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Post mass media in the modern informational society
"Journalistic text in a new technological environment:
achievements and problems"

RUSSIAN AMATEUR AND PROFESSIONAL POPULAR SCIENCE
CHANNELS ON YOUTUBE

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Abstract

This study examines popular science journalism the media direction that is currently relevant. Interest in it gradually grows up in the mass consciousness, and more and more new media are beginning to specialize in popular science content. At the moment, there are not so many examples of successful scientific media in Russia, and their format itself is often clumsy and academic. With the development of new Internet resources, the blogosphere and amateur journalism, a “new generation” of popularizers of science has emerged and chose a different approach to creating their own content. They not only prove that science can interest the audience and bring millions of views, but also gradually change the attitude toward education, the power of scientific knowledge and freedom from pseudoscientific stereotypes. Through the analysis of two popular Russian channels “Toples” and “PostNauka” we note the specific advantages and disadvantages of professional and amateur content on popular science topics. In the course of a detailed analysis of the content, audiovisual and genre characteristics, we concluded that the quality work on the selection of scientific material of both channels. However, the amateur channel in this case more effectively copes with the popularization mission, making the material clearer and more interesting for the viewer. These findings were also confirmed through the work with the focus group. This work allows us to formulate recommendations for the creation and promotion of popular science content for a mass audience.

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Keywords: Video blogging, media platform, popular science journalism, video hosting, YouTube, popular science blogging.



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1. Introduction

The development of scientific potential is a topical issue for many countries of the world, including the Russian Federation. Researcher Muravitskaya (2017) notes that the dialogue between the government, scientists, journalists and society is an important element that can help the country become a major world power. The desire to develop science is declared by the government of the Russian Federation and the Ministry of Education and Science. More and more modern research sites and laboratories are being created, prospective researchers are encouraged by grants and valued by employers. Even though many of these initiatives are subject to public criticism, it is impossible not to note the systematic work of the state in this area.

At the same time, in modern Russia there is also increasing attention to scientific information from a wide audience (Litke, 2013). Researcher Simakova (2016) also mentions this fact in his work, noting that interest in science is especially characteristic of young people from 18 to 40 years old.

In his open lecture, Tarasevich (2018), one of the main scientific popularizers of the country and the creator of the "Schrödinger's Cat" publishing, voiced two reasons for the growing interest in science in Russia: the natural change of trend from anti-science in the 90s to scientifically grounded knowledge and the self-realization of intelligent youth, wishing to change the lives of others for the better, but without entry points to the political world. Also, in his book, Tarasevich (2018) noted that modern popular science journalism performs three important functions, as he calls them "God", "Stomach" and "Mirror". The role of "God" allows popular science journalists to answer global questions of the universe through their materials, which previously could. The development of scientific potential is a topical issue for many countries of the world, including the Russian Federation. Researcher Muravitskaya (2017) notes that the dialogue between the government, scientists, journalists and society is an important element that can help the country become a major world power. The desire to develop science is declared by the government of the Russian Federation and the Ministry of Education and Science. More and more modern research sites and laboratories are being created, prospective researchers are encouraged by grants and valued by employers. Even though many of these initiatives are subject to public criticism, it is impossible not to note the systematic work of the state in this area.

At the same time, in modern Russia there is also increasing attention to scientific information from a wide audience (Litke, 2013). Researcher Simakova (2016) also mentions this fact in his work, noting that interest in science is especially characteristic only be explained by religion. "Stomach" helps to connect theoretical, far from a wide audience of discoveries with their daily lives (like how that fundamental discovery turns into a pack of new pills in a first aid kit). The function of "Mirror" in this context is the most difficult, it is responsible for the emergence of a feeling of empathy between the character and the reader being described, the ability to shift the experience of others onto his personal experience.

Other researchers associate the popularity of science with the development of popular journalistic blogs and online media (Abramov, 2014). Indeed, in recent years, many such projects have been discovered: "The Shelf", "Arzamas", "PostScience", "Guttenberg's Smoking Room", "Obrazovach", "Schrödinger's Cat", "N+1" and others. They function at different web sites and cover a wide range of topics related to both the humanities and the exact sciences. It is difficult to say whether the mass discovery of such media

is the cause of the popularity of scientific content or just a reaction to the audience's request, but it is impossible to deny their importance in modern scientific and educational activities.

