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CONTENTS

LEAD ARTICLE

Structural characteristics of social media presentation of diverse conflicts: Prospects for modeling[1]

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Abstract
The presentation of social conflicts on online platforms remains one of the most important scientific problems because of its direct interconnection to the offline social processes. This article presents the results of the research of two social conflicts – Nagorno-Karabakh problem, and the construction of the Nord Stream 2 gas pipeline – coverage in Russian segment of social networks. Study revealed that there is no direct relationship between the intensification of actions within a conflict situation and their media presentation from the structural point of view. Professional journalistic principles and approaches play a significant role in determining the nature of conflict coverage on online platforms. Generally, it seems more likely that the single model for the presentation of different types of social conflicts on online platforms is utilized. This model has an institutional basis – the individual or group level of understanding conflicts is not so clearly manifested.

Keywords
Social conflicts, social networks, online platforms, media presentation, coverage, model, structure, institutions.

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Introduction

The presentation of various conflicts in the media remains one of the most popular and complicated issues of scientific research (Vartanova, & Vyrkovsky, 2023). The existing methodical, methodological, classification problems are of a very different nature (Schoemaker, & Stremlau, 2014; Reuben, 2009; Loucif, 2022; Siddique, 2022) and, of course, significantly they complicate the acquisition of new scientific knowledge in this field. This is especially critical for the development of key conceptual and epistemological units, including models, classifications, etc. (Schoemaker, & Stremlau, 2014). At the same time, modeling conflicts based on typological differences allows not only to organize them within a system, but also, perhaps even more importantly, to deduce the principles of the dialectic of conflicts – both "real" and "media" related ones, bringing up the full predictive potential of modeling.

As already noted above, in the existing body of scientific papers devoted to conflicts and their presentation in the media, there is a huge variety of approaches to both classifying conflicts and determining the structural characteristics of their media representation, while scientists point to the "separation" of the theoretical development of real conflicts as such and their representation in the media (Vartanova, Gladkova, & Dunas, 2023). In fact, it is not necessary to talk about any conventionally recognized models describing the dialectic and structural characteristics of the presentation of conflicts in the media and, moreover, the specifics of the relationship between the real conflict and its coverage in the media. An exception, obviously, should be made only for the most crude, "general" and therefore early theoretical models describing the development and attenuation of conflict as such (Simmel, 1904; Coser, 1957), without direct connection to the media.

At the same time, modern conditions involving large-scale digitalization, mediatization (Hjarvard, 2008; Couldry, & Hepp, 2016; Hepp, & Krotz, 2014; Anisimov et al, 2023) and conflicts can cause, on the one hand, both a cardinal complication of both forms and types of social conflicts and their media representations, and the emergence of fundamentally new ones models of the dialectic of conflict. Thus, one of the most popular scientific directions in the research of modern new media has become mobilization studies, which are designed to answer the question of how the specifics of the presentation of conflict-causing information in social networks can influence the development of offline social conflicts (Koltsova, & Kirkizh, 2016; Bodrunova, & Litvinenko, 2013). And at the present stage, full-fledged answers to the fundamental questions of a conceptual nature have not yet been received, and those that exist have a contradictory character (Lim, 2013).

Thus, any attempts to create a model of the development of conflicts and their media representations in the modern context can be extremely important – first of all, as a foundation for further research, which, of course, will be actively conducted in the future. Within the framework of this study, we plan to focus on the presentation of social conflicts exclusively on online platforms, since it is this environment that is currently the least studied and, accordingly, provides a minimum of material for theorizing.

Theories and methodology of research

In this article, we proceed from the already mentioned standpoint that the typology and modeling of the dialectic of any objects are inextricably linked: different types of units of the same class can develop either in different ways (and in this case it makes sense to talk about several dialectical models), or comparably, demonstrating a common model of development. In this case, the most productive way of modeling, obviously, is the identification of different types of objects and the study of their dialectics in a comparable context with the fixation of significant differences.

As mentioned above, the classification of conflicts and their presentation in the media is carried out on many grounds: the composition of participants, geography, scope, specifics of development, etc. (Cottle, 2006; Ayodeji, Theophillus, & Livian, 2002; Wallensteen, 2011; Gutsche, & Hess, 2018, etc.). Conceptually, in order to develop a specific model, it makes sense, firstly, to focus on classification on one basis, and secondly, to choose the most "simple" or the most commonly used typology. The approach that has already been developed within the framework of the implementation of this project and based on the distinction of social conflicts by spheres of social activity is closest to us (Khokhlov, 2014). As a result, it implies the presence of economic, social, political, legal, ideological, moral, religious, scientific, managerial, military conflicts (Krasheninnikova, & Nikolskaya, 2022). This approach in a somewhat modified form (i.e. with the addition of narrower spheres of social activity) has been implemented in the vast majority of modern Russian studies of the presentation of conflicts in the media (e.g. Golbreich, 2015; Smirnova et al, 2022, etc.).

The second level of creating a dialectical model is the identification of epistemologically significant characteristics of the conflict and/or its media representation. Those variables allow us to talk about different variants of the development of the conflict both in reality and in the media. Separately, we note that these characteristics can also be used as a separate basis for

classification, since they have quite distinct species-forming features. Given that this article deals with dialectical models of media representation of conflict, it is fundamentally important to analyze the combination of various characteristics at different stages of the conflict development.

The set of these characteristics in the context of the presentation of the conflict in the media is also very wide. In regard to their quality, scientists suggest, for example, to consider the level of the subjects of the conflict (e.g. state, institution, community, group, individuals, etc.); the systemic characteristics of the conflict; the level of geopolitical confrontation (e.g. local, regional, international, etc.), the type of activity subjects of conflict, etc. (Vartanova, Gladkova, & Dunas, 2023). On the basis of this general methodological approach, other original systems of characteristics of both conflicts themselves and their presentation in the media are being developed (see e.g. Smirnova et al, 2021), which usually include indicators related to various types of subjects/participants of the conflict, objects of the conflict, and the scale of its spread. This approach, even being the main one in the domestic scientific discourse, does not exclude the use of others bases, for example, on the political science paradigm (see e.g. Lee Francis, 2008; Koopmans, & Erbe, 2003).

The temporal characteristics of the conflict turn out to be almost critical when studying the parallel and interrelated development of the conflict in the media and real life. One of the traditional research problems covered within this paradigm is the asynchrony of conflict development offline and on online platforms, i.e. social networks (see e.g. Azarov et al, 2014).

In this article, we will try to apply the described approach to modeling the dialectic of social conflict in the media, de facto testing its heuristic capabilities. We are not inclined to say that the results obtained can be considered universal – rather, it is just a methodological attempt made in the mode of grounded theory (Mills, & Birks Hoare, 2014) but not a strict quantitative research paradigm.

Materials and methods

Since the purpose of our research is to test the theoretical approach described above in order to create a model for the development of social conflict in the media, our research involves the use of both qualitative and quantitative methods.

The first step was the choice of different types of conflicts, present in the Russian-language media. An important methodological condition in this case was a sufficiently long period of their development, which allows us to consider its different stages. Within the framework of this study, the period 2019-2021 was

studied. The selected time interval was associated with the peak development of the conflicts described in the article, as well as the chronological tasks of our study that were originally fixed. Basing on the classification according to the spheres of life of society, we preferred to focus on the "biggest" of them – economic and military. The choice of the first one is due to the critical role of the economy in functioning of the modern society, as well as our desire to distance ourselves from political issues, which traditionally attracts excessive influence of actors at various levels and is *a priori* accompanied by a large number of distortions in the media caused by their influence (Bykov, 2013). Military issues are traditionally considered to be the most popular in media conflictology and obviously generate the largest share of scientific works (Romero-Trillo, 2011; Labush, & Puyu, 2019; Schoemaker, & Stremlau, 2014).

In this case, the focus was on the conflict in Nagorno-Karabakh, the most acute phase of which took place in 2020, as well as the conflict related to the construction of the Nord Stream 2 gas pipeline by Russia, which caused objections from a number of foreign countries. It should be noted that the level of "conflict" issues in both cases is extremely high, which means that the states are involved in conflicts, including both foreign countries and Russia.

Background

The military conflict between Armenia and Azerbaijan in Nagorno-Karabakh began in 1988 and continues to the present. It is characterized by varying degrees of intensity of hostilities throughout the period. This confrontation has an interethnic ethno-political status. Since 1921, the territory of Nagorno-Karabakh was part of the Azerbaijan SSR, and had the status of broad autonomy. However, in 1988, the local population of Nagorno-Karabakh advocated reunification with Armenia. In the autumn of 1991, Nagorno-Karabakh declared its independence from Azerbaijan. Earlier, local authorities repeatedly appealed to the leadership of the USSR with a request to join Armenia, but these demands were not met. Just before the collapse of the USSR, in December 1991, a referendum was held in Nagorno-Karabakh, in which the overwhelming majority voted for independence from Azerbaijan.

The period from 1992 to 1994 went down in history as the First Karabakh War. During the full-scale military confrontation between Azerbaijan and Armenia, military aircrafts and heavy equipment were used. About 30 thousand soldiers and local residents became victims of this war. Azerbaijan lost control over most of the autonomy. In 1994, in Bishkek, the parties agreed on a ceasefire. In fact, the conflict was frozen. Further, over the following years, various states

(including Russia, the USA, France) made numerous attempts to reconcile the parties, but all the attempts failed.

The escalation of the military confrontation in Nagorno-Karabakh occurred in 2014, and later in 2016 (the April War). In 2018, when opposition politician Nikol Pashinyan came to power in Armenia, a new round of relations with Nagorno-Karabakh began, which the new leadership considered part of its republic. In the autumn of 2020, fierce confrontation in Nagorno-Karabakh began again. The second Karabakh war lasted 44 days. As a result, Azerbaijan managed to regain control of a significant part of the autonomy. About 5 thousand people were killed. A Russian peacekeeping contingent was introduced into the territory of Nagorno-Karabakh. In December 2022, the residents of Nagorno-Karabakh found themselves in a blockade: a checkpoint with the Azerbaijani military was installed in the Lachin corridor linking the autonomy with Armenia. Currently, the political settlement of the military conflict in Nagorno-Karabakh with the participation of the intermediary countries has not brought tangible progress in resolving the issue. In 2019-2021, the situation in the region worsened. That is why this particular conflict became the subject of this research.

The situation related to the construction of the Nord Stream 2 is an example of the economic conflict in question. Nord Stream 2 is a 1,234 km long gas pipeline to Europe, laid along the bottom of the Baltic Sea from the port of Ust-Luga in the Leningrad Region (Russia) to Greifswald (Germany). Its purpose is to transport Russian export gas. The construction of a gas pipeline along the bottom of the Baltic Sea began in 2018. In September 2021, the laying of pipes was completed, and in November of this year the gas pipeline was ready for operation. The pipeline route passes through the maritime territory of several states – Russia, Finland, Sweden, Denmark and Germany. The founder of Nord Stream 2 is the Russian company Gazprom. The conflict situation with the construction of Nord Stream 2 is primarily related to the US sanctions against individuals and companies directly involved in the construction of the gas pipeline, as well as Germany's refusal to certify the gas pipeline after Russia recognized the Donetsk and Lugansk People's Republics. It should also be noted that Denmark did not want to allow the construction of a gas pipeline on its territory until recently, but then agreed to it. Ukraine and Poland actively opposed Nord Stream 2, as they were economically interested in further export of Russian gas through their territories. They were supported by Estonia, Latvia, Lithuania, the Czech Republic, Hungary, Slovakia, Romania and Croatia. They explained their disagreement with the construction of Nord Stream 2 as possible risks to energy security in Central and Eastern Europe.

At the moment, the Nord Stream and Nord Stream 2 gas pipelines do not operate due to sabotage in the fall of 2022 at the height of the gas conflict between Russia and European countries. The period of 2019-2021 was characterized by an aggravation of the international confrontation over the construction of the Nord Stream 2, which became one of the criteria for choosing this particular conflict as an economic one to study in the framework of this research.

The second stage of the study involved describing the chronology of the most important events within the framework of the conflicts described above – this was done by monitoring official statements in the largest mass media. This work made it possible to determine the stages of both processes within the framework of the general theory of the dialectic of social conflicts (e.g. Simmel, 1904; Coser, 1957).

The third stage of the study was devoted to the formation of an array of materials posted on social networks during the period in question and dedicated to two selected conflicts. The selection of materials was carried out using Medialogia system, that aggregates materials from all the largest online sites available on the territory of the Russian Federation.

For the initial selection of media texts, based on the work we conducted earlier (Krasheninnikova, & Nikolskaya, 2022), special search queries were formed that made it possible to select relevant messages. For the Karabakh conflict, the request looked like this: (Karabakh*) And (activization* OR fighting* OR fighting* OR military* OR wars* OR sabotage* OR incident* OR conflict* OR attacked* OR escalated* OR *shelling* OR shooting* OR provocateur* OR destroyed* OR escalated* OR dialogue* OR compromise* or negotiation* OR truce* OR problems*); for the conflict around the Nord Stream 2 as follows: (Severn* And stream*) And (ban* OR conflict* OR armed* OR weakened* OR damaged* OR undermining* OR obstacles* OR problems* OR provocateur* OR protest* OR against* OR destruction* OR rupture* OR recession* OR risk* OR sanctions* OR restrained* OR dispute* OR terrorist attack* OR anxiety* OR difficult* OR threats* OR strike* OR destroy* OR damage* OR emergency* OR embargo OR escalate*). We are aware that it is impossible to form an absolutely accurate general population in this way. Nevertheless, the complexity of queries guarantees a minimum level of "noise", that is, getting into the sample of texts that are not related to the topic.

Since the volume of the general totality in both cases exceeded 500,000 units, we decided to create a sample representing the general totality with a maximum statistical error of 5% and a confidence probability of 95%. For each of the arrays, the volume of the sample totaled 384 media texts. For each of the calendar years, 128 materials were analyzed, respectively, which were selected quarterly at regular intervals in a sample ranked according to the calendar

principle. Thus, a comparable number of media texts (about 30) were selected for each quarter – this was done for their correct comparison. For example, with the activation of conflicts, the number of media texts produced increases, which in statistical analysis can lead to an unjustified "preponderance" of the significance of their characteristics.

In this case, it was decided to abandon the automated analysis of media texts due to the search nature of the work aimed at identifying the potential of modeling the dialectic of social conflict on online platforms. In this case, it was assumed that the texts might contain characteristics that were not previously taken into account in mathematical linguistics, but were important for solving the problem we chose. Obviously, such characteristics can only be recorded when analyzing texts de visu.

On the basis of earlier works, we formed a list of characteristics, the presence or absence of which was noted when analyzing individual texts: publication date, genre / format of publication, subject of publication (the considered aspect of the event); the hero of the publication (the central figure of the publication); the role of the author, the availability of data, statistical, economic, sociological information in the text; the level of consideration of the problem; the author's attitude to the event. The results obtained were aggregated and compared with the chronology of events known from the official statements of the parties to the conflict presented in open sources.

Results and discussion

As noted earlier, the temporal properties of conflict in the modern society are becoming an important parameter for the study of the parallel development of conflict in the media and social (real) spaces. General overview of the media presentation of the two studied conflicts and the correlation of information coverage of conflicts with the intensity of real events in physical space allow us to draw some conclusions.

In general, the conflict related to the situation around the construction of the Nord Stream 2 main gas pipeline is characterized by a not very high saturation of events in the period 2019-2021 under consideration (the total number of events is 15). At the same time, it is difficult to talk about a certain dynamics of events, or about the vectors of conflict development, since in the years under consideration it was not possible to fix fundamental changes in the number of events in the real, physical (not media) space, so it ranges from 0 to 4 by quarters. Compared to this economic-type conflict, the conflict between Armenia and Azerbaijan in Nagorno-Karabakh is characterized by a rather high saturation of

events in the studied period. All in all, 86 separate events were recorded within this conflict. An increase in activity within this conflict situation was observed in the second half of 2020, a sharp increase in the number of events occurred in the 3-4 quarters of 2020: 12 events and 52 events, respectively. At the same time, from the point of view of constructing models for the development of conflicts of various types in the modern information space, it is noteworthy that, in general, the nature of the presentation of the two studied conflicts in the space of the largest online information resources is to a small extent related to the intensity of real events within the conflict.

The analysis of publications on individual parameters of texts that were included in the research scheme at the programming stage indicates a rather detached nature of the description of conflicts by the authors. In the economic conflict over the situation with the construction of the Nord Stream 2 gas pipeline at the beginning of the chronological period under consideration, the attention of the authors of publications to the activities and statements of the heads of state and their role in the development of the situation is noticeable (*Figure 1a*):

Figure 1a

**The number of texts about Nord Stream 2, representing
different types of heroes (abs. meanings)**
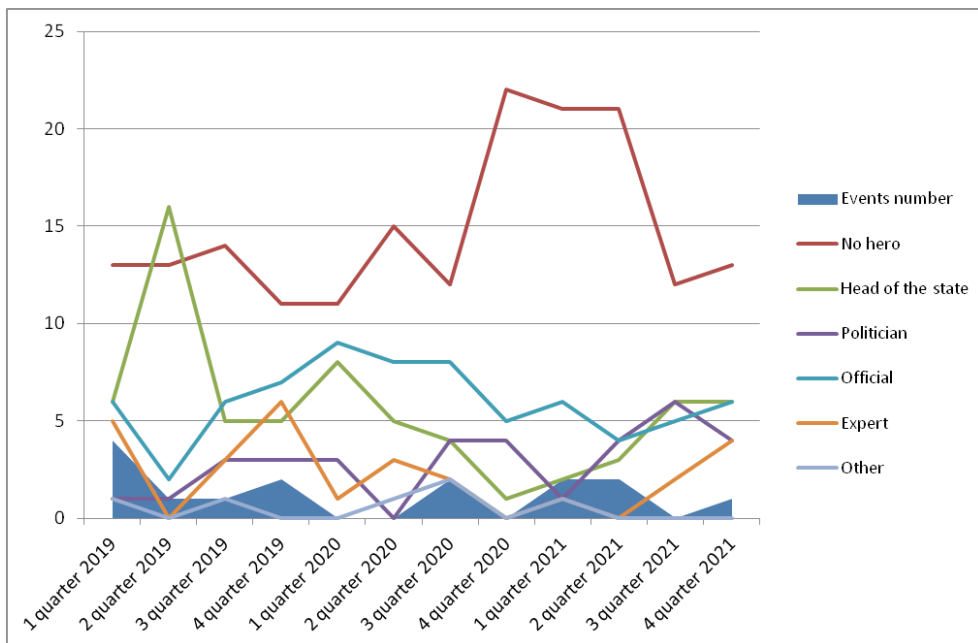
The materials often contain a hero, i.e. the head of state. As the conflict situation develops, the ratio of different types of heroes of publications changes, the largest number of texts that do not contain a specific hero can be found in the fourth quarter of 2020 and the first-second quarters of 2021, followed by a decrease in the number of texts of this type.

The coverage of the conflict in Nagorno-Karabakh from the point of view of the presence of hero follows a slightly different model (*Figure 1b*):

Figure 1b

The number of texts about the situation in Nagorno-Karabakh, representing different types of heroes (abs. meanings)
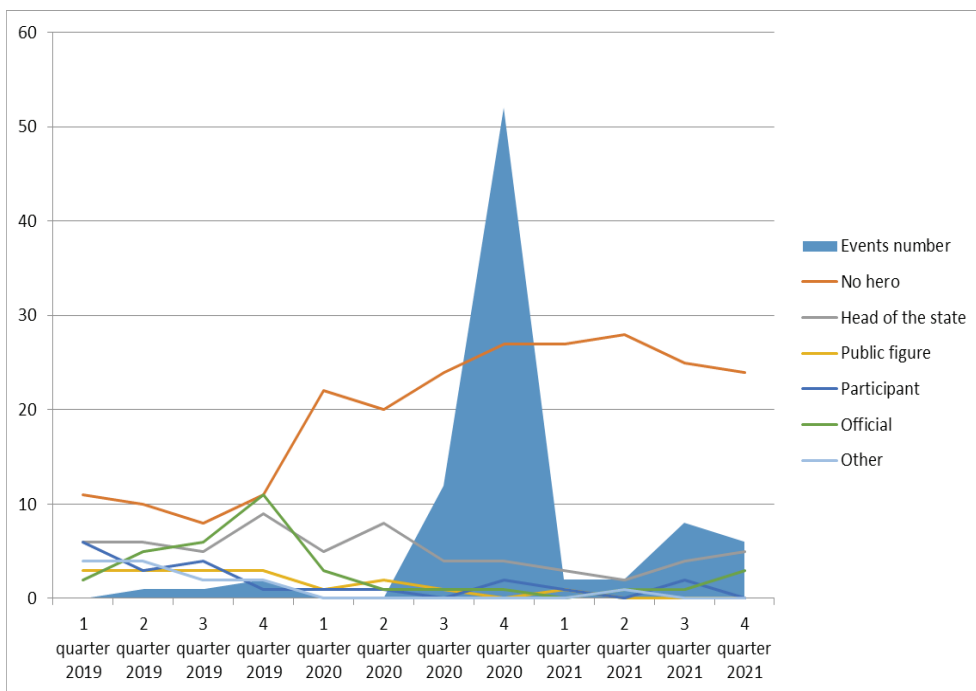
At the first stages of the development of the situation (in the first half of the studied period – from the beginning of 2019 to the middle of 2020), different types of heroes of messages were present in the texts in almost equal (albeit small) proportions. Further on, with the development of the situation and the increase in saturation of events, the authors of the material increasingly started to avoid pointing to specific actors. Probably, in this situation, we can talk about depersonalization of the conflict over time. In addition,

from a research point of view, it seems possible to discuss the possibilities of considering this process in the context of the concept of mediatization of military / armed conflict, as well as to assume the understanding of conflict situations at the individual and personal level as a practice peculiar to less formalized communicative practices, including discussions in the space of social networks.

A comparison of the data obtained during the analysis of two different types of conflicts according to the criterion of "publication hero" indicates certain similarities in the models of their media presentation. The dominance of texts without a hero is the main characteristic of a possible model. Two other notable types of heroes in conflicts of different types are heads of state and officials. At the same time, the other types of heroes (e.g. public figures, participants in events, politicians) are secondary. It is noteworthy that the authors of the publications do not represent possible experts in them, which – potentially – negatively affects the quality of the texts representing the conflict.

It should also be noted that the data obtained show a relationship between the characteristics of the subjects presented in the materials and the author's general attitude to the described problem situation expressed in the text. As the analysis showed, at the beginning of the period under review, the negative attitude to the events within the conflict was more clearly expressed in the materials on the situation around Nord Stream 2, and at the turn of 2020-2021, when the number of materials without a hero becomes more noticeable – the attitude presented in the text to the described situation becomes more neutral.

The role of the author in the coverage of the two conflicts considered corresponds to the general situation in journalism of recent decades. In the majority of the texts devoted to the conflict in Nagorno-Karabakh (*Figure 2a*) and the situation around the construction of the Nord Stream 2 gas pipeline (*Figure 2b*), the authors describe the events from the perspective of an outside observer:

Figure 2a

The role of the author in the texts about the situation in Nagorno-Karabakh (abs. meanings)
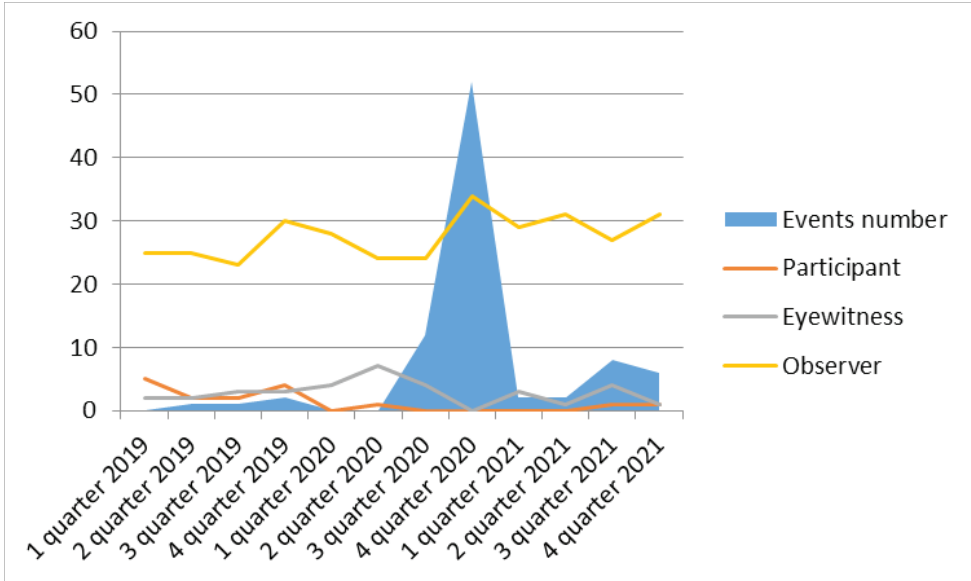
Figure 2b

The role of the author in the texts about Nord Stream 2 (abs. meanings)
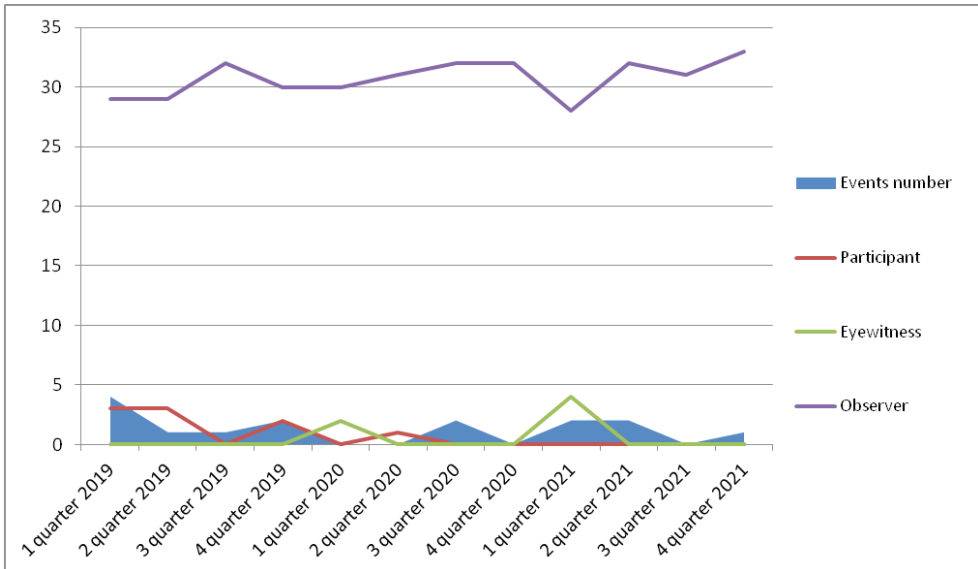
At the same time, the type of conflict, the nature of events within the conflict, the possibility of involving the authors and other circumstances do not actually affect the author's choice of a role in relation to the events described. Interestingly, even in a military conflict geographically closer to the borders of Russia, in a situation where the authors of media texts have the opportunity to realize a wider range of roles and act at least as an eyewitness to events, the picture remains unchanged.

