The impact of Russia's state-run propaganda apparatus on online media in Hungary – 2010–2017

Executive summary with tables and figures

19 March 2018

The Corruption Research Center Budapest was created in November 2013 in response to the growing need for independent research on corruption and quality of government in Hungary. Hence, the Center was established as a non-partisan think tank independent of governments, political parties, or special interest groups. The aims of the Center are to systematically explore the causes, characteristics, and consequences of quality of government, problems of corruption, and regulatory failures using an interdisciplinary approach. The Center also aims to help citizens to hold governments accountable through the use of empirical evidence.

The impact of Russia's state-run propaganda apparatus on online media in Hungary – 2010–2017

The research was supported by Hungarian citizens

Supporting partner:

3gteam ltd: http://www.3gteam.hu/

Staff:

Miklós Hajdu	research fellow
Hanna Fölsz	research assistant
Balázs Molnár	software engineer
Zsanna Nyírő	research fellow
Júlia Orbán	administrative assistant
István János Tóth	managing director

Experts:

Katalin Andor	economist
Katalin Goldstein	language consultant
Jenő Gyenese	software engineer
Magda József	lawyer
Zoltán Kelemen	lawyer
Attila Székely	procurement specialist

Corruption Research Center Budapest
e-mail: info@crcb.eu
Internet: http://www.crcb.eu/

Date of publication: 19 March 2018

"Action in obedience to orders does take away freedom in a certain sense, but it does not, therefore, make a man a slave, all depends on the object of the action. If the object of the action be the good of the state, and not the good of the agent, the latter is a slave and does himself no good: but in a state or kingdom where the weal of the whole people, and not that of the ruler, is the supreme law, obedience to the sovereign power does not make a man a slave, of no use to himself, but a subject. Therefore, that state is the freest whose laws are founded on sound reason, so that every member of it may, if he will, be free; that is, live with full consent under the entire guidance of reason."

(Spinoza, 1670)

Contents

Abstract

In this paper, we investigate the impact of Russia's state-run propaganda apparatus on online media in Hungary using methods drawn from content analysis and distributive semantics. For the analysis, we downloaded articles published between 2010 and 2017 on nine Hungarian-language online portals (888.hu, hidfo.ru, index.hu, lokal.hu, magyaridok.hu, mindenegyben.com, mno.hu, origo.hu, and pestisracok.hu) and collected them in a database. We analysed 1 million articles and more than 278 million words in total. We used statistical methods to compare content from pro-government news portals (888.hu, lokal.hu, magyaridok.hu, and pestisracok.hu) to that in articles published by hidfo.ru, the Russian propaganda portal par excellence. Based on results from linguistic profiling, articles from hidfo.ru show Russian language features and are translated from a foreign language.

We investigated four issues: (i) the coverage of negative or sensitive issues and events concerning the Russian government or Russian politics; (ii) the use of the words "migrant" or "refugee"; (iii) the interconnections of the themes "migrant" and "terror" and (iv) "migrant" and "violence". To test our hypothesis, we ran logit regression estimations using different subsamples of articles. Our results demonstrate the impact of the Russian state-run propaganda apparatus on Hungary's online media, especially on the pro-government online news portals. One unanticipated finding of our research is that mindenegyben.com, which is a very popular site on Facebook, tends to partially follow Russian state propaganda in its articles with regard to Russian topics. Our analysis of articles published from 2010 to 2017 in index.hu and origo.hu shows that after Origo's editor-in-chief was fired for political reasons, the language of origo.hu changed and the portal started to use terms and language promoted by Russian state propaganda in a somewhat more forceful way. An analysis of articles published by the nine online portals from 2015 to 2017 demonstrates the impact noted above of Russia's state-run propaganda apparatus on Hungary's pro-government online media. The results from our statistical analysis show that the pro-government portals publish articles on negative or sensitive issues tied to the Russian government or to Russian politics less frequently than news portals that are independent of the Hungarian government.

In addition, the analysis demonstrates that among the pro-government portals, the discourse on 888.hu and lokal.hu concerning "migrants", and the interconnection of the themes "migrant" and "terrorist" and "migrant" and "violence" do not differ significantly from the discourse used by hidfo.ru. In addition, other pro-government news portals, such as pestisracok.hu and magyaridok.hu, are statistically much closer to hidfo.ru than the non-government portals mno.hu and index.hu. Thus, while magyaridok.hu, pestisracok.hu, 888.hu, and lokal.hu are indirectly financed by the Hungarian government through advertising for ministries and state-owned enterprises, they seem to operate similarly to portals that are members of the Russian state-run propaganda apparatus in terms of the issues analysed in our paper.

Keywords: content analysis, Hungary, online media, Russian state propaganda

Background

1. It is well known that the new strategy in Russian state propaganda focuses on online media, especially social media, to affect key political decisions (e.g., Brexit) and presidential or general elections (e.g., in the USA and Italy).[1] In our analysis, we investigate possible Russian state influence on Hungary's online media, especially on its pro-government portals. We analyse whether there is any similarity or equivalence with regard to topics, the use of words or assumptions between Hungarian news portals and hidfo.ru, a news portal for Russian state propaganda written in Hungarian. If our results show any similarity or equivalence, we can conclude that Hungary's online media follow the principles and logic spread by Russian state propaganda and that Russian state propaganda influences Hungarian online news portals.

2. We analysed articles on nine Hungarian news portals from 1 January 2010 to 31 December 2017 using qualitative and quantitative content analysis and methods from distributive semantics.[2] The portals under analysis are the following: 888.hu, index.hu, lokal.hu, magyaridok.hu, mno.hu, mindenegyben.com, origo.hu, pestisracok.hu, and hidfo.ru, a Hungarian-language, Russian-operated propaganda portal. Using methods from forensic linguistics, we scrutinized articles from hidfo.ru that display Russian language features and we assume that they are translations.

3. During the research, we downloaded and analysed 1,027,653 articles and 278 million words.

4. In the paper, we analyse articles from nine portals on four topics:

(i) the coverage of negative or sensitive issues and events concerning the Russian government or Russian politics;

(ii) the use of different words for refugees(the use of the words "migrant" and "refugee");

(iii) the probability of interconnections between the themes "migrant" and "terror" or the presence of the implicit statement "if migrant, then (rather) terror" on the online news portal;

(iv) the probability of interconnections between the themes "migrant" and "violence" or the presence of the implicit statement "if migrant, then (rather) violence" on the online news portal.

---

[1]See Alandete, 2017; Alandete & Verdú, 2018; Alto Data Analytics, 2018; Applebaum, 2017; El Pais, 2018; The Guardian, 2017; Gressel, 2016; Isaac & Wakabayashi, 2017; Kroet, 2017; Mayer, 2018; Meister, 2016; Oremus, 2017; Paul & Matthews, 2016; Polyakova et al., 2017; Walker, 2017; Zhao, 2018.