In any case, modern popular science journalism solves a number of important tasks: it provides a link between the academic community and society, reports on recent discoveries and developments, and forms the scientific picture of the world as a whole with the audience (Mukasheva, 2018). All these things are particularly relevant in Russia, since a large number of people are still subject to pseudoscientific delusions. Suffice it to recall the theory of the dangers of vaccination or flat Earth. The well-known Russian media theoretician Tertychny (2013) notes that the main threat to science in Russia is the loss of interest and trust in it from a wide audience, the substitution of critical thinking with pseudoscientific myths. And qualitative popular science journalism should be an effective weapon in the fight against these problems.

At the same time, because of the specificity of the subject matter it is important for the creators of popular science content, to be little popular among the mass audience, to sharply feel and understand their audience, their communication habits and needs. Even the linguistic aspect becomes special in this field. Materials about science inevitably have to refer to terminology, which has to be "translated" into the category of understandable phenomena (Shcherbakova & Ulyanov, 2018).

All of the above suggests that in the discussed crisis of fundamental science in Russia, we are witnessing its active going beyond the limits of a highly educated audience to the masses. Popular science journalism, which was at the peak of attention during the Soviet period and almost lost its influence in the 1990s, did not disappear as a species, but, on the contrary, emerges from the shadows. This also implies the growing importance of the repeaters of scientific knowledge for wide strata of the population, since an unprepared reader will hardly master the articles of scientific journals or reports of individual organizations.

2. Problem Statement

Despite the undoubted development of popular science journalism in Russia in recent years, theorists and practitioners point out two problems in this environment: the poor quality of popular science content and the search for unconventional approaches to its presentation. Sometimes scientists themselves express dissatisfaction with popular science materials, noting their stereotypedness and inability to interest a wide audience (Kokhanova & Cheresheva, 2018). Perhaps it was the lack of new formats for submitting popular science content in the official media that provoked the emergence in this area of new amateurs who had no previous experience in the media but were able to breathe new life into an established direction. After all, in our opinion, popular science got its real "mass character" with the advent of simple fans in this sphere, including video bloggers on YouTube hosting.

On the one hand, this phenomenon has partially deprofessionalized popular science journalism (inspired by the example of successful bloggers, anyone can now create and distribute content on this subject), but on the other, it created healthy competition in this field between professional and nonprofessional media. Perhaps this particular atmosphere was missing earlier. Cause now in order to attract the attention of the audience, it is not enough to talk clear about new scientific phenomena, it is necessary to do this in fresh and bright ways, and therefore to move away from patterns and the usual vision.

It should be noted that journalists and bloggers of popular science topics have different approaches to creating content, which sometimes becomes noticeable even with a superficial view. In our opinion, an

understanding of these differences, the search for strengths and weaknesses of each of the parties are necessary for the further development of the entire field of popular science journalism.

3. Research Questions

To analyze the differences of the approaches to the popular science content creation of bloggers and journalists, we formulated the key issues that the study will pay close attention to:

- 1) Whose content is currently more popular on the YouTube platform?
- 2) What methods are used by the journalists and bloggers in order to transmit scientific knowledge?
- 3) What audiovisual techniques are used in the analyzed materials?
- 4) How does the public react to popular science content of bloggers and journalists, and to whom does it prefer?
- 5) What are the main features in content creation that can be noted on both sides?

4. Purpose of the Study

The purpose of this study is to analyze the differences in the creation and design of popular science content by professional personnel (journalists) and amateurs (bloggers). This work will help to describe in detail the effective and inefficient ways of transmitting scientific knowledge to a wide audience.

5. Research Methods

The study used the method of content analysis (manual) for the selected database of materials. It consisted of 36 videos published in 2018 on the YouTube, which were randomly chosen from the "Topless" channels (amateur blog by Yana Lapotkova) and "PostScience" (a professional channel of the Internet media "PostScience"). For the search for the material, we did not accidentally turn to the YouTube video platform. First, it is one of the few platforms where various media content creators (professionals and amateurs) are gathered and put in equal conditions. Therefore, it is here that the development of the channel directly depends on the quality of the content and the understanding of the target audience. Secondly, YouTube is the most popular video hosting in Russia. The huge popularity of YouTube among the young population is also recognized by representatives of the scientific world (Yashina, 2018). According to Koch (2017) YouTube is leading in its market by a wide margin, thanks to the network effect, which probably will not be possible to catch up with by anyone. Attention was focused on the channels "Topless" and "PostScience", since they are one of the most popular in the field of scientific enlightenment and cover similar issues relating to both the humanities and the exact sciences.

