



# Karabakh War in Online News and Social Media: Representation, Confrontation and Maneuvers of Information

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## **INTRODUCTION**

Among many events of 2020, the 44-day war in Karabakh was one of the most significant. The decades-long conflict between Azerbaijan and Armenia entered a new phase in late September with the escalation of hostilities into a full-scale war. Given the regional geopolitics, ongoing strategic rivalries, and the protracted diplomatic background of the Nagorno-Karabakh dispute, the renewed hostilities attracted high levels of attention from international media. Social media and other cyber-mediated channels rapidly became a continuation of the battleground, especially after the tensions escalated in September 2020. Moreover, the confrontation between Azerbaijani and Armenian information actors, both enjoying others' support internationally, has had many facets.

The recent war in Karabakh is significant and exemplary in terms of the dynamics of modern conflicts and the information environment. In particular, the bidirectional relationships between various aspects of modern wars, such as skillful war planning, political-military concept building, battlefield military effectiveness, and strategic communication practices exceed the limited and isolated achievements in each of these domains in determining the winners of wars. Besides, the general coverage and representation of the war, as well as the dynamics of influence on social media, would most probably provide significant lessons-learned, not only for the belligerents or regional countries but also for others who have to operate in the modern information environment.

This short paper includes an exploratory case study of the representation and impact of the Karabakh War online. It will start with an overview of the news environment and the war coverage by international and regional news media, focusing on the often-neglected exploration of the narratives presented in Russian sources. Furthermore, it will also present the statistical and qualitative observations acquired from social media data analyses.



This research has been made possible by funding obtained from the US-based Chrest Foundation for the project "Digital Media Ecosystem in Turkey: Actors, Interests and Politics"

\*The author would like to thank Ms Zeynep Başaran for her help in reviewing and preparing this report.



#### **News Coverage**

Following the tensions and gradual escalation in the preceding months, the conflict between Azerbaijan and Armenia over the dispute in Karabakh turned into a full-scale war on September 27, 2020. Apart from many important conflict events and phases of the war, the Russian-brokered peace deal on November 9, 2020, was particularly significant in terms of its impact on the level of engagements on social media and the coverage of international news media. Overall, to explore content and representation trends, we acquired and processed news data from three different sources. Also, we used each source in various settings to diversify our data exploration process.

First, we used the Media Cloud<sup>'</sup> to explore the general patterns of coverage in the international media, checking the news sources in various countries, ranging from the European countries to the US, Russia, and regional countries in or around the Caucasus. Second, we also used the Media Cloud tool to acquire data from additional sources, with particular attention to Russian outlets. In the end, we were able to collect more than 20,000 different URLs, which were further cleaned through relevancy checks.

Secondly, we used tools and data provided by the GDELT Project (Global Database of Events, Language, and Tone)<sup>2</sup>, which enabled us to start an additional layer of data collection utilizing the international, comprehensive, and multilingual coverage of the tool. This time, we collected data from as many sources as possible, focusing on the news content mentioning the Azerbaijan-Armenia conflict, the war in Karabakh, the Karabakh dispute, and other relevant terms or events. Thirdly and finally, we also used a news collector algorithm we built during recent research projects to cross-examine the coverage and relevance of the material we collected from other sources.



**Figure 1:** The daily number of news content about the conflict between Azerbaijan and Armenia, as acquired from the Media Cloud. The dataset focuses on the full coverage of Russian sources while also including other international outlets.



**Figure 2:** The daily number of news content about the conflict between Azerbaijan and Armenia, as acquired from the GDELT databases. The dataset includes content from a comprehensive list of sources globally.

