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Corpus-Based Analysis as a Method to Identify Russian Trolling Activity

Abstract: There has been an increased interest in the field of informational and psychological warfare conducted by the Russian Federation directed at Western countries and their allies following the intensification of the conflict in Ukraine. The most visible example of this are the activities in the field of propaganda, disinformation and psychological operations accompanied the annexation of the Crimea and manipulate the American public during the presidential election in 2016. Trolling as one of using tools of such activity is a highly visible manifestation in which users or automatic comment generation programs manipulate online discussions. This phenomenon is visible and widely discussed in the media discourse. Efforts are being made to develop academically rigorous systems of identification and description. This paper presents the results and main conclusions reached through the application of the author's method of analysing key words supported by corpus-based analysis in exploring this phenomenon.

Keywords: *trolling; informational warfare; propaganda; corpus-based analysis; the Russian Federation*

Introduction

So far, several research focused on Russian trolling activity were conducted. It should be mentioned research conducted by NATO Strategic Communication (Szwed & Lolatamishvili, 2016; Svetkowa, 2016; Spurds et. al., 2015) as well as research using IT techniques in identifying traffic and communication in the network (Al-Khateeb & Agarwal, 2016; , Agarwal et. al., 2017). The results of journalistic investigations are also important for scientific cognition (Aro 2016; Weisburd & Watts & Berger, 2016; Chen 2015.). Present study is part of a trend of using linguistic methods; finding

keywords characteristic of Russian propaganda in Internet discourse through in-depth analysis of Russian trolling efforts. The method of corpus-based linguistics was used to support this research, which is based on an analysis of text characteristic of the community or the phenomenon, referred to as the text corpus. Different computer tools are necessary for conducting this research.

The results presented relate to quantitative and qualitative analysis of the comments under articles published on the Polish portal onet.pl, which referred to the political situation in Ukraine during three different periods. The study used a computer program called AntConc.

Research Problem

Scientific interest in Russian informational warfare emerged relatively recently, and has been given increased attention following the Russian annexation of Crimea in 2014, as well as the activities of the state in Ukraine's eastern region (with the exception of historical publications dating back to the Cold War). Contemporary relevant publications mostly come in the form of reports from research of expert institutions. You can extract the following research directions from available publications:

- conceptual and theoretical foundations of Russian informational warfare (Franke 2015; Snegoyaya, 2015, Darczewska, 2014; 2015; 2016; Darczewska & Żochowski,2015, Wojnowski 2015, Weremiuk 2015),
- military aspects of Russian informational warfare (Chambers, 2016),
- ideological and cultural sphere of influence on Western society (Krekó et al., 2016; Lucas & Pomaranzev, 2016; Lutsevych, 2016),
- activity in the media sphere, including research on used techniques and methods of propaganda, disinformation and psychological and information operations (Conley et al., 2016; Giles, 2016; Rácz, 2016; Racz & Pynnöniemi, 2016).

This research project looks to determine the specifics of social media usage by the Russians in informational and psychological warfare, including trolling. Trolls are considered to be web-based tools used to support activities of the Russian military, intelligence and propaganda (Szwed & Lolatamishvili, 2016, p. 55). Pro-Russian internet trolling is identified as methodical communication calculated to create favourable attitudes towards Russian state actions, actively influence debates relating to state activities, as well as distribute and render disinformation credible, using both profiles controlled by humans and automated bots (Giles, 2016, p. 40). Characteristics of statements identified by NATO StratCom as trolling are (Svetkowa, 2016, p. 44):

- disproportionately long comments (exceeding 4 lines of text),

- comments beyond the scope of the topic,
- comment content appearing on other sites / portals or social media profiles,
- aggression and hostility within the statement,
- language errors,
- other users identifying a given person as a troll.

Trolling as a phenomenon is constantly evolving, and above characteristics should be considered as the most visible characteristics of specifically Russian trolls. They are not, however, required by nature, which means that they will not necessarily consistently appear. The degree of success and the subtlety of a troll is dependent on the dexterity and skill of the person or persons engaged in these activities. Utilized techniques and content criteria are also profiled based on the conditions of the state towards which trolling activity is directed. However, regardless of the state, some trolling features are universal. Trolls consistently use symbolism in their content— metaphors, stereotype based comparisons, and through the creation of supporting neologisms (Szwed & Lolatamishvili, 2016, pp. 7–8).