[2]On methods used in content analysis, see Antal, 1976; Berelson, 1952; Krippendorff, 1980; Krippendorff & Bock, 2009; Neuendorf, 2002; Weber, 1990.

5. Analysing these four areas with several methods, we calculated the distances between news portals and plotted them on a coordinate system. Finally, we calculated the distances of pro-government and independent news portals from the Russian state propaganda portal hidfo.ru.

6. The importance of the analysis is supported by the fact that there are several undeniable signs of intensifying Russian influence in Hungary.[3] Further, the new research results on Twitter and Facebook activities before and during the Brexit campaign, the US presidential election, and, more recently, the Catalan referendum on independence and the Italian general election provide clear empirical evidence on Russian state activity and the influence of Russian state propaganda. These activities are sophisticated and well targeted,[4] using modern technology and methods (stochastic models and network analysis) to be more effective and pervasive.

7. The other point that justifies our research is that there were fundamental changes in the Hungarian media system[5] in 2017. That year, almost the entire regional print media was seized by Prime Minister Victor Orbán's frontmen.[6] Beyond this reason, this radical change in itself justifies an analysis of how Russian state-run propaganda can affect pro-government Hungarian news portals in this new media structure. If we detect any similarity with Russian state propaganda messages, we can presuppose *a fortiori* that it is to be found in public media that are directly controlled by the Hungarian government.[7]

[3]See Bátorfy, 2017a; Bátorfy & Szánthó, 2016; CRCB, 2016b; Erdélyi, 2016; Feledy, 2016; Globsec, 2017a, 2017b, 2018; Juhász & Szicherle, 2017; Medvegy, 2017; Panyi, 2017a, 2017b, 2017c, 2017d, 2018; Papp & Oroszi, 2014; PCBLOG, 2014; Radi, 2017; S. Bíró, 2017.
[4]See Paul & Matthews, 2016.
[5]On the Hungarian media system, see Bátorfy, 2015, 2016; Czibik et al., 2013, 2016; Hajdu et al., 2016, 2018; Magyari, 2014; Medvegyev & Szalay, 2017; Szántó et al., 2018; Szeidl & Szűcs, 2016a, 2016b.
[6]See Bátorfy, 2016, 2017b, 2018.
[7]On theoretical and empirical analyses of the Orbán regime, see CRCB, 2015; Guriev & Treisman, 2015; Kornai, 2015, 2016; Szeidl & Szűcs, 2017; Tóth & Hajdu, 2017, 2018a, 2018b.

8. For twenty years, since 12 March 1999, Hungary has been a full member of NATO; it has been a member state of the European Union since 1 May 2004. To belong to the "West", to "Europe" – that was the foremost goal of Hungarian representatives of the Enlightenment in the late 18th and early 19th centuries, and it was the most important aim for the leaders of Hungary's revolutions in 1848 and 1956, as well as during the regime change of 1989.

9. The implementation of this research was made possible by the financial support and voluntary work of Hungarian citizens.

Results

1. As a null hypothesis, we assumed that in the topics under analysis there are no similarities between the content of Hungary's online media (including the pro-government news portals) and that of the Russian state-run propaganda portal hidfo.ru. In other words, we assume *a priori* statistically significant differences between them.

2. Furthermore, we presuppose that the news portals for the pro-government media are not closer to the Russian state propaganda portal than the independent ones are.

3. Based on the results of our statistical analysis, we must reject both hypotheses.

4. We found evidence in several areas under analysis that there are no significant statistical differences or that there are strong similarities between the content, language, and implicit statements found in Russian state propaganda and the features of the Hungarian pro-government news portals. With regard to 888.hu, lokal.hu, and pestisracok.hu (all of which are pro-government portals) as well as mindenegyben.com, we found that these news portals do not differ significantly from hidfo.ru in one or more areas. These results are supported by those from the qualitative content analysis as well.

5. Furthermore, we found evidence that the content of one of the most influential Hungarian news portals, origo.hu, significantly changed after its editor-in-chief was fired for political reasons in the summer of 2014.[8] Since then, the language of origo.hu has changed considerably; the site seems to have adopted the language used by Russian state propaganda.[9]

6. The results of our quantitative content analysis show that the pro-government portals only devoted limited space to events and news that were sensitive for and avoided by the Russian government.[10] The pro-government portals covered these topics significantly less than the independent portals, and the former are much closer to Russian state propaganda from this point of view than the latter. We interpret these results as a clear sign of Russian state influence. The results of logit regression estimations underline the fact that coverage of sensitive issues does not differ significantly in the pro-government portals (pestisracok.hu and lokal.hu) and in mindenegyben.com and hidfo.ru. All these news portals have covered these sensitive issues minimally. Thus, the pro-government portals listed behave the same way as

[8] Before 2014, origo.hu had a neutral, moderate, data-based style (Mako, 2011). On the issue of the dismissal of the editor-in-chief, see https://bit.ly/2q6WeIW, https://bit.ly/2Jh4KNv, and Magyari, 2014.
[9] See Figure 3 and Table 2.
[10] See Figures 4 and 5 and Tables 4 and 5.

hidfo.ru does.

7. We assume that Russian state-run propaganda uses and fosters a special discourse pattern that aids in dehumanizing refugees.[11] In the first step of this process, they use the word "migrants" instead of "refugees", because the latter has a strong positive meaning and the former has a rather neutral one. In the second step, they interconnect "migrants" with a negative label ("terror", "violence", "disaster", "flood" etc.). The inventor of this type of discourse strategy ultimately achieves dehumanization:[12] the receivers (the recipients of the propaganda) interconnect "migrants" with negative meanings, and they accept the implicit statements *"if migrant, then violence/terror/disaster"* and so on.[13]

We discovered that the use of the word "migrant" does not differ significantly between hidfo.ru and one of the Hungarian pro-government portals, 888.hu. From this perspective, 888.hu is the same as Russian state propaganda. If we check the length of the articles and time of publication, the results from our estimations show that the words used by 888.hu do not differ significantly from those of hidfo.ru, and the pro-government portals are much closer to the language of Russian state propaganda than the independent news portals.[14]

8. The interconnection of the word "migrant" and the theme of terror was found mostly on hidfo.ru and on one of the pro-government portals (lokal.hu). From this aspect, lokal.hu does not differ from Russian state propaganda.

9. The results of logit estimations point out that as regards the connection between "migrant" and the theme of terror, the pro-government portals have entirely adopted the logic of Russian state propaganda. There is no significant difference in content between hidfo.ru, on the one hand, and 888.hu and lokal.hu, on the other. From this perspective, the Hungarian pro-government portals operate much like Russia's state propaganda portals.[15] Origo.hu is closer to Russian state propaganda than the independent news portals.