The analysis of genre characteristics of materials about the two conflicts considered in the course of the study shows that the military conflict in Nagorno-Karabakh is mainly represented by notes and comments. The third most common genre of the studied publications was the article (Fig. 3a):

Figure 3a

Genres of texts about the situation in Nagorno-Karabakh (abs. meanings)
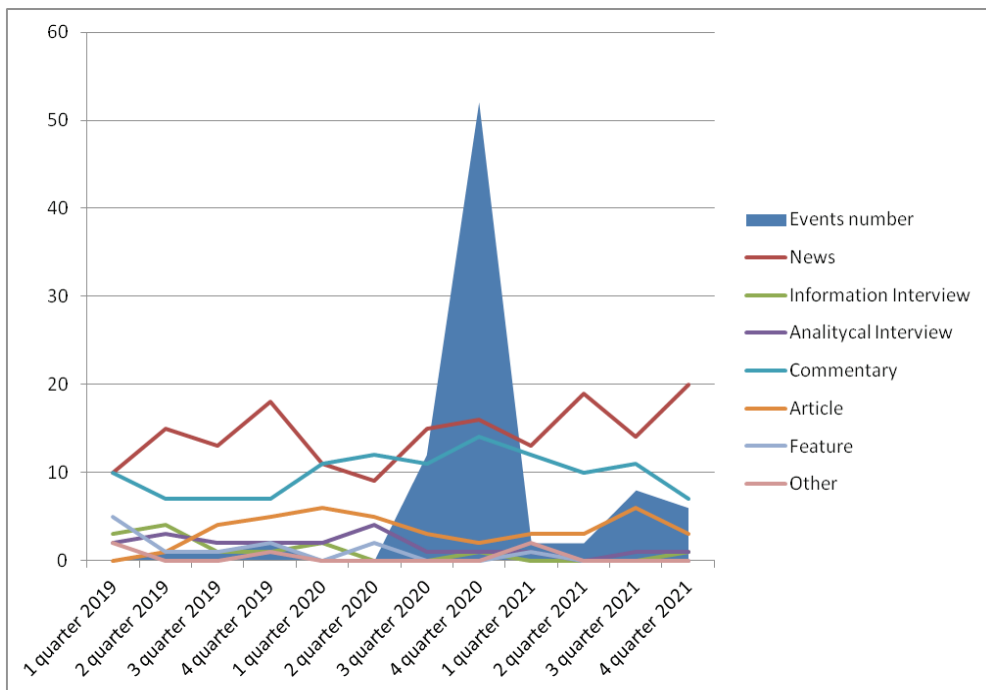
It is noteworthy that the interview – both analytical and informational – turned out to be poorly represented in the corpus of the texts considered. Thus, it can be concluded that short text formats have become more in demand in the coverage of this conflict. In the media presentation of the economic conflict

related to the situation around the construction of the Nord Stream 2 gas pipeline, it was possible to record a greater variety of genres in the absence of a clear and unambiguous upward or downward dynamics (*Figure 3b*):

Figure 3b

Genres of texts about the Nord Stream 2 (abs. meanings)
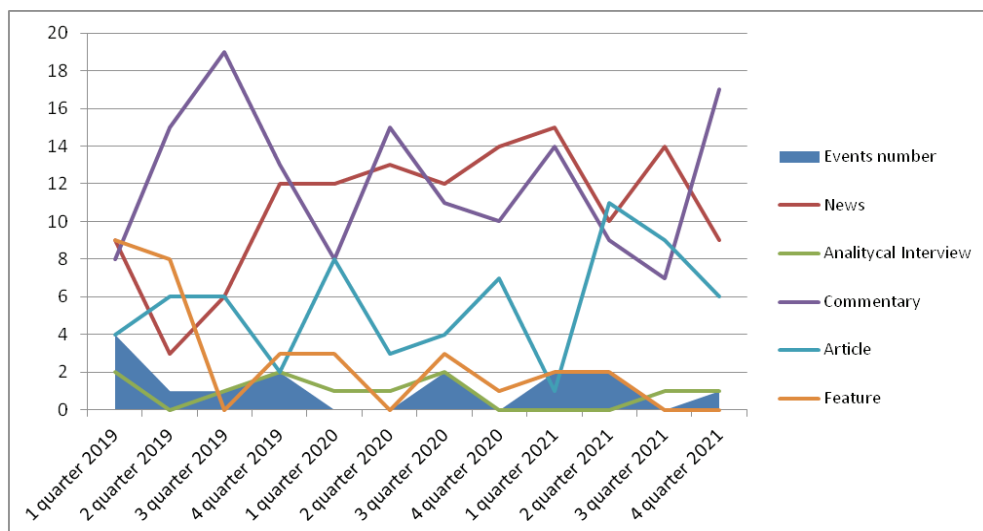
It is possible to identify a more noticeable trend towards an overall increase in the number of texts in the genre of notes on the situation around the gas pipeline and a less noticeable trend in the growth of the number of articles, which peaked in the second quarter of 2021. At the same time, the results show a general decrease in the number of comments on the situation in the period from 2019 to 2021. In general, it should be noted that it is not possible to detect a relationship between the number of events within the conflicts of the two types considered and the choice of specific genres.

Researchers are often interested in the nature and level of understanding of specific topics in the mass communication space, both in its professional and non-professional segments (Anikina, & Khrul, 2015). It is noted that the set of arguments used to confirm the position presented in the text is not too diverse and may depend on both the context of the discussion and its topic. At the programming stage of this study, when developing the analysis scheme, an assumption was made that a sufficient amount of accurate information, data of different types, may appear in conflicts of two types, which become available

to communicators and can be used in the texts. However, the study showed that a characteristic feature of the media presentation of conflicts was the absence of data as an element of argumentation system used by journalists. At the same time, the hypothesis that data are more actively involved in the texts of analytical genres has found partial confirmation when considering the nature of presentation of the events around both conflicts. In the case of the coverage of events around the Nord Stream 2, the largest number of materials that do not contain data on events was recorded in the third quarter of 2020 and the first quarter of 2021, when the number of texts of analytical genres decreased.

A similar model, in which the appearance of data arguments in the system coincided with the appearance of articles, rather than materials of other journalistic genres, was also revealed during the analysis of publications on the situation in Nagorno-Karabakh. The analysis of publications according to the level of consideration of conflict situations shows the implementation of the institutional logic of describing conflicts regardless of their type. Both the materials on the construction of the Nord Stream 2 gas pipeline (*Figure 4a*) and the texts about the conflict in Nagorno-Karabakh are dominated by the institutional level of describing events and the problem as a whole (*Figure 4b*):

Figure 4a

**The level of consideration of the situation in the texts
about Nord Stream 2 (abs. meanings)**
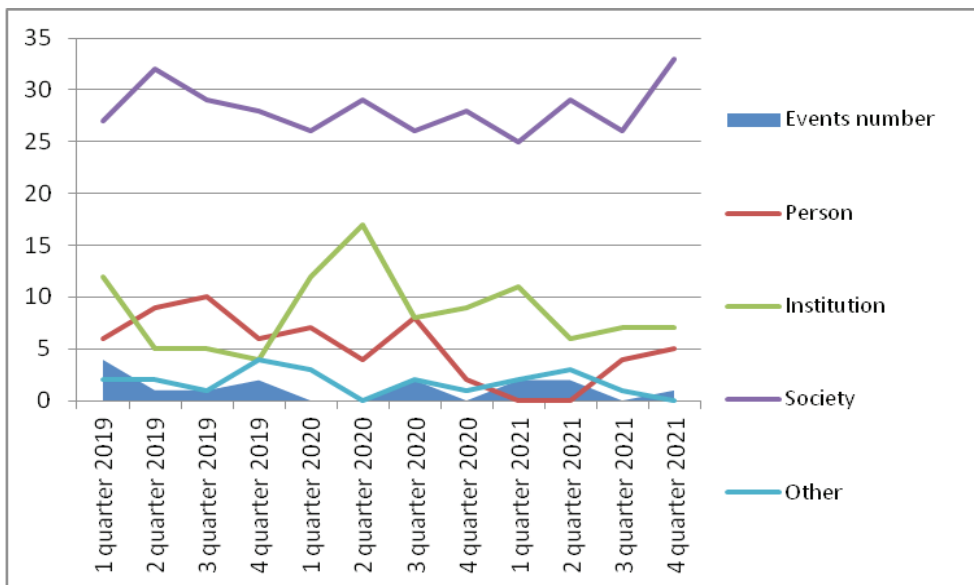
**The level of consideration of the situation in the texts
about Nagorno-Karabakh (abs. meanings)**
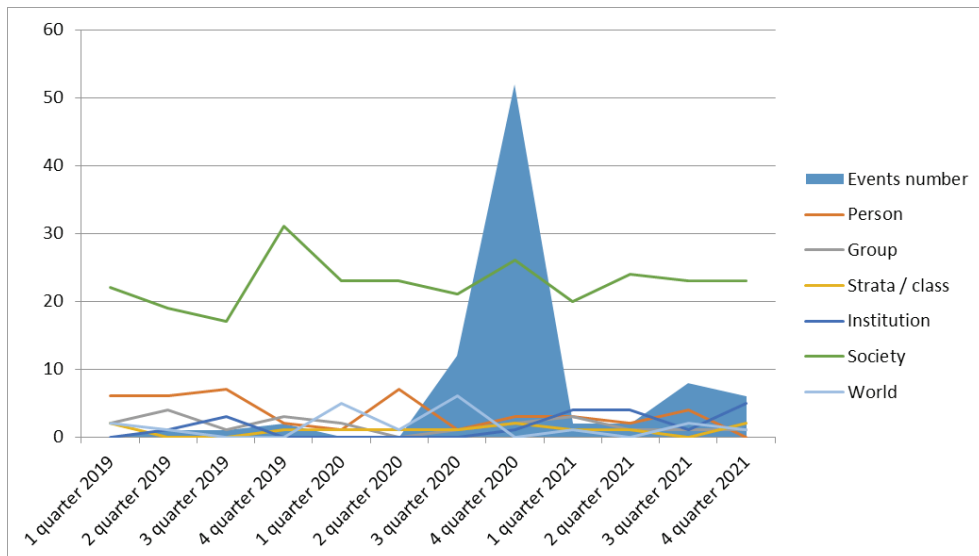
In the situation with the gas pipeline, the texts considering the situation at the level of society as a whole are equally noticeable. At the same time, it seems important that the model of media presentation of the military conflict (i.e. the situation in Nagorno-Karabakh) does not actively involve any of the levels of description of the situation, except for the institutional. That is happening regardless of the large number of people involved in the events and the possibility of understanding events at the level of groups and other communities. The interpretation of this fact may be related to the type of sources studied, and indicate a difference in the presentation models of conflict situations in the spaces of official and informal communication.

Looking back at the analysis of data on the author's attitude to the described events within the framework of two types of conflicts, it is possible to identify a certain difference in approaches. The attitude to the events of the conflict in Nagorno-Karabakh is more often neutral (*Figure 5a*):

**The author's attitude to the situation in the texts
about Nagorno-Karabakh (abs. meanings)**
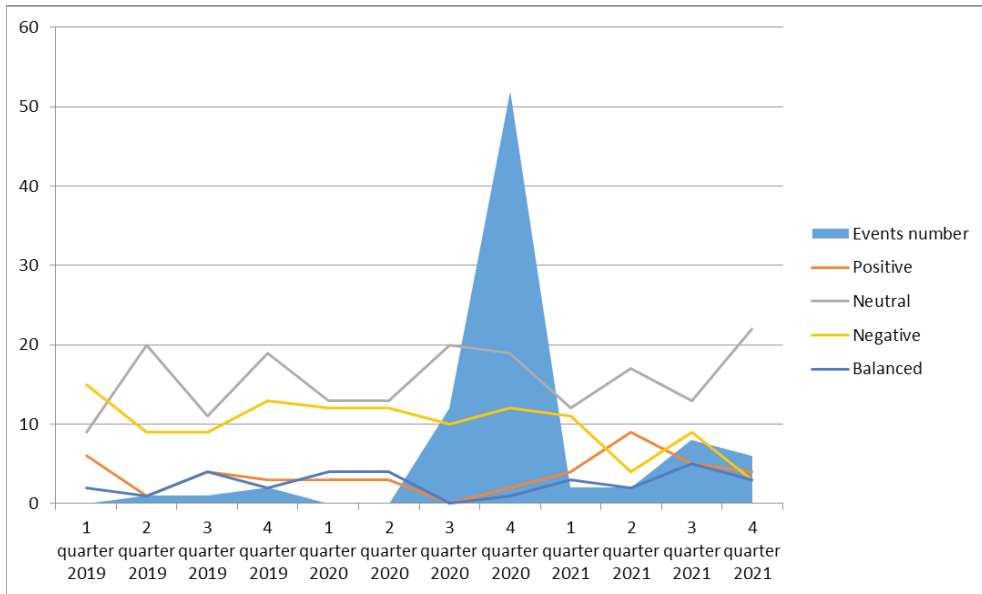
Probably, the explanation of this fact may be related to the nature of the military conflict and the possible negative effects of the publication of emotional texts containing unbalanced assessments of the events.

In the description of the events around the Nord Stream 2, there is a trend towards an increase of the number of neutral publications, which simultaneously reduces the amount of materials demonstrating the author's negative attitude to the events (*Figure 5b*):

**The author's attitude to the situation in the texts about Nord Stream 2
(abs. meanings)**
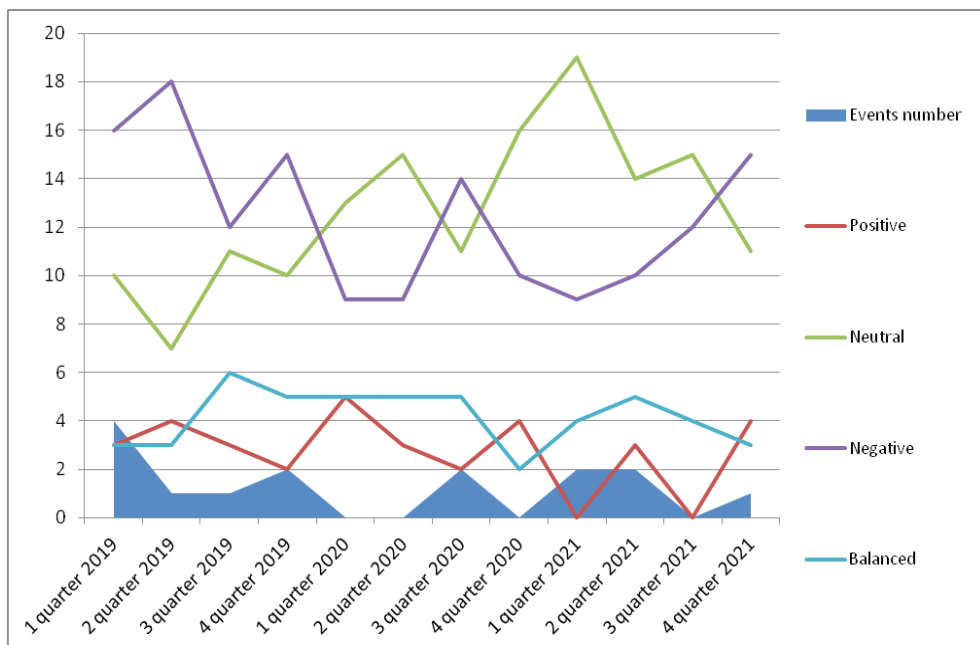
Here we can also notice a connection between the genre characteristics of the texts and the attitude expressed in them. The increase in the number of comments on the events of the studied economic conflict coincides with the appearance in the texts of a more negative attitude to the situation.

Conclusion

The results obtained during the analysis of media texts allow us to determine some general traits of the presentation of social (in this case, military and economic) conflicts in social networks. The model of conflict coverage does not imply structural changes parallel to the increase in the number of real events associated with the development of a specific conflict situation over time. In the model, there is no direct relationship between the intensification of actions within a conflict situation and the transformation of their media presentation from various points of view (genre structure, level of consideration of situations, characteristics of the hero, etc.). Interestingly, professional journalistic

principles and approaches, including key genre requirements play a significant role in determining the nature of the presentation of conflicts of various types on online platforms.

The existence of media resources / mass media as institutional subjects has a certain significance in the implementation of an institutional approach to the coverage of global and regional conflicts of various types, and also to a certain extent affects the detached nature of texts, which manifests itself both in the choice of actors by the authors and in the formulation of attitudes to the conflict situations described. Thus, the individual or group level of understanding conflicts, even in social networks, is far from clear.

Thus, at this research stage, we can rather talk about a *single* model for the presentation of different types of social conflicts on online platforms. This model has an institutional basis: the individual or group level of understanding conflicts is not as actively involved as one might expect. However, such an assumption requires additional research. For sure when studying some types of conflicts, one should take into account their multilayered complex nature, in particular, the national and cultural origins and subsequent development. However, our primary task was to study the media coverage of the events described. In the future, the study of different types of social conflicts will allow us both to draw deeper conclusions related to the national and cultural component, as well as to build theoretical models of their life cycle.

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ARTICLES

Argentine journalists producing news during COVID-19: Stress and job satisfaction

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Abstract

The COVID-19 pandemic proved to have a more significant impact in developing countries like Argentina: as social inequalities increased, vaccination was delayed, and lockdowns were extended. Argentina had one of the strictest and longest lockdowns in the world: from March 20 to November 9, 2020. Despite most of the activities being suspended or reduced, the number of new cases grew steadily, and journalism was one of the professions that remained active throughout this exceptional period. This study explores how Argentine journalists were challenged during the pandemic regarding their emotional health, stress and job dissatisfaction. For this investigation, a survey of Argentine journalists (n=50) was conducted focusing on stress, occupational stress, and job satisfaction measurement scales; in addition, two editors (from a newspaper and a news agency) were interviewed. The findings indicate that their constant exposure to the pandemic, accompanied by feelings of uncertainty, left them with no room to assess their well-being. The results show three primary aspects related to compassion fatigue: emotional exhaustion (closely related to anxiety), difficulty falling asleep, and headaches.

Keywords

Introduction

Over the last decades, an increasing body of media research shows that journalists are struggling to balance their personal and professional boundaries

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in terms of emotions and that during the pandemic, this situation appears to have worsened. Media coverage of the COVID-19 pandemic was highly stressful for communication professionals, particularly in countries such as Argentina, where the number of infections and mortality rates were extremely high. Since March 2020, when the quarantine was decreed as a preventive measure against the coronavirus outbreak, "the freedom of expression and the role of independent journalism have been under permanent threat" (Giudici, 2021: 21). This change caused by the pandemic for journalists, accompanied by the feeling of threat and stress, could lead to compassion fatigue, a form of traumatic stress resulting from repeated encounters with victims of trauma and traumatic situations. While compassion fatigue is often studied in counselors, nurses, and first responders, this current study applies the concept to journalists who often encounter similar victims and traumatic scenes. (Dworznik-Hoak, 2017).

Covering tragedy is in every reporter's job description; however, journalists do not always have the emotional tools to deal with crisis events. Reporting on COVID-19 was the priority in a context where cultural events, sports, and travel were halted, and many journalists adapted their writing and knowledge to the needs of society while also adapting themselves as citizens and workers to produce and process the facts in the best way they could. Thus, journalists were exposed to stories that contained elements of trauma that were not just protracted; it became worse with time as the pandemic in Argentina continued to show high mortality rates. Journalists were witnessing individual and collective grief at high levels (ADEPA, 2021; Clay, 2020; Newman et al., 2003: 4).

Even if the work circumstances during the pandemic were exceptional and the journalists had high exposure to contagion, several scholars agree that the role of a journalist is integral to ensure that we, as the public, are informed about global issues (Deuze, 2019; Jukes, 2020; Kotisová, 2019). Journalists frequently work with tight deadlines, investigating stories that cover a wide range of tragedies, which may involve putting themselves at risk (Feinstein et al., 2002). Many note that journalists are highly susceptible to stressor-related psychopathology (Feinstein et al., 2002; Morales et al., 2014, cited in Tyson & Wild, 2021: 8536).

Reporters covering the pandemic wrote about the hypothetical impacts and death toll increases; they were also direct witnesses at hospitals and suffered the loss of their own family members and close friends. "The (trauma) reporting was coupled with personal experience of living through it and anxiety about loved ones at risk from the virus" (imunjak, 2021: 320). Early studies on journalists' work and exposure during the COVID-19 pandemic confirmed high

levels of anxiety and work-related stress (Crowley, 2021; Selva, & Feinstein, 2020).

On the other hand, an increase in misinformation concerning the pandemic has been reported in many studies, where most interviewed journalists stated encountering misinformation at least once a week (Posetti et al., 2020: 12). This "disinfodemic," as stated by Jaakkola and Skulte (2023: 028), causes journalists' work conditions to worsen to a great extent. It was also observed that during the first stages of the pandemic, there was a "crisis coverage gap" in which the public interest and the information that was being covered by journalism went in different directions, as the media usually focused on economic indicators and the general population was more interested in practical day-to-day information (Quandt, & Wahl-Jorgensen, 2022: 926).

This continuous accumulation of information during the pandemic—in many cases produced and processed from journalists' homes—contributed to increasing their stress levels. Based on the interviews conducted for this study with two media editors, this stress could have been increased, according to Editor 1, due "to the continuous uncertainty about the lockdown, the vaccine incoming and their efficiency" (Personal communication, 2022). This situation happened in addition to "the lack of adequate work environments; many journalists had to share their computers with the rest of their family members, especially those with children in school. Moreover, they had to face technological gaps that affect the availability of tools and the challenging connections to the Internet," specified Editor 2 (Personal communication, 2022). Besides the omnipresence of the virus, the economic situation continued to be a challenge for journalists in Argentina, as indicated by a recent study by the Forum for Argentine Journalism (FOPEA, 2021a; 2021b). The report explains how the tendency towards work precariousness grew in the country's media, providing data such as seven out of ten media lacked non-supervisory journalists; 66.6% of surveyed media replied that they lacked staff registered with the compensation policy providing the greatest coverage of rights. The investigation concludes that most local journalists work in precarious conditions and find themselves forced to deal with high levels of instability (FOPEA, 2021a, 2021b). According to mbito Financiero (2022), concerning the journalists' working conditions, it was in a context where 2.1 million people were infected with coronavirus, and 52,000 deaths were registered during the first year of the pandemic.

Based on the presented arguments, instability at work, social and affective, which added to the contextual conditions, result in a growing state of emotional precariousness in times of crises where stress and personality changes will

play an important role. Following Thomson (2021), we explore three areas regarding the emotional work of journalists: (1) the suppression or denial of emotions in journalism can influence the performance of journalistic practice; (2) ignoring or marginalizing the work of journalists can have a negative impact on their well-being and mental health; and (3) normalizing conversations about emotions in journalistic work can benefit their mental health.

Faced with this scenario in the South American country, the pandemic also represented a challenge for journalists globally, although Latin America was the region where the most deaths had been registered (Mathieu et al., 2020). More than 600 journalists died of COVID-19 in 59 countries over ten months in 2020 (Press Emblem Campaign, 2021).

Although the economic situation for journalists in Argentina was a matter of concern with the arrival of the pandemic, it only exacerbated this problem in a work environment that did not seem to be friendly. In a report on *El periodismo durante la pandemia* (Journalism during the pandemic) (FOPEA, 2021a), it is noted that attacks on Argentine journalists were on the rise, going from 58 cases registered in 2019 to 82 in 2020, with journalists who work on television being the most attacked (24%). Since the beginning of the outbreak, journalists described what was happening, kept the public up to date on relevant issues, and occasionally contributed to the recovery, care, and preventative measures of their community.

Even if this study analyzes the possible stress traits in Argentine journalists during the pandemic, we believe it is important to specify that this population has also been challenged in recent times by the precariousness of salaries and an economy that at times is uncertain. In other words, the pandemic is not the only thing that has worried Argentine journalists. The economic situation associated with rising inflation has generated precariousness in different areas of work, including journalism. In August 2023, the interannual inflation reached 124.4%, (INDEC, 2023) and it is expected that by the end of the year inflation will reach between 140% and 190% (Bloomberglinea, 2023).