Global Database of Events, Language, and Tone, https://www.gdeltproject.org/about.html

<sup>1 &</sup>quot;Media Cloud is a consortium research project across multiple institutions, including the University of Massachusetts Amherst, Northeastern University, and the Berkman Klein Center for Internet & Society at Harvard University." https://mediacloud.org/about



Figures 1 and 2 show the news coverage trend lines about the Karabakh conflict, the recent war, and relevant political, diplomatic, and military events. Two charts represent similar trends and coverage patterns, as the number of pertinent news content mentioning the given topics increases rapidly on September 27, 2020. A small peak of media attention occurred in July, following border clashes and confrontational official statements. Since Figure 2 shows the number of objects acquired from many countries and different languages, the total daily numbers on it are higher than Figure 1. Additional peaks in Figure 1 and 2 mostly relate to battlefield events, the peace deal (November 9-10), statements from belligerent, regional, and global actors, civilian casualties, and a few significant conflict-related claims on the roles played by Turkey and Russia.



**Figure 3:** The person names mentioned in the collected articles. We used the Media Cloud topic mapper tool and an in-house named entity detector algorithm and cross-checked the figures' accuracy. A random sample of items was used to calculate the given numbers.

In addition to exploring content production rates and the categories of narratives presented in the collected datasets, names of influential persons as mentioned in the collected articles were checked. As the initial data collection, two different algorithms were used to cross-check computations' overall accuracy.

Figure 3 represents a cleaned and manually checked version of the Media Cloud topic mapper tool's list. As the chart shows, Azerbaijan's President Ilham Aliyev is the most frequently mentioned public figure in the coverage, followed by Armenia's Prime Minister Pashinyan. Russian Federation's Vladimir Putin and Turkey's Tayyip Erdogan are the third and fourth most mentioned persons. As the list indicates, most of the people mentioned by news outlets were official figures from various countries.

Figure 4 shows a similarly acquired list of organizations mentioned in the collected dataset. To avoid potential mistakes, we combine all mentions of defense ministries into one category, making the "Defense Ministry" the most mentioned organization by international news outlets. Others include the OSCE Minsk Group, the UN Security Council and General Assembly, the European Union, NATO, and the Kremlin.





**Figure 4:** The organization names mentioned in the collected articles. We used the Media Cloud topic mapper tool and an in-house named entity detector algorithm and cross-checked the figures' accuracy. A random sample of items was used to calculate the given numbers.

Following the initial exploratory analyses, we conduct a qualitative categorization of themes and narratives in the influential articles we collected in all data collection processes. The influence of any article is indicated by the social media engagement rates, links from and to other articles, and the frequency of similar narratives or stories that would indicate a wider circulation or even an ongoing campaign to boost a specific narrative. Interestingly, we found many articles from Russian sources that represent various approaches to Turkey's roles in the ongoing hostilities or its strategic competition with the Kremlin. For example, the images in Figure 5 show a news piece and interview claiming that Russia would have to "retaliate" against Turkey's support for Azerbaijan and force Ankara to "ask for forgiveness" from the Russian president Putin. Turkey's roles in the recent conflict and open diplomatic support for Azerbaijan ignited different reactions in the Russian information landscape.





**Figure 5:** An aggressive news piece by the Russian outlet Ura.ru, pushing the narrative that Moscow would retaliate to Turkey's support to Azerbaijan.<sup>3</sup> The image on the right shows the Google translation of the original article, published in Russian.

Similarly, Figure 6 includes another example from a Russian outlet, using threatening language towards Turkey in reaction to Ankara's open support to Azerbaijan. The article features the same figure, or "expert" as the previous one, pursuing a punitive approach to deal with Turkey's challenging regional policies and strategic output. In particular, the article mentions other Turkish-Russian geopolitical flashpoints and argues that if Turkey ever makes a decision and convinces Baku to establish a forward military base near the Caspian Sea, that base would be a military target for both Russia and Iran.



