

## **UNDERSTANDING POLITICAL MOBILIZATION THROUGH SOCIAL MEDIA CONTENT ANALYSIS: FACEBOOK AND VKONTAKTE IN THE FIRST DAYS OF THE EUROMAIDAN REVOLUTION**

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This paper suggests a method for studying the process of political mobilization based on social media content analysis. It examines the case of the Ukrainian Euromaidan revolution of 2013-2014, one of the most prominent recent examples of political mobilization involving the Russian-speaking community. The study focuses on the very first days of protests – from February 21 to February 29, 2013 and analyzes user publications on the two most popular social networks in Ukraine – Vkontakte and Facebook. Using IQBuzz – a commercial tool for data collection and content analysis, we identify major trends and dynamics of the Euromaidan protesters' online activity and examine them in accordance with the timeline of events. We then compare the results to the model of “connective action” devised by Bennett and Segerberg as a digital age alternative to the familiar yet outdated concept of “collective action”. Combining human- and computer-mediated content analysis, this paper aims to advance the understanding of the ways the new type of Internet media affects public engagement and contentious politics in the digital age.

**Key words:** Social networks, connective action, computer-mediated content analysis, Euromaidan, Vkontakte, Facebook

## **ИССЛЕДОВАНИЕ ПРОЦЕССА ПОЛИТИЧЕСКОЙ МОБИЛИЗАЦИИ ПРИ ПОМОЩИ АНАЛИЗА СОДЕРЖАНИЯ СОЦИАЛЬНЫХ СЕТЕЙ: FACEBOOK И ВКОНТАКТЕ В ПЕРВЫЕ ДНИ ЕВРОМАЙДАНА**

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## I. Introduction

Social networks have recently become a hot topic for researchers in a wide variety of academic disciplines. This paper suggests a method for studying the process of political mobilization based on social media content analysis. In our study, we examine the case of the Ukrainian Euromaidan revolution of 2013-2014, one of the most prominent recent examples of political mobilization involving the Russian-speaking community.

The present paper focuses on the very first days of protests – from February 21 to February 29, 2013 and analyzes user publications on the two most popular social networks in Ukraine – Vkontakte and Facebook. Using IQBuzz – a commercial tool for data collection and content analysis, we identify major trends and dynamics of the Euromaidan protesters' online activity and examine them in accordance with the timeline of events. We then compare the results to the model of "connective action" devised by Bennett and Segerberg (2012) as a digital age alternative to the familiar yet outdated concept of "collective action" (Olson, 1965). By drawing upon this recent theoretical model, the study specifically investigates a new type of political mobilization – one based on horizontal relations, spontaneous solidarity, and the absence of a single leader.

Combining human- and computer-mediated content analysis, this paper aims to advance the understanding of the ways the new type of Internet media affects public engagement and contentious politics in the digital age.

## II. Related work

Despite the growing number of studies discussing current political and social crises through the lens of digital media, the role of social networks in contentious politics has not yet been clearly defined, and their effectiveness for organizing protests remains questionable. Scholars differ greatly in their assessment of the topic: while some perceive social networks as an indispensable tool of political mobilization (Castells, 2012; Bimber, Flanagin, & Stohl, 2012), others remain quite skeptical about its potential to ignite real political activity (Morozov, 2012; Gladwell, 2010). Furthermore, certain researchers point out the fact that social networks can very well be used as a mean of disinformation, manipulation or remote surveillance with the goal of preventing protests (Howard and Parks, 2012; Rheingold, 2002). Finally, some authors have called into question whether new digital media are indeed so innovative (Onuch, 2015; Mejjias, 2011).

Nevertheless, Bennett and Segerberg's theory of "connective action" has been successfully applied in many recent studies to investigate and explain the role of social networks in protest movements that emerged over the past years, such as the Tunisian uprising (Lim, 2013), virtual disability rights protest at Donald Trump's inauguration (Trevisan, 2018), health activism (Vicari and Cappai, 2016), as well as Bennett and Segerberg's (2012) own work on Occupy Wall street movement.

The model of "connective action" suggests that horizontal communication becomes the basic form of organization, replacing administrative hierarchy and rigid structures typical for "collective action". In our work, this analytical tool will be used to frame the Euromaidan supporters' online activity.