For a better understanding of journalists' situation during before and after the pandemic, a research conducted by SiPreBA confirmend that between 2018-2019 around 3,100 journalists lost their jobs in Buenos Aires and over 4,500 in the country. In addition, the Argentine Journalism Forum (FOPEA, 2021) highlights that most local journalists work in precarious conditions and find themselves forced to deal with high levels of instability. Another study published by SiPreBA (2022) confirms that one in 10 journalists works for a self-managed media company and reveals that 14% were fired from the press industry during the last five years.

This article investigates how journalists experienced remote work during the COVID-19 pandemic and the effects on their psycho-emotional health. Theoretically, we depart from occupational stress and job satisfaction in order to understand their emotional situation during the lockdown. Reflections are made on occupational stress associated with the pandemic, and the scope of self-care as a tool for future action. This descriptive and exploratory study aims to comprehend the journalists' emotional health, work environment, and occupational stress during the lockdown in Argentina. Three research questions guide this study.

RQ1: Did the journalists develop any type of stress during the period in which they worked from home?

RQ2: Did the relationship with colleagues during this exceptional period influenced the journalists' job satisfaction?

RQ3: Could the survey results reveal possible indicators of compassion fatigue?

Theoretical framework

It is well known that journalists are professionals who deal with pressure on a daily basis. They have to assure the media that they are capable of providing first-hand news and with a high level of exposure (in this particular case, to maladies such as COVID-19 and emotional exposure) to the people struggling with the loss of loved ones.

Bos et al. (2004) show that occupations other than journalism, such as police officers, firefighters, and medical emergency staff, where the employees act as first responders, are highly stressful. Still, it is not taken into consideration that in many situations to which first responders are exposed, journalists are also present (accidents, terrorist attacks, natural disasters, amongst others). However, journalists may not be aware of the degree to which their work demands impact their emotional health. This applies not only to war correspondents but also to employees of small, medium, and large media companies. While research has been published on correspondents as responders, some note that journalists may not have access to appropriate assistance to deal with the impacts of occupational stress (Osofsky et al., 2005; Stroebe, & Schut, 1999). Monteiro and colleagues (2015) suggest that more knowledge of journalists' occupational stress variables is needed to develop training plans and support services for these professionals.

Like other professions, journalists compete with each other to gain a wider audience, share points of view and reactions, and achieve professional recognition

from their superiors and citizens. To accomplish this, they rely on their ability to continuously adapt to modern technology to disseminate the news through media outlets and social networks. However, transcending digital divides (Vartanova, & Gladkova, 2022; Escudero, 2023) in the context of the pandemic and confinement as a journalist can also be a stressful working situation, as presented throughout this study. Various researchers provide strategies that journalists employ when experiencing emotional labor, presenting them as a problem (or emotion); verbal processing with peers and personal networks (seeking support, using humor, debriefing); internal processing (introspection, acceptance, rumination, positive reappraisal, perspective taking); attentional deployment (following routines, activities such as exercise); boundary setting (not checking emails on days off); formal strategies such as counseling and therapy (Hughes et al., 2021; Miller, & Lewis, 2020; Thomson, 2018).

Occupational stress

The research on occupational stress among journalists is receiving more significant interest in academia. Experiencing an exceptional situation, such as the COVID-19 outbreak, has revealed how challenging and stressful this occupation can be. Even if it is reported from home and not directly on the scene of a traumatic event, the exposition of the news related to illness, death, and infection, has an impact on the media workers. According to Editor 1, "It was a difficult period for many; the thing is that in the case of journalists, as we were carrying out our duty, what we couldn't do was precisely to disconnect from the pandemic, the number of infected, our own numbers of infected, and the restrictions. The subject was being covered in all sections, and it had a great transcendence. We couldn't have a respite." In this sense, it is observed that COVID-19 was a transversal in all editorial offices, as it embraced every division; it was an unavoidable subject.

Journalists, due to daily professional demands, are exposed to intense occupational stress that can lead to compassion fatigue. A systematic review of job demands, coping, and impacts of occupational stress among journalists shows how journalists experience considerable stress, quality of life deterioration, and consider leaving the profession (Monteiro et al., 2015).

A key aspect of occupational stress is its direct impact on people's health and relations: physical illness, substance abuse, family relations, and professional satisfaction (Nelson, & Simmons, 2003; Stroebe, & Schut, 1999). More precisely, the impact of occupational stress may be experienced short, middle, or long term by these professionals depending on the effectiveness of the selected coping strategies and their resilient capacities to manage the work-related stress. According to Duran

(2010:71), "occupational stress has been a traditionally important subject at an organizational level, given its close link to workers' health and, thereby, its impact on the administration of economic and human resources in organizations." This is one of the reasons behind the extensive range of research on work-related stress, particularly from an organizational psychology point of view (Schaper, 2004).

From the psychological perspective, Lazarus's (1999) study on stress and emotion is of particular importance. He notes the existence of three interrelated components in the stress process: situation, personal resources, and the person's perception of their situation and resources. This interrelation accounts for the effect of stress, not only in how the person functions as a worker; but also in the cognitive, affective, and social spheres. The wide-ranging impact of work-related stress, its risks, and culture has consequences for mental and physical health and organizations. The impact can be seen in how this process greatly influences performance, motivation, and the quality of life of workers, the turnover and progressive withdrawal from jobs, and the resulting impact of these situations on productivity (Arias-Gallegos, 2012: 525).

Osofsky et al. (2005) focused on the health of war journalists, while Aoki et al. (2012) emphasized mental health impacts, perceptions, and attitudes of journalists. Perrault and Perrault's (2021) research found that journalists felt vulnerable during the pandemic, fearing for their health and jobs, and felt a responsibility to produce and deliver relevant information to their audiences.

Compassion fatigue

In the context of a long-lasting pandemic, we assess the presence of compassion fatigue, which refers to stress resulting from the traumatized individual and not the trauma itself; it involves an intense state of stress or undue concern for the cognitive, physical, psychological, and emotional pain and suffering of trauma survivors. Compassion fatigue, also known as "vicarious traumatization" or secondary traumatization (Figley, 2002: 1433), is related to the emotional residue or strain of exposure to working with those suffering from the consequences of traumatic events. Different studies confirm that journalists are exposed to events that mental health professionals deem traumatic (Feinstein et al., 2018; Newman et al., 2003; Osmann et al., 2020; Pyevich et al., 2003). "Compassion fatigue can occur due to exposure to one case or can be due to a cumulative level of trauma" (Cocker, & Joss, 2016: 618).

The common symptoms of compassion fatigue include chronic physical and emotional exhaustion, depersonalization, feelings of inequity toward the therapeutic or caregiver relationship, irritability, feelings of self-contempt, difficulty sleeping, weight loss, and headaches. According to Stifter (n.d.), tears,

exhaustion, and procrastination are signs and symptoms of "vicarious stress," or "compassion fatigue," a condition sometimes experienced by reporters who cover stories of people who are living in very stressful situations.

Methods

This study is based on a mixed method definition: "a class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, theories and or language into a single study" (Johnson et al., 2007: 112). More specifically, these research methodologies are considered to be complementary to each other rather than incompatible with each other (Strauss, & Corbin, 1998).

To answer our research questions, a psychometric study, using a quantitative focus and a transversal design of a descriptive-correlational type, was drawn up (Hern ndez et al., 2006; Salkind, 1997), looking to identify and describe the psychometric characteristics of the Questionnaire on Psychosomatic Problems (CPP) by Hock (1988) and the Overall Job Satisfaction Scale (P rez-Bilbao, & Fidalgo, 1995).

The data obtained through an online platform were analyzed using a statistical analysis program (SPSS 28.0.1.1). First, a descriptive exploratory analysis was carried out; in the first sections, they locate and describe the composition of the consulted population and describe some of the variables individually. Second, a correlational analysis was done to understand to what extent the state of psycho-emotional health, stress related to remote work, and job satisfaction of journalists were experienced during the pandemic period in Argentina.

For this study, we used semi-structured interviews, presented as in-depth interviews which are used extensively as an interviewing format, possibly with an individual or sometimes even with a group (Strauss, & Corbin, 2007). These types of interviews are conducted once only and generally cover a duration of 30 minutes to more than an hour (Crabtree, & DiCicco-Blum, 2006). In addition, the semi-structured interviews were based on a semi-structured interview guide, which is a schematic presentation of questions, and topics were presented by the interviewer. The interviews, consisting of open and closed questions, were conducted through video calls via WhatsApp with audio-recordings.

Participants

This study consists of 50 journalists in the media industry: radio, television, written press, and online media (as news agencies). The participants voluntarily took part and answered the survey questions. Participants were from around the country with or without experience in major critical incidents (natural and human disasters) and who work for a local news organization, nationwide news channel/

company, or recovered media outlets. No specific type of journalist was excluded; thus, the sample includes journalists who may work for more than one media company. Two editors also participated: a female editor from a news agency; a male newspaper editor, both with more than 20 years of experience as journalists and leading teams before and during the lockdown associated with COVID-19 in Argentina. The editors are referred to as Editor 1 (E1) and Editor 2 (E2).

Procedure

An electronic version of the questionnaire was created using the website Encuestafacil.com, which was sent via email and WhatsApp and shared in journalists' groups and organizations for ten days (from May 21 to 31, 2021). Once the information was collected, a database was established using SPSS, where the questionnaire was uploaded.

Questionnaire survey

To understand the contextual environment in which the professionals surveyed found themselves, they were consulted on aspects that would allow us to better describe the sample population in the context of a pandemic. The survey respondents provided their personal data (name and surname, age, gender, email, media where they work, and seniority in that media).

The Questionnaire of Psychosomatic Problems related to stress (CPP) by Hock (1988) and its Spanish adaptation by Garc a et al. (1993) was used. This questionnaire asks the subjects, via six (6) Likert reagents, to answer to what degree, over the past three months, they have suffered one of the symptoms described in the 12 items that make up part of the first block of questions. The responses range from "1=Never" to "6=With great frequency."

The sum of the values of all the answers gives a score between 12 (no stress symptoms) and 72 (maximum level of stress). The midpoint is established at 42 points. For this study, it was determined that all scores under 42 are considered an absence of stress; all scores equal to or higher than 42 denote the presence of work-related stress.

In the second block of the survey, the Overall Job Satisfaction Scale (Warr et al., 1979) and the Spanish translation and adaptation by P rez-Bilbao and Fidalgo (1995) was used. It consists of 15 questions and seven Likert reagents. Responses ranged from "1=Very Unsatisfied" to "7=Very Satisfied."

This test makes it possible to obtain the general level of work satisfaction, corresponding to the sum of all the items. Its minimum value is 15 (minimum satisfaction), and its maximum value is 105 (maximum satisfaction). The midpoint or neutral point is set at 60 points. Hence, for this study, all scores under 60 denote work dissatisfaction: all scores equal to or higher than 60 denote work satisfaction.

Results

This study explores how Argentine journalists were emotionally challenged during the pandemic regarding anxiety, job dissatisfaction, and examines a possible link between stress and compassion fatigue. A survey of Argentine journalists (n=50) was conducted focusing on stress, occupational stress, and job satisfaction measurement scales. We focus on categories that allow us to account for how work stress is expressed at a physical level, the emotional levels of job satisfaction, and those aspects that show the presence of compassion fatigue in this context, identifying some of the primary emotions recorded.

The sample in this study included women (72%) and men (28%) aged between 30 and 73. The workers participating in the study are employed by various media: radio (50%), written press journalists (38%), television channels (18%), and media websites (12%).

Out of all the survey respondents, 37 (74%) work for one media company, seven (14%) for two media outlets, five (10%) for three media outlets, and one (2%) for six media outlets. For the job diversity distribution by age and gender, it is observed that, in the case of women between 40 and 60 years old, multi-employability concentration is greater, extending their labor field to more than two occupations. For men, the ranges of 41-50 and 61-70 years of age work for one to three media companies at a time. The atypical cases are concentrated for both sexes in the 30-40 age range, a stage in which a greater workload is registered (three or more media outlets), confirming multi-employment (see *Figure 1*).

Figure 1

Questionnaire: In how many media do you work? Multi-employment.
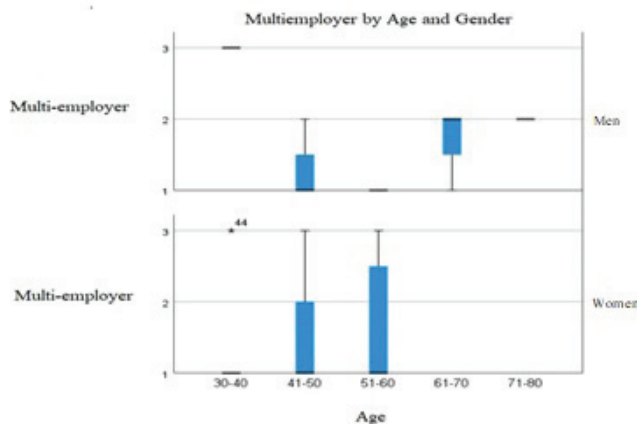
Regarding work stress, five participants (10%) showed a degree of stress. The manifestations that may be associated with tension are presented in decreasing order: the main symptoms of work stress are concentrated in insomnia problems to which are added symptoms of anxiety that are reflected in an increase in food intake and increased consumption of tobacco (72%); difficulties in getting to sleep (60%); strongly encouraged to not get up in the morning (58%); and a high rate of migraines and headaches (56%). Specifically, in the case of women between 30-60 years, the difficulties of dissatisfaction with their rest times are greater. In the case of men, the ranges of 40-50 and 61-70 are the ones who mostly express difficulties in falling asleep.

Looking at the level of physical symptoms of work stress, it is confirmed that the lack of sleep and migraines are experienced to a greater extent by women between the ages of 30-60. The participants concentrated in the ranges of 51-60 for men, and 30-40 for women, show a greater increase in dissatisfaction accompanied by recurrent headaches.

The symptoms of work stress related to increased food and tobacco consumption (72%) also show greater frequency in all ages and for both genders. Both symptoms occur more frequently between the ranges of 30-50 for women and 40-50 for men (see *Figure 2*). In that sense, Editor 1 recalls some exchanges with colleagues. E1: "At the second week of the lockdown, we were already pretty burned out. There were colleagues who went to sleep at dawn. When I woke up, I used to find a lot of messages from the chat group that we had back then" (Personal communication, 2022).

Figure 2

Tendency to eat, drink or smoke more than usual (by gender and age)

Figure 2. Tendency to eat, drink or smoke more than usual (by gender and age).
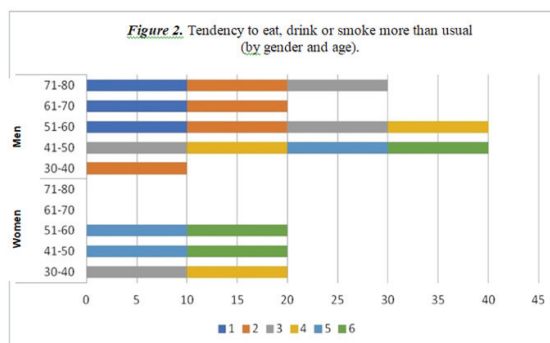
Regarding the level of job satisfaction during the COVID-19 lockdown, 38% of the journalists expressed a certain degree of dissatisfaction concerning their job stability, while 60% reported dissatisfaction when asked about the possibilities of a job promotion with their current employer. According to E2, the pandemic raised fears, dissatisfactions: "I couldn't tell you if it was on day 8 or 10, but we hadn't been locked up for long, and you could already see how the personalities in the team were changing: concern, fears, phobias of possible meetings, avoiding exposure in hospitals. We all respected each other, and more than a workgroup, a self-help group was created."

According to FOPEA's (2021) reports, the group of journalists consulted shows a trend towards multi-employment, a situation becoming more complex in the context of the pandemic and confirms the precarity indicated by previous studies. Based on participants' responses, there are historical elements linked to low salary levels (63% of dissatisfaction) or contextual aspects that are aggravated during crises, such as the physical conditions of their work environment (37%), their extended hours (36%), the scant recognition received for their work (32%). These are reported symptoms that generate dissatisfaction.

The findings also show that their dissatisfaction with the increased time dedicated to the production of news increases with age. Twenty-nine (58%) survey participants responded that they were satisfied with their work hours during the pandemic. In terms of the salary level, although dissatisfaction is a transversal item, the greatest dissatisfaction is registered between the age ranges of 40-50 years and between 50-60 (see *Figure 3*).

Figure 3

Salary

On the other hand, how the media managed journalists' work during the pandemic shows an accumulated percentage of dissatisfaction that represents 46% of the sample. In terms of the most satisfactory aspects of their work as journalists, the findings show that a high percentage of participants (66%) express high satisfaction with the work carried out in their respective jobs in the context of the pandemic. This satisfaction increases to the extent that the age of the respondent increases (60 to 80 years).

The items show satisfactory internal consistency in this study (Cronbach's $\alpha = 0.87$). According to E1, "For many, it was difficult because they had large families, or their elderly parents were far away, or they had recently lost a loved one. All of this led us to try to turn the situation around, to make it less tedious by talking about what our neighbours did from their balconies and describing the new role that the community was taking on" (Personal communication, 2022).

This high satisfaction with their work tasks is primarily focused on highlighting the benefits of their relationship with their co-workers, hierarchical managers, and coordinators, as well as the assigned responsibilities. Notably, the dissatisfied option was not chosen by any participant. This is expressed in the experience lived by E1: "While changes were noticeable in some colleagues and could be understood, as a work group, we supported each other the entire time. For some of them, talking about the infected had become a daily routine, and I think that if it worked for them to experience it that way, that's okay" (Personal communication, 2022).

The set also shows a trend towards satisfaction, while the respondents show accumulated levels (satisfied to very satisfied) that reach 72% and the chances of using their abilities (64%). When asked about their degrees of satisfaction with the freedom to choose their own work method during the COVID-19 lockdown context (*Figure 4*), 72% reported being satisfied, on average, with the possibilities offered in their respective media. In the case of men, the greatest satisfaction is in the range of 60-80 years; in the case of women, the moment of greatest satisfaction occurs at earlier ages, ranging from 30-50.

Figure 4

Freedom to choose their own work method during the COVID-19 lockdown
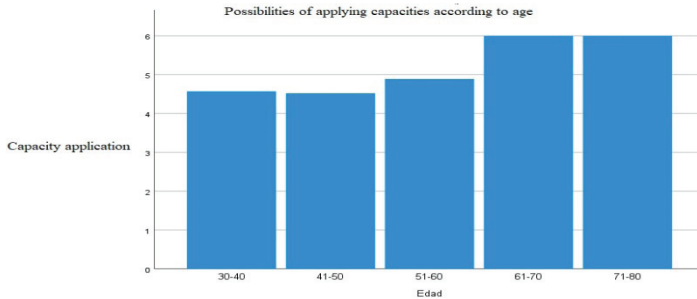
Conclusion

This study explores how Argentine journalists were emotionally challenged during the pandemic regarding stress and job dissatisfaction. The purpose of this study was to investigate how journalists experienced their new way of working during the COVID-19 lockdown period and the possible changes in their activities, feelings and relationships with colleagues. Since the sample is limited by the number of participants, the results achieved are also limited; Therefore, research in this line with a high number of participants will allow obtaining a better knowledge of this population during the lockdown period.

Regarding the journalists' feelings associated with stress during the lockdown (RQ1), after the analysis process, a series of elements were observed that deserve attention concerning the diversity of stress factors that have affected the work of these professionals. The findings for (RQ1) show that stress is experienced in different ways depending on gender and age range, among other issues. Through this study, we found a series of situations that affect them and occur outside working hours, like their type of rest and the possibility of being able to concentrate on other kinds of activities. The observed stress can be seen as a precursor to the discomfort caused by lack of rest (60% dissatisfaction). Participants (72%) reported feeling tense after long exposures to the computer screen. While they reported that their working hours during the pandemic were lengthened, 58% answered that they felt dissatisfied with their work schedule during the pandemic. Thus, the findings suggest that the population of remote workers during the pandemic with the most significant inconveniences were those between 41 and 50 years, an aspect that requires

further investigation to examine if it could be related to the care of others and demonstrates the limitations of this study. More specifically, the people who demonstrated this discomfort could be in charge of children/adolescents, where the requirement to connect and perform tasks online could impact the journalists' work. Being confined at home with children and family members requires multi-tasking using internet connections, tablets, computers, and mobile phones. However, the pandemic is not the only thing that has worried and stressed Argentine journalists. The economic situation associated with rising inflation has generated a lot of precariousness in different areas of work, including journalism. According to SiPreBA between 2018 and 2019 around 3,100 journalists lost their jobs in Buenos Aires and over 4,500 in the country. The Argentine Journalism Forum (FOPEA, 2021) highlights that most local journalists work in precarious conditions and find themselves forced to deal with high levels of instability and SiPreBA's research (2022) confirms that one in 10 journalists works for a self-managed media company and reveals that 14% were fired from a press company during the last 5 years.

With respect to the type of relationships between journalist peers during the lockdown (RQ2), participants reported on their employment relationship, either with colleagues or with superiors 82% satisfaction. Notably, through this study, it is evident that the highest values in the survey are reflected in the relationship that journalists maintain with their co-workers and peers, their bonds, and interactions during the lockdown. Regarding their salary, although dissatisfaction is an item that crosses the age spectrum, the data shows that the greatest dissatisfaction is between the age ranges of 40-50 and 50-60 years. Notably, wage dissatisfaction was at 63%, coinciding at a certain point with the FOPEA's (2021) study, noting that 66.6% represented job precariousness.

Finally, regarding the findings related to possible indicators of compassion fatigue (RQ3), the participants responded that the lockdown factor and the use and exposure to electronic devices for work and socialization were considered disturbing elements. The results show that stress is intimately related to the environment and the contextual conditions in which it develops: in this case, the pandemic period during working hours and in other spaces in the context of a long lockdown. Guerrero-Barona and Vicente-Castro (2001) found a series of similarities that make the individual consider more stressful environmental conditions, including uncertainty, lack of information, novelty, ambiguity, duration, and imminence of a situation. Based on our measurements and interviews, we find the presence of three aspects related to compassion fatigue

that deserve further study: emotional exhaustion, difficulty sleeping, and headaches.

This study is the first to investigate the potential stress factors in Argentine journalists during the COVID-19 pandemic. The findings confirm the need to advance research that delves into the consequences of stress and compassion fatigue to establish lines of support and monitoring aimed at this sector of media professionals.

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Media representation of the technologies of the fourth industrial revolution: Russian business media practice (2017-2021)[1]

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Abstract

The article studies specific topical and thematic features of representation of technology innovations in 2017-2021 in Russian leading business print and online magazines: *Expert, Profile, Inc. Russia*, and *Sekret Firmy*. The study showed that information technologies are the main topic of scientific and technological discourse in business media. Moreover, the emphasis is on artificial intelligence technology, blockchain and distributed ledger technology, and cybersecurity. The authors of online business magazines mostly focus on the representation of achievements, challenges, and future development of the IT industry. In addition to the IT sector, print business media also cover other high-tech areas, including those traditionally developed in Russia: space technologies, developments in energy generation, storage and transmission, and advanced materials and innovations in the agro-industrial complex. This approach appears to be more consistent with the objectives of scientific and technological development of the economy and social sphere.

Keywords

Business media, business journalism, media representation, digital economy, technology innovation, scientific and technological development.

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Introduction

Artificial intelligence, the Internet of Things, virtual and augmented reality, bio- and neurotechnologies – these and other technology innovations are rapidly reshaping the economy and social sphere. The ongoing changes are fundamental, which allows researchers to speculate about the beginning of the Fourth Industrial Revolution, the implementation of the so-called Industry 4.0. (Schwab, 2022a, 2022b). The development of key areas of the new technological revolution comes under the close scrutiny of the corporate sector and is the top priority of government policy in developed and developing countries, including the Russian Federation (Development of Selected High-Tech Areas, 2022).

Interestingly, the authors of the Industry 4.0 concept point out that the indicator of progress today is not so much the achievements and rate of scientific and technological development as the measure of acceptance of technology innovations by society. To a large extent, the solution to the problem involves efforts by the media as the main channel for making society aware of scientific and technological advances and challenges (Latov, & Latova, 2018). By shaping public opinion, mass media can impact decision-making in the innovation policy of the state (Waldherr, 2012, Nordfors, 2004a; 2004b; Gureeva et al, 2021; de Albuquerque, 2023) and the development of knowledge-intensive sectors of the economy, such as medicine (Haider, 2004) or the nuclear industry (Gamson, 1989).

Business media have a special role in this process. As part of the information infrastructure of the economy, business mass media reflect the innovation processes taking place in the economy and affect their evolution. By reporting on new developments and technology trends and analyzing the introduction and implementation of innovations, business media help businesses to overcome barriers to innovation development, including the lack of knowledge about new technology and markets for high-tech commodities (Vlasova, & Fridlyanova, 2022). The level of attention paid by business media editors to certain technology innovations suggests how relevant they are to the economy.

In addition to entrepreneurs, the target audience of business media includes investors, politicians, officials, scientists, and engineers willing to commercialize their developments, i. e. the main subjects of the national innovation system (Kudina, 2018: 174). Thus, business media can contribute to the innovation-driven growth of the economy, first of all, through the creation of an effective system of communication between the key innovation actors: academia, businesses, and governments[3].