**Figure 6:** An article by the Russian outlet infox.ru also pushing the narrative that Moscow would retaliate to Turkey's support to Azerbaijan.<sup>4</sup> The image on the right shows the Google translation of the original article, published in Russian.<sup>5</sup>

Figure 7 shows another example, this time published by Ria Novosti. The article presents a detailed analysis of Turkey's increasing strategic influence in the Caucasus, Ankara's support for Azerbaijan's quest to regain the control of its occupied territory, and argues that it poses a significant threat to Russia's strategic interests. The article very interestingly mentions the terms such as neo-Ottomanism and Pan-Turkism to refer to Turkey's widening influence

in its neighborhood, with the military, political, economic, cultural, and long-term dimensions. As the following sections of this paper will show, Pan-Turkism and neo-Ottomanism terms are frequently weaponized on social media and other online platforms against the Turkish Republic, especially in recent conflict events geopolitical tensions. Both terms are observed often in Armenian and Russian sources and used by social media accounts from both origins.

<sup>3</sup> https://ura.news/news/1052452620

<sup>4</sup> https://ura.news/news/1052452620v

<sup>5</sup> https://www.infox.ru/news/251/245029-satanovskij-prigrozil-turcii-udarom-marsian





**Figure 7:** An article by Ria Novosti also pushing the narrative that Turkey's support for Azerbaijan and increasing strategic footprint in the Caucasus is a threat for Russia.<sup>6</sup> The image on the right shows the Google translation of the original article, published in Russian.<sup>7</sup>

In sum, adding to the overall representation of the conflict in the Caucasus, the shown examples represent an often-neglected branch of the online information environment regarding Russian speaking online communities. Other narratives are also present, including the ones having a softer tone towards Ankara's policies towards the region,

claiming that the power structure and strategic strongholds still overwhelmingly favor Moscow, and the alarmist assessments of Ankara's increasing presence are not accurate. Another prominent theme of relevant debates in Russian sources relates to popular sentiment and trust towards Russia, especially in Armenia.

<sup>6</sup> https://ura.news/news/1052452620v

<sup>7</sup> https://ria.ru/20201007/turkey-caucasus-1578482919.html



#### **Social Media**

We collected data from multiple social media platforms to conduct this case study, focusing on communities, behaviors, languages, content promotions, narratives, and conversational networks across the platforms. In particular, we started with collecting the streams of Twitter data using its API (Application Programming Interface) and gradually moved to other platforms to observe similarities and differences, platform-agnostic features, and, most importantly, cross-platform propagation of informati on relating to the war in Karabakh. Besides, we focused on potential signs of influence operations, coordinated activities, communication patterns, and whether we can observe pathological network formations such as echo-chambers and polarized communities. The following subsections will demonstrate that fragmentation, cross-platform connections, coordinated activities, propaganda, and a multi-actor confrontation are prominent features within the networks we observed.



**Figure 8:** Trends of relevant activities on Twitter. The blue line represents the original tweets, while the green line represents the number of retweets from July 1 to December 15, 2020.

Similar to the news dataset, data from Twitter spans from July 1 to December 15, 2020. Figure 8 shows the trend lines and volume of activity we collected from the platform within the given time frame. The charts are split into original tweets and retweets as two categories. The relationship between the volume of tweets and retweets may often indicate coordinated or inauthentic activities on the platform. Intuitively, we observed that the activity levels started peaking on September 27, when the war broke out, across the social media platforms. However, the volume of tweets and retweets peaked mostly on November 8, 9, and 10. Therefore, it can be assumed that Twitter activity reacted to the peace deal and the preceding announcement by Azerbaijan regarding capturing Shusha from Armenian forces. Besides, a clear peak of activity is also observable in early December, indicating increased conversations concerning the Victory Parade conducted in Baku, with Turkish President Erdogan's presence. Other important dates of activity mostly relate to the conflict events in the battlefields and coordinated campaigns on the platform.





**Figure 9:** Number of tweets and retweets in most occurring languages in the Twitter dataset. Blue bars represent the original tweets, while green bars represent the retweets for each top language.

