Ukrainian scientific TV programs and YouTube channels as a distraction from war news on Russia’s invasion of Ukraine: a survey-based observational study and a content analysis

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Abstract
Purpose: This study examined whether popular science journalism can be a distraction from war news, as the life of all citizens in Ukraine has changed significantly since the beginning of the full-scale Russian invasion of Ukraine on February 24, 2022.
Methods: This article presents an audience survey on whether they viewed science content as a distraction from war news. In addition, an analysis of 10 Ukrainian YouTube channels was conducted. All videos that were published after February 24, 2022, the start date of Russia’s full-scale invasion of Ukraine, were processed.
Results: Out of 460 audience members of TV programs and YouTube channels, 64.8% of respondents considered watching popular science or entertainment programs as a distraction from the war. An analysis of the content of popular science YouTube channels during the first 2 months of the war showed that every active channel was reformatted according to the realities of wartime. In addition, the audience survey demonstrated that even during the war, this type of content has remained relevant.
Conclusion: The Ukrainian audience needed scientific content as a distraction from the war. The majority of respondents, regardless of gender, needed to divert their attention from military operations. Ukrainian science journalists also joined the information war against the foreign invasion.

Keywords
News; Journalism; War; YouTube; Ukraine
Introduction

Background/rationale

February 24, 2022 was the beginning of a new reality for Ukrainians. They began to see rockets in the sky, respond to air alarms and look for the nearest bomb shelter, give shelter to other people, and avoid certain products. Destroyed houses, mass murders, and relocations affected not only the physical but also the psychological health of Ukrainians. According to the report of the International Organization for Migration, as of May 2022, more than 6 million Ukrainians were forced to leave for other countries. Another 8 million became internally displaced [1]. Some relatively safe people struggled with survivor guilt. Those who came under fire tried to reach safer places, and those who found themselves in occupied areas tried to simply survive. Some refused to leave their homes. Around the clock, people watched the news to understand where there were “green corridors” for evacuations in their area. Ukrainians, regardless of their location, constantly watched, listened, and read the news, fearing missing important information. Subsequently, psychologists advised those who were already safe to try to return to a relatively normal lifestyle—that is, to go to work and distract themselves from the news for a certain time [2].

On February 26, 2022, six Ukrainian TV channels united and launched a joint information television marathon, where they continuously talked about the situation in Ukraine throughout the day [3]. The importance of news for Ukrainians could be seen from the growth in the number of audience members. For example, before the war, the Telegram channel of the Public Broadcaster of Ukraine had almost 9,000 subscribers, while in the first months of hostilities, the audience grew to 290,000 (Table 1) [4].

When the inhabitants of occupied or partially destroyed cities left the dangerous zones, and some returned to their homes, the period of getting used to the war began. News remained the top priority among any other programs. It is worth noting that the news itself has become more dynamic and diversified, partially replacing “entertaining” content for Ukrainians due to the conditions in which they found themselves. The news began to give the “emotion” that the audience demanded, for example, the victories of the Ukrainian army or people’s grief. However, in addition to news, work continued on other projects, in particular, popular science projects on YouTube channels.

Objectives

The objective of this study was to expand knowledge about the value of science journalism in times of war. This study allows science journalists to understand the importance of their field by examining the extent to which people need scientific information during wartime.

Methods

Ethics statement

The authors requested feedback and questions from respondents in social media polls. No sensitive personal information was acquired; therefore, neither institutional review board approval nor informed consent was required.

Study design and setting

This is a survey-based observational study and content analysis. An audience survey was conducted on whether they viewed science content as a distraction from war news. The survey was conducted among Internet users using social networks (Facebook and Instagram) from May 18 to June 5, 2022. In total, 460 respondents took part in the survey. The total target number could not be estimated.

Data sources/measurement

The survey consisted of two questions: “Did you start watching scientific or entertainment content to distract yourself from the war” and “Which content did you choose for yourself.” The first question had two answer options (yes or no), and the second question contained three options (science content, entertainment content, or both). The analysis of answers focused on whether viewers started using popular science content to distract from news about combat operations and whether the need to use non-news programs as a distrac-

Table 1. The number of subscribers of the Public Broadcaster of Ukraine after the Russian invasion of Ukraine in February 2022 [4].