It is noted that the identification of a troll is a very difficult task. This is due to the above-mentioned dynamic nature of trolling resulting from the adjustment of trolls to specific conditions, including in particular the use of the principles of a democratic state (freedom of speech). Researchers additionally distinguish at least two types of people involved in Russian trolling activity – one that consciously and under recommendation act in the interest of the Russian State, and the "useful idiots", people who unconsciously – but with regularity and commitment- disseminate pro-Russian propaganda or disinformation (Szwed & Lolatamishvili, 2016, p. 55). There is therefore a need to look for tools that will significantly improve the ability to study the phenomenon of Russian internet trolling, and then specify results.

Corpus-Based Analysis

Corpus-based analysis of text (also known as corpus linguistics) is a research method in linguistics involving the examination of a collection of texts being chosen based on predefined rules. These texts are assumed to be typical in character of a given community or topic, and applied computer tools are used to automatically analyse spoken texts. Extracted texts are called a corpus (Pawlikowska, 2012, p. 113).

The selection of a corpus should be based on a sample of texts relevant to the examined issues - e.g. the language characteristic of a community or media discourse. Specific separation of the corpus is subject to criteria. They may be based on an intuitive understanding that the text or texts are important to their subject matter research,

but there are also more concrete criteria – e.g. the time of their creation, reference to specific concepts or as they are expressed through high rankings in specialized journals. The availability of sources and the technical capabilities of the researcher are important in the selection of any corpus (Kamasa, 2014, p. 102–104).

Methods of corpus-based analysis vary. (Kamasa, 2014, pp. 104–110) distinguished them in the following manner

- *analysis of the frequency lists* – based on an examination of the list of all words that appear in the corpus concerning their frequency of occurrence, and the percentage in relation to the total amount of text;
- *keyword analysis* – the study of previously separate search keywords in the text that have been identified as important for the text subject;
- *analysis of collocation* – a method of examining the coexistence of individual words in the text to search for terms most frequently encountered in conjunction with each other,
- *analysis of concordance* – focused on the study of the context of extracted data and terms.

The method of corpus-based analysis is not limited to linguistic research, but is also applicable to a variety of issues within social sciences, such as the analysis of discourse. Therefore, it seems legitimate to verify whether the methodological success in discourse analysis can also be used on the subject matter of this article.

Research Method

The aim of the study was to analyse the comment narratives under articles published on the portal onet.pl, which referred to the political situation in Ukraine, and the identification of quantitative and qualitative evidence of Russian related trolling. The internet portal was chosen based on the amount of users and page views (Wirtualne Media, 2015, June 8).

The research hypothesis assumes that the examined phenomenon started or significantly intensified at the turn of November and December 2013, with the beginning of the so-called Euromaidan. This is reflected through an increased frequency of relevant internet statements, the content of which is similar to anti-Ukrainian propaganda while also being characteristic of Russian propaganda.

In order to verify the hypothesis, three corpora have been extracted in order to compare quantitative and qualitative changes in the comments. The corpora were isolated based on the selection of three testing periods (Table 1). Two selection criteria were used:

- Similarity in the significance of events affecting their media coverage and thus a potential similar interest in the subject of Polish Internet users expressed in a similar number of comments.
- Diversity in terms of the international situation in the context of Russian-Ukrainian relations and the resulting likelihood of trolling by the Russians.

