussions and the speed of opinion formation. We also try to explore how the micro-patterns of the rise of distrust work within the comments of one post, thus maintaining stably high levels of distrust from post to post. In such maintenance, external content is also used, so we explore the provenance of the content dragged into the community from external sources and qualitatively assess its interpretation by the @*anti\_covid21* community members, thus expanding previous research on ecosystems of conspiracist sources of content.

Another major gap is that, today, antivaxxer communities are rarely studied beyond the English-language countries/datasets; some French-, Spanish-, Chinese-language cases that exist have been studied in a very similar way, pointing out to the discursive peculiarities of international conspiracies in the local contexts. We would like to expand our study to Russia, a special case in terms of acceptance of vaccination by the society and the societal trust patterns. Thus, the country's public sphere is characterized by low trust in general, and the low trust to political institutions and media in particular (Deloitte, 2020; Edelman, 2021). Moreover, we have earlier discovered a 'triangle of mistrust' between political powers, media, and citizens that was characteristic of the Russian society before 2022 (Bodrunova, 2021) and intensified during the pandemic. This created favorable conditions for the rocketing rise of public distrust to vaccines, as they were endorsed by the authorities, both local and national, mostly via state-affiliated media and governmental portals. At the same time, Russian healthcare services have experienced mixed attitudes from the population. The reputation of the Soviet medical services, mostly favorable in the older populational strata, has much changed in the post-Soviet times, with the rise of private healthcare that has brought social inequality into healthcare, shortages of financing of public medical service, and perceived lowering of quality of public medicine. One more factor of the Russian context is that, surprisingly, international conspiracy theories seemed to be less

popular in Russia, and international actors' roles in the development of the pandemic were mostly discussed within the framework of the 'vaccine wars' and mutual prohibition of vaccines developed in Russia and Europe/the USA. This distinguishes the situation in Russia from other European countries and poses a question on what actors or industries were most responsible for the distrust to vaccination; this is why we, first of all, pose the research question on the direction of distrust. Then, we add to this the research questions on the patterns of distrust, and then the one on the information sourcing.

Thus, taking Russia as a case both peculiar (in configuration of social distrust) and typical (in terms of the spread of anti-vaccination dissent and formation of antivaxxer communities), we assess the 282,000+ comments in the largest antivaxxer community on Russian Telegram (and, very likely, on the Russian-speaking Internet), namely *@anti\_covid21*. The dataset comprised all the posts, comments, and their metadata (authorship, day and time of publication, belonging to a discussion thread) in January to July 2021. After pre-reading, formation of the 'distrust vocabulary', and manual randomized quantitative-qualitative content analysis (coding as suggested by Krippendorff, 2018), the main dataset of coded comments (Dataset 1) was reduced to 12,188+ comments. Two more datasets were formed in order to answer the research questions posed, namely Dataset 2 with the comment threads from the three most active days coded continuously (411 comments) and Dataset 3 of the posts coded for the 'ecosystemic' belonging of the attracted external content found in them (1,185 posts). For further data analysis, we employed both qualitative and quantitative methods, including correlational analysis, structural and discursive analysis of threads, and qualitative interpretation in classifying information sources and their perception by the antivaxxer community.

## **Literature review:**

### **Cumulative opinions in unhealthy communities**

#### *Cumulative deliberation and its implications for unhealthy communication*

Since 2015, several scholars have posed a conceptual question on how opinions form online (Porten-Che , & Eilders, 2015; Pfetsch, 2018; Bodrunova, Blekanov, & Maksimov, 2021; Bodrunova, 2023), in particular – what happens in the reality of online discussions instead of the ideal deliberative communication pre-seen by classic deliberative theory (Habermas, 1992/1996, 2006). As one of the potential responses to this question, we have suggested the conceptual framework of cumulative deliberation. It, i.a., implies that communication online does not follow the patterns of deliberative discussion, and opinion

formation there is primarily cumulative. In its turn, the cumulative nature of online deliberation implies that cumulative patterns of opinion formation need to be thoroughly studied, as they are largely responsible for the current structure of opinions, including polarization and echo chambering (Bodrunova et al., 2019).

As it is known from influential previous works, cumulative patterns of opinion formation may also be ‘enriched’ when participants of communication spend some time within a certain configuration of people interested in the same issue (Fishkin, & Luskin, 2005). Such enrichment, in theory, leads to more multi-sided and considerate opinion formation. However, the well-known works by Fishkin and Laskin focus on communication in conditions of technically open user interaction and do not check whether enrichment by data from incoming sources within closed-up milieus leads to formation of pluralist views – or, rather, as one may presuppose, it is more likely to reinforce the views with selective information supply if the community in question is a closed-up milieu with already echo-chambered attitudes.

This poses a question on how cumulative patterns of opinion formation work in closed-up milieus constantly ‘enriched’ by the moderators who may supply one-sided, rather than polar or variable, information for discussion. This is exactly how Telegram communities work (Urman, & Katz, 2022), including those of antivaxxers (Schlette et al., 2022).

Additionally, opinion cumulation can exist on various levels – that is, opinions may accumulate or dissipate in time throughout the discussion; they may have daily cycles; they may also grow within micro-patterns (e.g., micro-spirals of silence; see Bodrunova, Blekanov, & Maksimov, 2021) under individual posts. Taken together, this complex opinion dynamics is additionally shaped by endogenous (discursive) and exogenous (affordance-related and contextual) factors. Of them, what lies at the heart of anti-vaccination opinion cumulation is, undoubtedly, distrust.

#### *Distrust as both an exogenous and an endogenous factor in unhealthy opinion cumulation*

The COVID-19 has been called ‘an epidemic of uncertainty’ (Pertwee, Simas, & Larson, 2022). At least partly, prejudice against vaccination may have rational explanations. First, there is perfectly rational weighting of personal risks against personal and populational benefits, both often non-evident and dependent upon belief into the mechanisms of preventive medicine. Rationally, hesitancy may naturally rocket when the vaccines are created in emergency circumstances.

Assessment of personal risks, however, may get significantly distorted via mediatization of the public discourse around vaccination. Media privileges negative content due to structural biases in content selection, professional understanding of journalistic mission, and commercial benefits that negativity brings (McQuail, 2005). Additionally, people themselves tend to consume content selectively, in consistence with both the ‘confirmation bias’ hypothesis (Oswald, & Grosjean, 2004) and the social judgment theory (Nyhan, & Reifler, 2010), which state that people tend to choose information that corresponds to the beliefs-based core of their identity, rejecting opposite views.