Figure 9 shows the top six languages in terms of their frequency in original tweets and retweets. Accordingly, English was the most frequently used language, reaching almost a million original tweets and more than four million retweets. The second place in the chart is more interesting, as Turkish original tweets reach almost 600 thousand while retweets exceed 3.1 million. Remarkably, the ratio of

retweets against original tweets is higher in the Turkish category. Although it is still in the usual range, this increased ratio would indicate more partisan and more inauthentic activity levels. The third most frequent language was Russian, followed by French, Indian, and Spanish. English, Russian, French, and Spanish were widely used by Azerbaijani and Armenian social media accounts in the given timeframe.



**Figure 10:** Language-specific trend lines showing the daily volumes of original tweets and retweets from July 1 to December 15, 2020. Colors represent each most used language in the dataset.



More interestingly, language-specific peaks determine the overall view of the trendline that was shown in the previous figures. In particular, Figure 10 shows the trend lines and daily volumes of activity on Twitter in each top language. As clearly shown, the activity peaks in early November primarily emanate from Turkish tweets, while English tweets mostly dominated the previous phase of the active war. As the following subsections also indicate, English was used by many different communities. Besides, November 8-10 and early December were when Turkish-speaking accounts mostly presented a congratulatory tone with regards to the announcement of a victory by Azerbaijan. Still, in English, Russian, Armenian, Azerbaijani, and Turkish posts, we observed significant levels of inauthentic activity, coordinated with highly active political accounts, troll accounts, and automated bot accounts.

The following sets of figures will demonstrate conversational networks and associated behavior/activity trends in the given events. In particular, to conduct the subsequent analysis, we divided the Twitter dataset into week-specific sections. Starting from September 25, 2020, we analyzed seven consecutive weeks while also adding another week for early December activities. For all eight datasets, we visualized "networks of user mentions," "networks of shared URLs (including tweets)," "hourly frequency of tweets that include mentions of selected users," and "hourly frequency of tweets and retweets that include selected URLs." Community detection algorithms were used to detect clusters of accounts and shared mentions, while centrality measures were checked to see influential or most frequently mentioned accounts.



## **Twitter Mention Networks**











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Figure 11: Networks of user mentions on Twitter, and hourly frequencies of mentions of selected sets of users



All in all, this approach allowed us to observe network structures of the ongoing "conversations" and the potential presence of consistent or suspicious peaks of activity in relation to mentioned users or shared URLs. In general, user mentions are used for various purposes. The first prominent objective is to boost the visibility and influence of specific accounts. In the network charts, the sizes of nodes represent the number of mentions they receive from other accounts. Mostly, the most prominent nodes, aka the most mentioned accounts, receive consistent support from others. Second, mentions can be used to influence targeted people, groups, or institutions. For example, several public figures were frequently mentioned, along with other known people, for affecting their political decision making. US congressmen and congresswomen were among the examples of such public figures.

Both network structures and activity levels indicate several important characteristics. First, the networks are fragmented along several lines. The first distinction between Twitter clusters relates to their behavioral patterns, as some groups use mentions to boost other specific accounts' influence. This mentioning behavior occurs consistently. Some other groups of accounts are mentioned, on the other hand, for "being influenced," or even silenced or dismissed, depending on the case. Besides, clustering also occurs for each language.

Interestingly, some accounts received bursts of high numbers of mentions, apparently due to coordinated activities, including bots, trolls, and cyborgs. Lastly, we can confidently confirm that large numbers of accounts exist in all clusters and languages to conduct such inauthentic activities. By simply checking the number of links from mentioning accounts to mentioned accounts, a.k.a out-degrees, we observed many accounts that mention others in automated manners.

Next, networks of shared URLs (links to other web pages) are analyzed for community detection, presence of suspicious activities, narratives being promoted, and the potential signs of impact being desired to achieve due to the given activities. Figure 12 shows the network visualizations and hourly activity charts of selected URLs for each week, as mentioned above.













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**Figure 12:** Networks of URL shares/mentions on Twitter, and hourly frequencies of counts for selected sets of URLs. Blue areas represent hourly URL shares, while orange lines represent the retweets of content containing those URLs.