Table 1. Researched Articles and Extracted Periods

Title	
The Period of the 2010 Presidential Elections in Ukraine	
"Polska została na lodzie" [Poland left out to dry]	(Onet, 2010, February 2)
"Putin zrelaksowany" [Putin Relaxes]	(Onet, 2010, June 10)
The Period of Association Agreement Negotiations and the Start of Euromaidan Protests (2013)	
"Umowa stowarzyszeniowa czeka do listopada" [Association Agreement is pending until November]	(Onet, 2013, February 7)
"Ukraina: Wizyta Komorowskiego na Wołyniu uzasadniona" [Ukraine: Komorowski's visit to Volhynia justified]	(Onet, 2013, July 3)
"Kreml: Rosja może udzielić Ukrainie pożyczki, jeżeli o nią poprosi" [Kremlin: Russia may grant Ukraine a loan if requested]	(Onet, 2013, December 16)
"Kwaśniewski w „Spieglu": Bruksela była naiwna" [Kwasniewski in the "Spiegel": Brussels was naive]	(Onet, 2013, December 9)
"Akcja poparcia dla protestujących na Ukrainie w Kielcach" [Support action for protesters in Ukraine in Kielce]	(Onet, 2013, December 12)
The Period of 2014 Presidential Elections in Ukraine	
"Zamknięto listy kandydatów w wyborach prezydenckich na Ukrainie" [Closed lists of candidates in the presidential elections in Ukraine]	(Onet, 2014, April 1)
"Ukraina: przed wyborami prezydenckimi rośnie poparcie dla Poroszenki" [Ukraine: the presidential elections is indicating increased support for Poroshenko]	(Onet, 2014, May 6)
"Petro Poroszenko: umowa z UE będzie wdrażana natychmiast po ratyfikacji" [Petro Poroshenko: the agreement with the EU will be implemented immediately upon ratification]	(Onet, 2014, September 15)
„Ukraina: MSZ oczekuje, że Rosja uzna wybory prezydenckie" [Ukraine: Ministry of Foreign Affairs expects that Russia recognizes the presidential election as legitimate]	(Onet, 2014, May 25)

A similar number of comments were chosen for each of the given periods (approx. 90 for each period, and from 11 to 61 for each article) in order to maintain consistency among them. Subsequently, the initial comments on the article within the first hours of its publication were compared by author.

The study used both quantitative and qualitative methods. The aim of quantitative analysis was to identify the intensity of occurring words (*analysis of the frequency lists*) and comparison of changes in this area between the three periods. The focus is mainly on nouns, enabling clear separation of subject areas that appeared in the comments. As a result of categorization, the contents were divided into those that occurred most frequently. This led to the distillation of words related to the following thematic groups:

- Poland;
- Ukraine,
- the Volhynia Massacre,
- Russia,
- The United States,
- Europe.

The qualitative analysis observed narratives of surveyed comments in relation to the separate thematic areas (*keywords analysis/ analysis of concordance*). The author then determined the frequency of the characteristic theses over the study period. Whenever a thesis appears once over the considered period, the frequency is classified as low, but where two, three or four were identified, it is considered as occurring at a medium frequency, and if more than five times - high frequency.

Results

Quantitative Analysis

The study showed that, depending on the period, the frequency of individual words from different thematic groups varied. Quantitative analysis shows that comments related to Europe and the United States appeared least, while those that refer to Polish, Russia and Ukraine were the most common.

Some significant differences were noticeable between the various periods of research. Figure 1 shows that between 2010 and 2013 the share of comments relating to the Volhynia Massacre increased by 23%. There was also an increase in comments relating to Ukraine (from 16% in 2010 to 25% in 2013). It should be emphasized that in 2013 the comments relating to these two topics accounted for 52% of all researched statements.

On the other hand, content related to Poland dropped by 13 percentage points, while content related to Russia dropped by 19 percentage points. Changes with regard to comments related to Europe and the United States were small.

The analysis of changes between the second and third periods indicates that the above-mentioned trends were maintained, although there were some differences. Comments relating to Ukraine continued to increase (from 25% to 45%), however comments related to the Volhynia Massacre decreased by 17 percentage points. Still, the comments relating to Ukraine and referring to the Volhynia Massacre together accounted for 55% of all statements contained within thematic categories.

A significant increase was observed in comments relating to Russia, Russians and their politicians (an increase from 12% to 26%). Poland related comments maintained a downward trend of 8 percentage points. As in previous periods, no significant changes were found between the comments on the European Union and the United States.
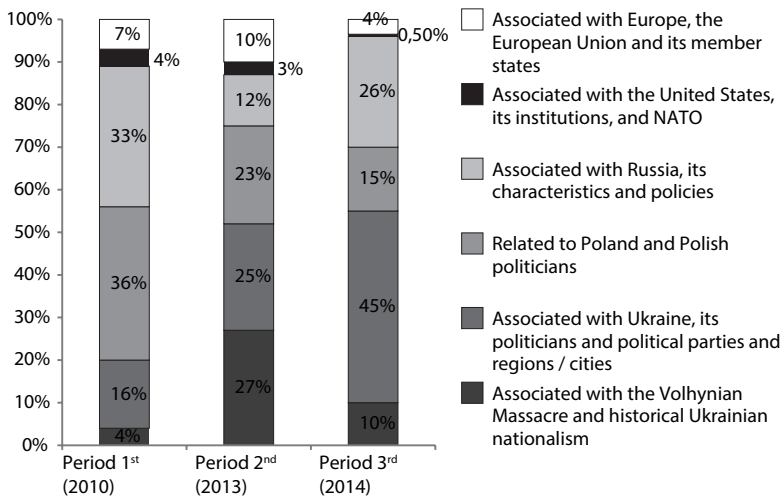

Figure 1. Thematic Groups of Most Frequently Occur Words
Source: Conducted research.