However, it is much less the short vaccine approval notice or other rational reasons that foster vaccine hesitancy and make social network users gather in discussion groups of conspiratorial nature. In many more cases, it is the general levels of situational uncertainty (Heiss et al., 2021), eternal insecurity, and deep lack of trust in key institutions involved in the production, supply, and distribution of vaccines (Pertwee, Simas, & Larson, 2022) – among them, in the authorities, wider ruling elites, national healthcare systems, World Health Organization (WHO), pharmaceutical giants, and international businesses and business leaders. Even before the pandemic, studies had found connections between distrust to political parties (Kennedy, 2019) and individual politicians (Baumgaertner, Carlisle, & Justwan, 2018), on one hand, and distrust to vaccination, on the other. A recent scoping review (Lun et al., 2022) on barriers and facilitators of vaccine acceptance divides them all into interpersonal, institutional, and community- and policy-related, showing that, on the institutional level, distrust to authorities and healthcare systems is called key in a large number of works on COVID-denialism. In one work, mistrust to fellow citizens is also mentioned. However, in this review, most of the reviewed papers were based on surveys, and none on social media analysis. Online discursive practices of COVID-19 antivaxxers have been so far studied less than one would expect; also, available studies focus on national cases in European, English-speaking, and Spanish-speaking countries, and only a small number attempted to map the addressees of distrust. In case studies of online discourse, several addressees of distrust have shown up, only partly mirroring the picture drawn by surveys. Thus, just recently, Paraskeva (2022) has assessed anti-vaccination discourse in Cyprus for most frequent topics and mentioned actors, discovering that governmental actors much outperformed all other actors, but did not actually map *all* the addressees of user distrust. In Turkey, a link between distrust to doctors and the anti-vaccination ideas in general was discovered (Eslen-Ziya, & Pehlivanli, 2022), which complements the knowledge

on overall trust in healthcare being in direct proportional relations to vaccine confidence, moderated by the level of social consensus / polarization (Sturgis, Brunton-Smith, & Jackson, 2021). Other addressees of distrust are hybrid and online-only media, often seen as actors of structural oppression along with governmental institutions (Smith, & Graham, 2019; Filkuková et al., 2021). Besides that, in seven European countries, strong antisemitic-colored distrust was expressed within conspiracist posting on social media (Karakoulaki, & Dess, 2021). No systemic mapping, though, has been done so far.

While wider social distrust is an exogenous factor external to the antivaxxer talk, the distrust expressed by users may also be seen as a discursive feature important for other users and overall opinion cumulation. Elsewhere, distrustful user talk showed up as subversive – it ‘both mirrored authoritative discourses and subverted official advice, by appealing to scientific language and “alternative” evidence’ (Bergman et al., 2019: 1161). Subversive COVID-denialist discourses are, again, often accompanied by aggression: Inability of rationally proving a position and subconscious realization of flawed logic makes people stray into packs and defend their positions via incivility rather than rational argumentation (Wu, Lyu, & Luo, 2021). As our previous study shows (Bodrunova et al., 2021), aggression may perform both constructive and destructive functions in online deliberation. Thus, aggression may be politicized and politically polarized; it serves for demarcating ‘us/them’ and discrediting the opposing camp, negatively contextualizing it, and linking it to social problems. But it may also fuel discussions and involve new commenters.

Another infamous discursive feature of the COVID-denialist and antivaxxer discourse, and an extreme priming manifestation of contextual distrust, is the presence of conspiracy theories (Butter, 2020). During the pandemic, ‘the sudden lack of control and increased uncertainty may have made people particularly vulnerable to conspiracy theories’ as ‘explanations for events that posit powerful actors are working together in secret to achieve self serving or malicious goals’ (Dow et al., 2021: 2). In the pandemic, conspiracy thinking united suspicions towards the ‘secret cliques that rule the world’ with misinformation on the origin and treatment of disease, and deep fears of personal and social-group nature. Under the pressure of uncertainty, as no close escape is foreseen, in contradiction to the appraisal theory that expects people to get engaged in problem-focused coping (including active and rational information seeking), users adopt dysfunctional practices engaging with irrational explanations (Heiss et al., 2021).

Conspiracy theories are narratives of a specific sort. The narrative frameworks fueling conspiracy stories interpret complicated realities in a simplistic way that



fills in seemingly missing links in logical chains, such as, e.g., hidden powers that secretly rule social and political processes. ‘You can’t just factcheck, label, or remove a [conspiracy] narrative’ (Wardle, & Singerman, 2021). As Bertin and colleagues (2020) show, none of the COVID-related conspiracy theories discovered by them discussed exact dangers caused by vaccines but rather addressed political or general medical issues. This may mean that conspiratorial mind has been shaped by factors external to the virus and disease. Moreover, conspiracy theories, despite their global character, are contextual, as fears and insecurities that provoke them are context-bound.

The relations between the three features of the antivaxxer discourse – open distrust, aggression, and conspiracy thinking – have been significantly understudied; though it is these three discursive features that are capable of forming the *patterns* of anti-vaxxer discourse, including how they shape each other. Thus, surveys show that conspiracy theories may foster anti-vaccination inclinations mostly based on distrust (Bertin et al., 2020). Conspiracies also tend to affect perception of governmental anti-COVID measures as too strict, thus adding to institutional distrust (Rieger, & Wang, 2022). Growth of conspiracy thinking has also been linked to perceptions of high threat in general (Heiss et al., 2021), as well as to refusal to trust science in general or biomedicine in particular (Imhoff, & Lamberty, 2020). However, in social media talk, distrust and conspiracism demonstrate mixed evidence in terms of their inter-relatedness. As shown above, a rare cross-country study (Karakoulaki, & Dessì, 2021) has found antisemitic conspiracies in the European COVID-19 dissident discourse, showing interconnections between anti-vaccination conspiracy theories and antisemitism as distrust to an ethnic group. We could identify one paper on Cyprus where distrust to institutions was a strong predictor for conspiratorial thinking in social media data (Bantimaroudis, 2021). On the contrary, though, a small-sample study of vaccine denialism on Facebook<sup>3</sup> showed that distrust and conspiracy tended to belong to different users (Hoffman et al., 2019), which is counterintuitive and needs further investigation. An earlier Facebook<sup>4</sup> study on polio (Orr, Baram-Tsabari, Landsman, 2016) also divided the vaccine-skeptical comments into divergent distrust-based and conspiracist groups. Another type of inter-relations may emerge when both conspiracies and distrust are mediated by a third factor: Thus, Jiang and colleagues (2021) have shown that the number of followers and ideology combined are mediating factors for both conspiratorial thinking and distrust to medical professionals. Fuchs (2021)

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<sup>3</sup> Belongs to Meta company, banned on the territory of the Russian Federation.