The number of studies dedicated to the role of the social networks in the Euromaidan revolution of 2013-2014 remains quite limited. One such rare example, “The Ukrainian Protest Project” by Olga Onuch and Tamara Martsynyuk (2014), deserves a special mention for conducting a unique poll among the protestors over several weeks. Despite an impressive amount of data collected by the researchers, one of the significant drawbacks of their study is the lack of attention provided to the most popular social network in Ukraine – V Kontakte. The same is true for a whole number of other works on the subject. While the effects of Facebook and Twitter in the context of Euromaidan revolution are accounted for by a number of authors (Metzger and Tucker, 2017; Bohdanova, 2014; Barbera and Metzger, 2014; Savanevsky, 2013), none of these studies examines V Kontakte in details. Such an omission is particularly surprising considering the fact that by the time the first protests have broken out in November 2013, V Kontakte had almost ten times more registered users in Ukraine than Facebook.<sup>1</sup>

### III. Methodology of data collection and processing

The present paper aims to fill the aforementioned gaps in literature by analyzing user publications in the very first days of protests (February 21-29, 2013) on the two most popular social networks in Ukraine – V Kontakte and Facebook. For this purpose, we turned to IQbuzz – an online software for monitoring and analyzing social networks and web resources, primarily used for marketing purposes, but also applied in academic research.

Although social media content analysis has become a hot topic for researchers due to its high practical value in the domain of commerce and marketing (Taboada, 2017; Barbosa and Feng, 2009; Jansen et al., 2009), no open-source software for Russian language content analysis is publicly available at the moment. Therefore, researchers have no other option but to rely on commercial services, such as IQBuzz, for academic purposes. While IQBuzz offers a large array of analytical tools that have been successfully used in a number of studies (Azarov et al., 2014; Glukkov, Bulatova and Galitskaya, 2015; Brodovskaya and Dombrovskaya, 2016; Nagorny, 2017), its main drawback consists in the system’s closed-source and not fully explained methodology. In order to compensate for this drawback, we used a mixed approach, recurring to human-mediated analysis on several stages of our research.

The data collected for our study is in Russian, which requires some clarification. First, although IQBuzz system is in theory able to collect messages in any language, in practice, its sentiment analysis algorithm only works for texts in Russian (more on that later). Second, as studies have shown,<sup>2</sup> Russian scored as the main language of the Ukrainian internet in November 2013 – right on the eve of the civil uprising. Finally, Kiev, where the first protests broke out, is a predominantly Russian-speaking city.<sup>3</sup>

In order to develop a set of relevant keywords for our study, we have applied a semi-automatic method of lexicon generation. Using bootstrapping techniques as a general guideline (Godbole et al, 2007), we began with a set of manually selected seed words, and then extended

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<sup>1</sup> “Review of Social Networks and Twitter in 2013-2014.” *Yandex.ua*. Last modified August 21, 2014. [https://download.yandex.ru/company/Yandex\\_on\\_UkrainianSMM\\_Summer\\_2014.pdf](https://download.yandex.ru/company/Yandex_on_UkrainianSMM_Summer_2014.pdf)

<sup>2</sup> “Ukraine Analytical data set: November, 2013 - monthly results.” Audience.Gemius.com. Last modified November 2013. <https://audience.gemius.com/en/research-results/ukraine/>

<sup>3</sup> “Public Opinion Survey of Residents of Ukraine.” Gfk.com. Last modified August 23, 2017. [http://www.gfk.com/fileadmin/user\\_upload/dyna\\_content/UA/02-News-2017/2017-8-22\\_ukraine\\_poll\\_presentation.pdf](http://www.gfk.com/fileadmin/user_upload/dyna_content/UA/02-News-2017/2017-8-22_ukraine_poll_presentation.pdf)

it by using IQBuzz automatic instruments together with human-mediated selection. First, we collected all messages published on Vkontakte and Facebook during the period from November 21, 2013 to February 22, 2014 that contained the word “Euromaidan” either in English, Russian, or Ukrainian (i.e. “Евромайдан,” “Євромайдан,” “Euromaidan”). A clarification is in order here: although the main language of our study is Russian, the term “Euromaidan” has quickly become a proper noun used as a hashtag in several other languages. As recent studies have demonstrated, the application of social media specific syntax such as hashtags helps to improve the overall quality of the results (Mohammad et al., 2013; Barbosa and Feng, 2010).