Qualitative Analysis

The author divided comments into negative and positive values as part of the qualitative research portion. The results are presented in Tables 3 and 4. Most thematic areas saw overwhelmingly negative comments.

The first time period of study, with respect to comments related to Poland, highlighted the fact that criticisms, particularly related to the political class, and foreign policy direction, especially with respect to its Eastern policy, dominated online discussions. The content of comments relating to Poland also highlighted a perceived lack of independence in the conduct of its policy and its dependence on other countries.

Content relating to Europe and the United States generally drew attention to the short-sightedness of policy and blindness to the growing power of Russia.

Comments related to Ukraine focused on issues concerning historical policy and the Eastern geopolitical orientation of political authority.

In comments relating to Russia, comments seen as negative highlighted its growing imperial ambitions and threats to international security. Negative comments refer also to Vladimir Putin (regarded as the de facto leader of Russia, and not the incumbent president Dmitry Medvedev). Descriptions within the context of Putin were: "a man with two faces", "bloodthirsty", "cold" (Onet, 2010, February 10).

Comments concerning the Volhynia Massacre are for obvious reasons contextually defined as negative, but its content is quite general and relates mainly to the concealment of this fact within Polish-Ukrainian relations.

The second study period showed an intensification of anti-Ukrainian statements targeting mainly the issue of the Volhynia Massacre. During this period words began to appear *en masse* that were previously unheard of or simply emerging incidentally, for example. 'riezuny'/'rezuny', as well as strongly marked emotional phrases such as 'were slain', 'cruelty', etc. and indicating the groups responsible for the murders of Poles: 'UPA', 'OUN', 'SS-Galizien'. A characteristic feature of this period was the emergence of very long, and informative comments that can be clearly distinguished in this respect from the rest of the entries. It is very important that in this regard, their form coincides largely with characteristics of Russian trolling, which has been determined by NATO StratCom on the basis of the above-referenced research. Two of such example comments are presented in table 2.

Table 2. Examples of comments with long, informational overloaded form
and manipulated conent

Text of comment	Reference
'Bandera supporters consider the current borders of Ukraine "unfair" (as Oleh Tiahnybok described them) and seek to revise the borders to the detriment of the Polish state. They do not express any repentance, they are proud of the murder of 200,000 Poles in Volhynia and in Eastern Malopolska. They make monuments one of the greatest criminals in the history of this part of Europe.	(Onet, 2013, December 9)