<sup>4</sup> Ibit.

states that, on ‘openspace’ social media like Facebook<sup>5</sup> or Twitter, conspiracy theories may themselves be countered by a range of discursive means, from satire and humor to friend/foe talk, verbal attacks, or violent threats; this is also supported by empirical research (Enders et al., 2021). However, it is yet unclear how conspiracy thinking relates to aggressive behavior in antivaxxer discussions. It is logical to suggest that aggression must be linked to spreading conspiracy theories, as both aggression and conspiracy thinking are types of defensive behavior. Both aggression and distrust may have heavy linkage to conspiracy thinking, but this remains underexplored.

*The role of information ecosystems in fostering dysfunctional and anti-political discourses*

One more structural feature of a strong dissident public is the information ecosystem that supports it, providing curated information flows aimed at proving dysfunctional views via certain types of evidence. Thus, Herasimenka and colleagues (2023: 134) note that ‘digital infrastructures are at least as important as the message, especially for issue-oriented campaigning that goes against scientific consensus and public health guidelines.’

The ‘spatial turn’ in public sphere studies (Waldherr, Klinger, & Pfetsch, 2021) has underlined connectedness of online publics to wider information ecologies. ‘Geographies’ of networked support have already been shown to play important roles in the growth of dissident communities and their communication, e.g., in electoral communication of far-right and radical parties in Europe. In particular, Heft, Reinhardt, and Pfetsch (2022: 2) have shown that the level of openness of communicative ecologies of right parties depended on their systemic status: The parties in power tended to open up their communication to the national media systems and national discursive competition, while those in opposition composed self-referential campaign ecologies. For an antivaxxer community, radical enough in its anti-vaccination and COVID-denialist views and oppositional to rational and state-promoted attitudes to the disease and vaccination, we would expect a self-referential ecosystem of conspiracist and denialist sources, similarly closed-up and supportive for one-sided views. We find a description of a similar self-referential ecosystem in Kim & Kim (2023): On Facebook<sup>6</sup>, they claim, QAnon pages and groups increasingly relied on internal information sources within the platform, becoming less and less dependent

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<sup>5</sup> Belongs to Meta company, banned on the territory of the Russian Federation.

<sup>6</sup> Ibid.

on content beyond Facebook<sup>7</sup>. The reason for this might be that the posts with Facebook<sup>8</sup> links attracted significantly more shares and comments than other posts by the movement – a sign of formation of an autarchic community with a self-supportive cumulative opinion.

Conventional wisdom would say that such dissident ecosystems contain misinformation, radical opinions, unverified witness, and other types of information critically different from legacy media content. Participants of irrational discussions are expected to use noncredible sources or avoid providing sources whatsoever. However, antivaxxer communities are far from being that simplistic. On the English language Facebook<sup>9</sup>, ‘anti-vaccine groups had increasingly more relied on relatively credible sources while their posts using low credibility sources were less than 2% and recently decreasing’ (Kim, & Kim, 2021: 1). However, credible sources combined with the antivaxxers’ ‘exclusive sources’ (ibid); they also used sources representing more conservative or far-right political views than those of the pro-vaccine groups. This echoes research on the Querdenken movement, a social movement behind most of the German pandemic protests. Thus, Zehring and Domahidi (2023: 1) showed that Telegram-based Querdenken communities ‘preferentially forwarded content from far-right and QAnon communities, while far-right and conspiracy theorist alternative media channels act[ed] as content distributors for the movement.’

## Research questions

Thus, uniting the discursive and ecosystemic features of the antivaxxer opinion cumulation in one research design, we pose the following research questions:

**RQ1.** How can distrust expressed in *@anti\_covid21* be mapped? Which actors of the pandemic are the most distrusted?

**RQ2.** Are there any patterns of distrust attachment and/or co-occurrence of destructive speech features in the user comments?

**RQ3.** Are there any patterns of distrust accumulation in time? On which level do they work?

**RQ4.** How is the ecosystem of information sources constructed in *@anti\_covid21*?

**RQ4.1.** How can the sources of reposted information be mapped in terms of geography?

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<sup>7</sup> Belongs to Meta company, banned on the territory of the Russian Federation.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

**RQ4.2.** How can they be mapped in terms of typology, format, and belonging to the conventional media systems? How are sources of various origins interpreted by the moderators and commenters in *@anti\_covid21*?

**RQ5.** How do the elements of the ecosystem of distrust, namely the discursive patterns and the information sourcing, work together in *@anti\_covid21*? What is their combined effect?

## Methods

### *The research design*

In accordance with the research questions, the design of our study implies step-by-step assessment of:

(1) the addressees of distrust which allowed for mapping of the most distrusted perceived actors of the pandemic;

(2) the discursive patterns of inter-relation between discursive features (active distrust, aggression, and conspiracy thinking) in terms of their co-occurrence and spurring each other;

(3) the patterns of opinion cumulation in time, including accumulation of destructive content features and their co-accumulation;

(4) the ecosystem of information sources in the attracted external content in media-systemic and geographical terms;

(5) the combined effect of the discursive and ‘ecosystemic’ features of the destructive discourse in the community.

### *Data collection and the datasets*

With the help of our web crawler (Bodrunova, Litvinenko, & Blekanov, 2017) reconfigured for Telegram, we collected all the posts and comments from *@anti\_covid* as of 2021. However, as much of the data did not suit our purposes (posts contained less than five comments each), we have selected a time span of six months, January to June 2021, which brought 282,000+ user comments with 1,185 their respective posts and metadata (dates of posting/commenting, authors’ nicknames, types of external content in the posts, and links to them).

### *Data pre-processing*

To form the datasets, we have first applied a dimensionality reduction procedure and then coded the data according to variables set for RQ1 to RQ4. To reduce the volume of the data, we have read 20,000+ comments, created a vocabulary on distrust, verbal incivility, and conspiracy theories that included 620 tokens (stems and stem bigrams), and applied it to the initial dataset of

comments. As a result, the dataset has been reduced to 82,000+ comments (and their respective posts) that contained at least one word from the vocabulary. This made 29% of the initial data.

#### *Data coding*

To answer RQ1, RQ2, RQ3, and RQ5, on the level of a comment, each sixth comment was coded via randomized coding as suggested in Krippendorff (2018), resulting in more than 13,200 coded comments. The coding was performed for four variables (presence of distrust, addressee of distrust, presence of aggression, and presence of conspiracy theories). A team of 28 coders have been tested for inter-coder reliability, reaching the minimum average Randolph kappa reliability of 0.6 (of -1 to 1) in groups of four coders each. After post-coding cleaning, 12,188 comments remained (Dataset 1).

To tackle RQ4 and RQ5, on the level of a single post, we have also coded solid daily samples for the three most active days (411 comments altogether; Dataset 2), as they contained many long threads of comments.