Network analysis of shared URLs reveals several important features in terms of the evolution of Twitter activities during Karabakh's war. First, clustering in the network structures is more apparent than the mentioned-user networks, as each group tends to promote distinct categories of content or groups of narratives. Second, URL networks also reveal a few specific narratives emphasized by each group of highly active users. For example, with the help of certain other communities, pro-Armenian groups frequently co-mention several easily identifiable types of content. The narrative about the alleged transportation of Syrian mercenaries to the South Caucasus is combined with politically motivated and emotionally charged previous narratives to attract international support. Besides, pro-Armenian groups are distinctively able to combine many types of links and many sources of information, including

funding/donation promotions, celebrities, and cross-platform activities. They also used emergent crisis events elsewhere, such as a violent attack in Austria, to spread narratives and propaganda relating to the war in Karabakh.

On the other hand, pro-Azerbaijani sources seem to focus on a smaller number of content types and narratives. Overall, the Azerbaijani side's major success is to boost the representation of battlefield achievements across online social networks. Nevertheless, both Turkish and Azerbaijani clusters lack the extensive coordination to conduct overarching cross-platform operations, matching activities in Armenian or Russian clusters. All in all, URL networks reveal confrontation dynamics, master narratives, indicators of specific campaigns, and artifacts being used to push those narratives.

#### **Most Frequent Tactics and Techniques**

As the URL network analysis on the Twitter dataset indicates, cross-platform dynamics of the social media activities during the war in Karabakh was significant for getting a comprehensive picture of the online information environment, actors, objectives, narratives, and behavioral patterns. Twitter conversations included many links to other social media platforms. Some of these links were promoted by inauthentic and coordinated groups of accounts. Therefore, adding to Twitter, data from other platforms were also used to explore relevant social media activities' characteristics. Furthermore, links between these platforms were checked explicitly. Overall, there are significant commonalities in narratives being promoted by social media clusters across social media. On the other hand, observing Telegram enabled us to collect more data from various platforms and web sites that include regional perspectives that are harder to pick from the noise in other platforms.





**Figure 13:** The figure shows messages from a prominent cross-platform social media account. It has frequently promoted anti-Turkish, anti-Azerbaijani, pro-Russian, and pro-Armenian narratives and claims. For instance, the chart shows a few of them, including a claim that Turkish special forces would attack Armenia militarily.

A prominent feature of the Karabakh's social media representation was cross-platform activities that were used for propaganda, disinformation, and promotion of distinctive narratives. We observed high transitivity levels between Telegram, VK, Twitter, Facebook, Instagram, and YouTube. You-Tube receives many in-links to videos from other platforms.



Figure 14: Telegram was one of the most active platforms during the war in Karabakh.<sup>8</sup>





**Figure 15:** The image shows a snapshot of a YouTube video featuring Russian mercenaries and their conversation on recent battlefield experiences. One of the topics is Turkey's Bayraktar TB-2 UAVs and their impact on the battlefield.



**Figure 16:** Images are frequently used in the influence operations online. During the recent war in Karabakh and related geopolitical events, many images were disseminated to spread falsehoods targeting Turkey and its relations with NATO allies.



Other prominent techniques of influence during the war in Karabakh include boosting existing false narratives, utilizing bilateral or geopolitical tensions as "attack vectors," hijacking conversations during important conflict events in other places, and producing and disseminating well-curated groups of imagery to achieve higher impact and influence. Figure 16 shows a group of images produced and spread to attack Turkey in different information

environments. For example, following a recent violent attack in Austria, coordinated Twitter accounts were used to blame Turkey for supporting terrorism. Similarly, similar accounts across platforms used terms such as pan-Turkism and neo-Ottomanism frequently in relevant campaigns. As mentioned before, pan-Turkism is a frequent term specifically used in Russian and Armenian media.