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[3] State Program "Scientific and Technological Development of the Russian Federation". URL: http://government.ru/docs/36310/

How efficiently do business media perform this function? What is the content of the scientific and technological discourse of business media? Which areas of global and national technological development attract more attention from business journalists, and which areas are undeservedly ignored? Answers to these and other questions are of interest not only to theoreticians and applied researchers of the media sphere but also to innovation policy experts (Ilchenko, & Frolova, 2021). Yet, there are very few media studies on these issues.

Literature review

The authors of most papers focus on studying the media representation of certain technology areas, such as synthetic biology (Wang, & Du, 2023), carbon capture, utilization and storage technology (Jiang et al., 2022), or energy technologies in general (Ter v inen, 2014). The subject of research is often news stories published in print and online general interest media (Dempster et al., 2022; Strooban et al., 2019; Weaver et al., 2009; Anisimov et al, 2023); their content is frequently analyzed using custom software (Groves et al., 2016). There is virtually no research on analytical journalistic materials published in business media.

Few papers by Russian researchers are devoted to the study of media discourse on innovations and technology park development based on a long list of mass media, including individual business publications (Toganova et al., 2016; Latov, & Latova, 2018). The results show a steady increase in the number of publications about new technology, especially in the areas actively supported by government programs (e.g. nanotechnology). However, the analysis of media texts revealed that technology innovations are not associated clearly enough with changes in public life, and the media discourse about technology parks is dominated by publications about promotional events (conferences, forums, etc.); however, there are few texts about the key areas of technology innovation studies and their expected results.

The international media discourse on innovation was studied in the articles by Gromova (Gromova, 2021a, 2021b) based on translated materials posted on the InoSMI website, including publications of foreign business media. Notably, most of the publications reviewed by Gromova were of the analytical genres, which made it possible to trace quite clearly the characteristics of innovations under study: life cycle stages, main actors, type of innovations, extent, etc. The author proposes to further investigate social, economic, and political trends in the field of media discourse on innovations, which form an innovative culture and, consequently, an innovative type of thinking in society, contributing to its development.

We believe that the lack of research into the scientific and technological discourse in business media stems from the lack of tools for studying this complex issue. In order to tackle this problem, we developed a methodology for studying science and technology-related topics in business media by the example of studying functional, topical/thematic, and genre features of analytical publications about technology innovations (Ilchenko, & Frolova, 2021). It is assumed that such publications deal with science and technology issues in the most in-depth and versatile way since the analytic character and high quality of journalistic examination of topics distinguish business media from other types of mass media (Vyrkovsky, 2009), and technology innovations drive the Fourth Industrial Revolution (Schwab, 2022a).

This approach formed the backbone of the research project "Technological Innovations as an Object of Journalistic Analysis in Business Media". During the first stage of the project, we studied the topical and thematic characteristics of publications about new technologies in the leading Russian business journals *Expert, Profile,* and *Forbes Russia* in 2017-2021 (Frolova et al., 2022a, 2022b; Ilchenko, 2022).

The results of the study show a steady increase in the number of analytical publications on innovations during this period and their diverse content. It should be noted that the majority of such publications appeared in sections devoted to the development of private and financial sectors, major events, challenges, and trends in the business and social spheres, rather than in specialized science and technology sections, such as *Innovations* or *Science and Technology*. Non-specialized sections also drove the growth of the share of innovation-related materials in business magazines, which can be explained by the unprecedented influence of the new technological revolution on social and political processes, the economy and business, which results in an increasingly important role of the science and technology aspect in the journalistic analysis of the business sphere (Frolova et al., 2022a).

The study of thematic features of publications on new technologies allowed us to determine the main areas of science and technology development of the economy and society analyzed in the publications of business magazines, identify current technology trends neglected by journalists, rank the economy sectors covered in the context of their technological development, and monitor several other parameters, such as the life cycle stages and geography of innovations, etc. (Frolova et al., 2022b; Ilchenko, 2022).

The logical continuation of the research project appears to be the study of the practice of media representation of technology innovations in the business

media operating exclusively online. The relevance of the study is determined by the generally higher demand for online media in the modern audience than for print media. In addition, the operation in the digital space, knowledge, and direct use of information technologies, which open up new opportunities for collecting, analyzing, presenting, and distributing content, can influence the thematic and genre preferences of online business media authors who create analytical publications about new technologies.

The main purpose of the article is to explore the topical and thematic features of the representation of technology innovations in the leading Russian print and online business magazines. The research hypothesis is as follows: the editors of business magazines focus more on the development, firstly, of information technology (IT), which is the foundation of the Fourth Industrial Revolution, and secondly, on innovations in high-tech spheres traditionally developed in the Russian Federation, such as energy, materials science, space industry, agro-industrial complex, etc.

Methodology

The subject of the study was the content of the leading Russian business media outlets: Sekret Firmy[4] and Inc. Russia[5] online magazines and Expert and Profile printed weekly magazines. We chose these magazines because they are popular among the audience and have similar typological features.

All four media outlets produce journalistic content addressing cross-cutting topics dedicated to the development of the business sphere and have similar circulation and audience coverage. For example, Inc. Russia, the Russian version of the American business magazine Inc., positions itself as "a legendary magazine about entrepreneurship. We focus on small and medium-sized businesses, advanced technologies, and the people behind it all"[6]. The magazine's website is visited by 1.1 million unique users each month[7].

The About section on the website of Sekret Firmy (secretmag.ru) says that it is "a magazine about business, economics, finance and high technologies that promote the development of economy and business in Russia and in the world." The outreach of the website is 1.1 million unique readers per month.

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[4] https://secretmag.ru/

[5] https://incrussia.ru/

[6] Inc. Russia mediakit data for 2021.

[7] Here and elsewhere, the data on the audience coverage of the media outlets' websites is given for November 2023; the data was obtained using the SimilarWeb service (www.similarweb.com).

Profile is a weekly printed business magazine that "publishes original articles on the widest range of topics from politics, economics, business and finance, public, social and cultural life." The circulation is 92 thousand copies[8]. The magazine's website, www.profile.ru, is visited by 861.8 thousand users per month.

The editorial board of Expert magazine presents itself as "a weekly that deeply and professionally studies economics, business, and socio-political processes. Expert does not limit itself to figures and facts, but gives readers plenty of reliable information, presenting trends, analytics, forecasts, and ratings, describing the state of industries, and publishing interviews with key business figures". The circulation is 92 thousand copies[9]. The current website traffic is 929.5 thousand unique users.

The period of the study covered the years 2017-2021. This time frame was chosen deliberately to cover a relatively stable period of the country's development: from the approval of the Strategy of Scientific and Technological Development of the Russian Federation (approved by Presidential Decree No. 642 of December 1, 2016) to the beginning of the Special Military Operation in Ukraine in February 2022.

During the content analysis of the business media, we selected journalistic publications that met two main criteria. The *first criterion* is related to the publication genre. The sample included journalistic texts characterized by the analytical way of reflecting reality, which does not only describe events, problems, and phenomena but also substantiates, evaluates, and forecasts them, and in some cases formulates an action program (Tertychnyy, 2013). With this criterion in mind, the selection of publications was based on the list of the main analytical genre forms used in business magazines: expert interviews, recommendations, forecasts, comments, reviews, ratings, opinion columns, case studies, news features (or trend articles), and analytical articles (Vyrkovsky (ed.), 2012: 599-628). Additionally, different approaches to the identification and description of analytical genres in mass media were taken into account: both earlier publications (Kroychik, 2004; Lazutina, & Raspopova, 2012; Tertychnyy, 2014) and more recent studies of the genre structure of online media (Kolesnichenko, 2018, 2019, 2022).

The *second criterion* reflected the subject limits of the publications: the development, implementation, application, regulation, or future use of technology innovations, which are represented in industry and services by

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[8] Profile mediakit data for 2020.
[9] Expert mediakit data for 2020.

two types – product and process innovations (Innovation Management, 2019). Product innovation is the development and introduction of technologically new or significantly improved goods and services. It can include new uses or combinations of existing knowledge and technology. Product innovations include new goods and services, significant improvements in the functional or user characteristics of existing goods and services, new uses, and new design. Process innovation is the implementation of technologically new or significantly improved production methods, including product delivery methods. Process innovations include new or significantly improved production methods; new delivery methods; new or significantly improved methods for the creation and provision of services.

To identify the topics of technology innovations in the publications of business mass media, we relied on a wide range of theoretical research on the issues of innovative development of both global and national Russian economy (Development of Selected High-Tech Areas, 2022; Dezhina, & Ponomarev, 2020; Innovative Economy, 2019; Oganesyan et al., 2018; Maslennikov, 2017; New Technological Revolution, 2017; Ponomarev, & Dezhina, 2016; Glazyev et al., 2014, etc.). As a result, we compiled a model list of 15 high-tech areas that match both key science and technology areas of development of the Russian Federation (The Concept of Technological Development of the Russian Federation Until 2030, 2023[10]) and global innovation trends of the Fourth Industrial Revolution (Schwab, 2022a). This term was coined by Schwab, the founder of the World Economic Forum. The Fourth Industrial Revolution is a new stage of human development. It is based on the three previous industrial revolutions and driven by the growing availability of the latest, primarily information technologies, as well as the convergence of digital, physical, and biological systems (Balatsky, 2019).

Below is the model list of 15 high-tech areas covered by this study:
- New computing technology
- New industrial and system software
- Blockchain and distributed ledger technology
- The Internet of Things
- Cybersecurity technology
- Artificial intelligence technology
- Robotics

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[10] The Concept of Technological Development of the Russian Federation Until 2030 // Decree of the RF Government No. 1315-r of May 20, 2023. URL: http://government.ru/docs/48570/

- Unmanned vehicles
- Technologies of new materials and substances
- Biotechnology and medicine
- Neurotechnology
- Virtual and augmented reality
- Energy generation, storage and transmission technology
- Modern and future mobile communication networks
- Space technology.

While we selected publications from the print business media, we analyzed all issues of Profile (198) and Expert (223) (421 issues in total). We used the Integrum information retrieval system of mass media monitoring and analysis to select publications from the online business media. The system indexes the materials and contains full-text archives of over 12,000 sources, including Sekret Firmy and Inc. Russia. The system generated a sample of 10,113 publications (4,111 from Sekret Firmy and 6,022 from Inc. Russia) that contained keywords 'tekhnolog*' ('technolog*') or 'innovats*' ('innovat*'). We excluded publications that did not meet the two criteria described above from the sample. In addition, we analyzed the sections of Sekret Firmy and Inc. Russia online magazines for the period under study that could contain the publications we were interested in: Technology and Stories sections in Sekret Firmy magazine and Invent, Fly, and Understand sections in Inc. Russia magazine.

The final sample consisted of 1,033 publications of analytical genres about technology innovations corresponding to the fifteen key areas: 292 publications from Inc. Russia, 135 publications from Sekret Firmy, 416 publications from Expert, and 190 publications from Profile (Table 1). We included publications focusing specifically on novel solutions[11] and publications with an explicit science and technology narrative[12]. The latter category of texts includes, in particular, publications on knowledge-intensive business development, which, in addition to an overview of the technology (either

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[11] Tselykh, A. Govorit kak Putin, chikhat kak Sobchak. Kak rossiyskaya neyroset uchitsya klonirovat golosa [Speak Like Putin, Sneeze Like Sobchak. How a Russian Neuron Network Learns to Clone Voices]. Sekret Firmy, November 21, 2019. URL: https://secretmag.ru/enciklopediya/poyas-i-put.htm

[12] Albert-Deitch, C. Slezhka za pokupatelyami: kak magaziny povyshayut svoyu pribyl s pomoshchyu novykh tekhnologiy [Shopper Watching: How Stores Are Boosting Their Profits with New Technologies]. Inc. Russia, May 15, 2017. URL: https://incrussia.ru/understand/slezhka-za-pokupatelyami-kak-magaziny-povyshayut-svoyu-pribyl-s-pomoshchyu-novykh-tekhnologiy/

developed or used), refer to companies' development strategies and financial performance[13].

Priority topics in the scientific and technological discourse of business magazines in 2017-2021

Mass media outlet // High-tech area	Inc. Russia (abs.)	Sekret Firmy (abs.)	Expert (abs.)	Profile (abs.)	Σ (abs.)	% of pub.
Artificial intelligence	71	38	50	17	76	17.0
Biotechnology and health	40	20	75	26	161	15.6
Energy generation, storage and transmission technology	12	3	71	32	118	11.4
Blockchain and distributed ledger technology	46	13	35	8	102	9.9
Cybersecurity technology	11	17	27	18	73	7.1
New computing technology	18	6	38	8	70	6.8
Space technology	8	5	21	27	61	5.9
Technologies of new materials and substances	14	3	35	9	61	5.9
Unmanned vehicles	14	4	19	13	50	4.8
Robotics	12	4	16	11	43	4.2
Virtual and augmented reality	23	8	2	3	36	3.5
The Internet of Things	12	6	6	12	36	3.5
Industrial and system software	4	6	15	1	26	2.5
Modern and future mobile communication networks	3	1	5	4	13	1.3
Neurotechnology	4	1	1	1	7	0.7
Σ	292	135	416	190	1033	100

[13] Sample publication: Suvorova, N. RCML: razrabotchiki iz Permi pereobuchayut promyshlennykh robotov (i planiruyut zavoevat mir) [RCML: Developers from Perm Retrain Industrial Robots (and Plan to Conquer the World)]. Inc. Russia, September 6, 2017. URL: https://incrussia.ru/concoct/rcml-razrabotchiki-iz-permi-pereobuchayut-promyshlennyh-robotov-i-planiruyut-zavoevat-mir/

Results

Digitalization of the economy and business processes is the main topic of scientific and technological discourse in the business media (*Figure 1*). In this respect, artificial intelligence (AI) solutions are the key driver of the development of information technology. This area not only ranks first among the high-tech areas but also largely determines the development of other technology trends presented in analytical publications of business media, including unmanned vehicles, robotics, virtual and augmented reality, and the Internet of Things.

Figure 1

Rating of priority topics in the scientific and technological discourse of business magazines in 2017-2021

Topic	Percentage
Artificial intelligence technology	17,0%
Biotechnology and health	15,6%
Energy generation, storage and transmission technology	11,4%
Blockchain and distributed ledger technology	9,9%
Cybersecurity technology	7,1%
New computing technology	6,8%
Space technology	5,9%
Technologies of new materials and substances	5,9%
Unmanned vehicles	4,8%
Robotics	4,2%
Virtual and augmented reality	3,5%
The Internet of Things	3,5%
Industrial and system software	2,5%
Modern and future mobile communications networks	1,3%
Neurotechnology	0,7%

■ *Inc. Russia, Sekret Firmy, Profile, Expert*

In addition to AI solutions, the top five leading high-tech areas include technologies also related to the information industry, such as blockchain and distributed ledger technology and cybersecurity technology, which ensure the stability of the digital economy infrastructure. Besides, information technologies in many ways shape the development of other high-tech areas featuring on the pages of business magazines (*Table*). There is a remarkable share of publications on mobile health (mHealth) and other IT implementation practices in medicine (MedTech), cloud technology and algorithms for big data collection and analysis, and additive technologies.

Table 2

**Top-ten high-tech areas and technology innovations
driving these areas (%)**[14]

High-tech areas		% of pub.	Technology innovations
Artificial intelligence technology		52	Recommender and intelligent decision support systems
		26	Computer vision and facial recognition technology
		21	Natural language processing, speech recognition and synthesis (chatbots and voice assistants)
		2	Other
Biotechnology and health	Medicine and health	25	Medical technology (MedTech) and mobile health (mHealth)
		24	Advanced drug development
		14	Health-related genetic technology
		6	Life extension technology
		16	Other
	Biotechnology in agribusiness	7	Cultured meat/protein
		3	Genetically modified organisms (GMO)
		5	Other biotechnology in agribusiness

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[14] The table shows the conventional names of the groups of technology innovations that are the subject of at least five analytical publications over the entire study period of 2017-2021 (one text per year on average). Otherwise, innovations were grouped under "Other".

Energy generation, storage and transmission technology	51	Battery energy storage systems for electric vehicles (41%) and other purposes (10%)
	25	Renewable energy sources
	13	Hydrogen fuel cells
	6	Nuclear power and fuel energy industry
	5	Smartgrids
Blockchain and distributed ledger technology	61	Blockchain in the financial sector, cryptocurrencies
	20	Non-financial applications of distributed ledger technology (in logistics, utilities, law, etc.)
	9	NFT in creative industries
	10	Other
Cybersecurity technology	91	Personal data protection and cybersecurity of various industries (banking sector, medicine, energy, etc.)
	9	Digital piracy and malicious software
New computing technology	46	Microelectronics
	43	Cloud technology and algorithms for big data collection and analysis
	9	Quantum computers and computing
	2	Other
Space technology	30	Achievements and challenges in the development of the Russian space industry
	25	Private space industry
	18	Lunar and Mars programs of leading spacefaring nations
	10	Geo-information and satellite communication systems
	10	Space research
	7	Other

Technologies of new materials and substances	33	Additive technology (3D printing)
	23	Polymer composites
	15	Rare and rare-earth metals
	13	Nanomaterials (graphene and nanotubes)
	16	Other
Unmanned vehicles	58	Self-driving cars
	36	Unmanned aerial vehicles
	6	Other
Robotics	78	Industrial robots
	12	Exoskeletons
	10	Other (household and combat robots)

Other global technology trends are also gaining more attention from business mass media. For example, energy generation, storage and transmission technologies are primarily represented by publications on the development of electric vehicles and green energy. Innovations in medicine are mostly driven by the achievements in the pharmaceutical industry and genetics. It is worth noting that some rapidly developing global high-tech areas such as virtual and augmented reality, modern and future mobile networks (5G and 6G), and neurotechnology (brain-computer interfaces) feature in less than 4% of the analytical publications of business media, which may correlate with the level of development of these areas in the Russian economy, science, and technology. Industrial and system software, a critical area for the development of the digital economy that clearly depends on foreign suppliers, features only in 2.5% of the publications.

Biotechnology and Health ranks second in the science and technology thematic rating of both print and online business media. Apart from that, the practice of representing innovations in business print and online magazines differs significantly (*Figure 2*). The online magazines have a much greater focus on the development of the IT industry. The share of publications on AI, blockchain and distributed ledger technologies in online media is twice as high as in print media, while the share of publications on virtual and augmented reality is almost seven times higher than in print media.

**Comparative analysis of the scientific and technological discourse
of print and online business magazines in 2017-2021**
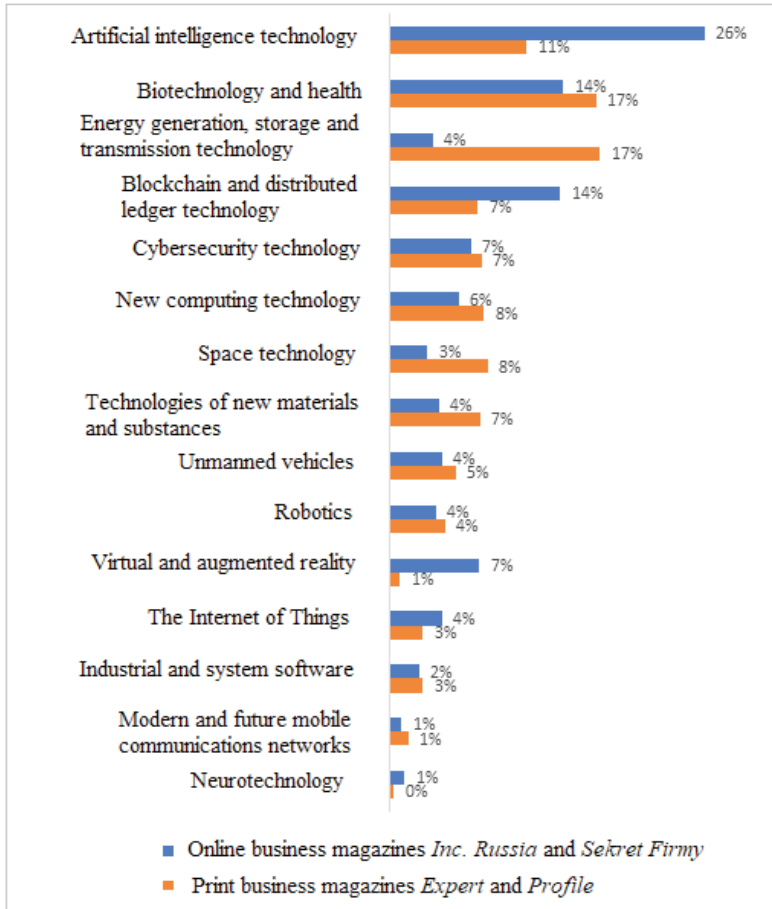
The print magazines are more "conservative": they pay more attention to the high-tech areas historically more established and traditionally developed in the Russian Federation, such as energy, space, and materials science.

Priority topics of the media outlets under study exemplify the specific nature of the scientific and technological discourse of print and online business media (*Figure 3*). In addition to the topics of artificial intelligence and virtual and augmented reality clearly dominating the online magazines, publications on blockchain and distributed ledger technologies dominate in *Inc. Russia* magazine, whereas publications on cybersecurity technologies are predominant in *Sekret Firmy* magazine. Along with a large number of publications on energy

generation, storage and transmission technologies, the print business magazines cover the topic of space technology development (in *Profile* magazine) and technologies of new materials and substances (in *Expert* magazine) in much more detail. Moreover, a greater focus on the achievements and challenges in the development of the Russian agro-industrial complex and microelectronics results in a higher share of publications about new computing technology and biotechnology in *Expert* magazine.

Figure 3

Specific nature of topics in the scientific and technological discourse of business magazines in 2017-2021
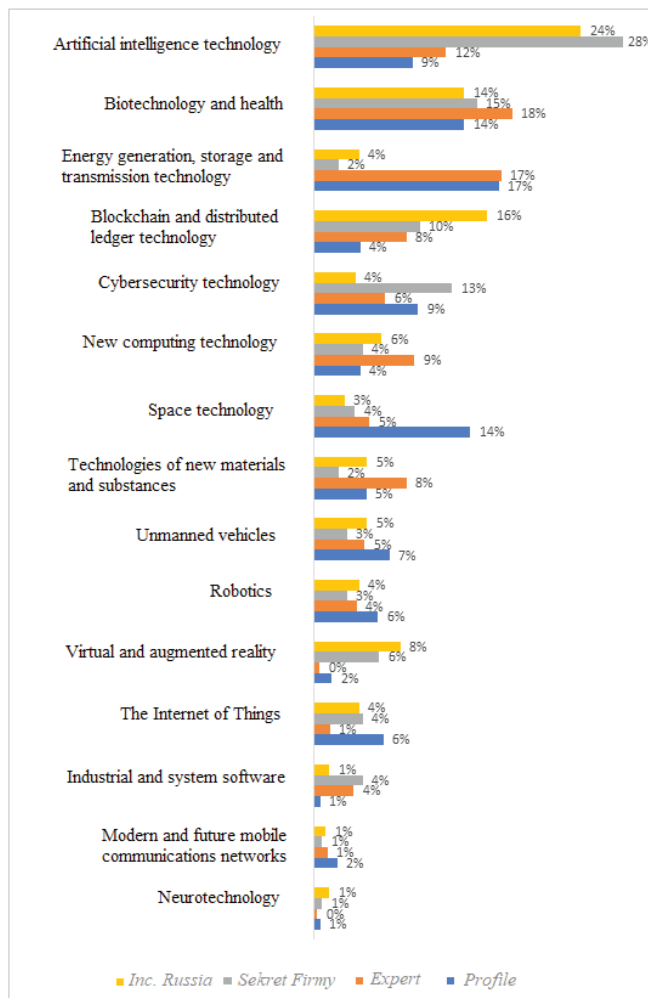
In general, the online business magazines demonstrate a thematic bias in favor of information technology and feature a relatively small volume of publications analyzing other areas and issues critical to the innovative development of the national economy and social sphere, primarily related to the Russian manufacturing sector, which depends on imported components and equipment, including those vital for research and development. In this respect, the practice of print business magazines, with a more balanced thematic range representing technology innovations, seems to be more effective and relevant to the goals and objectives of science and technology development of the Russian Federation.

Conclusion and discussion

The first part of the research hypothesis was confirmed. Information technology is the main topic of the scientific and technological discourse of business media. The emphasis is on the development of artificial intelligence technology and the implementation of recommender and intelligent decision support systems, computer vision, natural language processing, speech recognition and synthesis technologies in business processes, production, and everyday life. There is a remarkable share of publications on AI-based technologies, such as unmanned vehicles, robotics, virtual and augmented reality, and the Internet of Things. Cybersecurity, blockchain, and distributed ledger technologies are also among the top five high-tech areas most often covered in the publications. In addition, digital technology in many ways shapes the development of other high-tech areas featuring on the pages of business magazines, for example, medicine and advanced materials.

The second part of the hypothesis was only partially confirmed. The high-tech areas traditionally developed in Russia's economy, science, and technology are mainly represented in the publications of print business media. For example, space technology receives extensive coverage in *Profile* magazine, while *Expert* magazine focuses more on innovations in the agro-industrial complex and technologies of new materials and substances. Energy generation, storage and transmission technology is the priority topic for both periodicals. However, it is worth noting that the content of these areas is based mostly on global technology trends rather than the specifics of innovative development of the national economy. For example, energy generation, storage and transmission technologies are represented by the publications about the development of electric vehicles (41%) and about renewable energy sources (25%). A mere 6% of the publications focus on innovations in the nuclear power and fuel energy industry, which Russian engineers and scientists are famous for.