To answer RQ5, we have taken posts as units of analysis (Dataset 3). We have detected the type of content shared in a given post and whether a hyperlink was available; due to Telegram's specific affordances, this was done in an automated way but demanded a lot of doublechecking, as many links were automatically substituted by Telegram to those leading to Telegram itself. We have employed 6 more coders (Randolph Kappa 0.7 the lowest) to code three 'ecosystemic' variables as suggested by Krippendorff (2018), namely the country of origin of shared content, belonging to legacy media / web 1.0 media (noting the media outlet), and belonging to user-generated content (noting the platform / social networking site).

#### *Data analysis*

For RQ1, based on the coding of the Dataset 1, we have simply designated the overall volume of distrust that various addressees gained in the user comments; we have also grouped the results in four domains that we have seen as dominant bearers of distrust.

For RQ2, we have used descriptive statistics (Spearman's rho correlations) detection of connection between the discursive features and the addressees of distrust.

For RQ3, we have employed structural analysis of coded threads from Dataset 2; our judgment was also informed by the incomplete but still long threads of Dataset 1. We have qualitatively assessed when exactly distrust, aggression,

and conspiracy thinking popped up in comment threads and whether the configurations of the three destructive features tended to repeat from thread to thread. We had to rely on qualitative judgment, as the data threads were not sufficiently long for Granger testing or any other statistical assessment; however, by juxtaposing dozens of coded threads, we have managed to detect repeated patterns that may, in future, be subjected to automated or semi-automated detection after machine learning if researchers collect and code enough trained data.

For RQ4, we have employed descriptive statistics based on coding of the Dataset 1 and interpretive reading of posts in accordance with coding of the information sources. Interpretive reading included assessment of semantics of the attracted external content and juxtaposition of the semantics to that of the surrounding text added by the community moderators. This allowed for detection of functions of the attracted content, as described in the Results.

For RQ5, we have summarized the results of RQ1 to RQ4, in order to underline the combined effect created by content attraction plus moderation and the users' reaction to this moderated content, especially via the destructive discourse features such as distrust, aggression, and conspiracist thinking.

## Results

**RQ1.** The discourse of distrust in our dataset was present in 45.4% of the coded comments of the Dataset 1 – that is, in nearly each second coded comment. As stated above, our data, was a vocabulary-based selection; however, the filtered-out comments were largely phatic; thus, the meaningful comments aggregated in Dataset 1 may be called ‘a discourse of distrust’ where each second utterance contains open distrust. 45.4% is somewhat lower than in our pilot study of the Dataset 1 (Bodrunova, & Nepiyushchikh, 2022), as the 2022 study was conducted on the most intense fragment of the discussion; but the figure is anyway high and tells, beside the rest, that our vocabulary-based search for destructive content was successful.

We have mapped the addressees of distrust (see *Figure 1*). We have also grouped the results into four domains – ‘healthcare’ (the virus/pandemic, vaccine, healthcare system, and WHO), ‘elites’ (the national powers and businesses, international actors, and police), ‘people’ (ordinary people and Jews), and ‘culture’ (media, celebrities, religion, scientists/experts, and others) – see *Figure 2*. We see that, expectedly, the vaccine itself is the most distrusted ‘actor’; however, the national authorities follow closely, mentioned in over 20% of the comments with distrust. The national authorities outperform

the healthcare system, international actors, and fellow citizens as objects of distrust and bear the main responsibility for the crisis in the antivaxxers' eyes. Among the distrusted actors, we find media (labeled 'fake' and 'bots', mostly unproven), celebrities who support vaccination, and traditional (and victimized in the recent Russian history) addressees of distrust, like Orthodox priests and Jews. However, national businesses are nearly absent in the data. Together with the absence of political parties among 'national power', this draws a picture of a distorted public sphere where national parties and businesses are so insignificant in decision-making that they evoke no criticism even from the antivaxxer communities; moreover, they are depicted in the user comments neither as protectors of people from executive authorities' arbitrary actions nor as articulators of popular hopes or fears.

Figure 1

Mapping the addressees of distrust

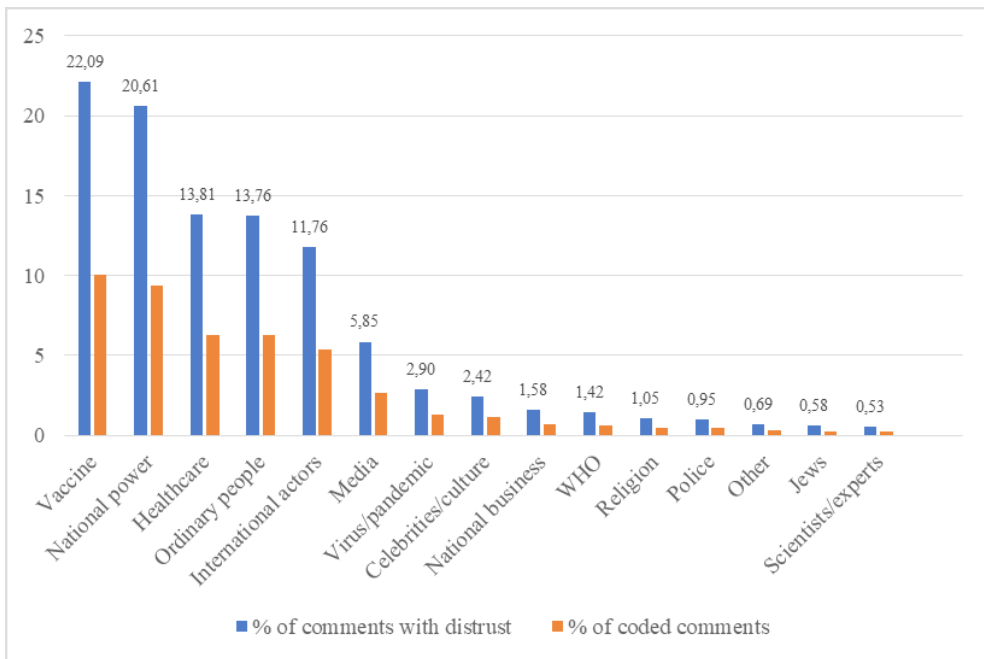
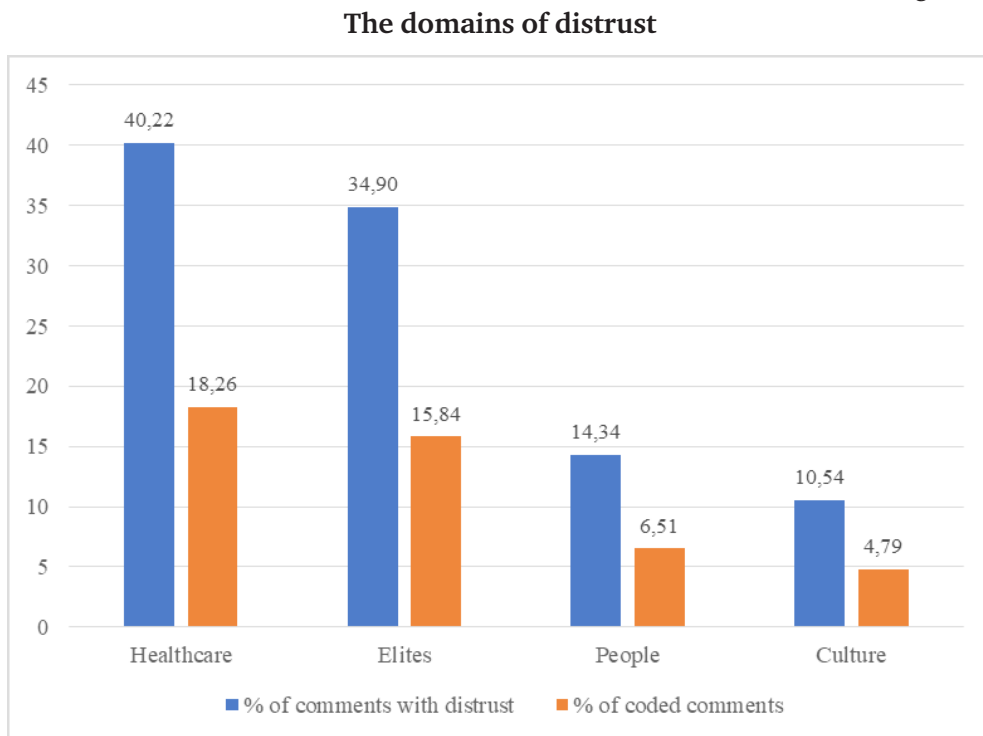