<table>
<thead>
<tr>
<th>Date</th>
<th>Website: unique users (million)</th>
<th>Facebook: video views (million)</th>
<th>Telegram subscribers</th>
<th>Instagram followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2022</td>
<td>4.0</td>
<td>4.2</td>
<td>8,830</td>
<td>16,090</td>
</tr>
<tr>
<td>February 2022</td>
<td>7.8</td>
<td>28</td>
<td>213,000</td>
<td>17,361</td>
</tr>
<tr>
<td>March 2022</td>
<td>9.5</td>
<td>48</td>
<td>283,000</td>
<td>30,927</td>
</tr>
<tr>
<td>April 2022</td>
<td>7.3</td>
<td>33</td>
<td>292,949</td>
<td>40,499</td>
</tr>
<tr>
<td>May 2022</td>
<td>5.2</td>
<td>12.3</td>
<td>294,184</td>
<td>40,572</td>
</tr>
</tbody>
</table>
tion was associated with gender.

**Bias**
There was no reportable source of bias in this survey.

**Study size**
The sample size could not be estimated since only the respondents’ data were included.

**Statistical methods**
Response data from the survey were presented with descriptive statistics.

**Content analysis of 10 Ukrainian YouTube channels**
An analysis of 10 Ukrainian YouTube channels was also conducted. Ukrainian-language channels with at least 4,000 subscribers were selected. In general, the number of subscribers on the channels varied from 4,000 to 577,000. All videos that were published after February 24—that is, after the start of Russia’s full-scale invasion of Ukraine—were processed. Content created before the war was also analyzed for comparison. The content analysis focused on answering the following questions: first, whether the number of releases decreased compared to before the war; and second, whether the new videos mentioned the war.

**Results**
The results of the audience survey showed that out of 460 respondents, 298 (64.8%) used popular science or entertainment content as a distraction from the war, while 162 (35.2%) did not do so. Of those who answered in the affirmative, 27.5% preferred popular science programs, 37.2% watched entertainment content, and 35.3% watched both (Fig. 1).

Among the 143 surveyed men, 87 (60.8%) needed distraction from news about the war, while 56 (39.2%) did not. Among the 317 surveyed women, 206 (65.0%) used popular science or entertainment programs as a distraction, while 111 (35.0%) did not (Fig. 2 and Dataset 1).

The analysis of popular science TV programs showed that the content on most YouTube channels had changed; specifically, they have reoriented themselves to the realities of the war. Some channels simply mentioned that Russia had invaded the territory of Ukraine and now active hostilities are taking place in the country, and some began to explain why it is necessary to hide in bomb shelters during alarms, how the weapons that the Ukrainian army has (e.g., Javelins, Stingers, or Bayraktars) work and what Russia’s launch of missiles with nuclear warheads might lead to.

The analysis of the quantity and quality of the content identified the following findings:

*Imeni T.H. Shevchenka* (577,000 subscribers) is a popular science channel on the history of Ukraine. Before the start of the full-scale invasion, the channel also published videos about the difference between Ukrainians and Russians, discussed the topic of how Russia occupied Crimea, and debunked Russian fakes. After February 24, 2022, videos about nuclear ash, how to protect yourself from shelling, and how to destroy tanks began to appear. In addition, the channel analyzed the topics of the division of Ukraine and the history of land fortifications in Ukraine.

*Kliaty rutsionalist* (206,000 subscribers) is a channel where the founder, Artem Albul, debunks myths, superstitions, and pseudo-experts in his videos. During the war, videos were not published on the channel.

*Tsikava nauka* (187,000 subscribers) is a channel for children that dubs popular science and educational videos from foreign YouTube channels from various fields of science. Over the past 2 months, the channel’s content and quantitative diversity have not changed. However, at the beginning of each issue, the authors show a patriotic image with the inscription “Ukraine above all.”

*Tvoia pidpilna humanitarka* (130,000 subscribers) is a channel where the author talks about whether the Ukrainian lan-
Ukrainian scientific TV programs as a distraction from war news

Language is really the second in the world in terms of melodiousness, whether there was surzhyk (a nonliterary linguistic variant characterized by a mixture of Ukrainian and Russian forms), and other topics. Since the beginning of the war, the channel has released two videos in which the author mentioned that Russia attacked Ukraine.