The scientific and technological discourse of the online business magazines is devoted mostly to the development of information technologies. Artificial intelligence, blockchain and distributed ledger technology, virtual and augmented reality – the share of online publications about these technologies is several times higher than that of print publications. The exception is biotechnology and health, where the share of publications in the print and online magazines is approximately the same, but again, the authors of the online magazines put a greater emphasis on the use of IT in medicine and mobile health than, for example, on biotechnology in agribusiness (the ratio of publications is 43% to 8% for the online media and 14% to 19% for the print media). Analytical publications about the achievements, problems, and prospects of other areas, besides IT, which are important for the innovative development of the economy and are primarily related to the manufacturing sector, are found on the pages of the online magazines under study in a significantly smaller number than in the print business magazines. In general, a more balanced (in terms of topics) practice of representation of technology innovations in the print business magazines appears to be more effective and relevant to the goals of science and technology development of the economy and social sphere.

What causes the thematic bias in favor of information technology in online business media is the subject of another study. It is possible that the specific features of digital journalism play a part here because, for digital journalism, it is essential to have knowledge of information technologies, which makes IT topics more congenial and understandable for representation.

In our opinion, one of the promising areas for further research is the study of functional and genre features of the scientific and technological discourse of online business media, which will allow us to answer the question of what purpose and in what genre forms journalistic content about innovations is delivered to the target audience.

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Mediatized by policy and demediatized in practice: Representation of Russian youth policy in the social media accounts of the authorities[1]

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Abstract

This paper examines how well the government agencies responsible for the implementation of specific areas of national youth policy in Russia manage to cover this topic on their social media resources, and identifies relevant trends for the space where the state and youth communicate. The results of our qualitative and quantitative content analysis of posts showed that the topic of youth policy does not receive proper coverage on the agencies' own social media accounts. Most often, youth policy is discussed in the context of covering events for young Russians. In addition, much attention is paid to documenting meetings of government officials to discuss issues within their areas of competence. At the same time, reports on specific government measures to support young people, current initiatives, and success stories of young Russians who take an active part in the development and implementation of the country's youth policy rarely get published on the agencies' accounts. The potential of the format for discussing youth policy in an open dialog on equal terms with the audience has yet to be tapped into. We believe it is possible to view the identified features of the communication strategies of the agencies as manifested demediatization of interaction between the state and youth.

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Keywords
Mediatization, demediatization, state, youth, youth policy, social media.

Introduction
Today, digital media play a key role in addressing various social and political issues. Russian and international scholars believe that political communication in an information society is deeply immersed in the media environment, which has its own special logic of functioning (Vartanova, 2020; Labush, & Puyu, 2019; Gureeva, 2020, Shestopal, 2010; Altheide, & Snow, 2000; Hepp, & Krotz, 2014; Lundby, 2014). Over the past few decades, researchers have been exploring the ways in which new media influence the transformation of the socio-political environment, examining how the authorities (Kryshtanovskaya, & Filippova, 2018; Surma, 2015; Chizhov, 2016; Crozier, 2007; Howard, 2005) and citizens (Vyrkovsky, & Kolesnichenko, 2020; Efanova, & Melnichenko, 2018; Bennett, Freedon, Hussain, & Wells, 2013; Sandoval-Almazan, & Gil-Garcia, 2014) use social media platforms to achieve their goals.

In Russia, the significance of new media space as the infrastructure for social and political communications is recognized at the government level. In July 2022, the President of Russia signed Federal Law No. 270, which requires government agencies to post information about their work on their official social media pages on a regular basis. The law took effect in December 2022; from then on, agencies must publicize their activities and comment on matters of current interest on their accounts. To monitor the implementation of these measures, the digital outreach of government authorities is rated[3] to evaluate performance indicators such as the visibility of agencies on social media, audience activity, content quality, content policy planning, special projects, and handling comments.

The Russian government focuses on finding effective mechanisms of communication with young people. For example, the Fundamental Principles of the State Youth Policy of the Russian Federation for the period up to 2025 approved by the Russian government back in 2014 set forth the following policy priorities: shaping the media space to enable youth development and promoting feedback and relations between government institutions, non-governmental associations, and young people. The official document puts particular emphasis

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[3] The digital outreach of government authorities has been rated since 2020 by the Research Center of Independent Non-Profit Organization "Dialog". URL: https://anodialog.ru/2023/07/25/dialog-predstavil-rejting-raboty-organov-vlasti-v-internete/

on the need to create efficient mechanisms to raise awareness among young people about the focal points and action items of the youth policy.

The federal authorities responsible for implementing the state youth policy in Russia include the Federal Agency for Youth Affairs (Rosmolodyozh), the Ministry of Science and Higher Education, the Ministry of Labor and Social Protection, the Ministry of Culture, and the Ministry of Sports. In this paper, we examine how well the agencies manage their own coverage of the youth policy on their social media resources and identify relevant trends for the space where the state and youth communicate.

Theoretical framework

Nowadays, the media forms a substantial part of the relations and processes by which people define their lives and assign a meaning to what surrounds them. One of the concepts that most fully reflect the essence of the increasing media influence on various spheres, including the socio-political sphere, is the concept of mediatization. The term was coined in 1993 by the English researcher Thompson (1993), who referred to the process of attributing media logic or media form to basic elements of social and cultural reality as mediatization. In present-day studies, the term "mediatization" often acts as an umbrella concept (Kolomiec, 2014) describing the process of the growing influence of modern communication technologies, including media content, media organizations, media effects, and media logic, and the individual and social significance of media consumption. Mediatization marks the irreplaceability of media in different areas of social life, which leads to qualitative changes in everyday practices (Jansson, 2018).

Digital media, including social networks and messengers, have already become familiar platforms for socio-political communication. Young people are the most active audience of digital media since they are the most receptive to innovations and digital technology (Vartanova, & Gladkova, 2022). According to the 2022 data by the Russian research company Mediascope[4], young people aged 18-24 spend an average of 5 hours and 45 minutes on the Internet every day, which is considerably more than the average for all Russians (3 hours and 40 minutes). The success of digital media is primarily due to the demand of modern society for fast access to and interactivity in dealing with information.

The relationship between youth and the state in the field of social media has been a topic of extensive research by various professionals. A large number of

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[4] Media Consumption in 2022 / Mediascope. URL: https://mediascope.net/up-load/iblock/e20/5xy943jkri4ngauf1t1stsr0877w3jn5/CSTB_медиапотребление.pdf

academic papers and monographs have been published in Russia (Gureeva et al, 2022; Minskaya, 2021; Kasyanov, Shcherbakova, & Samygin, 2019; Kalugina, & Klimova, 2016; Popova, 2021) and abroad (Arif, 2019; Livingstone, 2007; Theocharis, 2012; Bennett, Freedon, Hussain, & Wells, 2013); however, it should be noted that this kind of research quickly becomes outdated (Komarova, 2021). It requires updating the theoretical and conceptual tools for describing the specific features of mediatized interaction and verifying new hypotheses empirically. The process of demediatization is one of the underexplored yet increasingly influential trends of our days. In the broadest terms, demediatization can be described as a process of slowing down or reversing the transformation processes associated with the presence, use, and influence of media in all spheres of human life (Kopecka-Piech, 2020).

The review of studies examining the process of demediatization allows us to distinguish two main lines in its conceptualization. The first group of researchers understands demediatization as a gradual shift away from the mediation of traditional media in the process of delivering messages from the sources of information to the audiences (Strömbäck, & Esser, 2014; Kunelius, & Reunanen, 2016; Firmstone, & Coleman, 2015). The second group of researchers focuses on studying individual and group practices of intentionally limiting or avoiding participation in mediatized communication and not using media in certain aspects of everyday life consciously for one reason or another (Steinmaurer, & Atteneder, 2019; Pfadenhauer, & Grenz, 2016; Jansson, 2018). Methodologically, these studies of reactions to mediatization aim to capture and acknowledge the active role of subjects under pressure caused by the profound integration of media into contemporary life. In this respect, particular attention is paid to describing the various motivations for demediatization, including attempts to protect oneself from media's invasion of privacy, the desire to become more productive (by limiting time spent on using digital services and consuming content for non-professional purposes) (Kirschner, 2017), the desire to demonstrate one's exceptionalism ("everyone is on social media but I am not") (Prisching, 2017), etc.

We should also highlight the interpretation of the demediatization process recently proposed by Russian researchers Gavra and Bykova (2022). The main focus of their research is event demediatization, i.e. demediatization of local politicized incidents. The authors define demediatization as a process in which the level of mediatization of a newsworthy event is purposefully reduced by moving the discussion of the event to the periphery of public media discourse. Such event demediatization can be spontaneous or purposeful. Researchers

point out that the tools of intentional demediatization can include silencing, discrediting sources, and shifting public attention to other newsbreaks.

As part of the communications between the state and youth, we propose to consider the process of demediatization in connection with the strategies of three key actors, among which are not only the state and the youth audience, but also the digital platforms on which their interaction takes place.

If we appeal to the idea that media is an inherently impartial communication medium that performs strictly mediation functions (McQuail, 2010), then demediatization can be described as the process of acquiring subjectivity by new media in the processes of socio-political communication. Digital platforms, which provide the resources for interaction between the state and young people, are increasingly establishing themselves as independent actors of communication. In many ways, digital media defines the principles by which the information field around a person is formed today. Thanks to algorithmic content delivery, they decide what to show the users and what to hide from them. Digital media algorithms select content based on the user's personally identified interests and digital interaction experience recorded by the platform. For example, if entertainment and lifestyle content accounts for a significant share of media consumption by young people (Dunas et al, 2023; Alhabash, & Ma, 2017), this kind of content will feature the most in the newsfeed, with other news pessimized. Posts about government initiatives in youth policy run the risk of being ignored by the algorithms because they do not match the interests and interactions of the audience, the data on which was previously collected. The youth feed is gradually becoming more and more thematically homogeneous. Therefore, no matter how hard the government agencies try to build constructive communication in social networks, the target audience will simply not see their posts. At the same time, young people get the impression that the government does not communicate with them at all, because such posts almost never appear in their feeds.

The manifestation of demediatization trends on the part of young people can be considered at the level of individual and group practices of intentionally limiting or avoiding participation in mediatized communication and the purposeful rejection of media in certain contexts. For "digital youth", media use experiences are characterized by independence, thoughtfulness, and awareness (Dunas, 2022). Young audiences can demonstrate a very high, almost professional level of critical thinking during media consumption, control the duration of media activity, and put bounds to its "integration" into their daily routines. Thus, young people are active actors in the media communication space, as they demonstrate the ability to control their level of involvement and select their content consumption.

The telling signs of demediatization by state authorities are, firstly, their selective media support of some initiatives, and secondly, their refusal to provide feedback in their own channels (with regard to all or some issues) at a time when young people are ready for dialog and expect the government to engage in two-way communication on social and political issues. Unlike a number of foreign researchers who interpret demediatization as the aspiration of government agencies to communicate directly via their own social media accounts, bypassing mass media (Strömbäck, & Esser, 2014; Kunelius, & Reunanen, 2016; Firmstone, & Coleman, 2015), we cannot unambiguously define it as a manifestation of demediatization, if demediatization is understood as a slowdown of the transformational processes associated with the expansion of media logics. In an era of deep mediatization, social networks push back the conventional limits of communication in the political sphere, offering political actors numerous extra tools for interacting with target groups. However, to be able to utilize them, political actors need to take into account a number of specific features and the operation logic of digital platforms. Therefore, with the minimized role of mass media and more intensive interaction in government agencies' social media, the state will still have to adapt to the requirements of communication platforms.

Methodology

Our previous research studied the manifestations of demediatization in the socio-political context at the levels of youth and digital platforms. In this paper, we decided to find out whether this phenomenon is specific to the communications of Russian authorities on social media on youth policy issues. With this purpose in mind, we will focus on the following questions:

1. How well is the youth policy represented on the official accounts of relevant executive authorities on social media?
2. In what contexts is youth policy mentioned most often?
3. What are the specific features of information support of events related to the implementation of youth policy on the official accounts of responsible agencies?

The main research method was the qualitative and quantitative content analysis of posts on social networks. The subject of our research was the posts of the Federal Agency for Youth Affairs (Rosmolodyozh), the Ministry of Science and Higher Education, the Ministry of Sports, the Ministry of Labor and Social Protection, and the Ministry of Culture in the VK social network and Telegram Messenger. We chose these communication platforms for our analysis because they are very popular among the young audience. According to Mediascope, VK

(or VKontakte) and Telegram remain the leading positions among social media in terms of the average daily reach of the Russian audience[5]. In addition, all five agencies have official accounts on both platforms, which made it possible to conduct a comparative analysis.

The study was divided into three stages. Firstly, we analyzed the dynamics of references to the youth policy by each agency in VK and Telegram and the overall dynamics of representation of this topic on their accounts. The total sample was 298 posts. To identify the contexts in which youth policy is used, we made a content analysis of the agencies' posts on VK and Telegram. The list of contexts was compiled in the course of the study. Out of the total sample of youth policy posts, we excluded posts where this word combination was mentioned in a formal rather than a meaningful way. By formal references in the posts, we mean mentions of the youth policy in the job titles of the speakers. So, the total sample where the topic is mentioned in a meaningful way amounted to 236 posts.

The third stage of the study included a more detailed analysis of posts about two events (N=121): the Territory of Meanings youth forum (*Territoriya smyslov*, N=70) and the educational project "Voice of Generation" (*Golos pokoleniya*, N=51), as the results of the second stage of our research showed that events were the most popular context for youth policy coverage. We selected the information support of these two events for the case study because the posts, which discussed youth policy through the prism of the events, most often referred to the Territory of Meanings and the Voice of Generation. To identify the features of coverage of these events, we: a) described the dynamics of references to them on social media resources and determined which stages of the events were covered in more detail; b) identified peak periods of mass media interest in these events and compared the dynamics of references to the analyzed events on external and internal media resources; c) identified the genres of the publications by the agencies about these events; d) analyzed the reaction of the social media audience to these posts.

When identifying the genres of the publications, we used the classification by Kolesnichenko (2021), which describes popular formats for presenting information in social networks. The response of the audience to the publications about the events was assessed using metrics such as the number of likes, reposts, and comments. The dynamics of references to the word combination "youth policy" in VK and Telegram was monitored using internal search on

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[5] Media Consumption in 2022 / Mediascope. Available at: https://media-scope.net/upload/iblock/e20/5xy943jkri4ngauf1t1stsr0877w3jn5/CSTB_медиапотребление.pdf

the platforms. The data provided by the Medialogiya monitoring system were used to identify the dynamics of references to the topic in the mass media. The chronological framework of the study covered the period from 2021 to 2022.

Results

Specific features of representation of youth policy on the agencies' accounts: the qualitative and quantitative analysis

The analysis of the references to the word combination "youth policy" on the social media accounts of the five agencies revealed that this topic does not receive proper coverage. We found only 298 posts mentioning youth policy over two years. In VKontakte, all the agencies mentioned the term 86 times in 2021 and 63 times in 2022. In Telegram, youth policy was mentioned only in 37 posts in 2021, although in 2022 their number increased considerably to 112. Thus, the overall dynamics of the references to youth policy in VKontakte and Telegram shows the inconsistency in its coverage on different communication platforms of the agencies. The number of references to youth policy by the agencies in VKontakte peaked in March 2021; in Telegram, in October 2022 (*Graph 1*).

Graph 1

References to youth policy in VK and Telegram, 5 executive agencies
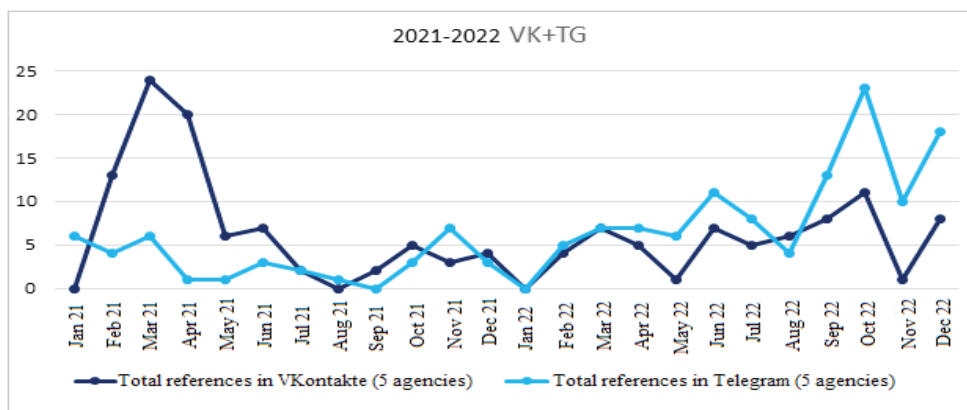
Unsurprisingly, Rosmolodyozh was the agency that addressed this topic in its publications the most. Over two years, the Federal Agency for Youth Affairs published 119 posts mentioning youth policy in VKontakte and 121 posts in Telegram, which accounts for more than 80% of the total number of posts by all five state agencies. We found the least number of references to youth policy on the accounts of the Ministry of Labor and Social Protection and the Ministry

of Culture. These ministries published only 2 such posts on VK. *Graphs 2* and *3*
show the distribution of the posts referring to youth policy on the VK accounts
and Telegram channels of the five agencies.

Graph 2

**Distribution of references to youth policy on VK accounts
of 5 executive agencies in 2021-2022**
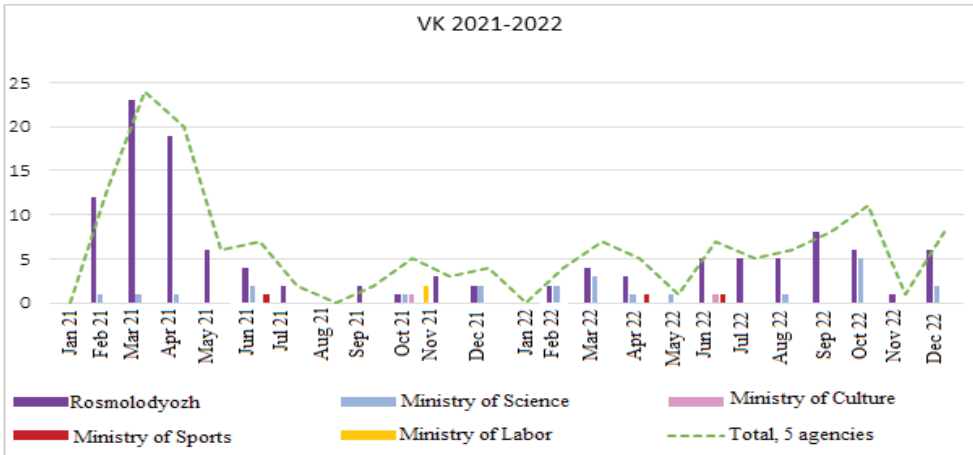
Graph 3

**Distribution of references to youth policy in Telegram channels
of 5 executive agencies in 2021-2022**

To determine the context in which the topic of youth policy is covered, we decided to use the method of content analysis of posts on the agencies' accounts. Out of 298 posts, youth policy was mentioned in a meaningful way in 236 posts, which were included in the final sample for content analysis.

The results showed that the agencies most often discussed youth policy on their VK accounts in the context of ongoing events (42%) and official meetings between government officials to address issues within their areas of competence (27%) (*Figure 1*). Success stories of young Russians covered through the prism of their participation in the country's youth policy (8%) and government support for youth (7.5%) were reported much less frequently. In addition, youth policy was rarely addressed in the context of the discussion with the expert community (7.5%). Other reference contexts included youth policy initiatives (5%). Of particular note is the context that we can describe as a dialog with young people (3%). For example, on March 23, 2022, Rosmolodyozh announced the launch of a website to collect proposals for the Youth Policy Law, encouraging young people to join the project and send their own ideas[6].

Figure 1

**Contexts of references to youth policy on VK accounts
of 5 executive agencies in 2021-2022**
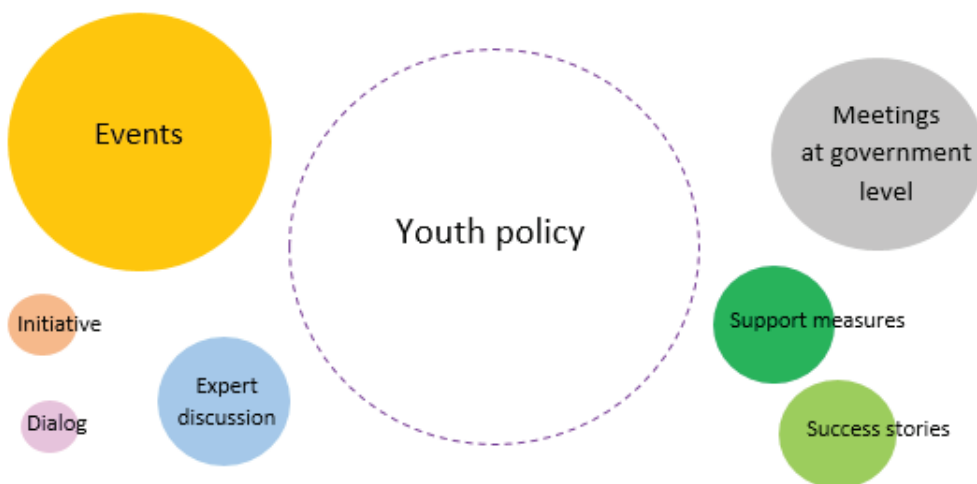
Such "angles" of presenting the topic of youth policy as events (26%), meetings of government officials (24%), and expert discussions (21%) received

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[6] Post on the Rosmolodezh VK-account published on March 23, 2022. URL: https://vk.com/wall-49388164_56810

almost equal coverage in the Telegram channels of the five agencies (Figure 2). However, we should note that texts with expert reviews of youth policy implementation were published on Telegram almost three times more often than on the official VK accounts. Dialog was another youth policy context, which has gained more prominence in the agencies' Telegram channels (12%). For example, on January 11, 2021[7], the Rosmolodyozh Telegram channel posted an invitation to choose the most relevant topics for discussion at the Youth Policy Commission of the Russian State Duma[8]. In another post[9] the agency offered its followers to join the conversation about youth policy and grant competitions in a live broadcast on the Clubhouse. Success stories, by contrast, were less often the reason to talk about youth policy (4%). Posts about special initiatives (7%) and government support measures (6%) were rare on Telegram.

Figure 2

Contexts of references to youth policy in Telegram channels of 5 executive agencies in 2021-2022

Events as a context for covering youth policy in the Rosmolodyozh account

Since youth policy was much more widely presented as a topic on the accounts of Rosmolodyozh than on the resources of the other agencies, we decided to take a closer look at these publications. We analyzed the posts referring to youth

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[7] Post on the Rosmolodezh Telegram channel published on January 11, 2021. URL: https://t.me/rosmolodez/2876

[8] The State Duma is one of the chambers of the Russian parliament, the Federal Assembly

[9] Post on the Rosmolodezh Telegram channel published on March 6, 2021. URL: https://t.me/rosmolodez/2915

policy through the prism of events, and found two events that the Federal Agency for Youth Affairs mentioned most often. They were the annual Russian youth forum "Territory of Meanings" (*Territoriya smyslov*) and the educational project "Voice of Generation" (*Golos pokoleniya*), which is a relatively new project for the agency launched in 2021 to develop the management potential of Russian youth. These two events were the subject of our case study of information support of youth events on official resources.

Case study: Territory of Meanings

The Territory of Meanings is described as the largest educational forum in Russia, which has been bringing together young professionals in different industries from across the country to create socially important projects every year since 2015. The forum offers several themed sessions targeting young people aged 18-35. The sessions address such issues as culture, education, entrepreneurship, public administration, journalism, etc. In 2021-2022, the Territory of Meanings was mentioned 4,696 times in the Russian mass media, and 70 times in the VK and Telegram accounts of Rosmolodyozh.

Rosmolodyozh covered the event on its own social media accounts most actively in July 2022, when the final stage was held in Solnechnogorsk, and in the period from February to March 2021, which coincided with the regional stage of the forum that year. The data on the references to the event in VK and Telegram (*Graph 4*) indicate that in 2021 the regional forums of the Territory of Meanings enjoyed more coverage than the final event of the project; in 2022, on the contrary, the culmination of the forum campaign coincided with the peak of references to the event on social networks.

The final stages of the forums in 2021 and 2022 received the most publicity in the mass media: the references to the Territory of Meanings peaked in July 2021 and July 2022 (*Graph 5*). It can also be noted that the event was a bit more actively promoted in the media in 2021 compared with 2022: the number of references totaled 2,696 in 2021 and 2,000 in 2020.

Interestingly, the event did not disappear from the Russian mass media agenda after the end of the forum in August 2021. From October to December 2021, journalists frequently mentioned it in the context of two other Rosmolodyozh contests, Hospitality Workshop (*Masterskaya gostepriimstva*) and Your Move (*Tvoy khod*), the winners of which were given the opportunity to visit the Territory of Meanings forum. In addition, during this period the Territory of Meanings was mentioned in the context of the Senezh Management Workshop, which has become a traditional forum venue. However, Rosmolodyozh did not stir up interest in the forum between October and December 2021 on its own accounts.

Almost all content about the forum on both Rosmolodyozh communication
platforms was limited to informational genres: news (47%) and announcements
(30%). Posts openly encouraging people to join the event accounted for a mere
5% of the sample. Other formats of social media coverage of the Territory of
Meanings included the impressions of forum participants, audience surveys, and
reports on the forum sessions. Remarkably, there was a publication among the
posts about the event in VK, where six participants of the Territory of Meanings
forum shared their ideas on the development of youth projects in Russia, but
this format did not go any further on Rosmolodyozh's accounts.