At this first stage, more than 124 000 messages meeting the aforementioned criteria were identified. Location specs were used by the system to collect messages published by Ukrainian users only. Given the fact that this study has focused on the effect that social networks might have had on the protest movement, the next step was to select only those messages that were published by Euromaidan supporters. In order to identify this specific subset of users, we relied on a general assumption that those who supported Euromaidan would speak of it in positive terms, while those who opposed it would use a rather negative language. Differentiating between positive and negative tonalities required running a sentiment analysis on the collected data set.

Researchers identify two main approaches to this task — lexicon-based approach and machine learning approach (Medhat et al, 2014; Pang and Lee, 2008). The later uses statistical sentiment classifiers that perform poorly when applied to complex topics with multiple subdomains such as political publications. This was clearly demonstrated at the 2012 ROMIP competition, when lexicon-based method outperformed machine-learning algorithms in sentiment analysis of Russian-language political news (Chetviorkin and Loukachevitch, 2013). Therefore, for the purpose of our study, we used IQBuzz sentiment analysis function that operates on lexicon-based tonality recognition.

As it follows from the system’s description, every text message is considered as a bag-of-words. Following this representation, a dictionary of positive and negative terms is used to assign certain values to different words within each message. A combining function is then applied in order to make the final prediction regarding the sentiment of the message and place it into one of the following categories: negative/positive/mixed/neutral. Following our assumption that Euromaidan supporters would rather speak of it in positive terms, we only kept messages with positive tonality in our data set, removing all of the negative ones. Since our study focuses primarily on protestors and their activity, we also aimed to eliminate news publications and journalist reports. Hence, messages with neutral or mixed tonalities were not included in our data set either.

By default, IQBuzz uses its own dictionary; however, it also allows for manual tonality calibration. This option was of great use for identifying messages published by Euromaidan supporters. A list of handpicked words with manually assigned domain-specific tonalities was integrated into the existing IQBuzz dictionary. Case in point, we’ve added a list of English loanwords with strong sentiment that are commonly used on social networks, such as «респект» (respect), «игнор» (ignore), «лузер» (loser), «бан» (ban) etc. We’ve also manually reassigned tonality values for some of the topic-specific words. For instance, we assumed that in the context of the Euromaidan civil unrest, words such as «система» (system) and «режим» (regime) would clearly have a negative tonality, while the word «Европа» (Europe) and its

derivatives — «европейский» (European), «европеец» (European), «еврозона» (Eurozone) would rather be used in a positive sense. All taken into account, the initial set of 124 000 messages yielded 13 642 messages with a positive tonality.

The next step consisted in running an analysis on this reduced data set in order to identify words that were often used in a positive context together with the word “Euromaidan” (“Евромайдан,” “Євромайдан”). The system came out with a list of words out of which we manually selected several terms that were particularly relevant to our study and used them to compile the final request:

«Евромайдан | Майдан | Євромайдан | Euromaidan | митинг | протест | "акция протеста" | активист | евроинтеграция »

Finally, the entire process was repeated with the new expanded set of keywords. Filters were set to collect messages with positive tonality containing any of the aforementioned terms published on Facebook or Vkontakte by users located in Ukraine during the period between November 21, 2013 and November 29, 2013. The final data set comprised 4255 messages.

The number is rather modest by comparison with our initial data set, which can be explained by several factors. First, our method of identifying Euromaidan supporters and protest sympathizers by keeping messages with positive tonality only might not have been sophisticated enough, leaving a number of relevant messages out. Second, the IQBuzz algorithm of sentiment analysis is not fully disclosed, therefore we cannot account for any possible technical shortcomings. Considering these limitations, the absolute numbers indicated on the graphs presented in the following section might underestimate the actual number of messages published on social networks in the given period. However, since the goal of our study is not to compare absolute numbers but to identify major trends and dynamics of Euromaidan supporters’ online activity, the available data set of 4255 messages was considered sufficient.