Figure 2



Interestingly, the political standing of the community does not correspond to the conventional view on polarization in the Russian society. Before the pandemic, the regime critics were described as well-educated, cosmopolitan, and liberal, while its supporters as more post-Soviet by values, less educated, and more involved in manual labor (Bodrunova, & Litvinenko, 2015; Berezuev, & Zvonaryova, 2019). However, in @anti\_covid21, we have run into a reverse picture: The antivaxxer community is politically similar to what we described as ‘angry citizens’/‘angry patriots’ in the 2010s (Bodrunova, Litvinenko, & Blekanov, 2017; Bodrunova et al., 2019) who mistrust nearly all the public actors, as well as fellow citizens, media, and social groups who irritate them, like immigrants or liberals:

*[I] don't trust social networks. Don't trust media. Don't trust the government. But I know I am not alone and the majority is like me.*

The picture of combined distrust to political, media, and healthcare actors not counterbalanced by trust to possible alternatives public actors (e.g., left



or right parties, public or private healthcare), corresponds to what we have earlier called ‘the triangle of mistrust’ (Bodrunova, 2021a). In the post-Soviet context of detachment between the powerful (from governments to police) and the ordinary citizens, the latter’s underlying distrust becomes highly multi-directional, spreading from fellow discussion participants to world powers, but is mainly directed to the national public sphere. International actors take lesser attention than expected, given the international reach of conspiracy theories. Transnational conspiracy narratives, like chemical trails, 5G networks, chipping, or spread of Morgellons disease via vaccination and wearing face masks, as well as Rockefellers and Bill Gates were mentioned; but the discontent directed to the national authorities and national healthcare was three times more intense. Thus, it was not (only) the conspiracy theories that guided distrust to vaccination; it was the ‘extended distrust’ to the main protagonists of the public sphere and healthcare.

**RQ2.** More complicated patterns of distrust show in: (1) how the addressees co-occur in users’ criticism; (2) how the destructive discursive features co-occur in it; and (3) how addressees are linked to the discursive features. To uncover it, we have conducted Spearman’s rho correlation analysis (see *Table 1*). When data is grouped by domain, the patterns show up clearly.

*Table 1*

**Patterns of ‘co-distrust’, discursive, and domain/discourse inter-relations**

|            | Addressee | Aggression | Conspiracy | Healthcare | Elites | People  | Culture |
|------------|-----------|------------|------------|------------|--------|---------|---------|
| Distrust   | .783**    | .144**     | .207**     | .418**     | .421** | .260**  | .217**  |
| Addressee  | 1.000     | .150**     | .163**     | .541**     | .551** | .420**  | .392**  |
| Aggression |           | 1.000      | .025       | .125**     | .129** | .054**  | .025    |
| Conspiracy |           |            | 1.000      | .149**     | .156** | .043**  | -.043** |
| Healthcare |           |            |            | 1.000      | .886** | -.071** | -.080** |
| Elites     |           |            |            |            | 1.000  | -.031*  | -.015   |
| People     |           |            |            |            |        | 1.000   | .003    |
| Culture    |           |            |            |            |        |         | 1.000   |

*Note.* \*:  $p < 0.05$ ; \*\*:  $p < 0.005$ .

Here, the intriguing findings are several. For (1), healthcare in general is criticized together with the elites (0.886\*\*), even if our previous study shows that, taken separately, vaccines do not relate to international actors (Bodrunova, & Nepiyushchikh, 2022). The strength of ‘co-distrust’ ties between the national healthcare and authorities, including the local ones, is enough to

make this linkage the strongest in our data. In contrast, healthcare and elites are provenly *non*-linked to cultural and social actors; we can explain it by noting that healthcare actors are criticized for the ‘core’ issues of the pandemic (wrong motivation for vaccine deployment, dangers associated with vaccines etc.), while nonpolitical actors are mostly criticized for support of vaccination. Thus, divergence of patterns depends on the issue; different actors are associated with differing vaccination-related issues.

(2) Unexpectedly enough, distrust is very weakly linked to both aggression and conspiracy theories. This definitely needs further research; qualitative analysis, however, provides for hints on the reasons of this weak link. Thus, distrust, aggression, and conspiracy talk belong to three varying modes of opinion expression: Distrust exists in the form of statements on attitudes and rhetorical questions, aggression is met in shorter appeals to fellow commenters and polarizing criticism, while conspiracy talk implies a kind of reasoning where (pseudo-)logic is conveyed in an explanatory mode which eliminates aggressive speech. Conspiracy theories work as a form of flawed coping via alternative explanation and, thus, needs explanatory frames, rather than rapid rebuttal ones. They also are relatively rare in our data; this is why their link to distrust is weak.