Text of comment	Reference
In 2004 the All-Ukrainian Union of "Freedom" numbered about 900 members. In 2012 there were 20,000 members. In the elections to the Verkhovna Rada in 2006, Freedom received 0.36% of votes (the most in the Lviv Oblast - 2.23%). In the elections to the Verkhovna Rada in 2007 it got 0.76% of votes (the most in Tarnopol region - 3.44%). In the elections to the Verkhovna Rada in 2010 received 1.43% of votes (the most in the Lviv Oblast – 5.35%). In the 2010 municipal elections, Freedom received: – Lviv Oblast - 25,98% – Ternopil Oblast - 34.69% – Ivano-Frankivsk Oblast - 16.66% – Volyn Oblast- 7.45% – Rivnenska Oblast - 6.35% In the elections to the Verkhovna Rada in 2012, the "Freedom" was 10.45% (the most in the Lviv Oblast - 38.01%). It is worth adding that the cult of OUN-UPA is also propagated by the All-Ukrainian Coalition "Fatherland" Yulia Tymoshenko. Homeland in the elections to the Verkhovna Rada in 2012 received 25.55% of the vote (the most in the Vinnytsia Oblast - 45.01%). In total, the parties that refer to the OUN-UPA and Ukrainian chauvinism received 36% of the votes in election to Verkhovna Rada in 2012. Cult of Bandera and other OUN-UPA leaders began to grow after 2004 when it began to be promoted by state authorities. It is Victor Yushchenko and Yulia Tymoshenko are the parents of this Nazi monster like the party "Freedom". God-fathers are Aleksander Kwaśniewski and Lech Kaczyński. They both implemented American policy aimed at detaching Ukraine from Russia, and the only surviving anti-Russian tradition in Ukraine is the tradition of the Ukrainian Insurgent Army, which in the past beat "Lacha and Moskala" <Which means they fought both with Russian (Moskals) and Poland (Lachs)>. The question is whether the President of the Republic of Poland is to pursue American policy towards the Ukrainian Republic or perhaps to represent the strategic interests of the Polish state and nation. January 20, 2010 President of Ukraine Viktor Yushchenko has signed the decree 46/2010, "for the spirit of defending the national idea, for heroism and sacrifice in the struggle for an independent Ukrainian state". Stepan Banderze was posthumously awarded the title of Hero of Ukraine. President Yushchenko announced the decree on January 22 during the Unity Day celebration. In a poll conducted in March 2010 by the Sociological Group "Rating" 53% of Ukrainians were in favour of canceling the decree on the title of Ukrainian hero Stepan Bander. 28% were in favour of Bandera and his title as a hero, and 19% did not have an opinion. It is worth doing a similar study in March 2014. I bet the supporters of Bandera will definitely be more than 28% of Ukrainians.'	(Onet, 2013, December 9)
'Apart to the official program, there is also an unofficial program, not covered by a public document, but readable by the members of Freedom and the actions they undertake. It is much more radical, including racist. In their view of the nation, the "new" nationalists reject the former, biological bias of the national community (the nation as a counterpart of the species) to the	(Onet, 2013, December 12)

Text of comment	Reference
view that the nation is "the incarnation of the idea of history in the dialectical development of the spirit". Such neo-romantic views, in line with the spirit of postmodernism, make practically impossible rational discussion with the Freedom program's theses. The unofficial program is also said by the party's actions, such as the great propaganda campaign on the anniversary of the creation of the SS-Galizien division, several attempts to disrupt the celebration of the Poles murdered by the UPA in the The Huta Pieniacka massacre, calling on Russian citizens of L'viv "Ukrainization" their children's names, actively fighting demonstrations on the legalization of marijuana, tolerating a speeches which approve Hitler's activities, etc. "Freedom" is definitely negative for the so-called historical dialogue with Poland (similarly to any other neighbour of Ukraine). According to her, what the Ukrainians did to the representatives of other nations was at least justified, and whatever the Russians, Poles, Hungarians, etc. did against Ukrainians, it was at least unjustified and usually criminal. Hence actions such as picketing Polish celebrations commemorating the Ukraine, questioning the right to setting up a monument of murdered Poles, accusing Poles of mass murders of the Ukrainian people, etc. It gives raise and will raise in the future the irritation in Polish-Ukrainian relations where specific actions will be taken by self-government authorities controlled by Freedom. This, however, does not change the fact that anti-Polonism is both in rhetoric and in the program of this minor party is not the most important: Russia and Russia are the main and truly dangerous enemies of Ukraine.'	(Onet, 2013, December 12)

Three of the five articles of the survey sample selected for this period were published in the first weeks of December and discussions concerning Polish-Ukrainian relations based on the mentioned historical events and the phenomenon of nationalism in modern Ukraine (frequently referred to as the Freedom party) strongly dominated comment narratives.

The others remained the same as in the previous period: Poland was criticized for poorly pursued foreign policy; Russia for imperialism, and the West for procrastination and interference in the internal affairs of Ukraine.

The third period saw a higher frequency of anti-Ukrainian statements, but related to more than just the issue of the Volhynia Massacre. In fact, the majority of comments focused on the problem of efficiency of Ukraine as a state and the legitimacy of the elections. The narratives of other thematic areas generally stayed the same – in the case of Poland, comments again concerned the political class and its decisions; while in the case of Russia, as in previous periods, imperialism, but now also the failure of its foreign policy (the loss of Ukraine from its sphere of influence).