In order to identify these trends and dynamics we have used extensive functionality of IQbuzz system and plotted all of the collected messages on a graph as a function of time, with every hour matched by a corresponding number of messages published on Facebook or Vkontakte by Euromaidan supporters. This allowed us to identify major peaks of activity and compare them with the chronology of events during the first week of protests.

#### IV. Data analysis and visualization

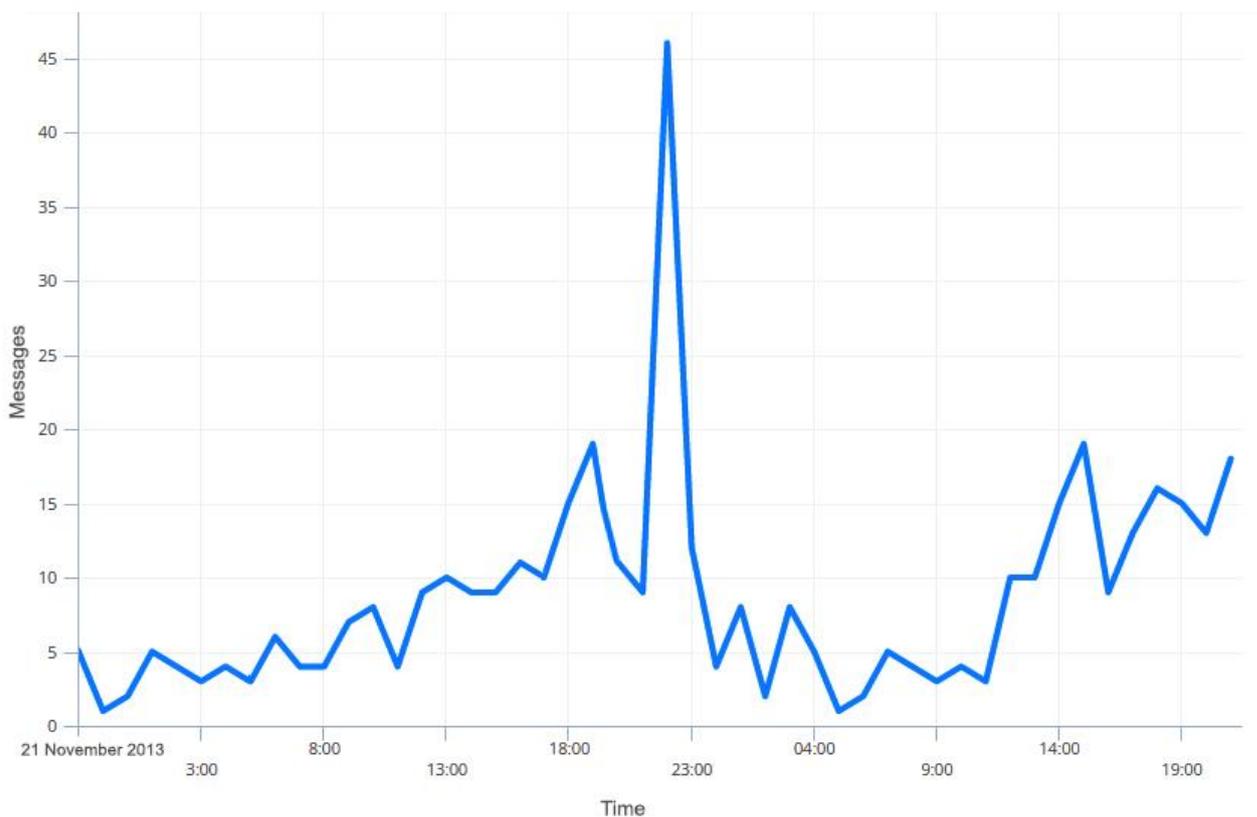
We now proceed with a brief description of the timeline of events. The decision to suspend preparations for the signing of the Association Agreement was announced on February 21, 2013 at 16.00, and immediately provoked a negative reaction from the proponents of European integration. As some of the observers have noted (Savanevsky, 2013), “At around 19.00, it became clear that the number of people who had really strong feelings against the government’s decision is quite significant. People were waiting for a signal from the opposition leaders. Yet, it came from journalists, social activists and common citizens.”