Tokar.ua (43,000 subscribers) is a channel that publishes information about space, technology and inventions. From the beginning of the war, the author of the channel, Nazar Tokar, began to make programs about the war in Ukraine.

Alpha Centauri Ukraine (33,900 subscribers) is a channel that publishes videos from foreign YouTube channels about space translated into Ukrainian. For the first month after the war, there were no videos on the channel, then videos about space novelties began to appear, but before the start of each episode, the authors mention Russia’s full-scale invasion of Ukraine. They call to help the Ukrainian army.

Dovkolabotanika (14,900 subscribers) is a channel where author talks about the world of plants and animals. The content on the channel has not changed since the beginning of the war; however, at the beginning of the videos, the author mentions the war that Russia started against Ukraine.

Naukuimo (6,000 subscribers) is a channel where scientists talk about the importance of sleep, as well as ornithology, pain, artificial insemination, and other topics. During the war, one video appeared on the channel, where candidate of biological sciences Olga Maslova, sitting in the basement, talks about a dream during the war.

Lakuna (4,000 subscribers) is a channel where the author records short popular science videos about scientists from various fields and their inventions. Since the beginning of the war, the channel has released only two protest videos (one in Ukrainian, the other in English) about the fact that Patreon does not allow fundraising for the Armed Forces of Ukraine.

D6 nature (4,000 subscribers) is a channel that publishes videos united by the theme of nature. Since the beginning of Russia’s invasion of Ukraine, the authors have recorded several videos about the war in Ukraine.

The changes in the quantity and quality of content on YouTube channels are summarized in Table 2.

### Table 2. Changes in the quantity and quality of content on YouTube channels in Ukraine after the Russian invasion of Ukraine in February 2022

<table>
<thead>
<tr>
<th>YouTube channel name</th>
<th>Has the number of releases decreased?</th>
<th>Did it mention the war?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imani T.H. Shevchenka</td>
<td>No</td>
<td>Yes, changed the content</td>
</tr>
<tr>
<td>Kliaty ratschenist</td>
<td>Yes, decreased</td>
<td>There are no video releases</td>
</tr>
<tr>
<td>Tsikava nauka</td>
<td>No</td>
<td>No (very briefly)</td>
</tr>
<tr>
<td>Tvoja pidpilna humanitarka</td>
<td>Yes, decreased</td>
<td>Yes, mentioned</td>
</tr>
<tr>
<td>Tokar.ua</td>
<td>No</td>
<td>Yes, changed the content</td>
</tr>
<tr>
<td>Alpha Centauri Ukraine</td>
<td>No</td>
<td>Yes, mentioned</td>
</tr>
<tr>
<td>Dovkolabotanika</td>
<td>No</td>
<td>Yes, mentioned</td>
</tr>
<tr>
<td>Naukuimo</td>
<td>Yes, decreased</td>
<td>Yes, changed the content</td>
</tr>
<tr>
<td>Lakuna</td>
<td>Yes, decreased</td>
<td>Yes, mentioned</td>
</tr>
<tr>
<td>D6 nature</td>
<td>No</td>
<td>Yes, changed the content</td>
</tr>
</tbody>
</table>

#### Discussion

**Key results**

The results of the audience survey showed that 64.8% of respondents used popular science or entertainment content as a distraction from the war. Of those who answered in the affirmative, 27.5% preferred popular science programs, 37.2% watched entertainment content, and 35.3% watched both.

Regarding the distribution of answers according to gender, among the surveyed men, 60.8% needed distraction from news about the war. Among the surveyed women, 65.0% used popular science or entertainment programs as a distraction.

**Interpretation**

The results of this survey show that in order to temporarily distract from the realities of combat operations, the majority of the audience used entertainment content. This is because in Ukraine during the war, the development of such content intensified. Stand-ups by comedians in bomb shelters became popular, and a humorous show about the war was periodically broadcast on the air of a nationwide television marathon. Psychologists have also advised Ukrainians to joke and laugh during the war [5]. Laughter should be used as a protective reaction to severe stress. However, one should not underestimate popular science programs, because more than a quarter of respondents preferred this type of content, and 35.3% watched both entertainment and popular science programs.