(3) Patterns of use of aggression and conspiracist thinking are also actor-independent, even if weakly enough (0.150\*\* and 0.163\*\*, respectively), which indirectly confirms their rootedness in speech situations, rather than in actor nature; this is also confirmed on the domain level. Moreover, and expectedly, conspiracy theories are actively non-linked to the cultural/celeb domain. In contrast, distrust varies noticeably with regard to addressees, both directly (0.783\*\*) and by domain – healthcare and elites vs. people and culture.

**RQ3.** In addition to RQ2 and our previous quantitative study (Bodrunova, & Nepiyushchikh, 2022), we have assessed the patterns of opinion cumulation within individual posts as seen from our coding, using the Dataset 2 and being additionally informed by the coded incomplete threads of the Dataset 1. What we have discovered were two patterns that stood out in the data, being true for nearly one fourth of both datasets. These patterns could be revealed in a qualitative way only; the threads were too short and non-consistent (that is, they contained phatic or irrelevant comments that could not be coded consistently) for Granger or other statistical tests, as stated above. We have called the first patterns ‘the distrust outburst’: It is characterized by growth of distrust to multiple actors within one discussion thread, after an aggressive comment appears; a conspiracy theory starts to be discussed sooner or later (see *Appendix A*). The second pattern is of a ‘rapid rebuttal’ type where all the commenters unite

in sarcasm and negation of the value of vaccination (see *Appendix B*); we have called this pattern the ‘solidarity in negation’ one.

Presence of these two patterns brings on two conclusions. Thus, there are (at least) two types of opinion cumulation: An ‘outburst’ one and a ‘deepening’ one. The first type needs an aggressive micro-trigger which works as a bifurcation point and shows the way to other distrustful expressions. The other one aggregates distrust from the very beginning. Both patterns start to direct distrust to multiple actors, and both employ conspiracy theories as supporting/explanatory frameworks in the middle of the pattern. The second pattern cross-validates our earlier conclusion on ‘solidarity in condemnation’ and ‘aggressive support’ (Bodrunova et al., 2021: 189) as functions of aggression in polarized speech; here, as we see, we can judge more precisely on the nature of aggressive solidarity, as we see it being rooted in distrust, supported by conspiracy theories, and developing in time in comment threads.

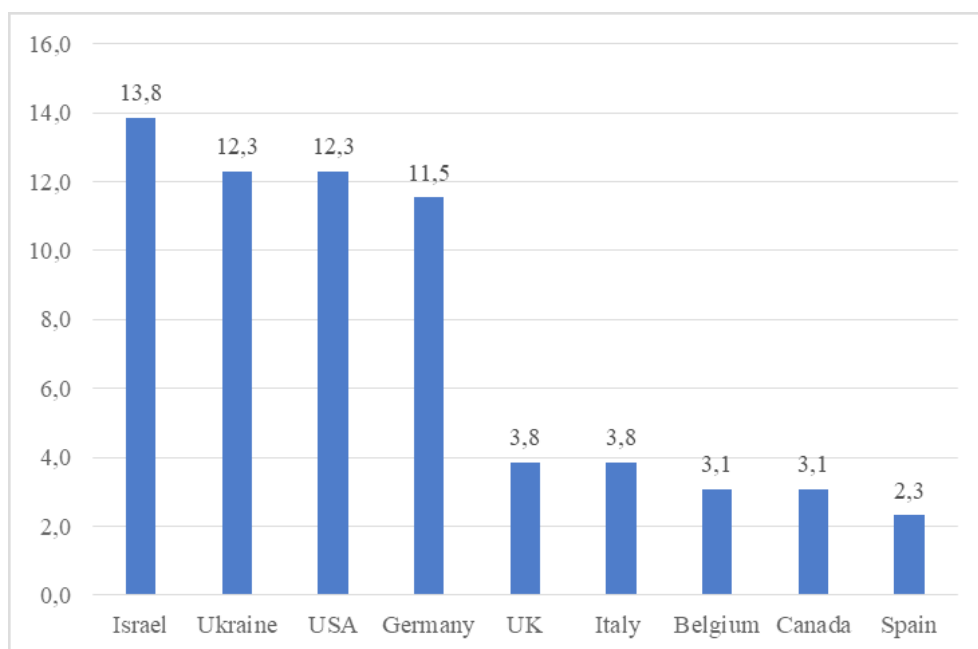
**RQ4.1.** Distrustful and aggressive commenting in *@anti\_covid21* is, to a large extent, provoked by the content that the users react to. In our sample, the community moderators use textual links, photo, or video content in 95.3% of posts, and this content is highly selective and one-sided, making the (unknown) moderators the major gatekeeper of anti-vaccination content, perhaps in the whole Runet. Moreover, it makes the *@anti\_covid21* community a reactive, not a proactive one – a type of a community or public not yet described in the academic research on publics, to our best knowledge. And the attracted external content is global enough to create an impression that authorities around the world are similarly hypocritic and repressive: 51.6% (content from Russia) vs. 43.7% (content from abroad) vs. 4.7% (content of undefined origin).

The biggest number of supportive foreign content naturally comes from the Russian-speaking users who reside outside Russia. The main diasporas that provided the moderators with content were those in Israel, Germany, and the USA (see *Figure 3*). Interestingly, of all the post-Soviet states, only Ukraine before 2022 stands in line with these three diasporas. This needs further investigation; thus, we need to know whether the diasporas in Euroatlantics were, indeed, less tolerant to anti-COVID-19 measures, or the moderators looked at these countries just because the content from them got viral with higher probability due to the bigger size of Russian-speaking populaces in these four countries. However, Kazakhstan (15%+ of Russian speakers) or Latvia (23%+ of Russian speakers), that each provide for less than 0.5% of the links, rather support the former conclusion on lower tolerance of the diasporas beyond the post-Soviet region to the anti-pandemic measures introduced by the national authorities. Moreover, if we looked outside the anti-

COVID-19 discourse, we would see that, e.g., in Germany, Russian-speaking diasporas supported far-right parties more than the general population did (Golova, 2020) and, in the USA, the less educated Russian-speaking communities were critical of the ‘Black Lives Matter’ movement. Thus, there is some slight but general tendency in the major Russian-speaking diasporas beyond ex-USSR towards illiberal radicalism, which may provide for more wary treatment of the state measures against COVID-19, which deserves thorough studying.