Graph 4

**References to the Territory of Meanings event on Rosmolodyozh's social
media accounts (VK and Telegram) in 2021-2022**
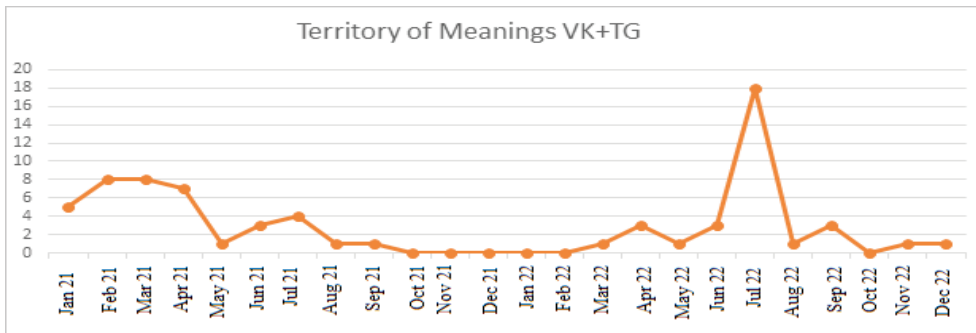
Graph 5

References to the Territory of Meanings event in mass media in 2021-2022

Case study: Voice of Generation

The Voice of Generation project was launched in September 2021 as a new flagship educational program offered by Rosmolodyozh for people between 23 and 35 years old, which want to develop their management skills. At the end of the program, the participants who have prov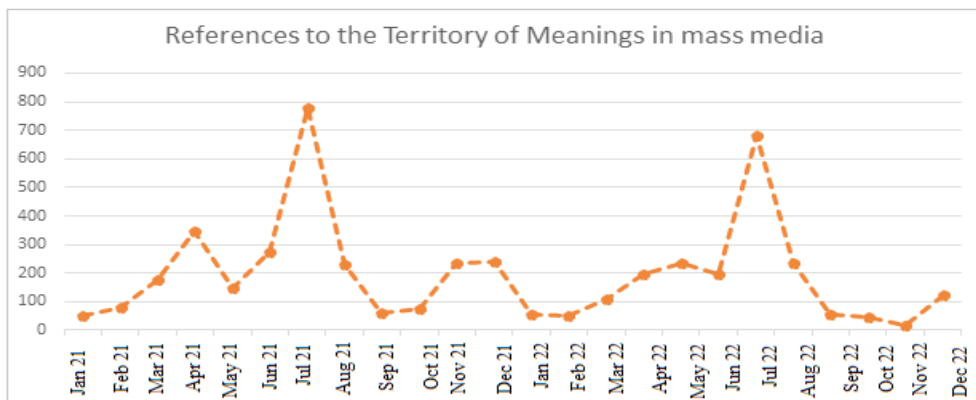en themselves are included in the executive candidate pool of the government agency with the opportunity to take part in the implementation of federal projects. The program is open for youth policy professionals, university students, and recent graduates working in government and commercial organizations in any sector.

In 2021-2022, the Voice of Generation was mentioned 863 times in the Russian mass media, and 51 times in the VK and Telegram accounts of Rosmolodyozh. If we compare the dynamics of references to the event in the agency's accounts (*Graph 6*) and the mass media (*Graph 7*), we note a discrepancy in the periods of active coverage.

Rosmolodyozh most actively addressed this event in its social media accounts in the period from July to September 2022. This period coincided with the completion of the first season of the Voice of Generation, the collection of applications, and the closing of the elimination round of the second season of the project. If we look at the graph of references to the event in the Telegram channel and on the VK account, we will see that the information support of the second season of the Voice of Generation, which started in September 2022, became much more intensive in comparison with the first season of the project in September 2021: the number of posts about the event increased three times.

The majority of posts about the program on both VK and Telegram were the participants' impressions (40% of all posts). The project was frequently mentioned in information posts: news (21%) and announcements (19%), with news being more actively posted on VK (29% of all posts on this platform), while announcements were most common on Telegram (33% of all posts about the event). Other formats of reporting on the Voice of Generation included the publication of the program's anthem, an audience survey to see if the followers had time to apply, a report on the project's first module about leadership, and a congratulatory message to a program alumna on her appointment as head of the youth committee.

Mass media interest in the project peaked in December 2022 and September-October 2021. Here we should highlight that the surge of media publications in December 2022 was related not so much to the first educational module "Leadership Position" of the second season of the Voice of Generation project, as to the completion of the special (additional) program "Voice of Generation: Vice-Rectors" launched

in October 2022 and the three-day intensive workshop "Voice of Generation: Teachers". Both programs were developed by Rosmolodyozh in cooperation with the Ministry of Science and Higher Education of the Russian Federation.

Other peaks of publication activity in the mass media (September-October 2021) were related to the launch of the first season of the educational event in 2021 and the first module of the program. The graph of media references to the Voice of Generation shows that the announcement of the first season in 2021 was more publicized than the start of the second season a year later.

Graph 6

References to the Voice of Generation event on Rosmolodyozh's communication platforms in VK and Telegram in 2021-2022
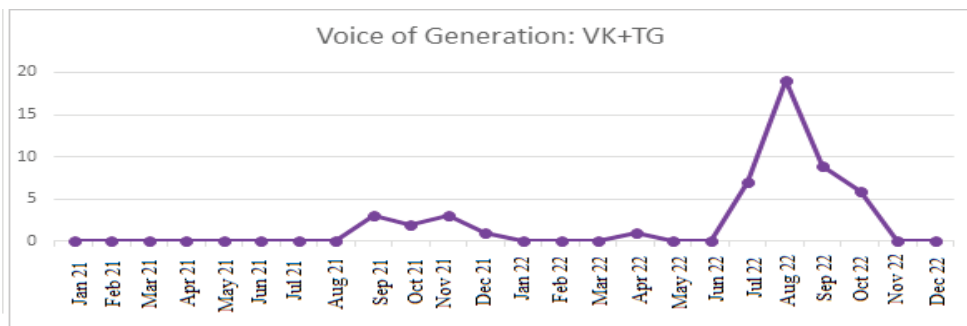
Graph 7

References to the Voice of Generation event in mass media in 2021-2022
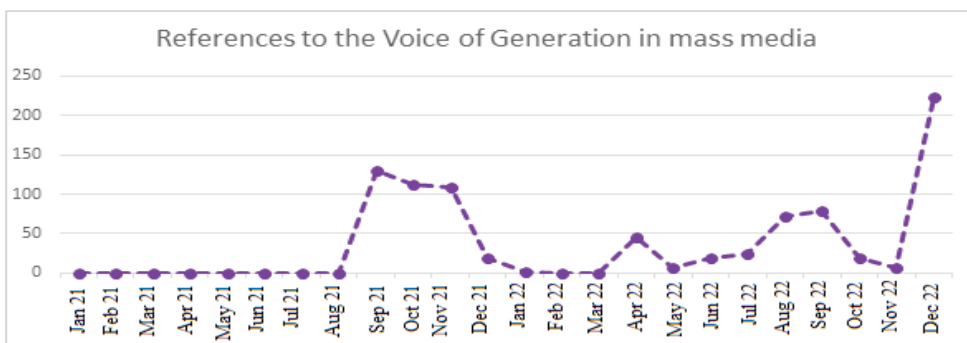
If we consider the indicators of audience engagement under the posts about the two events on VK[10] (*Diagram 1*), we can see that the communication

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[10] The Telegram channel of Rosmolodyozh does not allow users to leave reactions and comment under posts.

strategy for the presentation of the new educational project Voice of Generation proved to be quite effective. In terms of audience response on the social media accounts of Rosmolodyozh, this event is comparable to the well-known Territory of Meanings forum, which has been held for eight years. The total number of comments under the posts about the Voice of Generation project (198) exceeded the number of comments under the posts about the Territory of Meanings forum (109) by almost two times. The number of likes under the posts about Rosmolodyozh's new educational project was close to the number of such reactions of the audience under the publications about the traditional forum (3,042 for the Voice of Generation and 3,139 for the Territory of Meanings, respectively). Nevertheless, it should be noted that the audience demonstrated a greater willingness to share information about the Territory of Meanings forum, with the number of shares about this event 1.5 times higher than that of the Voice of Generation project.

Diagram 1

Indicators of audience engagement under the posts about the Voice of Generation project and the Territory of Meanings forum on Rosmolodyozh's VK account
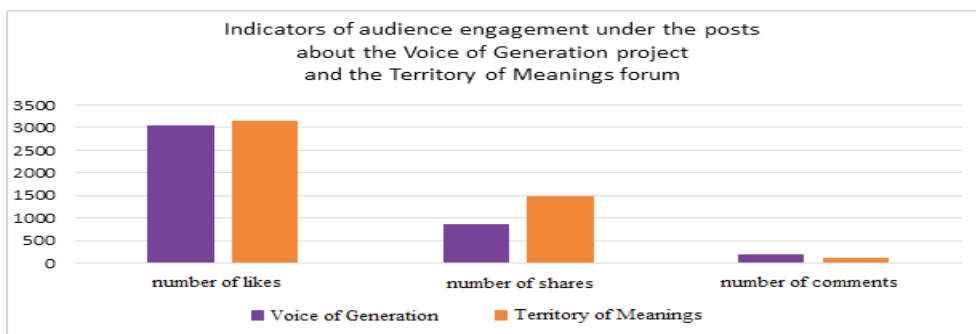
Conclusion and discussion

In this paper, we attempted to answer the question of how well government agencies manage to cover youth policy on their social media resources. The results of our analysis showed that the topic of youth policy does not receive proper coverage on the agencies' own social media accounts. Moreover, there is a tendency towards inconsistent support of the topic of youth policy on VK and Telegram: the number of references to this topic on VK is gradually decreasing, while on Telegram it is increasing. This can be explained by the fact that Telegram as a messaging service is gradually transforming into an effective

communication platform to which agencies pay increased attention. Telegram's rising popularity is driven by the ban on social networks such as Instagram[11] and Facebook[12] in Russia.

Unsurprisingly, Rosmolodyozh pays more attention to the topic of youth policy on its resources than other agencies, for which this area of work is not the main focus but which, nevertheless, have a direct relation to specialized initiatives aimed at young people. The least number of references to youth policy was found on the accounts of the Ministry of Labor and Social Protection and the Ministry of Culture.

Most often, agencies use their own accounts to talk about youth policy in the context of covering events for young Russians. The case studies of information support for the Territory of Meanings forum and the Voice of Generation educational project revealed different approaches to promoting important federal projects. While the coverage of the well-known Territory of Meanings forum, which has been held in Russia for eight years, was limited to providing news information to the young audience, the communication support for the new Voice of Generation event, which was launched in 2021, focused on demonstrating the benefits of the project through the participants' success stories and impressions. And this approach turned out to be rather fruitful: the indicators of audience engagement under the posts about the Voice of Generation and the Territory of Meanings were comparable, even though the potential target audience of the new project is obviously narrower. Personal stories, or, in other words, the "human interest" frame, resulted in more comments to the posts about the Voice of Generation on Rosmolodyozh's official VK account and almost the same number of likes as publications about the Territory of Meanings forum. At the same time, Rosmolodyozh's new project did not manage to attract much mass media attention: its information support was sporadic and much less active than that of the traditional Territory of Meanings forum.

On their accounts, the agencies also often report on meetings of government officials to discuss youth policy issues within their area of competence. On the one hand, such publications convey a message to the audience that the agencies make strenuous efforts in this area; on the other hand, the engagement potential of such reports remains controversial. At the same time, posts on specific government measures to support young people, current initiatives, and success stories of young Russians who take an active part in the development and implementation of the country's youth policy rarely get published on the

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[11] Belongs to Meta company, banned at the territory of the Russian Federation.
[12] Ibid.

agencies' accounts. However, we consider that these "angles" of presenting information could potentially contribute to creating a positive image of the authorities.

Discussing youth policy in an open dialog on equal terms with young people appears to be a promising communication strategy, but so far its potential remains untapped also. Meanwhile, there is a demand for communication with the agencies in the digital environment on the part of young people; young people often seek to present their picture of the world in their comments, share their reasoning, and introduce their initiatives (Gureeva, & Kireeva, 2023a). If the authorities want to draw young people's attention on social media and win their trust, they should be ready not only to listen more to the opinions of the audience but also to initiate these discussions themselves.

The absence of common infrastructure for obtaining up-to-date, complete information about youth policy and a consistent strategy of the authorities to provide information on this subject on social networks could be one of the reasons for the poor awareness of young Russians of the government's efforts in this area. The results of our earlier pilot survey of young students also indicate that this group does not perceive social media as the most promising resource for finding information about youth policy, noting that they would rather turn to legacy media in this case (Gureeva, Kireeva, 2023, b). Taking the research results into consideration, youth policy in Russia today is more likely to be called an area of social and political communications that is deeply mediatized *by fiat* and demediatized *in practice*.

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Visualizing environmental reporting in Nigerian newspapers

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Abstract

The study analyzed environmental news content in *Leadership* and *The Punch* newspapers from May 1, 2019, to July 31, 2020. The study aimed to determine the images used in news reporting about the environment based on the salient features they embody in the news. The findings revealed 151 articles about the environment while 117 contained images, split between *Leadership* (52) and *The Punch* (65) newspapers, indicating their prominence in environmental reporting. While some of the utilized images in the news reports captured the impact on the environment (air, land, and water) and its inhabitants, pictures of politicians were the most featured ones. The information/awareness theme was dominant, demonstrating a development communication perspective. The study also established a notable use of the "Health" theme, implying a connection between health and the environment, predominantly because of COVID-19.

Keywords

Environmental communication, photography, infographics, content analysis.

Introduction and background

The environment is an area of concern for Nigeria and Nigerians. This has been amplified by the position of Nigeria as one of the top producers of crude oil. The impact of multinational oil companies in the exploration and exploitation process has come with a mixture of gains for the government and some of its officials involved in the management of its oil resources (Odutola, 2020; Padmore, 2018), and devastating consequences for the environment, communities and people

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living in locations where the hydrocarbon resources are located (Anejionu, Ahiarammunnah, & Nri-ezedi, 2015; Kadafa, 2012; Nwozo, 2020; Ugwuoke, & Erubami, 2021). The print media has been at the forefront of attempts to bring the issues faced by the environment and people to local and global attention.

Alli (2001) argues that newspapers have the power to influence what people think. When in 1988, an Italian company dumped toxic wastes at Koko, a remote area in present-day Delta State, southern Nigeria, the media outcry led to the government using diplomatic channels to get the company and the Italian government to evacuate the toxic waste materials and subsequently, the formulation of a national policy on the environment, and the creation of the Federal Environmental Protection Agency (FEPA) in 1988, mandated with the administration and enforcement of the environmental law. The act setting up FEPA has since been repealed by the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 (Ogbodo, 2009). Environmental issues also include gully erosion, predominant in the southeast Nigeria, desertification, and flooding in the northern region of Nigeria, and deforestation for developmental purposes.

The images may be in the form of photographs, graphic illustrations, infographics, or cartoons. Photographs are stills of the event that is being highlighted, when they are not available, an infographic fills the gap. Graphic illustrations are art such as abstract images, digital flyers, advertisements, logos, and posters used to express visual ideas and convey newspaper messages. An infographic is short for a combination of information graphics. They are visual representations of graphical information, data, or knowledge. They are commonly used in newspapers to show the weather, maps, and site plans for newsworthy events, thus, simplifying complex information (Nirmala, & Arul Aram, 2018; Jenkins, 2006; Okon et al., 2022). Ghode (2012) states that newspaper infographics fall into three categories; those used to summarize news events fall under the first group such as photos, statistical data, and minimal text. The second group includes maps (topographic maps), symbolic interpretations, and extra-conceptual charts. For readers to better grasp and visualize the news or information, the third group uses a broader approach to information design, in which complex conceptual ideas are explained with graphics and text.

Scholarship on the media coverage of the environment abounds in academia where the use of images may be a part of the study (John, & Jonjua, 2018; Nwabueze, & Egbra, 2016). However, little research so far has exclusively captured the use of images to illustrate media coverage of the environment; Ndinojuo (2020a) explored the use of images in reporting biodegradables in Nigerian

newspapers. Studies in environmental communication (John, & Jonjua, 2018; Nwabueze, & Egbra, 2016) revealed that the environment has been reported to some extent by the Nigerian press. This study was undertaken to attempt to contribute to the lacuna that exists in the study of images (i.e. pictures and infographics) used by Nigerian newspapers in reporting environmental issues. Images are vivid, unambiguous, and comprehensible by themselves without any accompanying text to newspaper audiences regardless of literacy level. Thus, there is the need to study and analyze them to ascertain how they have been used by Nigerian newspapers in setting agendas for national discourse and framing specific narratives. The following research questions were raised to elicit answers from the sampled news stories:

1. To what extent are environmental images present in reportage about the environment?

2. What are the subjects of the environmental photographs used in environmental reporting?

3. What is the correlation between the images used in the story in relation to the news being reported?

4. Which environmental themes are represented as photographs and infographics in the newspapers?

Most studies on issues in environmental communication have concentrated mostly on analyzing text rather than images associated with news coverage. Studies strongly agree that visuals when included in news reports can make the article more interesting and creates a compelling narrative on the perception of the audience than texts on their own (Ndinojuo, 2020a, 2020b; Nirmala, & Arul Aram, 2018; DiFrancesco, & Young, 2011; Lobodenko et al., 2022; Omolabi, & Durosimi, 2017; Smith, & Joffe, 2009). In agreement, DiFrancesco and Young (2011) suggest that the manifestation of images in complement to textual elements creates a better understanding of the article. They found out that news stories accompanied by images in Canadian newspapers are more likely to have moral and emotional themes than stories without images. They assert that images are not driving news content; neither are articles driving the content of images. Instead, it seems that journalists and editors are attaching images post facto to articles that tend to be morally or emotionally edgy, regardless of the content of those images.

Smith and Joffe (2009) allude that imagery when used in news reporting could influence the salience of information in the memory of the audience, their emotional engagement, as well as their engagement with the environmental disruption under investigation. Dur (2012) corroborates this assertion with the

notion that data visualization provides a refreshing and diverse point of view about events and correlations between them. The human mind can perceive visual imageries faster compared to words. Data visualization, when frequently used in daily newspapers, communicates complicated articles filled with ratios, numbers, and miscellaneous data much better (Nirmala, & Arul Aram, 2018).

This brings us to the importance of attribution of images used in news reporting and the relevance of photojournalists in the overall news development and production. Photojournalists because of the importance of attribution should be identified in images used in environmental news reporting and news reporting generally. They are expected to be responsible and careful in the discharge of their duties in representing visual images (Press Council of India, 2010). Ndinojuo and Ihejirika (2019) in their study that analyzed the framing of news reports about military operations against the Boko Haram group found that most of the pictures used in news reports were not relevant, poorly or not captioned at all without source credit.

Knox (2009) asserts that images found in news do not accomplish all the functions usually ascribed to press photographs, such as captions, source credits, or even provide a better understanding of the issue being reported. Some images tell a different story than what is being reported. This occurs even though according to Griffin, the pictures used in news are expected to act as a "prompt or lead-in for the reader's eye" (Griffin, 2004: 384). Source credit and caption help the reader to understand what the image represents and the origin of the image. Not including the source affects the authenticity of the image and also denies the photojournalist credit for their work, which can serve as part of their work portfolio and can provide residual income as well as for future references when searching for work. These attributes are important for any image used in news reporting generally.

Castrechini et al. (2014) discussed the media portrayal of environmental issues focusing on how environmental reporting has transcended from scientific analysis to a more social/political discourse. In a sample of two Spanish newspapers between 1992 and 2006, they showed that environmental reporting has moved from being associated with nature to becoming primarily associated with the urban environment, and also a shift from scientific to political discourse with an emphasis on the social dimensions of environmental reporting. Nirmala and Arul Aram (2018) in their study of environmental images in Indian newspapers found that over 80% of the images used by the two newspapers analyzed were photographs compared to infographics.

Looking at the literature on environmental news reporting in Nigeria, most of the articles focused on textual analysis. Nwabueze and Egbra (2016), and Okoro and Nnaji (2012) included pictures in the content categories covering story type and nature of story respectively in the analysis of climate change reporting. It was curious that in the findings of newspaper reports in both studies (Nwabueze, & Egbra, 2016; Okoro, & Nnaji, 2012), the articles sampled did not use any pictures to write about climate change in Nigeria and Ghana or pollution and its impact on the Niger Delta. This study compared the findings to ascertain if the results would be consistent, four years after the study by Nwabueze and Egbra (2016), and eight years after the findings from Okoro and Nnaji (2012). Their observations showed that studies about the environment in Nigerian newspapers were more interested in analyzing texts rather than images. Ndinojuo (2020a) studied the use of visual images in reporting about biodegradables in four Nigerian newspapers in other to find out if there were embedded and overt meanings associated with the images used in reporting about biodegradables. This research aims to address these and other lacunas involved in the use of images in environmental reporting.

Methods

The research adopted quantitative and qualitative content analysis and visual discourse analysis to examine the images used in environmental reporting in two selected Nigerian newspapers. Two online national daily newspapers were selected and analyzed based on their circulation, which cuts across the six geo-political regions in Nigeria, content, and regularity of publication; they include; *The Punch* and *Leadership* newspapers. Both newspapers were selected to provide a balance based on the region of operation, *The Punch* is southern-based while *Leadership* is based in Northern Nigeria. Also, *The Punch,* with a circulation figure of 80,000 units per day and a strong online audience, is rated as the number one selling national daily in Nigeria, *Leadership* is one of the top-rated newspapers in northern Nigeria (Ndinojuo, 2020a; Nwabueze, & Egbra, 2016; Abdulkareem, Adisa, & La'aro, 2012). The study was conducted over a 15-month period from May 1, 2019, to July 31, 2020. With World Environment Day being June 5 annually, the time frame captures two periods within which there is environmental reportage. The environment also made headlines towards the end of 2019 with the controversy of President Donald Trump pulling the United States out of the Paris Agreement on climate change (Friedman, 2019; Holden, 2019).

The paper analyzes 916 daily editions of both newspapers. The data gathering began with typing the keyword 'environment' in the search query of the websites of the selected newspapers, entries that fall within the research stipulations were

selected and analyzed. Based on the opinion of experts and previous literature in environmental communication in Nigeria, the following themes were identified as being relevant to discourse on the environment in the Nigerian press: climate change, biodiversity, water pollution, air pollution, land pollution, water pollution, flooding, health and information/awareness. The coding consisted of the frequency and categorization of descriptive variables identifiable on the images, such as the caption and source credit, the type of image, and the environmental theme. This study adopted the model for categorization of images presented in Castrechini et al. (2014). The themes were adapted from Nirmala and Arul Aram (2015) and Nwabueze and Egbra (2016). The content categories are not mutually exclusive.

Table 1

Categorization of images

Categories	Subcategories
People	Politicians
	Experts
	Public
Landscapes	Urban landscape
	Natural landscape
	Other landscapes
Environmental problems	Impact on people
	Impact on animals/plants
	Impact on territory
Social actions	Public actions/NGO actions
	Government action

Source: Adapted from Castrechini et al (2014).

To ensure intercoder reliability, two independent coders were trained to code a subset of the research data as a pilot study. Neuendorf (2002) notes that reliability is the amount of concordance obtained by two or more independent coders. Five stories were selected from *The Punch* newspaper, using the same set of explicit recording instructions used in the formulation of the coding schedule. Chadwick, Bahar and Albrecht (1984) suggested a method of calculating intercoder reliability by dividing the number of units found in the same category by the number of units coded:

$$\text{Intercoder reliability} = \frac{\text{Number of units in the same category}}{\text{Total number of units coded}}$$

Neuendorf (2002) emphasized that coefficients of .90 or more at all times are practically appropriate for research studies, .80 or more is appropriate in nearly all circumstances, whereas .70 may be considered acceptable in a few exploratory studies depending on the research objectives. Two independent coders collected data from the five selected stories; they coded 67 and 75 items independently. Substituting for the values in the above equation:

Intercoder reliability $= \dfrac{67}{75} = 0.89$

The data obtained by independent coders above were established to be internally consistent and reliable for this study and hence were adopted as reliable to give consistent results.

Results

A content search of stories mentioning "environment" revealed a total of 200 articles, 117 (58.50%) from *The Punch* and 83 (41.50%) from *Leadership* newspapers, respectively. The study was about the "environment," not just the literal mention of the "environment". The articles were scrutinized, and stories that were about business or learning environments were eliminated because they did not fit the research context. One standout was the article in *Leadership* newspaper dated September 29, 2019, about the return of oil production to host communities of Oil Mining Lease (OML) 25 in Kula Kingdom of Akuku-Toru LGA of Rivers State (*Leadership*, 2019).