Out of 10 YouTube channels that were researched, three reduced the number of videos after the full-scale invasion, and one channel stopped publishing videos. This is explained by the fact that a large number of Ukrainian citizens became forced migrants, among whom there could be content producers in this field. It also takes time to organize the filming of programs in new conditions. Another factor was the bombing of residential areas, as among the destroyed buildings were also studios. One of the videos released after the full-scale invasion was recorded in a dilapidated building. Eight out of the YouTube channels that were researched mentioned Russia’s invasion of Ukraine in their videos, and four of them changed their content to reflect the realities of the war. Another channel, which does not produce its own content, but
translates videos from foreign channels, began to add a patriotic image at the beginning of the videos. This shows that despite the remoteness of scientific journalism from the military sphere, the authors showed their civil position and gave a clear signal that no sphere of life can be outside of politics nowadays.

Comparison with previous studies
The question of the place of science journalism during the war has not been considered acute, since the most attention has been paid to journalism covering combat operations. War reporting, in short, demands that notions of what constitutes good journalistic practice be realigned on the basis of different criteria than would typically seem appropriate, criteria thrown into sharp relief—at times violently so—by challenging circumstances [6]. However, it cannot be claimed that science journalism completely ceased to exist during wars. Rather, it was pushed into the background by war news. For example, in 1919, after World War I, journalists, publishers, and scientists created the Science News Organization, which distributed scientific news. They were convinced of the importance of scientific knowledge for the American public. The result of this collaboration was the organization Science Service, established in 1921 for the popularization of science, with the support and participation of the leading science organizations. Reaching the public also meant navigating the contentious relationship between scientists and the press to create new ways of translating science information, and overcoming scientists’ reticence about sharing their research interests with the lay public [7]. In Ukraine, periodicals during the First World War, especially in 1914–1916, mainly published informational messages about war events, but sometimes presented letters, memoirs, and artistic works that did not have a political or national coloration. This is due to the fact that during 1914–1916, the Ukrainian national press was actually banned by the Russian military authorities, with the exception of a few newspapers and magazines that continued to exist in Russian [8]. The main task for Ukrainian publishers was the revival of Ukrainian culture, which is why, therefore, due to political events, there was not enough space for scientific publications at that time in Ukrainian periodicals. The question of scientific journalism also attracted interest after World War II. As Martin W. Bauer and Jane Gregory write in their study, in the post-World War II period in the United Kingdom, there was a shift in science communication from a logic of journalism towards a logic of corporate communication, or in other words, from media-led activities towards a source-driven reportage of science [9]. Russia’s war against Ukraine is still in the hot combat phase, so most Ukrainian journalists are focused on covering events, as well as debunking fakes published by pro-Kremlin mass media. Nonetheless, there is still a certain stratum of journalists who continue to cover science news, especially since before the full-scale invasion of Russia in Ukraine, there was a social demand for science TV programs, as exemplified by a previous study finding that more than three-quarters of respondents were interested in scientific discoveries [10].

Limitations
The analytical results of this study reflect the assumption that Ukrainians who have encountered hostilities in Ukraine occasionally need a distraction from news about hostilities. However, the survey was conducted among social network users. If it were possible to survey respondents who do not use social networks, the results of the survey would probably show slightly different indicators.

Conclusion
This quantitative study and content analysis sought to broaden the understanding of whether it is necessary to produce popular science content during hostilities. As a result, it turned out that the audience needed scientific content as a distraction from the war. The majority of respondents, regardless of gender, needed to divert their attention from military operations. An analysis of 10 popular science Ukrainian YouTube channels showed that since the beginning of the war, most YouTube channels have continued their activities, but some have reduced the amount of content on the platform. Despite the remoteness of scientific journalism from the military sphere, the authors showed their civil position and gave a clear signal that no sphere of life can be outside of politics nowadays.

Conflict of Interest
No potential conflict of interest relevant to this article was reported.

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Data Availability
Dataset file is available from: the Harvard Dataverse at:
Ukrainian scientific TV programs as a distraction from war news

https://doi.org/10.7910/DVN/ISNBTM

Dataset 1. Raw response data of the survey on watching science content as a distraction from war news.

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