Figure 3

**Major providers of anti-vaccination content in Dataset 1,  
in % of the content from abroad**



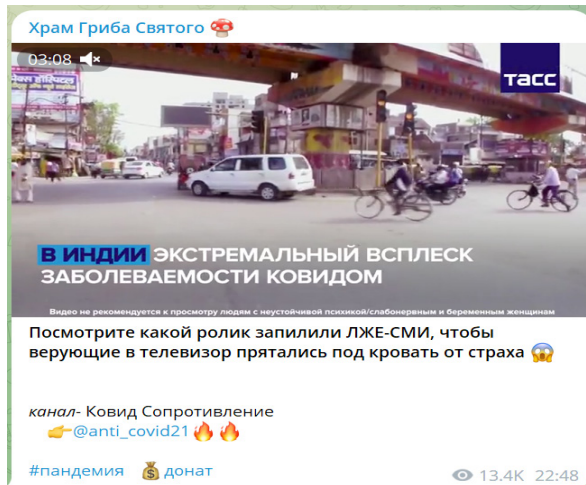
**RQ4.2.** In terms of content source type, we have found that it could be divided into three major groups: (1) content of Russian and European mainstream media; (2) user-generated evidence on social media; (3) content of blurred origin not accompanied by links to sources.

The mainstream media content was mostly textual, divided in two types: Fact-based highly criticized one (see *Figure 4a*) and almost-non-framed one on shortcomings of vaccination and anti-COVID-19 measures (see *Figure 4b*). This content served to either build distrust to mainstream media or support the narrative on vaccine inefficiency. Thus, the content of mainstream media had

no chance of pushing the vaccination agenda in the community: It either got sarcastically reframed or supported the general antivaxxer position.

Figure 4

Legacy media content: a) framed critically; b) critical and slightly framed



a)

В Швейцарии зафиксировали 64 смерти после вакцинации от фейко-вируса 🤖

Об этом говорится в сообщении швейцарского надзорного органа за рынком лекарств Swissmedic, опубликованном 22 апреля.

По состоянию на 20 апреля, в стране выявили 1485 случаев побочных эффектов, которые могли появиться после вакцинации. Из этих сообщений 706 случаев относятся к вакцине Pfizer, 761 — к вакцине Moderna. В остальных 18 случаях не указывается, какую вакцину использовали.

«В 64 серьезных случаях люди умирали в разное время после получения вакцины. Их средний возраст составлял 82 года, и большинство из них имели серьезные сопутствующие заболевания», — уточняется в сообщении.

[источник](#)

канал- Ковид Сопротивление

👉 @anti\_covid21 🔥🔥

#вакцинация 💰 донат

👁 11.2K 23:19

b)

Note. a) The title of the video reads: 'In India, there is an extreme outburst of COVID morbidity', while the moderators' text reads: 'Look what clip have the lying media jerry-rigged, for the TV believers to hide under their beds of fear'; b) the title of the text (added by the moderators) reads: 'In Switzerland, there are 64 fixed deaths after vaccination against the fake virus'; the text of the news follows as in the source.

Social media content was mostly visual and came mostly from YouTube and TikTok, less from Instagram<sup>10</sup> and Telegram; interestingly, the major Russian network VK.com (ex-VKontakte) was presented very little. The main aims of social media content were to provide the evidence on:

a) absurdity of measures and allegedly illegitimate attacks by police, mostly by personal witness;

b) COVID-19-related protest marches in Europe, Israel, and beyond;

c) alternative experts' opinions in interviews and discussion shows on YouTube channels and local online videocasts;

d) satirical content mostly mocking or childishly demonizing the major individual politicians and businessmen, from Bill Gates to notorious Russian politicians like Vladimir Zhirinovskiy;

e) 'video proofs' for conspiracy theories (see *Figure 5, a to e*, respectively).

The functions of these content pieces were several. First, they provided evidence from the popular side, as opposed to the authorities' claims. Second, they showed the solidarity of COVID-19 protesters around the world (or its part relevant for the Russian residents and re-settlers). Third, it allowed for vaporizing out of accumulating fear by mocking and ridiculing of both COVID-19 itself and the measures suggested by the authorities and supported by COVID-rationalists.

*Figure 5*

### User-generated content attributed to social media and its roles



Девушка рассказывает о ситуации в Германии.

канал- Ковид Сопротивление  
👉@anti\_covid21🔥🔥

a)

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<sup>10</sup> Belongs to Meta company, banned on the territory of the Russian Federation.

## Unhealthy communication on health: Discursive and ecosystemic features of opinion cumulation in the anti-vaccination discourse on Russian Telegram

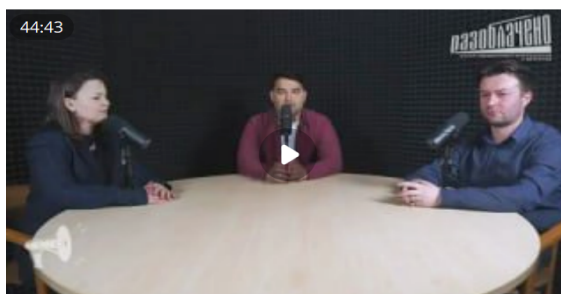


Швейцария. Суббота. Протест против ковид-ограничений 🤝

канал- Ковид Сопротивление

👉@anti\_covid21 🔥🔥

b)



Ученые со всего мира бьют тревогу; Врачи судятся с Правительством

Интервью с Алиной Лушавиной о прошедшей 9 и 10 апреля Международной научно-практической конференцией «Сохранение здоровья населения как глобальная проблема современности».

Так же, об исключении ковида из перечня особо опасных заболеваний, о заседании в Верховном суде РФ.

источник

канал- Ковид Сопротивление

👉@anti\_covid21 🔥🔥

#сопротивление 💰 донат

👁 13K 22:00

c)



**Жириновский предложил принимать в вузы только привитых от коронавируса**

«В вузы принимать всех, кто с прививкой. А то в Европе очередь на прививку, а у нас пустые кабинеты», — сказал Жириновский. Он отметил, что накануне выступил в аудитории на 150 человек. По его словам, ни один из студентов не сделал прививку.

Политик считает, что привиться нужно всем, поскольку пандемию будет трудно остановить. «Миллионы уже заболели, миллионы уже умерли», — заключил лидер ЛДПР.

[источник](#)

**\*\* Придурок**

канал- Ковид Сопротивление

[@anti\\_covid21](#) 🙌🔥🔥

d)



**Наночипы в медицине. Фильм Галины Царевой**

[источник](#)

канал- Ковид Сопротивление

[@anti\\_covid21](#) 🙌🔥🔥

e)

*Note.* The legends read: a) ‘A girl telling on the situation in Germany’; b) ‘Switzerland. Saturday. Protests against COVID-19 restrictions’; c) ‘Scientists from the whole world alarm. Doctors sue the Government’; d) ‘Zhirinovskiy [a Russian politician] proposes to admit to universities only those vaccinated against the coronavirus’; e) ‘Morgellons in the blood’ and ‘Nanochips in healthcare. A film by Galina Tsaryova.’