At 21.02 Kiev time, a renowned Ukrainian journalist and social activist Mustafa Nayyem published a message on his personal Facebook page: “Let’s meet up at 22:30 under the

Independence monument. Dress warm, bring umbrellas, tea, coffee, good mood and friends," he wrote.<sup>4</sup>

This succinct call for action has marked the turning point for future protests. It did not feature any political demands or slogans, and it did not suggest any long-term strategy either. Nevertheless, it was instantly picked up by thousands of users and spread like wildfire on social networks. One hour later, Maidan Nezalezhnosti – Kiev’s central square, was filled with up to 2000 people who came to show their disagreement with the government’s decision. The term “Euromaidan” was shortly coined on social networks to describe the incipient public protest.

Having plotted the number of messages published by Euromaidan supporters on Facebook and Vkontakte during the first day of protests as a function of time, we observed the following dynamics of hourly activity:



*Fig. 1. Euromaidan supporters’ online activity on Facebook and Vkontakte (21-22 November, 2013)*

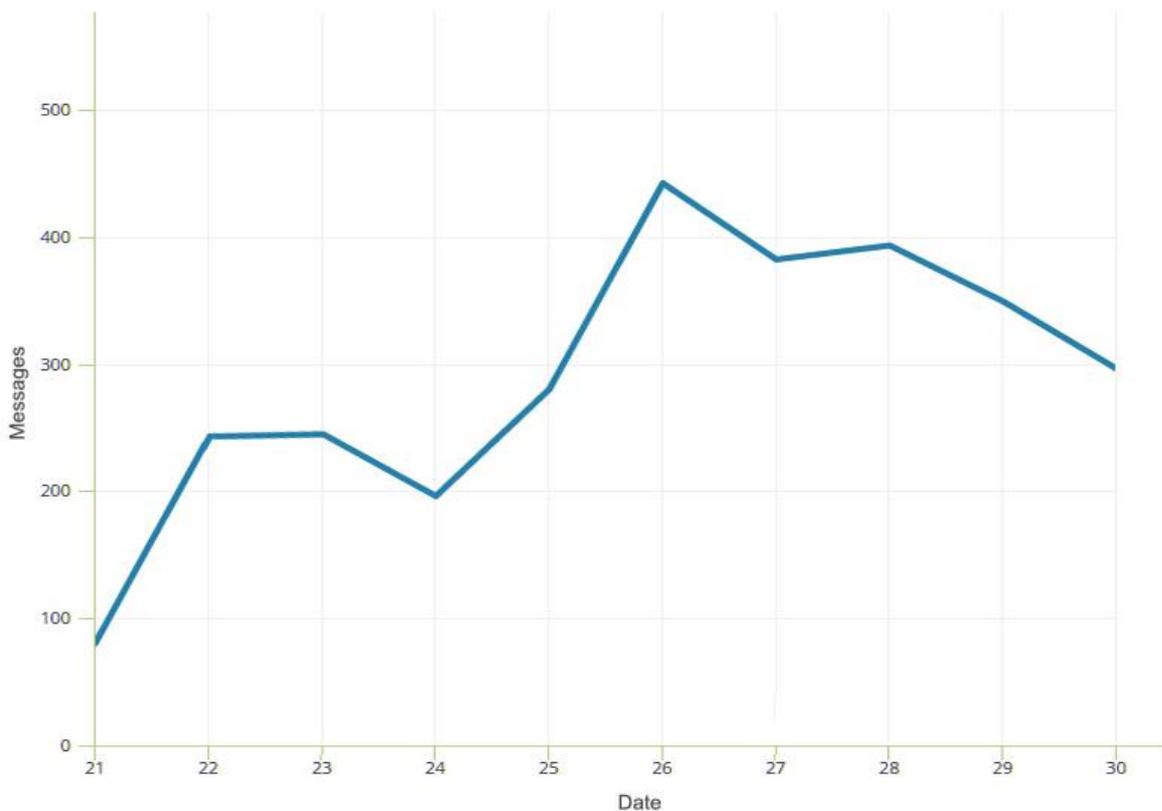
It is apparent from the graph that the major spike of activity was registered at around 21.00 – 22.00, which corresponds to the actual chronology of events. At 21.02, the public call to gather on the Maidan square first appeared on Facebook. This call has instantly sparked vivid reaction: users shared it on their pages, spreading the information across social networks in order to mobilize as much people as possible. Euromaidan supporters’ activity on social networks dropped down at around 23.00, which can be explained by the fact that many of

<sup>4</sup> Nayyem, Mustafa. (n.d.). In *Facebook*. Retrieved February 19, 2018, from <https://www.facebook.com/Mustafanayyem/posts/10201178184682761>

those who were active online that day have joined the protest on the Maidan, and therefore had less time for social media.