10. The interconnection of the word "migrant" and the theme of violence is most common on hidfo.ru. Within articles that contain the word "migrant", 13% of the articles during the period 2015–2017 used words that refer to violence. From that perspective, 888.hu and mindenegyben.com are the

[11]On press coverage of the refugee crisis in EU, see Berry et al., 2015.
[12]On discourse analysis of dehumanization, see van Dijk, 1987, 1993. More generally, on the role of propaganda in this process, see Arendt, 1951; Chapoutot, 2013, 2014; Klemperer, 1975. Finally, on empirical analysis of the consequences of such propaganda in a social conflict, see Yanagizawa-Drott, 2014.
[13]On the role of the anti-migrant propaganda in Hungary's online media, see Balogh et al., 2016; Bernáth & Messing, 2015.
[14]See Tables 6–8 and Figures 6–7.
[15]See Tables 9–12 and Figures 8–9.

closest to hidfo.ru, while origo.hu and mno.hu are the farthest from it.[16]

11. The results from logit estimations on the probability of the interconnection between the word "migrant" and words that refer to violence demonstrate that the pro-government portals do not differ significantly from Russian state propaganda.[17] The former operate as if they were part of the Russian state-run propaganda apparatus.

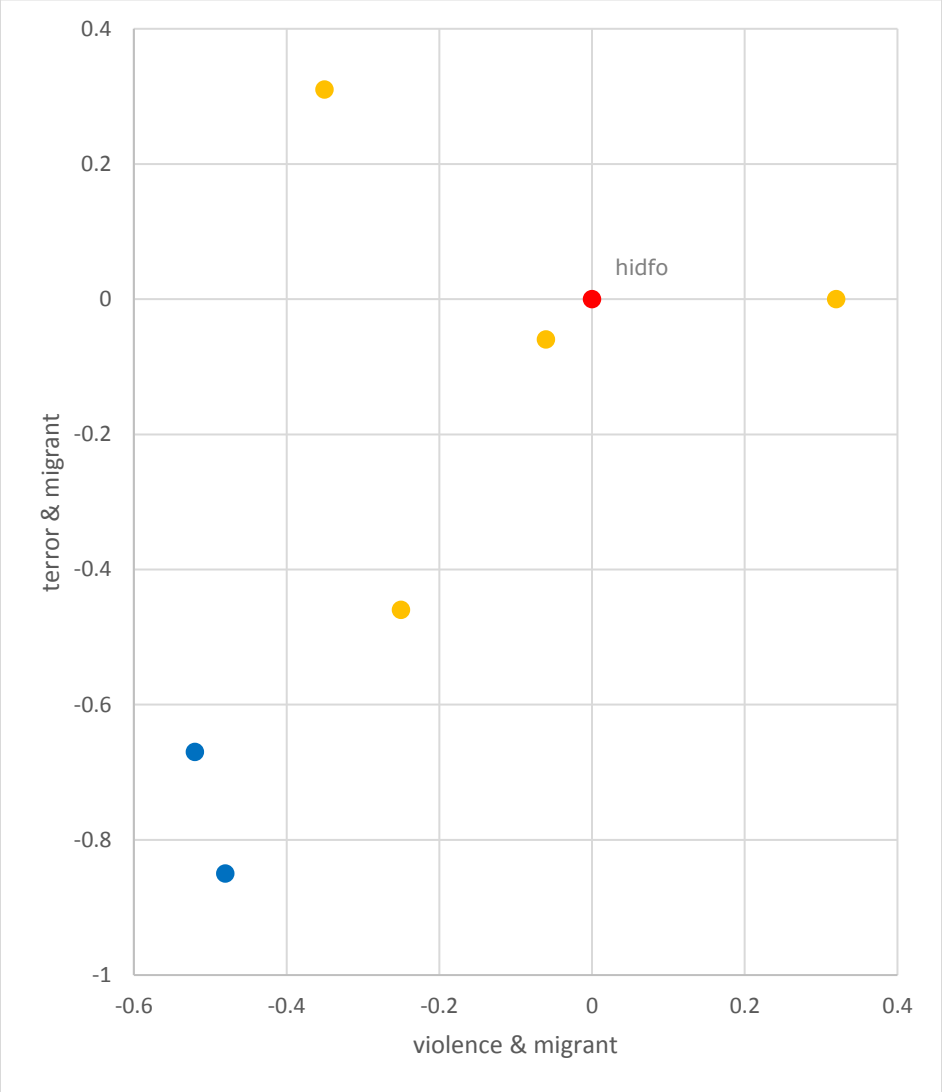
12. Our distributive semantic analysis shows that the word structure of the pro-government portals is the closest to the Russian state propaganda portal hidfo.ru.[18]

13. When we take into consideration both implicit statements from Russian state propaganda that use the discursive techniques of dehumanization, i.e. *"if migrant, then terror"* and *"if migrant, then violence"*, the results show that the Hungarian pro-government portals are close to the Russian state propaganda portal hidfo.ru.[19] The news portals close to the Orbán government embrace the latter (see Figure A).

14. Finally, we mapped the Hungarian news portals and hidfo.ru on an imaginary geographical map. Calculating their distances from hidfo.ru and placing them on a map where we identify hidfo.ru as Moscow, we transformed the distances of the Hungarian online portals from hidfo.ru to a geographical distance from Moscow (see Table A). On this imaginary map, 888.hu is situated as close to Moscow as a small city called Dubna; lokal.hu is located at Voronezh; magyaridok.hu at Chernobyl; pestisracok.hu at a small city in Ukraine called Zhytomyr; and origo.hu at Volgograd. Among the Hungarian online portals, only the two independent portals, index.hu and mno.hu, are located in Hungary on this map.

[16]See Tables 13–14 and Figures 10–11.
[17]See Tables 15–16.
[18]See Tables 17–18 and Figures 12–13.
[19]See Figures 14–16.

Figure A. Positions of the news portals under analysis in a coordinate system created by the "migrant and TERROR" and "migrant and VIOLENCE" conceptual relationships, Sept. 2015–Dec. 2017, N = 475,617



Notes: The coordinates for the news portals are controlled by the publication dates (trimesters) and lengths of the articles (logarithm of number of words).
Red point: hidfo.ru, Russian state propaganda portal
Yellow points: pro-government propaganda news portals
Blue points: independent news portals
X axis: Information on the share of articles which contain the "if migrant, then violence" implicit statement: a higher value represents a higher probability of this statement occurring. The value for hidfo.ru is the reference.
Y axis: Information on the share of articles which contain the "if migrant, then terror" implicit statement: a higher value represents a higher probability of this statement occurring. The value for hidfo.ru is the reference.
Reference: hidfo.ru, with coordinates (0,0)
Source: CRCB

Table A. Imaginary geographical distance from Moscow (hidfo.ru) of the news portals under analysis, Sept. 2015–Dec. 2017, N = 475,617