Then to each of the videos the following methods were applied: description, analysis, synthesis and observation.

In addition, the study was conducted with a focus group, which included 30 students (aged from 17 to 23 years). Respondents were offered to watch two videos and answer a number of questions. Subsequently, all opinions were analyzed and summarized into concrete conclusions.

6. Findings

The YouTube channels considered in this work have a long history. "PostScience" was registered in 2011, and the "Toples" video blog started in 2013. Despite the fact that blogger Jan Lapotkov leads his channel by 2 years less, at the moment he is much more popular than his fellow journalists: more than 2 million subscribers and 205 million views on his channel, against 350,000 subscribers and 35 million views on "PostScience".

And this case is not an exception, if we compare the popularity of journalistic channels on this platform with amateur projects, the conclusions will be quite unambiguous: "Arzamas" has 463 thousand subscribers and "Guthenberg's Smoking Room" has 72 thousand subscribers, against millionaire blog Ytopia Show, also Artur Sharifov (Artur Sharifov) with 935 thousand subscribers. As we can see, amateur content in this case significantly bypasses professional in views. Perhaps this trend is associated with an active search for new non-standard formats for presenting scientific information, audience's fatigue from clichés and restrictions (Petrova, 2018). We propose to consider in more detail the selected channels in the course of a comparative analysis.

The "Topless" video blog presents a description of the channel, in which the author reflects his personal motivation to create content and his main ideological postulate: "I love life, but I love to study it more. Complex things in simple language." This move brings the channel's audience closer to the host, as it begins to be perceived as an ordinary person with goals that are close to you, and initially broadcasts the concept of content so that the viewer can determine how interesting it is to him. The main cover of the channel is made in the style of cyberpunk: the name "Topless" rises against the background of the neon megalopolis. Primary colors: black, purple, blue and pink. In part, the channel cover is also associated with a computer board, which again leads to the topic of technology and cyberpunk. This concept looks fresh and modern. In addition, it is embodied not only in the main cover, but also in the screen saver in front of the videos, as well as in the design of the covers for each individual clip. The video covers should be considered in more detail. The cover of each video is not a freeze-frame from the release, but a separate illustration, on which the author of the channel is always present. Sometimes they focus on a humorous presentation (the issue about art is illustrated by the image of Mona Lisa with the face of Jan himself), in other cases of intrigue or fear (bloody smudges on the cover of the issue "Can AI kill on purpose"). But in any case, most of the covers with their neon glow and main color set echo the title visual theme of the channel. All this together creates a sense of integrity and elaboration, looks spectacular and provokes a desire to get acquainted with the content closer.

In the month on the channel "Topless" posts on average two videos, each of which collects about 1.5 million views, 170 thousand likes and 1 thousand dislikes. The themes of the channel's videos are very diverse: art, psychology, space, technology, sociology, economics, geography, etc. At the same time, very often the author's attention is focused on issues relevant to the target audience: Bitcoins, cybersecurity, features of the millennial generation. This demonstrates that the creator of the channel clearly understands who its content is focused on, and actively follow the information agenda. Partly Yana Lapotkova can be suspected in the use of clickbait tools, because most of his videos are titled provocative questions ("Does puberty kill?"). But media researchers also note the need for bright headlines in popular science journalism (Morozova & Eremin, 2016). Any complex terminology is not included in the title but is only mentioned

and explained in the video itself. There are links to the release's sponsors, additional information on the topic, the main sources, and the social networks of the author in the description of the videos (under the video itself). Sometimes this information is supplemented with a video annotation, which again has an advantage in the format of listing the questions to which the viewer will receive answers when watching.

The only channel host is Jan Lapotkov. If we use the classification of the roles of the popular science journalist, presented by Professor D. Fei, this host can be attributed to the group of “curators” (as cited in Anikina, 2017). He realizes his professional skills through the collection of information, its processing and dissemination, and addressing the expert community. At the same time, he communicates with the audience on an equal footing, as with friends. This is evidenced by the lexical features of the host's speech, buddy-like communication, frequent jokes, active gestures, and conversational slang. The author of the channel himself often turns to personal stories, shares his impressions and tastes. All this helps the audience to get closer to the presenter and to perceive him not as a “talking head”, but as an interesting interlocutor.