Table 2

Frequency and percentage of environmental images in
Leadership* and *The Punch

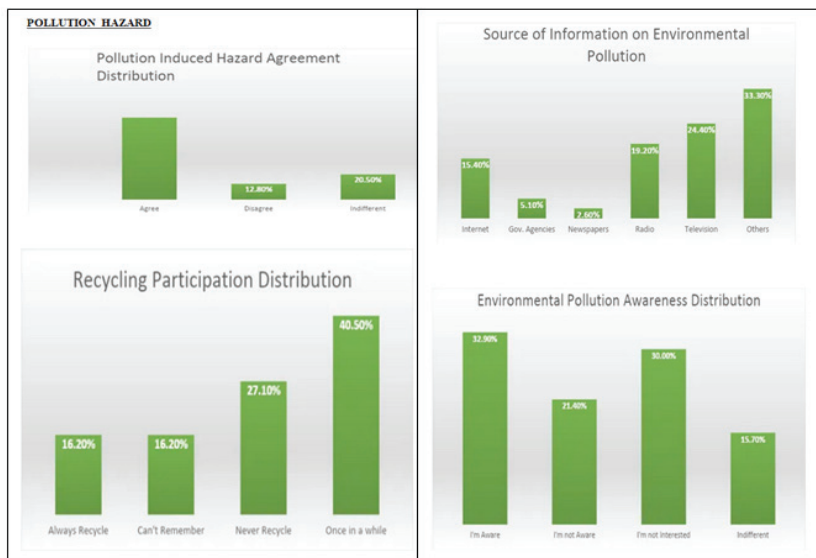| Environmental reports	Leadership N (%)	The Punch N (%)	Total N (%)
Reports mentioning environment	83 (41.50)	117 (58.50)	200 (100)
Reports about the environment	64 (42.38)	87 (57.62)	151 (100)
Reports about the environmental with images	52 (44.44)	65 (55.56)	117 (100)

Thus, the article was not selected even though news reports about oil drilling are usually accompanied by environmental issues, but this was not the case with this article, making it ineligible for selection in the study universe. Similar articles were eliminated, thus reducing the total number of articles to 151 (75.50%);

87 news stories from *The Punch*, and 64 articles for *Leadership* newspapers, respectively. The news stories were subjected to further examination because the research is concerned with images contained in environmental news reporting. This additional examination revealed a total of 117(77.48%) news stories containing images (see Table 2). *The Punch* contributed 65(55.56%), while the *Leadership had* 52(44.44%) articles with images. This served as the sample that was analyzed to answer the research questions and to show how images were used in environmental reporting by Nigerian newspapers. *Table* also showed that 77.48% of the stories about the environment contained images.

Table 3 compares the use of photographs, graphic illustrations and infographics by Nigerian newspapers. The result revealed that infographics were rarely used by newspapers. Only one news story utilized infographics to report on the environment in *Leadership* newspaper. According to Nirmala and Arul Aram (2018), over 80% of the images used by Indian newspapers analyzed were photographs compared to infographics. In comparison, over 99% were observed for this study. The infographic is presented in *Figure 1*; where the journalist used the infographic to show the trend in reporting environmental pollution in Nigeria. This was one of the functions mentioned by Nirmala and Arul Aram (2018) about the effective use of infographics to provide information on environmental issues, show the level of impact, and predict future trends.

Figure 1

Infographic in the news

Source: Leadership (June 4, 2019)

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Frequency and percentage of environmental images in
Leadership* and *The Punch

Environmental images	Sub-classification	Leadership N (%)	The Punch N (%)	Total N (%)
Photograph		36 (30.77)	57 (48.72)	93 (79.49)
Infographs		1 (0.85)	0	1 (0.85)
Graphic illustrations	First group	15 (12.82)	8 (6.84)	23 (19.66)
	Second group	0(0.00)	0(0.00)	0(0.00)
	Third group	0(0.00)	0(0.00)	0(0.00)

The first research question that seeks to understand the extent of environmental images being present in reportage about the environment is addressed by the total number of articles about the environment where images are used to present the news. Findings showed that 77.48% of the news stories about the environment had images. Information in Table 3 breaks down the utilization of images by comparing photographs, graphic illustrations, infographics, and cartoons. It shows that both newspapers overwhelmingly used photographs over infographic images. *The Punch* newspaper did not use any infographics in their news reporting about the environment during the study period, while *Leadership* applied an infographic image in only one scenario. Both newspapers used graphic illustrations in their reportage of environmental news, with *Leadership* using them nearly twice the number employed by *The Punch* newspaper. Only the first group in graphic illustrations that utilizes photos, statistical data, and minimal text was observed. There were also no entries for cartoons.

Table 4 further analyzes the environmental photographs in *Leadership* and *The Punch* newspaper to highlight the subjects of the environmental photographs that answered the second research question of the study.

Table 4

Environmental photographs in
Leadership* and *The Punch

Photograph categories N (%)	Subcategories N (%)	Leadership N (%)	The Punch N (%)	Total N (%)
People 88 (75.21)	Politicians	18 (15.38)	37 (31.6)	55 (47.01)
	Experts	5 (4.27)	13 (11.1)	18 (15.38)
	Public	10 (8.55)	5 (4.27)	15 (12.82)
Landscapes 36 (30.77)	Urban landscape	5 (4.27)	0 (0)	5 (4.27)
	Natural landscape	8 (6.81)	2 (1.71)	10 (8.55)
	Other landscapes	10 (8.55)	11 (9.40)	21 (17.95)
Environmental problems 44 (37.61)	Impact on people	6 (5.13)	2 (1.71)	8 (6.81)
	Impact on animals/ plants	7 (5.98)	2 (1.71)	9 (7.69)
	Impact on territory	21 (17.95)	6 (5.13)	27 (23.08)
Social actions 22 (18.80)	Public actions/ NGO actions	5 (4.27)	3 (2.56)	8 (6.81)

The subjects of images used in environmental reporting by Nigerian newspapers were assessed from four non-mutually exclusive dimensions: People, Landscape, Environmental problems, and Social actions. The results as captured in *Table 4* showed that "People" appeared in 75.21% of the articles about the environment, and politicians (47.01%) were the dominant pictures used in both *Leadership* and *The Punch*. However, *The Punch* utilized the pictures of experts in 13 news articles compared to five in *Leadership*, while for images of the public; *Leadership* had 10 stories compared to five in *The Punch* newspaper. Images of Landscape appeared in 36(30.77%) news articles. The Urban Landscape was used the least, appearing in 5 articles, the natural landscape appeared in 10 stories while the landscape described as "Other" was the dominant appearing in 21 news reports about the environment. *Leadership* had more reports covering both natural and urban landscapes compared to *The Punch* newspaper. The images showing environmental problems had 44(37.61%) outings in the environmental news reports. The impact on the territory (23.08%) was the dominant frame projected in the photographs compared to the impact on people (6.81%) and the impact on plants/animals (7.69%). In measuring the social actions depicted in images about environmental reporting, results revealed 22 (18.80%) stories with interventions of social actions, the government contributed 14(12.0%) compared to Public actions/NGO actions 8(6.81%).

The third research question addressed the question of the correlation of the image used to the environmental issue being discussed. The appropriateness or inappropriateness of the image depends on its function in the news. Does the image clarify the news? Does it expatiate on what is being reported? Does it depict what is being reported? Negative responses to the above questions indicate the inappropriateness of the image used in the report. The examination of the images showed that 35.9% of the images correlated with what was being reported as they described the event/action about the environment being reported, while 64.1% were considered inappropriate and showed no direct relationship with the environment or the environmental issue/action being reported. *Table 5* summarizes the correlation of the images to the environmental news being reported. The results for *Leadership* show an even split between images considered appropriate and those considered inappropriate, while the inappropriate images 75(64.10%) dominated reportage from *The Punch* newspaper compared to those regarded as appropriate, 42(35.90%). The newspapers used captions more than sources for their images in varying degrees; 56 stories had captions, with *The Punch* accounting for 48(41.03%), while *Leadership* used captions in 8(4%) of the total entries. Sources were rarely used in images presented from the findings; *Leadership* had no image where the source was identified, while *The Punch* presented only two images with the source (*Figures 2a* and *2*b) of the image identified. The two sources used by *The Punch* would be considered inadequate as they cited both sources as "Google".

Table 5

Correlation of the images to the environmental event being reported

	Leadership N (%)	The Punch N (%)	Total N (%)
Appropriate	26 (22.22)	16 (13.68)	42 (35.90)
Inappropriate	26 (22.22)	49 (41.88)	75 (64.10)
Total	52 (44.44)	65 (55.56)	117 (100)
Caption	8 (4.00)	48 (41.03)	56 (47.86)
Source	0 (0)	2 (1.71)	2 (1.71)

First image showing Google as source

Source: Aborisade (2019)

Graphic illustration showing Google as source

Source: Ojerinde (2019)

The final research question identified the themes represented by the images used in reporting about the environment. A summary is presented in *Table 6²*:

Environmental themes

Theme	Leadership N (%)	The Punch N (%)	Total N (%)
Air pollution	1 (0.85)	5 (4.27)	6 (5.13)
Biodiversity	1 (0.85)	4 (3.42)	5 (4.27)
Climate change	0 (0)	5 (4.27)	5 (4.27)
Crises	0 (0)	1 (0.85)	1 (0.85)
Flooding	0 (0)	1 (0.85)	1 (0.85)
Health	4 (3.42)	9 (7.69)	13 (11.11)
Information/awareness	34 (29.06)	34 (29.06)	68 (58.12)
Land pollution	10 (8.55)	4 (3.42)	14 (11.97)
Water pollution	2 (1.71)	2 (1.71)	4 (3.42)
Total	52 (44.44)	65 (55.56)	117 (100)

From the data captured in *Table 5* showing the environmental themes associated with the images used in environmental reporting in Nigerian newspapers, Information/awareness was dominant across both sampled newspapers, with *Leadership* and *The Punch* contributing 34(29.06%) each, accounting for 68% of the total images used in the reportage. The Land pollution theme was the next with the most entries showing 14(11.97%), followed by the Health theme with 13(11.11%) of the images used. The Crises theme and Flooding theme had the least entries with one entry each; the *Leadership* newspaper did not have any images captured for the Climate Change, Crises, and Flooding themes. *The Punch* newspaper, on the other hand, had at least one entry for every theme used in the process of data analysis.

Discussion

The study explored the use of images in environmental reporting in two Nigerian newspapers, *Leadership* and *The Punch*. The research attempted to provide answers to four pertinently raised research questions about the use of images in environmental reporting in Nigeria. Based on the classification of images by Ghode (2012), the prevalent image type employed by the newspapers

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² Note: *Table 6* depicts the images in each theme. Some news may have multiple themes, only the prominent theme was coded for each article.

were those in the first category used to summarize and explain news. The second (maps, symbolic interpretations, and extra-conceptual charts) and third (cartoons) categories were not found in environmental news reporting by Nigerian newspapers. This was aptly captured in *Table* where still pictures were the dominant form of images used in environmental reporting. This will require further investigation to understand the absence of maps and complex conceptual ideas in Nigerian newspapers reporting about the environment.

The first research question answered the question of the extent of images being present in environmental reporting. The findings revealed that images were present to a greater extent in environmental reporting as they were found in 77.48% of the stories about the environment in both newspapers. Studies have long supported the use of images in reporting because it not only makes the article more interesting to read but also creates a persuasive and enthralling narrative on how readers understand the news than just texts on their own (Ndinojuo, 2020b; Nirmala, & Arul Aram, 2018; DiFrancesco, & Young, 2011). Images of the environment are iconic and they tell the story so much more than the messages any words can convey. Omolabi and Durosimi (2017) reiterated that when images are used in journalism, they become historical and iconic with the strategic pragmatic meaning intended for both persuasive and informative purposes. Nigeria is a nation where environmental images have greatly influenced the advocacy for the environmental.

Figure 3

Impact of oil spillage in an unnamed area in Niger Delta region, Nigeria

Source: *Leadership* (July 10, 2019)

Figure 4

Air pollution from pipeline fire in Baruwa, Lagos State, Nigeria

Source: Izuora (2019)

The impact of international oil companies in the Niger Delta region and other oil-producing communities in Nigeria has been greatly brought to the fore by environmental reporting. This study also uncovered images (see *Figures 3* and *4*) that highlighted the environment of oil companies in Nigeria. When oil companies are accused of polluting the waterways and the air quality, pictures tend to tell a better story; the illiterate can understand the issues at stake even though the text of the communication may not be comprehensible to them. *Figure 3* shows one of the many communities that have suffered from oil spillage which affects the aquatic and terrestrial life in these regions. Images like the one in *Figure 3* made Ogoni community activists halt oil exploration and drilling activities in the area for many years after the killing of the environmental activist Ken Saro Wiwa and other Ogoni activists (Doron et al., 2016; Wiwa, 2020). Environmental images played a significant role in amplifying their environmental activism. *Figure 4* also showed the impact of environmental images from the perspective of air pollution. Seeing the images of the environmental impacts will create a better understanding than using just texts to describe the impacts. Ndinojuo (2020a) summarized this by stating that images when used appropriately in environmental reporting can convey the effects of human and natural actions that serve to remind the government, stakeholders, and the general public of the significance of maintaining policies and practices promoting sustainable development ideals.

The second research question analyzed the subjects of the environmental photographs used in environmental reporting by *Leadership* and *The Punch* newspapers. While 47.86% of the images were captioned, only two of the images included source credits, and both were from *The Punch*. The caption explains the context of the image while the source credit recognizes the photojournalist responsible for the image. Attributing an image to a source not only improves the credibility of the image but also helps the photojournalist in getting recognition for their work, which could also translate into better economic opportunities in the future. Attribution also ensures that if the images were misleading or fake, there is someone to be held responsible. The findings mostly affirmed that of Ndinojuo and Ihejirika (2019) that most images used in news reporting in Nigeria were not captioned and without source credit. Their study was about the military and Boko Haram terrorist group in Nigeria, while this is an environmental study; the findings on the use of images were largely similar indicating that this is a practice among Nigerian newspapers, not limited to news about the environment, but also other classifications like politics, health, sports, etc.

The features of the images showed that images of people featured most prominently compared to other categories. Images of people were dominant in the images (75.21%), followed by those depicting environmental problems (37.61%), landscapes (30.77%), and lastly, social actions (18.80%). The findings differed from those of Nirmala and Arul Aram (2018), where the landscape was the most featured (45%), environmental problems (23%), people (11%), and social actions (5%). The differences between the studies may be because of the influence of the people in Nigeria and India. Journalists in India may place more emphasis on the event being reported than on the people who may have a role to play in the environmental issue being portrayed, compared to Nigeria, where the effect of the environmental issue being reported pales in significance compared to the people involved. Thus, when reporting about an environmental issue, the newspaper may present a still-shot of the politician involved rather than present a picture of the pollution being reported.

In terms of the people in environmental news reporting, politicians were the most represented, mainly using official photographs of the president, vice president, governors, ministers, and other high-ranking government officials. This underscores their influence as the most important element in environmental news in Nigeria. The influence of images of "people" in environmental reporting could also be attributed to lazy reporting on the part of the journalist/ newspaper. Instead of reporting about an issue, they have been made aware

of; the journalist could write the story from his office and use the image of the nearest government official involved in the story to write his report. It could also be an editorial decision on the part of the newspaper to use the picture of the government official involved instead of using a picture of the environmental event being reported.

The third research question correlates the images used in environmental reporting to the event being reported. The results revealed that over 64% of the images could be considered inappropriate because their inclusion does not provide any additional understanding of what has been reported and oftentimes has no relevance to the environmental story being reported. Knox (2009) suggested that in some situations, images used in a news report tell a different story, even though Griffin (2004) noted that pictures are expected to aid news comprehension. In these instances of inappropriate use of images in environmental reporting, the images present a different understanding compared to what is being reported. *Figure 5* shows the picture of the Edo State governor, used in a report about the resignation of the commissioner for the environment. The governor does not have any direct action in the news. His aide was quoted as responding to the news, but it is the governor whose image was used in the reporting, instead of the commissioner that resigned or the aide that released the statement.

Figure 5

Edo State Governor, Godwin Obaseki

Source: David (2020)

Another example is the *Leadership* story titled "ERA Trains Students on Environmental Protection in Edo." The common image that may illuminate the report should be the location where the training of students on environmental protection took place in Edo State, Nigeria. Instead, a stock image (graphical illustration) that has no relation to the news is used in the story (see *Figure 6*).

Figure 6

Inappropriate graphic illustration used in environmental reporting

Source: *Leadership* (October 7, 2020)

Figure 6 has a tiny caption that reads, "A troubled young man walking into the light". One struggles to understand how this has any correlation to the news that students have been trained on environmental reporting. This same image was used in several other environmental news articles. What then is the caption on the image of a man walking into the light has to do with the news about training students about environmental degradation? Journalists and editors must be deliberate about the choice of images accompanying environmental stories. Images that do not aid understanding of the event being reported should not be used in environmental news. *Figures 7a* and *7b* highlight instances where the images correlate to the environmental news being reported.

Figure 7a

Report about environmental degradation

Source: Leadership (December 3, 2020)

Figure 7b

Environmental sanitation taskforce

Source: Omojuyigbe (2020)

Figure 7a shows the image used in the environmental report about distributing seedlings to formers to combat environmental degradation. The image then shows the impact of environmental degradation that may affect the area if economic trees are not planted to combat gully erosion. *Figure 7b* shows taskforce officers for environmental sanitation with goods impounded from defaulters. Most states in Nigeria designate a specific day, usually on a Saturday, for a statewide environmental cleanup exercise. Movement is usually restricted to members of the

public except those on essential duty. Defaulters risk being arrested and having their goods and property impounded if found loitering or doing business during sanitation hours. *Figure 7b* portrays what is being reported about the environment.

Research question four answered the themes discernable from the environmental reporting of Nigerian newspapers. The dominant theme was Information/awareness theme (58.12%). This can be attributed to the position of Nigeria being a developing country where most environmental actions are still at the awareness level rather than the implementation level. Governments, experts, and NGOs continuously proffer solutions to mitigate environmental concerns. The Health theme was also prominent, with about 11.11% of the stories. This was because of the impact of COVID-19 in 2020, and thus raised more environmental concerns and was captured in the news accordingly. Land pollution was featured (11.97%) mainly in stories about land pollution and solid waste management that plague most parts of Nigeria. The images used in these reports may not offer much insight into the story being reported as they are mostly pictures of politicians and experts mentioned in the report. *Figures 3* and *4* show examples of images used for themes of water pollution and air pollution, respectively. *Figures 8* and *9* show examples of Information/awareness theme and Biodiversity theme respectively.

Figure 8

An example of Information/awareness theme
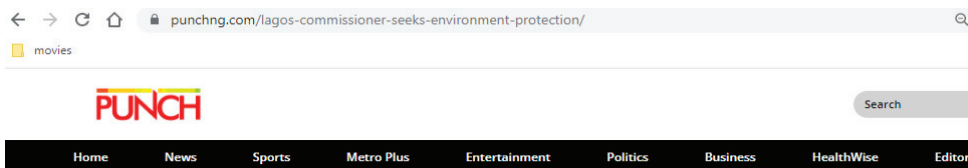
Source: Popoola (2020)

Figure 9

An example of Biodiversity theme

Source: Ihua-Maduenyi (2019)

Comparing the themes with those in Nimala and Arul Aram (2018) where the three dominant themes were Climate change (27.8%), Biodiversity (25.9%), and Water scarcity (23.1%), the three most dominant from our findings were Information/awareness (58.12%), Land pollution (11.97%), and Health (11.11%). What the result indicates is that environmental reporting in Nigeria and India has a different focus. India is a major industrial hub and would thus be concerned about its climate change perception, which can affect its diversity. The impact of its growing population can be felt in the scarcity of resources such as portable water as captured in the reports. The press in Nigeria (as a developing country and a major exporter of crude oil) tends to be more focused on development communication of informing the public about government policies and programs regarding the environment, and as a member of the Organization of Petroleum Exporting Countries (OPEC), found pollution themes in the air (see *Figure 4*), water (*Figure 3*) and land (*Figure 7b*). The themes highlight the areas Nigerian media consider prominent for Nigeria.

Biodiversity and Climate change are global themes in environmental discourse but were found not adequately discussed in environmental news in Nigeria. What this study has, however, achieved is to show the important linkage between health and the environment in Nigeria. A dirty and polluted environment is unhealthy for human habitation and a threat to the ecosystem. This has been one of the cardinal points of Niger Delta agitators for holding

international oil companies who have over the years caused monumental damage to the flora and fauna, as well as the political landscape in the Niger Delta. The government in Nigeria with the return of democracy in 1999 created the Niger Delta Development Commission and later, the Ministry of Niger Delta to address some of the concerns of host communities against the activities of oil companies. While this may not solve the problem on its own, it is an important first step toward bringing the stakeholders to a round table of agreeing how best to tackle environmental concerns raised by the host communities.

Conclusion

The study investigated the images used by Nigerian newspapers to report environmental news. Stories from *Leadership* and *The Punch* newspapers were analyzed between May 1, 2019, to July 31, 2020. A total of 151 news about the environment were collected from both newspapers, from this number, 117 contained images showing that images were prominently featured in environmental reporting. One drawback of the images was the non-inclusion of source credits in nearly all the images used while many others were not captioned. Nigerian newspapers did not prominently make use of infographics in their reporting either.

Infographics could be maps and charts that summarize information on statistics of environmental impacts. Their non-inclusion is a drawback as it sends the message that environmental reporting is less scientific and more political. This may be the reason why the Information/awareness theme was the dominant theme in both newspapers analyzed. The images captured various scenarios in the environment from water pollution, air pollution, land pollution, biodiversity, and climate change amongst a host of other themes. A key insight from the results was the significance of the health theme in environmental reporting, showing the association between environment and health.

We believe that further studies are needed to understand the editorial process involved in image selection used in environmental news reporting and the motivations behind selecting images in the news. This could also explain why there were no entries recorded for the second and third categories of infographics based on Ghode (2012) classification. One of the limitations of this study was the use of only two newspapers from a large list of national newspapers in Nigeria. The findings provide a glimpse into the landscape of environmental reporting in Nigeria; future studies should include more newspapers to ascertain the consistency of the conclusions and generalize the results across the Nigerian newspaper landscape.

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Using propaganda methods and markers in modern user-generated content: An example of a discussion on COVID-19 vaccination in the Telegram chat[1]

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Abstract

Over the last few decades, there have been several generations that can be called "digital". While older people may not ignore traditional media, younger generations receive information mainly or completely from the internet and new media. These new media platforms are not only means of mass media and communication, but also a convenient tool for propaganda, which is used by their users themselves. In the era of digital media, users are no longer only objects but also subjects. One of the most controversial topics of 2021 was the problem of vaccination against COVID-19. Representatives of the mass audience were instantly divided into "vaccinated" and "COVID dissidents." Using the Telegram discussion chat of the Ural Federal University as an example of this phenomenon, the authors analyze propaganda methods used by both sides in this kind of confrontation. As research methods, we used content analysis of chat messages, as well as a survey of its participants. Many participants in the chat discussion accused each other of propaganda. Therefore, we decided to find out whether the propaganda was really obvious to the majority of subscribers, and what type of propaganda (coming from vaccination supporters or opponents) was noticed by the subscribers. Vaccination against the coronavirus infection

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remains a highly debatable issue that needs to be addressed. We show that an open and honest discussion, without the use of propaganda methods, is required to build confidence when addressing any forms and methods of mass vaccination in modern social practice.

Keywords

Propaganda, user-generated content, propaganda methods, manipulation, vaccination, COVID-19.

Introduction

At the beginning of 2020, the world was swept by the coronavirus pandemic. Then, at the beginning of 2021, a struggle for mass vaccination began. The conflict was taking place both among countries (as each of them promotes its own vaccine) and among ordinary people who are instantly divided into "vaccinated" and "COVID dissidents". Initially, the word "propaganda" (from Latin – "to spread" or "disseminate") did not have a negative connotation, and in its most neutral context, it meant the dissemination of certain ideas or information. However, today, this word is rapidly becoming a derogatory term. Propaganda is seen as something negative and dishonest. Words such as "lies", "distortion", "deceit", "manipulation", "mind control", "psychological warfare", "brainwashing", and "palaver" are often used synonymously with propaganda (Jowett, & O'Donnell, 2012). In recent studies, the concept of propaganda is often associated with information warfare, post-truth politics, and manipulation (Bykov, 2021).

"Propaganda itself is a kind of activity for disseminating information of various content (ideas, views, assessments, facts, etc.), the purpose of which is to form certain beliefs in people's minds or to induce them to a certain way of behavior. The difference between propaganda and other types of information is that it affects consciousness and deeper structures of one's mental state: emotions, mood, psychological experiences, attitudes, and expectations. It is designed to form a biased attitude towards certain aspects of public and political life" (Bredikhin, & Udaltsov, 2020). As the researchers write, "the influence of propaganda on a person is like that of religion". It "seeks to give a sacred meaning to its ideas and make a person accept them on faith, without requiring any proof" (Sharikova, 2020).

In modern English-language literature, propaganda is often described as the intentional manipulation of public opinion (Zollmann, 2019). However, most positions regarding the concept of propaganda (ibid) reduce it to the influence of the elites, the ruling minority, or the media themselves. This author mentions

another point: propaganda can also come as a spontaneous and unconscious diffusion of ideology from members of a society. Finally, the author defines propaganda as "the forming of texts and opinions in support of particular interests and through media and non-media mediated means with the intention to produce public support and/or relevant action" (ibid). This definition, being quite broad, can also include propaganda by internet users and the so-called new media.

Meanwhile, interactivity is one of the important features of modern online publications. In this case, the modern user is often not only an object but also an active subject. Users of new media often collect and share information, and they may use propaganda methods and a propagandistic rhetoric, even being unaware of it. Researchers have already written about propaganda in social networks (Mejova, Petrocchi, & Scarton, 2021), and this article is also devoted to such propaganda in user-generated content. International research often associates propaganda with mass communication rather than interpersonal communication. However, the new media practice requires a systematic analysis, since this kind of mechanism is fundamentally different from the traditional propaganda model, in which the main role is played by mass media controlled by authorities and political elites.