News portal	Distance from hidfo.ru[1]	City	Actual geographical distance from Moscow[2] km	Relative geographical distance from Moscow
index.hu	100	Budapest	1480	100
mno.hu	92	Miskolc	1353	91
origo.hu	57	Volgograd	895	60
pestisracok.hu	54	Zhytomyr	830	56
magyaridok.hu	48	Chernobyl	680	46
mindenegyben.com	37	Penza	541	37
lokal.hu	33	Voronezh	464	31
888.hu	9	Dubna	112	8
hidfo.hu	0	Moscow	0	0

1. Distances are based on the estimations of odds of the implicit statements "if migrant, then TERROR" and "if migrant, then VIOLENCE" when the distance between index.hu and hidfo.ru equals 100.
2. This is based on a geographical distance between Budapest and Moscow. These cities are in Hungary: Budapest and Miskolc; these are in Ukraine: Zhytomyr and Chernobyl; and these are in Russia: Volgograd, Penza, Voronezh, Dubna, and Moscow. Source of actual geographical distances: http://bit.ly/2G0vrnR
Source: CRCB

15. Summarizing our results from the qualitative and quantitative content analysis and distributive semantics, we assume that there are similar or identical patterns on the pro-government portals and Russian state propaganda with regard to the lack of sensitive issues related to the Russian government, the words used and the implicit statements on refugees. That is, the 888.hu, lokal.hu, magyaridok.hu, and pestisracok.hu online portals can be identified as being close to Orbán's government, but we can also identify them as being close to Russian state propaganda.

Conclusions

1. Our initial hypothesis was that we cannot detect any equivalence or similarity between the Hungarian online news portals under examination and the contents of the Hungarian-language, Russian-operated state propaganda portal hidfo.ru. At the beginning of our investigation, we assumed that we would find no sign of Russian state propaganda in Hungary's online media. However, our empirical results (the results of the logit estimations) did not align with our initial hypothesis on ruling out equivalence or similarity between the various pro-government news portals and hidfo.ru.

2. Furthermore, we must also reject our weaker assumption that there is no difference between the pro-government and independent news portals in how they use and follow the language and logic of Russian state propaganda. In other words, the independent news portals, index.hu and mno.hu, are the farthest from the content of the Russian state propaganda portal (hidfo.ru), and the pro-government news portals are the closest to it. According to the results from our qualitative and quantitative content analysis and our regression estimates, the news portals close to the Orbán government can be considered as being close to Russian state propaganda as well.

3. Therefore, the influence of Russia's state-run propaganda apparatus on Hungary's online media, especially on news outlets associated with the Orbán government, cannot be neglected. While in other countries, state institutions would endeavour to limit such unwelcome influence, this cannot be said of Hungary, where the government seems to have opened the country's gates to the Russian state-run propaganda machine. In other countries, this kind of propaganda is disseminated consciously or unconsciously through social media such as Facebook and Twitter, as for example before and during Brexit, the Catalan referendum, the recent general elections in Italy, and the last presidential election in the USA. Despite the lack of data on how Twitter and Facebook could be used in the same way in Hungary, it is certain that it is not hidfo.ru which fills this void – since it has very little influence in the Hungarian online community – but rather the online newspapers associated with and financed by the Orbán government (through advertising). Aside from the likely involvement of social media, these pro-government news portals provide a perfect platform for exposing a wide Hungarian audience to information which is almost equivalent to that spread by Russia's state-run propaganda apparatus. These online news portals associated with the Hungarian government adopt and use the same implicit terminology and arguments as Russian state propaganda does. It is therefore surprising that these activities are paradoxically financed by Hungarian – and indirectly by EU – taxpayers' money.

References

Abdelmonem, A., Bavelaar, R. E., Wynne-Hughes, E., Galán, S. 2016. *The 'Taharrush' connection: xenophobia, Islamophobia, and sexual violence in Germany and beyond*. Jadaliyya. 1 March 2016, http://bit.ly/2IunZTt

Alandete, D. 2017. *How the Russian meddling machine won the online battle of the illegal referendum.* El Pais, 13 November 2017, http://bit.ly/2I1PPX0

Alandete, D., D. Verdú. 2018. *How Russian networks worked to boost the far right in Italy.* El Pais, 1 March 2018, http://bit.ly/2oEfQ6q

Allcott, H., M. Gentzkow. 2017. "Social Media and Fake News in the 2016 Election". *Journal of Economic Perspectives.* Volume 31, Number 2, Spring pp. 211–236. doi=10.1257/jep.31.2.211

Alto Data Analytics. 2018. *The construction of anti-immigration electoral messages in Italy. The role of foreign media in the anti-immigration debate one year before the 2018 election.* alto.analytics.com. http://bit.ly/2FSD2Wg

Antal, L. 1976. *A tartalomelemzés alapjai* (Foundations of content analysis). Budapest: Magvető Kiadó.

Applebaum, A. 2017. *The Dutch just showed the world how Russia influences Western European elections.* washingtonpost.com, 8 April 2017, http://wapo.st/2p7oM2R

Arendt, H. 1973 [1951]. *The Origins of Totalitarism. New edition with added prefaces.* New York: Harcourt.

Balogh, K., N. Fülöp, V. Ilyés, Z. Varjú. 2016. *Migránsok, menekülők, bevándorlók: mit sulykol a média? A bevándorlás szöveges és képi reprezentációja a magyar online médiában* (Migrants, refugees, immigrants: What is the media saying? Textual and visual representation of migration in Hungary's online media). nyest.hu, 29 September 2016. http://bit.ly/2p7KvbK

Bátorfy, A. 2015. *Hogyan működött Orbán és Simicska médiabirodalma?* (How did Orbán and Simicska's media empire operate?) kreativ.hu, 18 February 2015, http://bit.ly/2I05gis

Bátorfy, A. 2016. *Néhány adat arról, hogy a kormányközeli médiát hogyan tartja el a "piac"* ([Some data on how the government-affiliated media supports the "market"]). atlatszo.hu, 11 October 2016, http://bit.ly/2dTYoHd

Bátorfy, A. 2017a. *A kormánypárti sajtó és a közmédia is terjeszti a putyinista propagandát Magyarországon* (The pro-government press and public media spread Putinist propaganda in Hungary too). atlatszo.hu, 28 April 2017, http://bit.ly/2oDuVYa

Bátorfy, A. 2017b. *Kilenc grafikon a kormánymédia túlsúlyáról – így érvényesül a sokszínű tájékoztatás elve Magyarországon* [Nine charts on the predominance of the government media – this is what a diversity of information looks like in Hungary]. atlatszo.hu, 22 November 2017, http://bit.ly/2hUJe8y

Bátorfy, A. 2018. *Fedezze fel a kormányközeli médiabirodalmat!* [Discover the government-affiliated media empire] atlatszo.hu, 11 January 2018, *http://bit.ly/2CWuWsv*

Bátorfy, A., Z. Szánthó. 2016. *Bivalybasznádi álhírvállalkozók és Oroszország magyar hangjai* [Bivalybasznád's purveyors of fake news and Russia's voices in Hungary]. vs.hu, 7 April 2016, http://bit.ly/2oVsJag

Bennett, M. T. 2018. *Transparency is the best way to combat Russian propaganda.* The Washington Post, 23 January 2018. http://wapo.st/2D999xX

Berelson, B. 1952. *Content analysis in communication research.* Glencoe, IL: The Free Press.