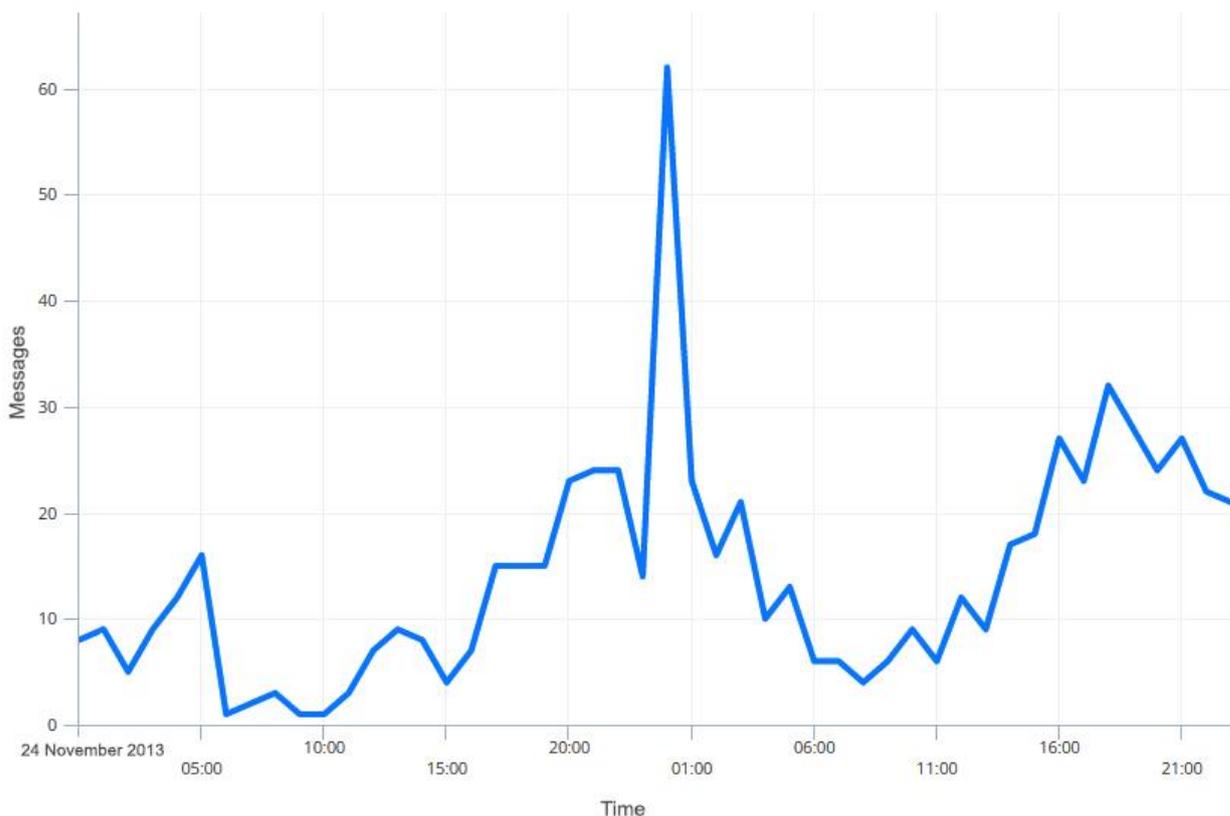
The main observation that emerges from the graphic above is that the spikes of online activity clearly preceded the gathering of the first demonstrators on the Maidan square. *Ipsa facto*, this might not suffice to postulate that there existed a cause-and-effect relationship. Yet, when considered together with the fact that the initial call for action published on Facebook did not feature any political demands or slogans, did not suggest any long-term strategy and was spontaneous in nature, our observation provides enough ground to suggest that the protest on the night of November 21 represents an example of “connective action”.