In the digital age, the Internet has become the main platform for this kind of influence, especially among younger generations who use social networks and instant messengers as the primary communication channels. Modern youth, and even some representatives of the older ("analog") generation, cannot imagine living without new technologies (Gokun, 2021). Trust in social media is increasing. Political and social life now includes generations formed in a new socio-cultural and technological context. Thus, the digital environment is becoming an important new field for propaganda (Solovey[3], 2018).

Traditionally, there have been two main positions regarding the concept of propaganda: propaganda as deliberate, planned, and long-term manipulation of public opinion, and propaganda as a tool for promoting certain ideas. However, modern interpretations of propaganda are more universal and describe it as an impact on social groups to ensure the dominance of a certain doctrine over competing analogues. Methods can include both persuasion (using logic and arguments) and suggestion (imposing a position against a background of a preliminary decrease in criticism of perception), as well as manipulation (Gorbatov, & Gurushkin, 2021). This approach combines both traditional positions in relation to propaganda and is used in this research.

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[3] Declared a foreign agent in the Russian Federation.

We have analyzed user-generated content, which has characteristics such as spontaneity, decentralization, and a lack of focus. Propaganda methods in user-generated content are too diverse, requiring a broad approach to the concept of propaganda. We can't simply call it "deliberation" or "exchange of ideas". More important in this case is what unites all these approaches. Propaganda always provides one-sided information to convince people of the "only true" point of view and often uses incorrect methods of persuasion.

The active promotion of vaccination against COVID-19 began in 2020 and still continues worldwide at all levels, from government to interpersonal. During major crises, people experience an increasing need for information and understanding (Spyridou, & Danezis, 2022). For example, from February to June 2021, the World Health Organization and its partners implemented an interactive global education initiative that enabled anyone interested in learning more about vaccination to receive the latest information, ask questions, and share their experiences (Goldin, Hood, Pascutto, et al., 2022). In turn, scientists are studying respondents' vaccination intentions in light of the perceived and increased risk of vaccination (Gursoy, Ekinci, Can, & Murray, 2022; Heinrich, Camacho, Binsted, & Gale, 2022; Lueck, & Callaghan, 2022), as well as general opinions and emotions about various stages of the COVID-19 pandemic, from the outbreak to vaccine distribution (Mahdikhani, 2022). The authors of this article have also raised similar questions.

Materials and methods

In this study, our aim was to analyze the methods used and highlight propaganda messages in user-generated content publications on COVID-19 vaccination, using the example of the Telegram discussion chat of the Ural Federal University (UrFU). We were interested in examining the statements of both users who support vaccination and those who oppose it.

Users of student chats are united by their social status and age, which creates a socially and intellectually equal platform for discussion. Additionally, they use the Internet for informal communication and do not limit themselves in emotional statements, making the use (whether consciously or unconsciously) of propaganda methods more evident. It is also noteworthy that modern students, being representatives of the so-called digital generation, continuously use their smartphones to chat, allowing discussions to unfold through constant, uninterrupted real-time communication, resulting in a vast number of messages that provide ample material for this study.

Simultaneously, the student discussion is noteworthy from a scientific perspective for analysis. On the one hand, being representatives of the digital

generation, they are primarily guided by new media where opposing opinions, including those on vaccination, are widely represented. On the other hand, these individuals represent intellectual youth, many of whom use scientific citations as arguments. Consequently, this group includes both sides of the conflict – "vaccinated" and "COVID dissidents" – who, due to their age, emotionally defend their positions.

The analysis materials were exported on July 10, 2021, at 12:20 pm. The university chat was technically linked to the Telegram channel[4]. At the time of verification, there were 8,165 channel subscribers and 525 chat subscribers.

Content analysis and online survey were utilized as research methods. Initially, the channel and chat messages were analyzed, starting from June 17, 2021 (the day on which a heated emotional debate began in the UrFU discussion chat, following an official announcement on vaccination by the University administration). From all the messages in the UrFU chat during the specified period, we identified those related to the vaccination issue and divided them into two groups – "for" and "against." Messages on other topics, as well as statements on vaccination with a neutral connotation, were excluded.

In addition, we analyzed the messages of the UrFU channel separately, as this represents the official position of the University. Moreover, it should be noted that news from the channel is automatically copied into the chat, thereby forming the basis for the subsequent round of discussion among the participants. Given that researchers have identified many different propaganda techniques (Peycheva, 2019), we have categorized only those that pertain to the actual messages of the participants, as it is an evolving and constantly changing field of discourse.

The second method we used was a survey. Since many participants in the chat discussion were accusing each other of propaganda, we decided to find out whether propaganda was actually apparent to the majority of subscribers, and which type of propaganda (coming from vaccination supporters or opponents) was noticed by the subscribers. Of course, this survey does not qualify the content as propaganda; it is simply an additional element to the main analysis. We aimed to test how receptive users are to propaganda methods and whether they can recognize them. The survey was conducted online using Google Forms, and we asked the participants the following questions:

First, have you noticed any propaganda messages related to COVID-19 vaccination in the UrFU chat? (When answering this question, the respondent also had to indicate which side the propaganda was coming from); *second*, did

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[4] https://t.me/urfu_ru

the messages in the UrFU chat influence your decision to get vaccinated against COVID-19; *third*, in your opinion, is the vaccination propaganda campaign effective (within the UrFU context), or does it have a negative effect? Also, if desired, survey participants could add specific examples of statements from the UrFU chat, which they considered propaganda.

In total, 92 people participated in the survey (the number of respondents was limited as we were only interested in the subscribers of the UrFU chat, and there are only 525 of them). As expected, the majority did not take the time to look for specific examples of propaganda, but we were able to gain a broader understanding of the opinions of the chat subscribers. The primary sources for this research are publicly available (Oleshko, Mukhina, & Malik, 2021).

Results

1.1 Propaganda methods of the official Telegram channel

As a starting point, let us assume that modern propaganda methods are flexible and ever-changing tools. They change in accordance with the traditions of a particular area, the pace of time, and the context in which they are used. Furthermore, audiences can become desensitized to certain methods of influence over time. As a result, a skilled propagandist must always be searching for and inventing new methods of influence.

Modern researchers identify various propaganda techniques, including information blockade, feedback, rewriting history, ranking, sensationalism, creating associations, sticking labels, psychological shock, substitution of concepts, and trolling (Fisenko, 2020). In addition, when describing effective forms of propaganda influence on the masses, researchers also note the importance of using vocabulary that is understandable to most members of the audience, repeated messaging, and avoiding any differentiation of propaganda that allows for alternative perspectives or doubts about the "absolute truth" of the initial message (Golodov, 2020).

As a basis for the study, we chose a classification that we believe includes a fairly comprehensive list of both classical and modern propaganda methods (Da San Martino, Barron-Cedeno, Wachsmuth et al., 2020). We used an approach that enables us to characterize the originality and dynamics of discussions in the framework of the analysis, with reference to the online platform (chat), the topic of discussion (vaccination), and the real and potential subjects of propaganda influence (students).

We began analyzing the results after the official university announcements were posted in the chat. During this period, a total of 74 messages were published

on the UrFU Telegram channel, with 14 of them being considered as promoting vaccination, and another 2 as indirect propaganda. As mentioned earlier, the discussion was sparked by the morning news on June 17 that students who were neither vaccinated nor had antibodies would be given spaces in the UrFU dormitory in the last turn.

Among the methods of vaccination propaganda used by the UrFU channel, the following can be noted:

1. Appeal to fear / prejudice:

– The threat of deprivation of specific benefits: dormitories and, in the future, possibly admission to offline classes *("We cannot endanger the lives of thousands of students and close the dormitories for a lockdown"; "In Moscow and the Moscow region, they want to go even further and prevent access to offline classes for non-vaccinated students or those who did not have COVID-19 antibodies"; "Universities are free to decide whether to admit non-vaccinated students to classes – Ministry of Education";* and a survey on the topic of "whether to allow non-vaccinated employees to the University");

– Negative statistics *("Four new COVID-19 cases among UrFU students were registered this week"; "The coronavirus has not yet been defeated, as evidenced by the increase in the number of cases in many regions"; "This week, 26 laboratory-confirmed cases of COVID-19 infection were recorded at UrFU"*);

– Oppressive facts *("The University expresses condolences to the family and friends, fellow students and teachers of the 22-year-old Masters-degree student who died on July 3 (…) On June 19 he received a positive PCR test for COVID-19, on the 21st the doctors connected him to a lung ventilator. He was not vaccinated"; "Ex-Dean of the UrFU Department of Journalism Boris Lozovsky has got infected with COVID-19"*).

2. Appeal to authority *("The most popular questions in the material of our colleagues from the Higher School of Economics were answered by volunteers of the Institute of Public Health of the Sechenov University (…) It was confirmed that mask regime and vaccination are most efficient in preventing the spread of coronavirus infection"*).

It is interesting that the majority of respondents (68.5%) indicated negative emotions towards such propaganda when answering the question, "In your opinion, is the vaccination propaganda campaign efficient (at UrFU level) or, on the contrary, does it have a negative effect?" Although they assessed the level of its effectiveness differently, another 10.9% considered the propaganda campaign successful (without indicating negative emotions about its format), and 19.6% said they did not notice any propaganda at all.

Results of a survey among the users of the UrFU discussion chat who responded to the question of whether the UrFU channel's propaganda was successful or not
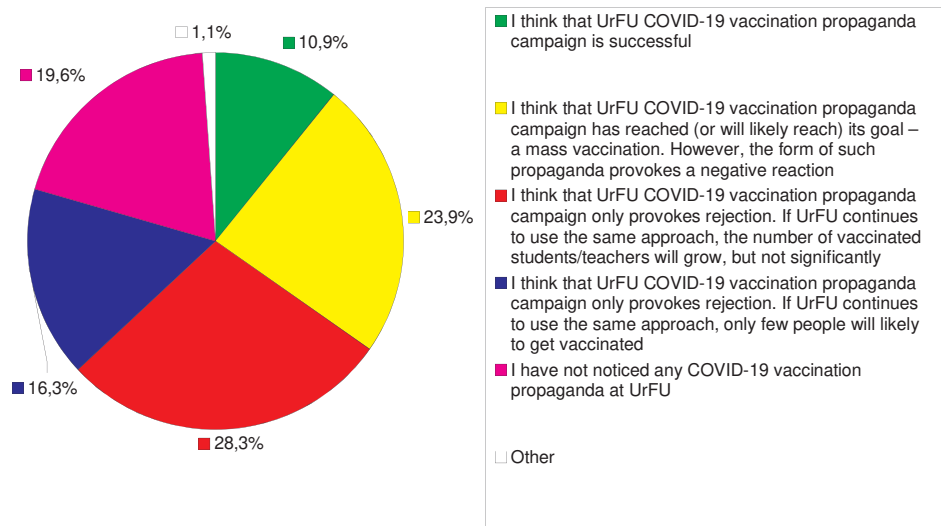
In general, it should be mentioned that the propaganda of the official Telegram channel of UrFU was quite direct: there were only a few messages that could be marked as a delicate attempt at manipulation.

*1.2 User-generated propaganda messages*

User-generated messages in this chat are far more illustrative. The chat is open to everyone, but it is primarily used by UrFU students. UrFU employees and graduates write less frequently. So, after analyzing chat messages about vaccination, we found 71 messages from supporters of vaccination and 131 messages from opponents of vaccination.

The question "Have you noticed any propaganda messages on COVID-19 vaccination in the UrFU chat?" strongly divided respondents into two sides. However, it is interesting to observe how people's perception differs from the actual data. The majority said there were equal propaganda messages coming from both sides (30.4%). Some insisted on the absence of propaganda (15.2%). But when the respondent emphasized the predominant propaganda from one of the sides, it referred to vaccination supporters (41.3%) – only to them or mainly to them. Another 13% believed that the propaganda mainly came from opponents of vaccination, and no one indicated that the propaganda came

only from them. As mentioned above, the actual data showed that the number of messages from vaccination opponents almost doubled the messages from supporters (131 versus 71).

**Results of a survey among the UrFU chat users who responded
to the question of whether they noticed any propaganda message
in the UrFU discussion chat**
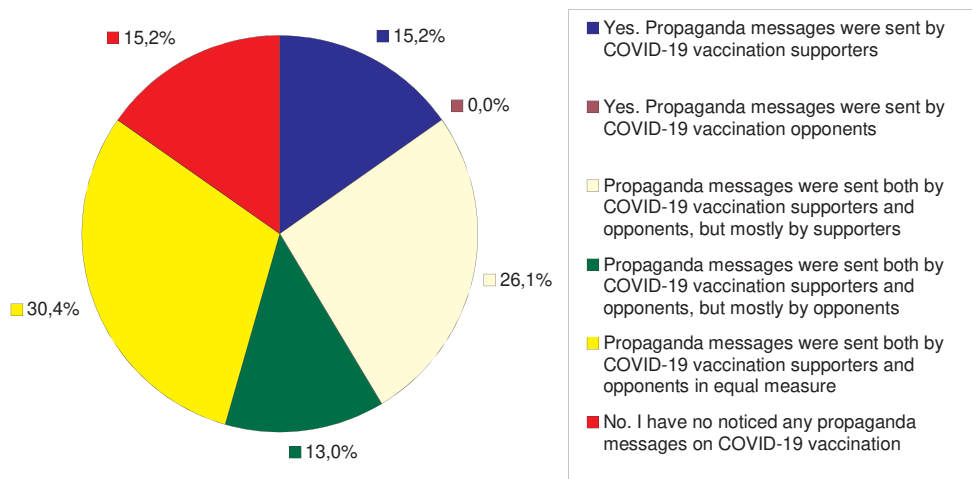
1.3 Propaganda methods of vaccination supporters

Specific propaganda methods used by vaccine advocates include:

1. Name calling or labeling:

– Declaring the opposite opinion as spam (*"Well, spam is also not good"; "Sending bulk messages that no one asked for is also spam"*);

– Declaring opponents amateurs to argue, regardless of their arguments *("Well, they're jus;t protesters, it doesn't matter what they're against, as long as they're making noise"*);

– Calling opponents fools *("All vaccination dissidents are narrow-minded"; "After such news about your mental health, how can we, as healthy people, have discussions with you about the benefits of vaccination?"; "Your point of view is ridiculous and stupid"*).

2. Whataboutism:

– Attributing "obscurantist" theories to vaccination opponents, even if they did not express such thoughts *("Why are you shouting that the vaccine hasn't*

been fully researched and that I'll grow scales?"; "Are you one of those 5G tower and microchip conspiracy theorists?"; "If you want to listen to fairy tales, listen to anti-vaxxers"; "Obscurantists don't need higher education");

– Declaring discussions with opponents as useless *("You can't convince active anti-vaxxers, so don't waste your time"; "Dialogues with anti-vaxxers are amusing but pointless")*;

– Making up arguments *("Can we call any arguments against several decades of global research "adequate" at all?")*;

– Personal attacks *("If you lie when you publish, you're a despicable scientist. Don't equate yourself to the best minds in Russia"; "You'd be better off writing scientific studies")*.

3. Causal oversimplification:

– Declaring a personal statement/opinion as a fact without providing arguments (*"The attempt is good, but one fact is missing. My messages do not carry any propaganda"*);

– Declaring information as proven without presenting arguments ("*The effectiveness of Sputnik V has already been proven"; "Such cases* (Author's note: deaths from the vaccine) *have not yet been registered, while millions of COVID-19 deaths have been registered"; "The vaccine does not guarantee that a person will not get COVID-19. It guarantees that someone might still get sick, but they will easily endure it because their immune system will be familiar with the virus"; "Getting COVID-19 from a vaccine is out of the question"*);

– Unconfirmed statistics *("Thanks to the vaccination of children, infant mortality has decreased hundreds of times over the past 50 years"; "If 100 masked people cough at you while you are wearing a mask, then you will get sick in 1-2 cases. If no one wears masks, your chances of getting sick raise by   times"; "In the case of the delta strain, the vaccine effectiveness is really reduced, but only by a maximum of 10-20%")*;

– Putting moral responsibility for potential deaths from COVID-19 on vaccination opponents *("They don't understand that if they don't die themselves, they will infect someone who might, and it will be their fault"; "By the way, I wanted to ask if there is a criminal offense for those who persuade someone not to get vaccinated. Are vaccination opponents aware of their responsibility for real people's deaths?")*;

4. Appeal to the authority (*"The article from the scientific community raised many questions, and the Gamaleya Research Institute has answered all of them"; "The Gamaleya Research Institute is a highly authoritative vaccine manufacturer"; "You have a higher education and access to articles in The Lancet and articles from*

Argentina – I don't really understand. The scientific approach is there"; "I understand that it's hard to believe in TV propaganda, but if someone's words are confirmed by scientific articles and statistics, then it probably sounds like the truth"*);

5. Appeal to fear/prejudice (*"I don't think that your grandparents would like the extinction of the country, but everything is heading towards this"*);

6. Exaggeration or minimization (*"Did he die? It would be worse if he had gotten the vaccine!"; "There are incompetent people working at the Gamaleya Research Institute"*).

It should be added that in the UrFU chat, only vaccination supporters called for the disabling / blocking of representatives from the opposite side (*"Someone disconnect her already"; "You could just block her"; "I would generally exclude people who refuse to get vaccinated from the university"*).

1.4 Propaganda methods of vaccination opponents

But there were definitely propaganda methods among vaccination opponents too. We divided them into two groups: statements against the vaccine itself and statements against compulsory vaccination.

Propaganda methods against the vaccine itself:

1. Appeal to fear/prejudice:

– Stating potential side effects as guaranteed (*"Give a normal vaccine, not this stuffy Sputnik V, which makes you feel worse than when you get sick with COVID-19"; "I'm not forcing others to risk their lives for me, but for some reason, they're asking me to risk mine for their sake"*);

– Declaring a vaccine as contamination (*"A vaccine is an infection, and not everyone can tolerate it easily"*);

– Sharing negative experiences (*"After getting vaccinated yesterday, I felt like a frying pan on fire"; "It's risky to get it, especially since a couple of my friends died after getting vaccinated"*);

2. Black-and-white fallacy (*"Did you not try to play sports and eat healthy? I assure you, all of this is much more effective! And how did humanity survive without vaccinations?"*);

3. Doubt (*"History is being rewritten, but we all rely on some kind of research, medicine, and the information we are provided"*).

4. Name calling or labeling (*"Discrimination against sensible people"; "There has always been deception of the people, for a conscious person is dangerous"*).

Propaganda methods against compulsory vaccination:

1. Name calling or labeling:

– Calling compulsory vaccination an experiment or a test (*"I will not allow experiments on my body"; "This vaccine has not yet passed the third stage of*

testing which ends in December 2022. Therefore, this is an experimental vaccine, and everyone who gets it is a participant in the experiment"; "So only the remote consequences are being tested. On us"; "Voluntary-compulsory experiments on us"; "I don't want to test it on myself").

2. Whataboutism:

– Paraphrasing representatives of the opposite side (*"Oh! Soft persuasion has arrived. Like, 'Why are you outraged? Authorities are still fair to you. Appreciate it!'"*);

– Bringing to the point of absurdity and sarcasm, allegedly on behalf of representatives of the opposite side (*"Rural people have flooded the city. Yekaterinburg is not elastic. Let them work for science, test a vaccine for normal people from good families"; "If the teachers do not want to be vaccinated, they are not allowed to teach (we cannot endanger the population!). They will be replaced by others, more flexible. If students do not want to be vaccinated, they will be kicked out of the university. Everything is voluntary. Everyone has a choice"*);

3. Appeal to authority (*"A physician I know from the pre-COVID-19 era explained to me the essence of vaccination"; "An actor with an adequate view and position is a hero of our time!"; "This contradicts the opinions of doctors whom I trust"*);

4. Black-and-white fallacy (*"We are citizens, not cattle"*);

5. Appeal to fear / prejudice (*"They will bring people to rallies and single pickets. Or some student will go on a hunger strike, sitting in a tent near the dormitory and become a TV star. Can't they see that such explicit enforcement only angers people and leads to the opposite effect?"; "Phases and are not over yet. They plan to vaccinate children by autumn"*);

6. Doubt (*"It usually takes - years to create a vaccine, yet they did it in just months"*).

Discussion

The issue of vaccination continues to be highly debated. Governments around the world are struggling to persuade people to participate in vaccination campaigns (Bullock, Lane, & Shults, 2022; Loucif, 2022), using various incentives, including monetary rewards (Iyer, Nandur, & Soberman, 2022). As practice and current research show, the key issue here is trust in the government (Van Oost, Yzerbyt, Schmitz et al., 2022; Aslanov, & Kotov, 2022), since not all medical experts have a common and unambiguous position regarding vaccination, and not all of them are vaccinated (Huang, Gilkey, Thompson et al., 2022).

Many people refuse to be vaccinated against COVID-19 not only because of the speed of its creation (Orlova, Fedulaev, Filatova, & Orlova, 2020), but also due to insufficient or, conversely, excessive awareness resulting from various persistent propagandists and manipulators.

Some subjects of information activity, clearly aware of the influence of the media and social networks, unequivocally supported vaccination, calling its propaganda "educational work" and considered the anti-vaccination movement "bewildering". Although, of course, there were others, no less persistently, proving the opposite. But both sides did not consider the participants in this discussion equal.

Thus, it would be strange to expect equal and respectful discussion from students when representatives of the scientific community do not follow such a path themselves. For example, some researchers openly call the position of vaccination opponents flawed, providing only "obscurantist" theories as arguments (such as chipping or sterilization of the population). They also mention numerous stories about non-vaccinated people dying from diseases (Glasper, 2021). While belief in the COVID-19 conspiracy theory can have severe consequences, it is essential to understand and study this phenomenon (Van Mulukom, Pummerer, Alper et al., 2022). At the same time, it must be admitted that there are negative examples of the consequences of vaccination in world history. The author of a study on this topic correctly notes that building trust in vaccines is more relevant than ever. The author wrote this in 2017 (Weigmann, 2017), but now this problem is even more urgent.

It should be noted that vaccination is supported by the authorities of all countries. Therefore, supporters of vaccination also propose strict penalties for anti-vaccination propaganda (Day, 2020; Gunai, 2019), indicating that they are taking more serious measures than simply calling on students to block opponents.

However, as long as vaccination remains officially voluntary, it is often promoted through internet propaganda. At the same time, the tendency of people to conform to social consensus, their desire to "be like everyone else," and not stand out from the crowd is an important propaganda factor. The overwhelming majority of people are conscious or unconscious conformists who prefer to be on the same side as the majority. Therefore, one of the tactics of propagandists is the "fabrication of consent," when many people support each other with likes, reposts, and positive comments to create the impression of mass support for an opinion (Solovey[5], 2018). We would venture to suggest that this is precisely why the majority of our respondents felt there was much more propaganda from

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[5] Declared a foreign agent in the Russian Federation.

vaccination supporters. It was towards the end of the chat discussion, when the survey was conducted, that vaccination supporters became very active, and simply outnumbered the opponents in the chat.

As a limitation that characterizes the results of the study as indicative to a certain extent, one should mention the fact that the student chat chosen for analysis is a unique platform with its own peculiar characteristics. Therefore, generalizing conclusions should be made with caution and adjusted for the age and social status of the respondents. At the same time, this choice is also due to several advantages we mentioned earlier and reflects the viewpoint of the young digital generation, which is also valuable.

At the end of the discussed questions, we would like to note that 89.1% of our respondents indicated that their opinion regarding vaccination did not change despite the messages in the UrFU chat. In total, 8.7% stated that they hesitated as a result of some remarks, and 2.2% admitted that they changed their position and decided to be vaccinated against COVID-19. Such a result is quite logical, as only a small number of people are able to admit that they are influenced by propaganda. However, if in reality the majority were so resistant to propaganda, it would have become a thing of the past a long time ago.

Conclusion

In conclusion, it should be noted that the main value of modern research (including ours) lies in capturing this global discourse on the topic of vaccination and propaganda (both "for" and "against"), analyzing the methods of propaganda and manipulative influence, based on our standpoint in the current period of time. It seems that after COVID-19 becomes history, it will be necessary to re-analyze not only the collected data but also the researchers' evaluations.

Thus, we have identified several popular propaganda methods used in the user-generated content, such as name-calling or labeling; whataboutism; causal oversimplification; appeal to authority; appeal to fear / prejudice; exaggeration or minimization; black-and-white fallacy; and doubt. Interestingly, most of these methods are used by both sides of this dispute.

At present, we can state that the issue of vaccination is extremely urgent and really requires public trust in vaccines. In order to build such trust, an honest and open discussion among professionals who hold different views is necessary. Research and public awareness are beneficial when different views are included in engagement activities. This enriches our understanding of society's response to health issues such as vaccination. The transition to online interaction as a

result of the pandemic may open up opportunities for expanding the geography of interaction, but as researchers agree, it is also necessary to take into account new barriers created exclusively by the online world, such as the fact that not everyone is included for one reason or another (Farrell, & Wilkinson, 2022). Blocking or criminalizing someone's opinion will not add any credibility to the "winners" and will only provoke a negative reaction, as our survey has shown through a specific sampling of respondents.

In this regard, comments from our survey such as *"I only see insults to each other"* and *"I had a feeling for a long time that everyone does not say everything they want to, even if they sincerely believe in their position"* are very illustrative. Obviously, all people, including participants in the UrFU chat that we studied, want an open scientific discussion but are often confronted with one-sided statements or propaganda. In our opinion, such discussion can become the main countermeasure against possible destructive content of social networks.

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