Table 2. Negative Context of Analysed Statements

Arguments / thesis	Frequency
The period of presidential elections in Ukraine in 2010	
Comments with words related to Poland	
– foreign policy that is perceived as too active towards the East	High
– Polish adventurism in the international arena, overly ambitious – servility to the Americans and other countries	Average
Comments related to the Russian Federation	
– characteristics of President Putin (cunning, unpredictability, aggression) – imperial ambitions of the Russian state	Average
Comments with words associated with Ukraine	
– Yushchenko as a "friend of Bandera supporters"	Average
– highlighting the Eastern geopolitical orientation of political leadership in Ukraine back in the day	Low
Comments with words associated with the United States	
– uncertain and disloyal ally – aggressive foreign policy	Low
Comments with words related to the Volhynian massacre	
– concealment of the Volhynian massacre as an argument when discussing the mistakes of Polish foreign policy	Average
– "Volhynia massacre" silenced as historical fact in Polish-Ukrainian relations	Low
The period of negotiating an association agreement and the start of the Euromaidan protests (2013)	
Comments with words related to Poland	
– generally poor condition of Polish politics and the state - the inability to pursue interests	Average
– servility to the Americans and other countries – the issue of scale of the Volhynian massacre and response of the Polish – foreign policy perceived as too active in the East – domestic issues are more important than the current situation in Ukraine	Low
Comments with words associated with Russia	
– Russia as an aggressor, long-time occupier of Poland – Russian Imperialism – Russians as a 'wild' nation	Low
Comments with words associated with the United States	
– the involvement of the United States (including the CIA) in the Euromaidan riots	Low

Arguments / thesis	Frequency
Comments with words associated with Ukraine	
– linking Ukrainian politicians with nationalist circles (it highlighted the fact that S. Bandera was granted hero status) – Ukrainian politicians (Klitschko, Tymoshenko, members of the "Freedom" party) as agents of the German government. – the need for Ukraine to settle with its own history	Low
Comments with words related to the Volhynian massacre	
– highlighting the scale of violence. – pointing to the rise in popularity of Ukrainian nationalists – the issue of UPA cooperation with Germany (and the activities of the SS-Galicia)	High
– reporting of Ukrainian nationalist territorial claims to Polish land	Average
The period of presidential elections in Ukraine in 2014	
Comments with words related to Poland and Polish politicians	
– Poland as a weak, poorly governed country	Average
Comments with words associated with Russia, its characteristics and policies	
– Putin as a loser (in the context of the elections in Ukraine) – general aversion towards Russia and its policies	Average
– Russia as an aggressor, the empire	Low
Comments with words associated with Ukraine	
– Ukraine as a weak country that will soon fall apart; election changed nothing	High
– errors in the elections – undermining the right to Ukrainian statehood.	Average
– Ukraine will be taken over by Western banks – popularity of Ukrainian nationalist groups – candidates for president controlled by the West – the threat of a military coup triggered by Ukrainian nationalist.	Low
Comments with words related to the Volhynian massacre	
– general indication of the fact of the Volhynian massacre	High

Source: Conducted research; Classification of frequency appeared theses: low – once; average – 2–4' times; high – more than 5 times.

In the case of comments concerning a positive narrative, there were no apparent differences between the study periods. In comments related to Poland, comments pointed to the right to engage in the westernization of Ukraine for moral reasons, and geopolitics, which were simultaneously identified as the Polish *raison d'état*. Comments directly associated with this 'Eastern neighbour', showed an appreciation for modernization efforts, however these comments highlighted the idea of Ukraine as a buffer state against Russian imperialism.