Bernáth, G., V. Messing. 2015. "Bedarálva. A menekültekkel kapcsolatos kormányzati kampány és a tôle független megszólalás terepei" [The bulldozer: The government's anti-immigration campaign and platforms for independent voices]. *Médiakutató*, no. 4. pp. 7–17. http://bit.ly/2FDXvNo

Berry, M., I. Garcia-Blanco, K. Moore. 2015. *Press Coverage of the Refugee and Migrant Crisis in the EU: A Content Analysis of Five European Countries*. Genève: UNHCR, http://bit.ly/2ImM4vx

Cadwalladr C., E. Graham-Harrison. 2018. *Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach*, The Guardian. 17 March 2018. http://bit.ly/2DCMWZb

Chapoutot, J. 2013. *Fascisme, nazisme et régimes autoritaires en Europe – 1918–1945*. Paris: Presses Universitaires de France.

Chapoutot, J. 2014. *La loi du sang. Penser et agir en nazi.* Paris: Gallimard

CRCB. 2015. *Impact Assessments Public Consultation and Legislation in Hungary 2011–2014.* Budapest: CRCB. http://bit.ly/1q8oGXQ

CRCB. 2016a*. Refugee Crisis in Hungary – 2015. A Content Analysis of Articles from on-line Version of Eight News Outlets*. Budapest: CRCB. http://bit.ly/2Fq4ava

CRCB. 2016b. *Járadékvadászat és a haveri kapitalizmus modelljei a magyar energiapiacon. 2011–2015. A magyar kormány – MVMP – MET történet elemzése* [Rent seeking and models of crony capitalism on the Hungarian energy market, 2011–2015: An analysis of the story of the Hungarian government, MVMP, and MET]. Budapest: Energiaklub, http://bit.ly/2p2ZOl8

CRCB. 2018. *Bangladesh, Zambia & Hungary. Data publication practice of the Hungarian Public Procurement Authority.* CRCB Research Notes: CRCB - RN/2017:3, Budapest: CRCB. http://bit.ly/2Gjq6cc

Czibik, Á., B. Pápay, Z. Szántó, I. J. Tóth. 2016. *Computer Assisted Content Analysis of the print press coverage of corruption in Hungary*. ANTICORRP Program. Budapest: Corvinus University of Budapest. http://bit.ly/2F2VWMO

Czibik, Á., A. Ferenczi, I. J. Tóth. 2013. *Print media expenditure of government institutions and state-owned companies in Hungary, 2003–2012. Descriptive statistics and observations.* Budapest: CRCB. http://bit.ly/2fUTJmZ

Czinkóczi, S. 2017. *Ennyit arról, mi maradt a vidéki sajtó sokszínűségéből, mióta Mészáros Lőrinc kezébe került* [So much for what's left of the diversity of the regional media since it fell into Lőrinc Mészáros's hands]. 444.hu, 15 April 2017, http://bit.ly/2oMYio5

El Pais. 2018. *Russian public media spread Catalan pro-independence propaganda*. El Pais, 2 January 2018, http://bit.ly/2CWlCoD

Erdelyi, P. 2016. *A magyar közmédia úgy terjeszti az orosz háborús propagandát, mintha közvetlenül Moszkvából szerkesztenék* [Hungarian public media spread Russian war propaganda as if edited from Moscow]. 16 December 2016. 444.hu, http://bit.ly/2FP4eVE

Feledy, B. 2016. *Ömlik az orosz propaganda, és sokáig észre sem vettük*. index.hu, April 4th, 2016. http://bit.ly/2DGJ3SU

George, A. L. 2009 [1959]. *Propaganda analysis: A study of inferences made from Nazi propaganda in World War II.* In Krippendorff, K., M. A. Bock (eds.). *The Content Analysis Reader.* Thousand Oaks, California: SAGE, pp. 21–27.

Globsec. 2017a. *How vulnerable are the Visegrad four societies?* http://bit.ly/2oNDRr9

Globsec. 2017b. *Vulnerability Index. Subversive Russian Influence in Central Europe.* Globsec Policy Institute, http://bit.ly/2FjB3w9

Globsec. 2018. *Information war monitor for Central Europe: January 2017 Part 1,* Globsec Policy Institute, http://bit.ly/2G513Mf

The Guardian. 2017. *Russia waging information war against Sweden, study finds.* 11 January 2017. http://bit.ly/2jDybQm

Guriev, S., D. Treisman. 2015. *How Modern Dictators Survive: An Informational Theory of the New Authoritarianism.* NBER Working Paper No. 21136. http://bit.ly/2nIQgMq

Gressel, G. 2016. *Russian-sponsored anti-refugee rhetoric in Germany bears the hallmarks of a hybrid intervention*. ECFR, http://bit.ly/20cn4rJ

Hajdu, M., B. Pápay, Z. Szanto, I. J. Tóth. 2018. "Content analysis of corruption coverage: Cross-national differences and commonalities". *European Journal of Communication.* Volume 33, pp 7–21; doi:10.1177/0267323117750673

Hajdu, M., B. Pápay, Z. Szántó, I. J. Tóth. 2016. *Human Assisted Content Analysis of the print press coverage of corruption in Hungary.* ANTICORRP Program. Budapest: Corvinus University of Budapest. http://bit.ly/2F4qk5o

Hallin, D. C., P. Manchini (eds.). 2004. *Comparing media systems: Three models of media and politics.* Cambridge: Cambridge University Press.

Hallin, D. C., P. Manchini (eds.). 2012. *Comparing Media Systems Beyond the Western World.* Cambridge: Cambridge University Press.

Holmberg, S., Rothstein, B. (eds.). 2012. *Good Government. The Relevance of Political Science.* Cheltenham: Edward Elgar.

Isaac, M., D. Wakabayashi. 2017. *Russian Influence Reached 126 Million Through Facebook Alone.* nytimes.com, 30 October 2017. http://nyti.ms/2h0YQH3

Juhász, A., P. Szicherle. 2017. *The political effects of migration-related fake news, disinformation and conspiracy theories in Europe*. Budapest: Friedrich Ebert Stiftung & Political Capital, http://bit.ly/2GWS3Wb

Kaminski, M. 2015. *'All the terrorists are migrants': Viktor Orbán on how to protect Europe from terror, save Schengen, and get along with Putin's Russia.* Politico.eu. 23 November 2015. http://politi.co/2CTBg8W

Klemperer, V. 2006 [1975]. *The Language of the Third Reich.* London: Continuum International Publ.