**Figure 17:** "The Breakout Scale" of an influence campaign serves as a model to assess the overall impact of a hostile influence campaign. The model was depicted in a recent report published by the Brookings Institute.<sup>9</sup>

Overall, the trends and patterns of campaigns run on social media during the war in Nagorno-Karabakh and its representation in the international news media indicate several problems in terms of the potential impact of influence campaigns during geopolitical crises and conflicts. Adopting the "breakout scale" model depicted by Ben Nimmo, as shown in Figure 17, we can confirm that multiple platforms were used for common strategic objectives during the recent war, leading to a cross-platform unification of hostile influence campaigns. Multiple actors frequently used celebrity amplification, aiming at specific organizations and public figures to achieve the maximum possible policy response and impact. Besides, the majority of hostile influence campaigns survive for long periods and play the long game.

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9 Ben Nimmo, The Breakout Scale: Measuring the Impact of Influence Operations, September 2020, Brookings.



### Conclusion

This paper demonstrated an overall view of the online information environment as it evolved during the recent war between Azerbaijan and Armenia in Nagorno-Karabakh. To sum, social media and other cyber-mediated channels quickly become a continuation of the battlefield. To track, analyze, understand, and predict the narratives and hostile information maneuvers, vulnerabilities to and weaknesses against information operations should be subject to recurrent evaluations. Such drawbacks include many factors, ranging from ineffective information assessment capabilities to the overarching effects of extreme political polarization.

The 44-day war between Azerbaijan and Armenia and subsequent ceasefire arrangements in Nagorno-Karabakh received extensive media attention in international, regional, and national contexts. The level of relevant activity on social media platforms was very high in tandem, especially after the war started on September 27, 2020. The battlefield events, course of the war, statements from official sources, claims and footage of military strikes on civilian-populated areas, the alleged use of foreign mercenaries, the role of international organizations, Karabakh's legal status, and the involvement of regional actors such as Turkey, Russia, and Iran were among the most frequent themes in the news.

Nevertheless, a closer look at regional sources and languages reveals additional features. In particular, the Russian news media and associated social networks online disseminated a set of particularly important narratives in the regional geopolitical context. Most importantly, the narratives pushed by the Russian sources have been tailored for each national audience in the region, aiming to achieve influence in Turkey, Azerbaijan, Armenia, Europe, and the domestic environment at the same time. For example, in Turkish-speaking channels, the main narratives were shaped around the Russian-Turkish cooperation, anti-NATO sentiments, and threat perception towards the West. Simultaneously, many stories in Russian and Armenian sources focused on the Turkish expansion, "pan-Turkic" threats, and Russia's roles as the single protector of Armenia. We noted an apparent effort to regain public trust and pro-Kremlin sentiments among the Armenian population, particularly after the ceasefire deal. Besides, on Russian social media channels and news media, we observed a growing threat perception concerning Turkey's defense ties with Ukraine. The strategic effectiveness of Turkish UAS in Nagorno-Karabakh worsened the negativity of such content.

Campaigns and multilateral confrontations on social media marked the informational and cognitive dimensions of the war. All major social media platforms were used, including Twitter, Facebook, Telegram, YouTube, VK (Vkontakte). We found that the cross-platform operations were frequent and widely used, although varying degrees of coordination and sophistication depended on the actors, campaigns, and narratives. We observed high-levels of activity among pro-Armenian networks in cross-platform coordination to achieve maximum potential policy impact in isolating Turkey and Azerbaijan through various means. On the other hand, the Azerbaijani side was particularly successful in the scalable representation of battlefield achievements across information domains. The frequent battlefield footage releases, mostly acquired via unmanned aerial systems, contributed to Baku's communication operations.

In this study, we also combined the analyses of online communication networks with the analysis of the online behavioral trends represented in mentions and shares of web links. Furthermore, we also adopted a recently published model to qualitatively assess the desired and achieved impact of social media campaigns. All in all, our exploratory study indicates that cross-platform coordination, online-offline dynamics of information, and the potential political-military effects of the operations in the information environment will remain significant strategic considerations in the foreseeable future.



Cyber Governance and Digital Democracy 2021/01/EN

January 2021

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