Table 3. Positive Context of Analysed Statements

Argument/Thesis	Frequency
The period of presidential elections in Ukraine in 2010	
Comments with words related to Poland and Polish politicians	
– Positive side of Polish involvement in the democratization of Ukraine	Average
Comments associated with Russia, its characteristics and policies	
– Putin's policies as efficient, a Russian patriot	Average
– Modernization, increasing the power of the Russian state	Low
– Russia as an object of aggression of the West	
– Highlighting the Eastern mentality	
Connected with Ukraine, its politicians and political parties and regions / cities	
– Western geopolitical orientation of Ukraine, the desire to modernize and democratize the country	Low
The period of negotiating an association agreement and the start of the Euromaidan protests (2013)	
Related to Poland and Polish politicians	
– Relevance of supporting protests of the Euromaidan	Low
Comments associated with Russia, its characteristics and policies	
– 'Bolshevism is not Russia'	Average
– Russians as a balancing factor towards aggressive Ukrainians with territorial claims in Poland	Average
– Relationship of the EU and Russia with regard to natural gas (indicated as mutual energy dependence)	Average
– Russia is under threat after the coup in Ukraine	Low
Comments associated with Ukraine	
– Ukraine as a buffer against Russia	Average
The period of presidential elections in Ukraine in 2014	
Comments with words related to Poland and Polish politicians	
– Poland as a country constantly threatened by Russian imperialism	Average
Comments associated with Russia, its characteristics and policies	
– Putin – a good president, efficient politician, enjoying popularity, Poroshenko's win in Ukraine is really his success	High
– Putin brings hope to Slavs	Low
– Mocking conspiracy theories related to Russia (in regards to the attempt to poison Yushchenko)	Low

Source: Conducted research; Classification of frequency appearedtheses: low – once; average – 2–4 times; high – more than 5 times.

The positive comments relating to Russia's actions were mainly concerned with the characteristics of President Vladimir Putin. These included such terms as 'work for the good of Russia', 'high-class politician' or 'born leader'. It also focused on the conditions of energy policy, which allowed for the subversive system of 'giving cards' in Europe by the Russians. It was also observed that Russia was pitted against aggressive Ukrainians in their territorial claims to Polish land in 2013.

Conclusion

The study found that the majority of the most commonly found terms in the comments manifested themselves in all stages of research. Already in 2010, we have seen negative statements with regard to Ukraine in particular - directly or indirectly - referring to the Volhynia Massacre. The situation was similar for the other content, which are now in line with Russian propaganda narratives (e.g.. that Poland leads dependent foreign policy and is too committed to the East; Russia is a strong country, whose leader engages in an organized state response to the perceived aggression of the West).However, the treatment of activity in Polish internet space, perceived as close to Russian propaganda talking points, as conclusive evidence of trolling activities is problematic from a methodological point of view. It is difficult to determine the source based solely on this indicator. The activity can be interpreted as Russian trolling activity which already existed in 2010, as well an expression of opinion of functioning parts of society, which has long been part of public discourse.

The accurate identification of this phenomenon as occurring in a given period of research, requires the observation of trends and dynamics of quantitative and qualitative changes between the comments in 2010 and those written in 2013 and 2014 - the years between the first, second and third periods. There is a visible increase in anti-Ukrainian expressions during the first speeches on Independence Square in Kiev, and this trend continues in 2014. Secondly, within the framework of qualitative analysis, it is noted that in the second and third period comments seemed to coincide with the previously identified trolling research done by NATO StratCom.

Summary

Based on the above conclusions, it can be formally concluded that the Russians, through psychological and informational warfare, work to exacerbate existing problems. These may be historical events affecting international relations (as in the case of the topic analysed in the paper) or social polarization around the issues already present in public discourse, which are important from the perspective of national

interests (e.g.. the presence of NATO troops in Poland). Provocation mechanisms are used for control, monitoring and handling. The core of these activities does not rest in initiating new public discourse[1]. Therefore, a clear and reliable identification systems for trolls becomes difficult to successfully achieve.

Through corpus-based analysis as a research method in the identification of this phenomenon, we can draw the following conclusions:

- its advantages are the universality and availability of tools and the broad possibilities for the creation of more research samples (corpus). This method allows for a more exhaustive approach to comment narrative analyses on social media and news portals in different languages;
- its disadvantages are primarily the difficulties of creating a reliable research sample and the time required for each analysis. This disadvantage can be minimized through the use of statistical indicators, which may, however, limit the possibility of qualitative analysis.

To summarize, the method of corpus-based analysis is a valuable tool in the study of trolling activity and can function as support for other approaches, e.g. at the stage of content analysis, which has been identified as Russian trolling. The previous trolling research overlapped with the results of present study, particularly in terms of the form of comments that is most characteristic of trolling. However, there is still need to conduct research on increasing precision in defining individual comments as trolling, and the largest potential in this regard author sees is in linguistic and IT-based methods.

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[1] The separate issue is the creation of chaos within an informational space, disinformation, where trolling can readily be used. This issue however goes beyond the framework of this article, because this research concerned the usage of this phenomenon in the proliferation of Russian propaganda.

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