Kontra, M. 2013. Átlagos mondathossz a BUSZI-2-ben? [Average sentence length in the BUSZI-2?] Magyar Nyelv 109 (2013): 342–343. http://bit.ly/2oTZOWt

Kornai, J., Rothstein, B., Rose-Ackerman, S. (eds.) 2004. *Creating Social Trust in Post-Socialist Transition.* New York: Palgrave Macmillan.

Kornai, J. 2015. "Hungary's U-Turn: Retreating from Democracy". *Journal of Democracy*, July 2015, Volume 26, Number 3, pp. 34–48, http://bit.ly/2oAasBn

Kornai, J. 2016. "The system paradigm revisited: Clarification and additions in the light of experiences in the post-socialist region". *Acta Oeconomica,* Volume 66, Issue 4. pp. 547-596. https://doi.org/10.1556/032.2016.66.4.1

Kovács, É., I. J. Tóth. 1992. "Ki mit mondott 1990-ben? Választási pártprogramok

tartalomelemzése" [Who said what in 1990? Content analysis of election party programs], *Politikatudományi Szemle*, Vol. 1. No. 1. pp

Krippendorff, K., M. A. Bock (eds.). 2009. *The Content Analysis Reader.* Thousand Oaks, CA: SAGE

Krippendorff, K. 1980. *Content Analysis. An introduction to its methodology.* Thousand Oaks, CA: SAGE

Kroet, C. 2017. *Russia spread fake news during Dutch election: report*. politico.eu, 4 April 2017, http://politi.co/2oX6b8P

Llewellyn, C., L. Cram. 2017. *We find Brexit-related Tweets from Twitter's list of suspected Russian troll accounts.* Neuropolitics Blog, 16 November 2017, *http://bit.ly/2FiN1He*

Magyari P. 2014. *Politikai okokból kellett távoznia az Origo főszerkesztőjének, állítja egykori helyettese* [Origo editor-in-chief had to leave for political reasons, claims one-time deputy]. 444.hu, 22 August 2014, http://bit.ly/2tkRzau

Magyarországi Tartalomszolgáltatók Egyesülete (MTE) és IyzR. 2017. *Tartalomfogyasztás és -megosztás a Facebookon 2016* [Content consumption and distribution on Facebook, 2016], http://bit.ly/2qzn12J

Makó, A. 2011. "Az őszödi beszéddel kapcsolatos online sajtómegjelenések néhány jellegzetessége az Index és az Origo hírportálokon [Certain features of online media coverage of the Őszöd speech on the Index and Origo news portals]" *Médiakutató*, no. 4., http://bit.ly/2tzvMMz

Mayer, J. 2018. *Christopher Steele, the Man Behind the Trump Dossier. How the ex-spy tried to warn the world about Trump's ties to Russia. The New Yorker,* 12 March 2018. http://bit.ly/2Hagfol

Medvegy, G., D. Szalay. 2017. *Eladták az indexet* [Index sold]. hir24, 20 April 2017, http://bit.ly/2CXSEEF

Medvegy, G. 2017. *Ha Putyin úgy gondolja, ez az ország az övé, akkor elmegy a falig* [If Putin thinks this country is his, he'll go all the way]. hir24, 3 February 2017, http://bit.ly/2nAdxmE

Meister, S. 2016. *The "Lisa case": Germany as a target of Russian disinformation.* NATO / OTAN. http://bit.ly/2FXUrfl

MTA Nyelvtudományi Intézet. 1998–2006. *Magyar Nemzeti Szövegtár*. http://mnsz.nytud.hu/

Németh, R. 2014. *Oksági következtetés az empirikus szociológiai kutatásban. Habilitációs dolgozat* [Causal inference in empirical sociology research: Habilitation dissertation]. Budapest: ELTE, http://bit.ly/2IoP0YB

Neuendorf, K. A. 2002. *The Content Analysis Guidebook.* Thousand Oaks, CA: SAGE

Oliker, O. 2015. *Russia's new military doctrine: Same as the old doctrine, mostly.* The Washington Post, 15 January 2015. http://wapo.st/2pi5N7F

Oremus, W. 2017. *Russia Used Fake News to Influence the Election, Says U.S. Intelligence Chief*. slate.com, 5 January 2017, http://slate.me/2iJ5BtG

Panyi, S. 2017a. *Orbánt is eszközként használja Putyin a Nyugat ellen* [Even Orbán used by Putin as tool against West]. index.hu, 3 February 2017, http://bit.ly/2k2o9ov

Panyi, S. 2017b. *Egy magyar titkosszolga részletesen felfedi, mennyire súlyos az orosz fenyegetés* [Hungarian secret service member details extent of Russian threat]. index.hu, 21 March 2017, http://bit.ly/2mpgfLf

Panyi, S. 2017c. *The Great Escape of 'KGBéla', Hungarian MEP Accused of Spying for Russia*. index.hu http://bit.ly/2ozBskA

Panyi, S. 2017d. *Satan's hand: Russian meddling behind Budapest's metro chaos.* vsquare.org, http://bit.ly/2F7rdu3

Panyi, S. 2018. *Nuclear lobbyists, Judo championship and Putin's tricks*, vsquare.org, http://bit.ly/2EMbdkg

Paul, C., M. Matthews. 2016. *The Russian "Firehose of Falsehood" Propaganda Model: Why It Might Work and Options to Counter It.* Santa Monica, CA: RAND Corp. http://bit.ly/2jDqPZT

Papp, L. T., B. Oroszi. 2014. *Nemzeti radikális hírportálok: Oroszország magyar hangjai* [Nationalist radical news portals: Russia's voices in Hungary]. atlatszo.hu, 26 August 2014, http://bit.ly/2nLX4e9

PCBLOG. 2014. *Putyin üzenőfüzete – A Hidfo.net és a kommunistabarát szélsőjobboldal* [Putin's message book: hidfo.net and the communist-friendly far right]. atlatszo.hu, 28 August 2014, http://bit.ly/2G61lmc

Pearl, J. 2000. *Causality: Models, Reasoning, and Inference*. New York: Cambridge University Press.