The locations in the video also contributes to creating an atmosphere of "friendly conversation." Most often, the host shoots clip on the background of a standard apartment room, illuminated by neon light. But sometimes the shooting takes place in thematic locations (the Tretyakov Gallery, the office of Kaspersky Lab, a sports stadium), where the channel's author becomes the conductor for the audience, through which movement there is a gradual acquaintance and immersion to a new place. By the way, Jan himself usually wears fairly simple, but bright clothes: a T-shirt or sweatshirt, glasses and a cap, jeans and sneakers. This means he reflects the collective image of its audience. In rare cases, Jan Lapotkov's co-hosts are his fellow bloggers from other popular science channels: they appear briefly in thematic issues. Thus, the author not only has a certain variety in the presentation of information, but also introduces the viewer to other similar channels.

Background music is always played in the videos, which varies throughout the release depending on the dynamics of the episode. But the shooting itself adds dynamism to what is happening: various angles and plans, locations or images change, visual effects, etc. This means that such works do not seem boring to a modern person, often focused on clip perception, they are able to carry away from beginning to end.

When broadcasting popular science content on this channel, various approaches to the problem are considered and effective techniques are used, such as: visualization (infographics, charts, illustrations, etc.), storytelling, citation of scientific sources. The narrative is built from simple thing to the complex ones: the author declares the topic and, together with the audience, begins a gradual immersion into it, not hesitating to cover trivial questions. Use of complex terminology in the video is minimal and is always accompanied by a detailed commentary. In addition, the author alternates the stages of explaining complex information with easy interruptions (jokes, personal stories), which relieves the tension of the audience and does not allow it to get bored. Also, often for a qualitative explanation of the material and to draw analogies, an appeal to precedent texts is used: popular films, books, comics, and pictures.

In his videos, the author consistently promotes positive values, such as curiosity about the structure of the world and society, the desire to independently reach the truth, critical thinking, faith in the power of scientific knowledge. This way, consuming the content of the "Topless" channel, viewers not only entertain and learn new information, which popular science journalism is aimed at, but also shape their value system under the influence of what they have viewed.

There is no clear description of the channel on the video channel "PostScience". In addition to the link to the main project web site, the creators of the channel did not provide any information. The main design color is orange. As Sysoyeva (2011) notes, this color attracts attention of an audience, gives it feeling of warmth and is most suitable for advertising technical equipment. In general, this coincides with the specifics of the content of the channel and the color design can be called successful. In addition to the bright orange backing on the main cover of the channel, five people are represented in the animation style (four men and one girl). Perhaps, these are members of the editorial staff or the main specialists-scientists with whom the editorial staff cooperates most actively. Unfortunately, no exact information on this issue was provided, and the cover could not be compared with the characters of the video or the editorial staff. This main cover is not very well combined with the covers of individual videos on the channel. The only thing they have in common is a small orange square with the letter "P" in the upper left corner of each video. Most of the covers are made from the still frames with researchers acting in the video, with a white inscription on top of it with the theme of the video and the name of the scientist. Sometimes on the left side they impose a bright substrate under the text, but its color is selected depending on the main sponsor of the video (from blue to orange). In rare cases the cover of the video is drawn in the style of elementary digital animation, when instead of short lectures on the channel lay out full-fledged courses a few hours long. As a result, we see stylistic disorganization that does not play to the benefit of the channel, as well as monotonous, rather boring covers that do not provoke the mass audience to view the content.

About 30 clips in month come out on the channel "PostScience", each of which collects an average of 10 thousand views, 400 likes and 20 dislikes. Published videos are of a wide variety of topics, which are always tied to the exact or humanities. In this regard, the target audience of the content is not clearly indicated even by age. It is content for people who are interested in all areas of scientific knowledge. The themes of the videos do not correspond to the actual news agenda and the attention focus of the audience. If we refer to the titles of the video, it can be noted that they directly talk about the content of the issue and the guest researcher ("Radioactivity - Ramiz Aliyev"). The most intriguing and provocative questions on the topic of release are indicated not in the title, but on the cover of the video ("Can I kill a soldier?"). However, they are not striking, lost on the background of the image and can often go unnoticed, so their effectiveness can be doubted. The authors of the channel boldly put terminology into the headings, hoping that their audience is prepared for this. In the description under the videos, they point out what will be discussed in the video, introduce the audience to the lecturer, quote him and leave a link to the text of the lecture.