The content of blurred origin partly corresponded to the aims of the (2) source category. Clicking on such content did not lead to any source; such content had interpretations that could be doubted (as an example, see *Figure 7*).

*Figure 7*

**Unattributed content on @anti\_covid21**



*Note.* The explanation tells of a COVID-19-infected man who had to be violently isolated by the ambulance workers but escaped from them. Though, it is not clear from the video whether this is definitely true.

Thus, content sourcing, despite the variety of information sources referenced to, was clearly one-sided, virtually preventing a many-sided discussion around it, both by content selection and by framing it. Altogether, it performed the roles of discussion triggering and shaping, as well as supporting of the dominant views in the community.

**RQ5.** After tackling RQ1 to RQ4, we may state that antivaxxer opinion cumulation within @anti\_covid21 happened on several levels. First, the community moderators supported a stable anti-vaccination discourse via selecting biased content from various Russian regions and/or major diasporas and criticizing fact-oriented information sources, thus creating a ‘worldwide’

picture of inadequacy of anti-COVID-19 measures, protest against them, and conspiracies behind them.

Second, the users responded by attempts to discuss this content, forming repeated patterns based on distrust to multiple actors, disappointment, fear, and anger, as well as on distorted explanation frames. In many cases, though, the discussion was not aggressive or full of conspiracies; however, distrust was the dominant discursive feature in *@anti\_covid21*, a major echo chamber with self-referential content-supported talk. On the level of one post, two frequent patterns of accumulation of distrustful opinion were discovered, namely the ‘distrust outburst’ and ‘solidarity in negation’ ones. Both led to distrust to multiple actors and evoked conspiracist thinking, but demonstrated that triggers of distrust might lie both in the provided content and in the commenters’ speech.

Third, the interplay between the biased content and the micro-spirals of negative solidarity that emerged in commenting formed the fabric of a destructive reactive community which, by 2021, turned into a sound public (not in political but in social terms) and a source of support for anti-vaccination views that spread around Runet, including diasporas and Russian-speaking population in the post-Soviet countries. Soon it caused action from the authorities, and the community was forbidden by Roskomnadzor (state agency engaged in online communication filtering) – however, it changed the title and, till today, continues to exist and collect fakes on current issues, though being less popular than in the pandemic times. Thus, such communities where a biased content ecology meets perpetuating micro-spirals of negative solidarity, demonstrate stability and a proteus nature; they can switch from issue to issue, continuing with their destructive discourse and cumulation of one-sided irrational opinions.

## **Discussion and conclusion**

In our research on anti-vaccination discourse on Russian Telegram, we have found that the self-referential echo chamber of *@anti\_covid21* was not based upon closed-up discussion and content supply, but rather upon sources from a variety of Russian and international, legacy-media and user-generated media, as well as upon a seemingly wide and open discussion. However, while sources were media and platforms from a wide variety of countries, content selection was highly biased and, ergo, evoked the only possible discursive response of rebuttal and distrust, accompanied with fear and disappointment. Together, the sources formed a discourse that principally questioned the mainstream media opinions and created a conspiracist view on governmental management of the pandemic in many countries. In addition, the Telegram affordances have played

a crucial role in how the community separated itself from alternative positions. Non-aiming at ‘opinion crossroads’, the community was deliberately created as a semi-closed resistant one, which Telegram allows for. In it, allowance for anonymity of content (not only unattributed but also with the links transformed for the users into t.me/[title]) lowered the responsibility for dissemination of fakes and criticism towards official statements, verified sources, and objective data.

We have also found that ‘the discourse of distrust’ was notably politicized, where distrust to national and global actors may be a mediator to vaccine distrust, while conspiracy theories may be a mechanism of secondary coping not only for a person but also within shared opinions, working as mini-narratives of proof. We have identified two stable patterns of accumulation of distrust, both leading to distrust reinforcement. This adds to our previous findings on the ‘spiral of distrust’ on the level of daily cycle (Bodrunova, & Nepiyushchikh, 2022) and allows for setting the three levels of dysfunctional opinion cumulation: Within the dataset, the daily cycle, and one post.

The strategy of content selection and framing and the patterns of user reaction that combined with the help of the platform affordances have produced a reactive community of distrust to multiple actors of the pandemic. This community quickly grew into an important public, even if it was cut from access to conventional politics and lacked political influence. Such publics and their ways of policy denial and counter-influencing the wider society deserve close studying.

Our research is, of course, still a pilot study, and it does not employ any quantitative (e.g., regression or factor) models that would allow for better discovery of the mediator roles of distrust to non-healthcare actors in the amounted distrust to vaccines and medical services around them. However, our analysis focused more on communication patterns and discourse than on the social-communicative category of distrust per se; we believe that our research design has allowed for unveiling the two-side nature of the @anti\_covid21 echo chamber where biased content met irrational commenting, remaining completely unquestioned. We add to the existing knowledge on how networked discourses in Russia and worldwide affected social perception of vaccines during the COVID-19 pandemic (see, i.a., Aslanov, & Kotov, 2022; Smirnova et al., 2022; Escudero, 2023) and insists on taking online communities into account in further studies of impact of networked communication upon e-health practices.

Our findings differ from previous studies on antivaxxer discourses, e.g., in Turkey where dissemination of anti-vaccination views was more strategized but focused on bodily freedom and personal choice, devaluing and shifting of

scientific evidence, and deepening polarisation between the supporters and deniers of the COVID-19 restrictions (Eslen-Ziya & Pehlivanli, 2022). There was much less personal harmful evidence than in other cases, and anonymity played a role in content selection (see Nguyen, & Catalan-Matamoros, 2022, for the opposite conclusions). Also, we cannot directly suggest ‘expansive and targeted [state] interventions... to curb the circulation of online narratives against vaccination’ (Kim, & Kim, 2021: 1), as such interventions would be immediately dismissed by the commenters and could build even more distrust. Moreover, transnational networks do not always favor state-based interventions.

What we would state instead is that the mechanisms of social trust undermined both before and during the pandemic are of deep enough nature, and they demand systemic reconstruction, to diminish irrationality and lust for conspiracy theories as mechanisms of priming fear. Bajwa (2021) has suggested to combine critical media literacy skills, citizen participation, and counter-offensive capabilities towards state-backed information operations; we would, though, tell that countering antivaxxer views would, in many cases, benefit from bigger trust to and rational collaboration with institutions responsible for management of social crises. We agree that rebuilding trust is a multi-stakeholder problem requiring a coordinated strategy (Yaqub et al., 2014), long-term and needed to be implemented before a health crisis erupts, as, during such a crisis, distrust may only deepen, which critically affects the nationwide efforts of both protection and recovery from a pandemic.

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