Polyakova, A., M. Kounalakis, A. Klapsis, L. S. Germani, J. Iacoboni, F. de Borja Lasheras, N. de Pedro. 2017. *The Kremlin's Trojan Horses: Russian Influence in Greece, Italy, and Spain.* Washington D.C.: Atlantic Council. http://bit.ly/2I1FElj

Radi A. 2017. *„Meghívott behatolás" a magyar kormánymédiába – Rácz András a putyini információs hadviselésről ["Invasion by invitation" in the Hungarian goverment media: András Rácz on Putin's information warfare].* atlatszo.hu, 23 May 2017, http://bit.ly/2pvhLtP

Shu, K., A. Sliva, S. Wang, J. Tang, H. Liu. 2017. *Fake News Detection on Social Media: A Data Mining Perspective,* http://bit.ly/2F5fd0f

Szántó, Z., I. J. Tóth, P. Manchini, R. Marchetti. 2018. *The Political Instrumentalization of Media Coverage of Corruption: Indices and Empirical Results.* mimeo

S. Bíró, Z. 2017. *Előadás a Millennium Intézet 2017. március 23-ai "Energiaforradalom vagy Paks? Mivel világítunk 20 év múlva?" c. konferenciáján*, http://bit.ly/2oUniMJ

Szeidl, A., F. Szűcs. 2016a. A jobboldal jobban lenyúlta az állami hirdetési pénzeket, mint a baloldal *[The right has grabbed state advertising money better than the left]. index.hu.* http://bit.ly/2FNoRS3

Szeidl, A., F. Szűcs. 2016b. *Pénzért cserébe elhallgatták a híreket? [News suppressed in exchange for money?]. index.hu.* http://bit.ly/2oJhcMC

United Nations. 2017. *International Migration Report*. New York: UN. December 2017. http://bit.ly/2BDqAtp

Uslaner, E. M. 2000. *Trust, Democracy, and Governance. Prepared for the European Consortium for Political Research (ECPR)* Workshop 13 on Voluntary Associations, Social Capital and Interest Mediation: Forging the Link, April 2000.

Spinoza, B. (1670): *Tractatus-theologico-politicus*. Hamburg: Apud Henricum Künraht, http://bit.ly/2tcznA (In English: https://bit.ly/2q25ePO)

Tóth, I. J., M. Hajdu. 2017. *Intensity of Competition, Corruption Risks and Price Distortion in the Hungarian Public Procurement – 2009–2016*. Working Paper Series: CRCB-WP/2017:2, Budapest: CRCB. http://bit.ly/2prJVsW

Tóth, I. J., M. Hajdu. 2018a. *Cronyism in Hungary: Empirical analysis of public tenders 2010–*

2016., Presentation at Conference "János Kornai's 90th birthday", Budapest, 21 February 2018. http://bit.ly/2DiNa7F

Tóth, I. J., M. Hajdu. 2018b. *How does the Kleptocratic State Work in Hungary? A research note based on Hungarian public procurement data*, Budapest: CRCB, http://bit.ly/2ByPJBu

van Dijk, T. A. 1987. *Communicating Racism: Ethnic Prejudice in Thought and Talk.* Newbury Park, CA: SAGE Publ. http://bit.ly/2FVFmek

van Dijk. T. A. 1993. *Elite Discourse and Racism.* Newbury Park, CA: SAGE. http://bit.ly/2pulVlD

Vosoughi, S., D. Roy, S. Aral. 2018. "The spread of true and false news online". *Science. 359, pp. 1146–1151. http://bit.ly/2pc80k7*

Walker, P. 2017. *Russia 'spreading fake news about refugees to sow discord in Europe' says ex-spy*, independent.co.uk, https://ind.pn/2o3QYT9

Weber, R. P. 1990. *Basic Content Analysis. Second Edition.* Newbury Park, CA: SAGE

Xiaoyan, Q., D. F. M. Oliveira, A. S. Shirazi, A. Flammini, F. Menczer. 2017. "Limited individual attention and online virality of low-quality information". *Nature Human Behaviour, V*olume 1, Article number: 0132 (2017) doi:10.1038/s41562-017-0132

Yanagizawa-Drott, D. 2014. "Propaganda and Conflict: Evidence from the Rwandan Genocide". *The Quarterly Journal of Economics*, Volume 129, Issue 4, 1 November 2014, pp. 1947–1994, https://doi.org/10.1093/qje/qju020

Zhao, C. 2018. *Russian Bots' Top Hashtag Is Schumer Shutdown as Government Closure Reaches Day Three.* Newsweek, 22 January 2018, http://bit.ly/2oXgImj

Annex

A1. Figures and tables

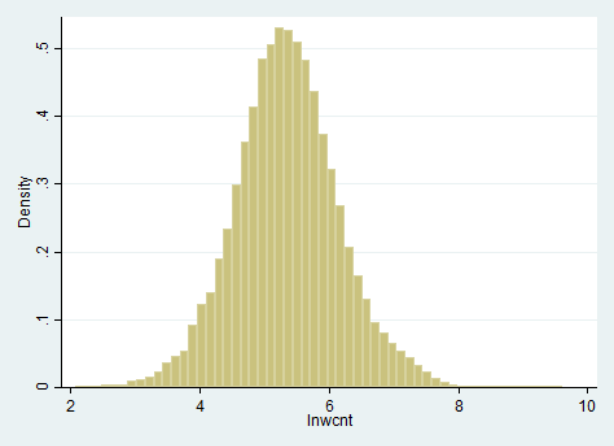
Table 1. Median and mean values for the number of words on the news portals under analysis, 2010–2017, N = 979,706

	Words				
Name of site	Mean	Median	Standard deviation	Total	Number of articles
hidfo	264.1151	218	177.9391	839,886	3,180
mindenegyben	211.4791	139	282.8601	5,056,888	23,912
888	249.4387	192	222.6724	7,300,573	29,268
magyaridok	296.1227	244	238.7270	3.31E+07	111,783
lokal	211.6199	171	163.3981	9,965,816	47,093
pestisracok	320.2814	241	283.6359	9,628,941	30,064
origo	313.6711	191	373.8999	8.26E+07	263,314
index	255.4776	163	318.8546	9.52E+07	372,460
mno	344.4667	250	315.3096	3.40E+07	98,632
Total	283.3689	190	318.4554	2.78E+08	979,706