There is no common host who would link all releases of the channel. In each video clip, we see a new researcher who presents his material in the form of a monologue, without appealing to the audience. Researcher does not disappear from the frame for a minute, only the shooting plans are changing (large and medium). Each of the researchers looks quite formal, although some come in casual clothes (mostly dark tones). They perform the full role of lecturers, they only work not with the audience in the classroom, but with people who sit on the other side of the screen. Here you cannot see personal stories, appeals to their own experiences. Only scientific facts. The work of journalists in this case can be described through the role of "coordinator". They are only intermediaries between the scientific community and the mass audience.

The only location for filming a video is the white studio room. Also, in the frame appears a chair on which the lecturer sits. In part, this background quickly introduces into boredom, but it helps to fully concentrate only on the words of the lecturer. The musical background in the video is used only at the time of the short intro, the lecture itself has no musical arrangement. Since the dynamics in the video is created only by changing two plans, it is difficult to call it exciting. You quickly get used to it and maybe these videos are better not to watch, but just listen.

In the videos we watched, the visualization and storytelling techniques were not used. Scientific sources have been cited in several issues and classical precedent texts have been used. The form is academic lectures, the authors of which explain important things, but do not set a goal to interest the audience. In our opinion, this function should have been performed by project journalists, but if they use a variety of effective methods on the official website to popularize science, they practically do not use them on the YouTube channel for some reason.

Lecturers and authors of “PostScience” are not perceived as “friends” or people close to the viewer, they are emphatically removed. Most likely, this channel does not influence the formation of the life values of the target audience; rather, it acts only as an informer.

During the study, the opinions of the focus group, the conclusions were unambiguous. The overwhelming majority of respondents noted that they enjoyed watching the release from the Topless channel (86.6%), and the video from the PostScience channel hardly watched to the end (90%). At the same time, the experiment participants also preferred the amateur channel (86.6%) in terms of the quality of information broadcast and its comprehensibility. However, several people were negatively disposed personally to the author of the “Topless” channel and his lexical manner; therefore, they preferred the “PostScience” channel, but noted that other amateur channels are watching about science.

7. Conclusion

After analyzing the two most famous Russian popular science channels on the YouTube platform, we can note that the mass audience gives amateur content a noticeable preference. Bloggers cope better with an interesting presentation of information, get closer to their viewers and use effective methods of explanation. Perhaps they do not understand professionally in the presented topic, but they study the sources (links to which can always be found in the video description), consult with experts on the topic, they are immersed in the material and can go from simple to complex things with their audience. Understanding what material can be difficult to comprehend, bloggers visualize it, explain it through storytelling or precedent texts. Bloggers do not hesitate to cause emotions among the audience (fear, joy, surprise), to form an emotional connection between the author of the channel and the viewer. This helps to popularize popular science content among the masses, to generate interest in scientific knowledge, to show that this is modern and in demand.

Professional channels appealing to experts do not always understand the level of qualification of their target audience and do not try to simplify the material, or at least visualize it. On the one hand, this does not make the broadcast material less quality, but on the other it does not correspond with the tasks of popularization. The viewer finds himself in the situation of a “lesson”, in which he needs to prepare for this “lesson” (understand the topic a little initially), listen attentively and not be distracted in order to catch the

point. The format without anything superfluous may seem close for older audiences. But this is not suitable for a mass young audience, active Internet users. The creators of professional channels appeal only to rational elements: proving and justifying their theses and their significance. This is an effective tool, but without appeal and to the emotions of the audience, you should not hope for the formation of attachment to the channel or for a change in the consumer attitudes of the audience.

Thus, we can see that both channels effectively communicate scientific knowledge, working with approximately the same target audience (this is evidenced by the description and “mission” of the media data). But these channels cope with varying degrees of success with the popularization function. This means that modern representatives of popular science journalism need to go beyond academism, look for new non-standard and dynamic formats, use effective methods of explaining information to attract viewers. After all, the experience of amateurs shows that popular science journalism escapes from the segment of specialized topics, it has massive attention with the proper approach, which means that it should and can be actively and efficiently developed.

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