According to our analysis, the dynamics of Euromaidan supporters’ online activity on social networks in the first week of the protests corresponds to the following figure:



*Fig. 2. Euromaidan supporters’ online activity on Facebook and Vkontakte (21-30 November, 2013)*

The graph shows that the next important spike of publications on social networks occurred on November 25. That spike can be explained by the prior events. On November 24, the official leaders of the opposition – A.Yatsenyuk, V. Klitschko and O. Tyahnybok have gathered thousands of supporters for a large rally “For the European Ukraine!” Among other things, the rally resulted in the separation of the protest movement into two fractions. The first fraction didn’t want the party leaders to head the protest movement and stressed the importance of remaining an independent, leaderless force (Onuch and Gwendolyn, 2016). Since the first fraction was located on Maidan, the other fraction controlled by the opposition parties had to install their tents on the European square. It is here that on the night of November 24, the first clashes between the protesters and the police took place.



*Fig. 3. Euromaidan supporters' online activity on Facebook and Vkontakte (24-25 November, 2013)*

The graph presented above demonstrates that the spikes of activity on social networks correspond to the violent confrontations that happened during the night. Journalists who were present on the European square on the night of November 24 reported that the first clash took place at around 20.00 when the special police units "Berkut" tried to prevent the protesters from installing their tents. Our graph depicts the first rise of online activity at around the same time. After several hours of calm, closer to 23.00, the police made another attempt to clear the square of protesters. The confrontation lasted for many hours, arguably being the main cause of the rise of Euromaidan supporters' online activity around midnight. As it was later pointed out by the journalists, "people were discussing the ongoing events on social networks, as well as sharing photos and videos that made it on TV the next morning."<sup>5</sup>

An important observation emerges from the presented figure: while the outbursts of violence that followed the rally on November 24 provoked a significant reaction on social media, no significant online activity can be noted prior to the rally itself, which began at noon of the same day. Thus, it becomes clear, that the pattern of online activity on November 24 (Fig. 3) is very different from that on November 21 (Fig. 1).

## V. Results and discussion

Two different ways of using social networks for political protest activity emerge from the presented analysis. The rally on November 24 was organized using already established party

<sup>5</sup> "Euromaidan in Kiev, the fourth day: a chronicle." *Liga.net*. Last modified November 25, 2013. <http://news.liga.net/articles/politics/928623.htm>

institutions; it was coordinated from “above” by several opposition leaders; furthermore, the rally was planned ahead and had a long-term strategy. In other words, it can be seen as an example of classic “collective action.” As it becomes clear from our analysis, the protest movement supporters’ online activity was very low prior to the opposition rally on November 24 and relatively high during the nighttime confrontations, which indicates that social networks were used as a mere tool of *media coverage*.

On the other hand, November 21 was marked by a considerable spike of online activity prior to the protests, suggesting that social networks had anticipated the events and were used as a tool of *mass mobilization*. The civil unrest was sparked by a Facebook post that did not feature any political demands or slogans and did not provide any long-time strategy. People organized themselves on a horizontal basis with no leaders involved. In other words, the whole process of mobilization was a grass-root one in nature, with no involvement of any established institutions. Finally, the protest was spontaneous, as nobody knew about it until a couple of hours before the event. All these characteristics suggest that the protests of November 21 exemplify “connective action”.

Summing up, it is important to stress that the goal of our study was not to simply observe the bursts of publications on social media during the resonance events. Instead, we have identified and compared two different patterns of online behavior – that of “connective” and that of “collective” action. Based on our analysis of the first week of the Euromaidan protests, we can now claim that social networks were primarily used as a tool of political mobilization on the very first night of protests, and functioned rather as a tool of media coverage later on.

A number of limitations outlined earlier in this text identifies areas for further research. Most importantly, a more open and sophisticated tool of content analysis is required to advance our understanding of the Russian-speaking social media. Nevertheless, using the existing instruments the present study analyzes the Euromaidan revolution through the lens of social media, compensating for insufficient scholarly attention provided to the most popular social network in Ukraine – Vkontakte. Finally, it suggests an original approach to studying contentious politics in the digital age through social media content analysis.

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