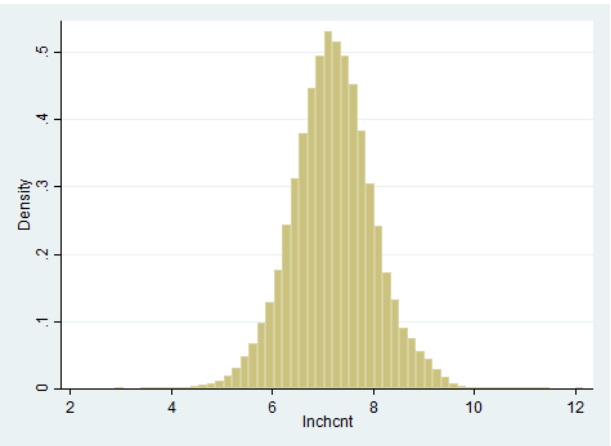
Source: CRCB

Figure 1. Histogram of article analysed by logarithm of number of words and number of characters, N = 979,706

a. Logarithm of number of words

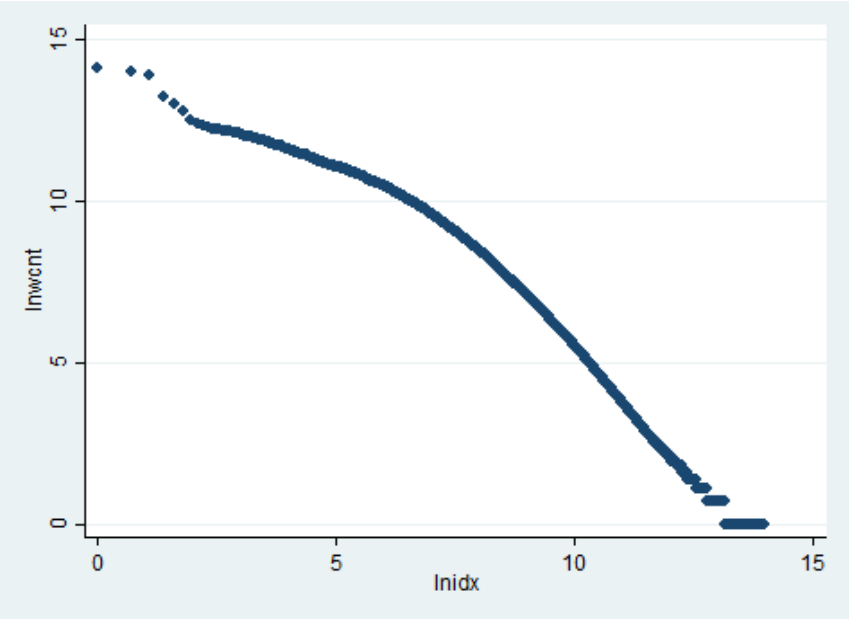


b. Logarithm of number of characters



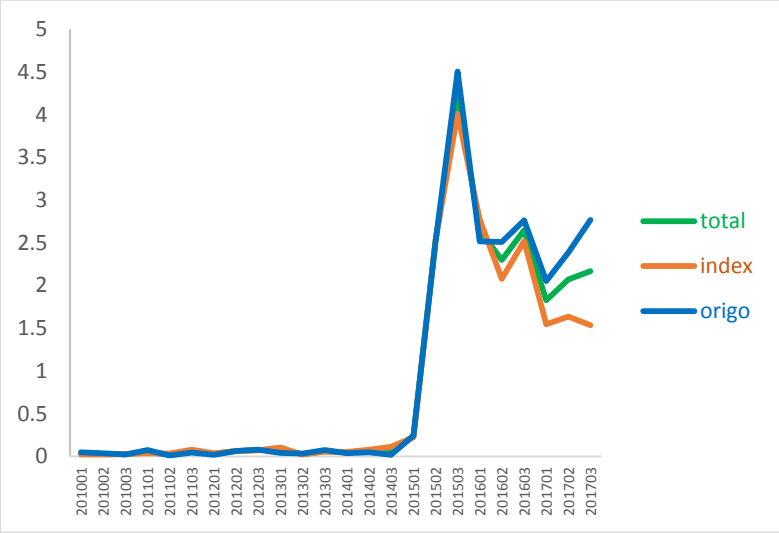
Source: CRCB

Figure 2. Distribution of words in the corpus by how many times a given word occurred in the corpus, log–log, (number of articles: 1,027,653; number of words: 278 million)



X axis: the logarithm of the rank order of a given word
Y axis: the logarithm of the number of occurrences of a given word in the corpus
Note: See Zipf's law, https://bit.ly/2l6RJgY
Source: CRCB

Figure 3. Share of articles that contain the word "migrant" on origo.hu and index.hu, %, trimesters, Jan. 2010–Dec. 2017, N = 635,774



Source: CRCB

Table 2. Estimation of odds for articles that contain the word "migrant" within all articles that contain the category REFUGEE on index.hu and origo.hu, 2010–2017, logit estimations

	index.hu vs. origo.hu pr(migrant=1)	index.hu vs. origo.hu pr(migrant=1) if REFUGEE=1
	(1) coeff.	(2) coeff.
origo.hu, Jan. 2010–June 2014	-0.4401**	-0.4223*
origo.hu, July 2014–Dec. 2017	0.2059**	0.4523**
Reference:	index.hu	index.hu
Trimesters (QDRM)	Y	Y
Logarithm of number of words (LNWCNT)	Y	Y
N: Jan. 2010–June 2014	354,433	4,830
N: July 2014–Dec. 2017	281,341	15,814

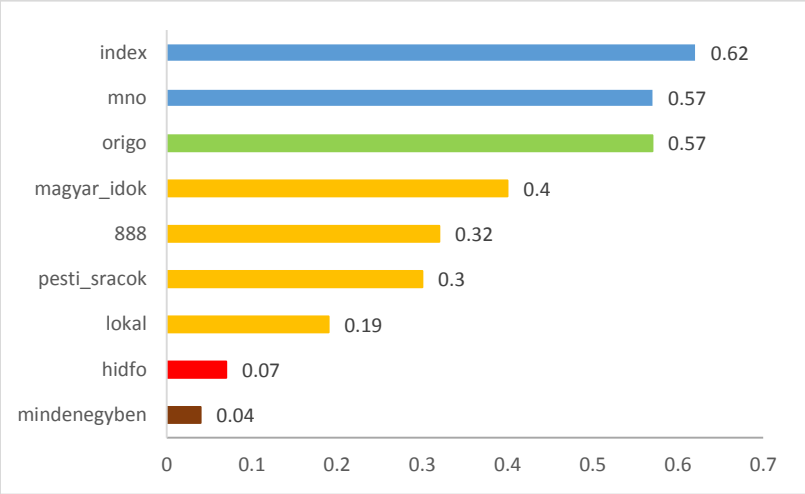
Note: Prior to the dismissal of the editor-in-chief at origo.hu: Jan. 2010–June 2014
After the dismissal of the editor-in-chief at origo.hu: July 2014–Dec. 2017
**p < 0.05; **p < 0.01*
Source: CRCB

Table 3. Share of articles that contain the category NEGATIVE on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 475,617

News portal	pr(NEGATIVE = 1)	pr(RUSSIAN = 1)	pr(NEGATIVE =1) if RUSSIAN=1
	%	%	%
hidfo	0.07	29.87	0.25
mindenegyben	0.04	3.08	0.17
888	0.32	12.03	2.19
magyaridok	0.40	10.71	3.12
lokal	0.19	5.34	2.53
pestisracok	0.30	9.57	2.76
origo	0.57	8.11	6.06
index	0.62	11.74	4.39
mno	0.57	11.31	4.35
Total	0.46	9.78	3.93
Chi2(8)	1.7e+04**	1.7e+04**	2.8e+03**

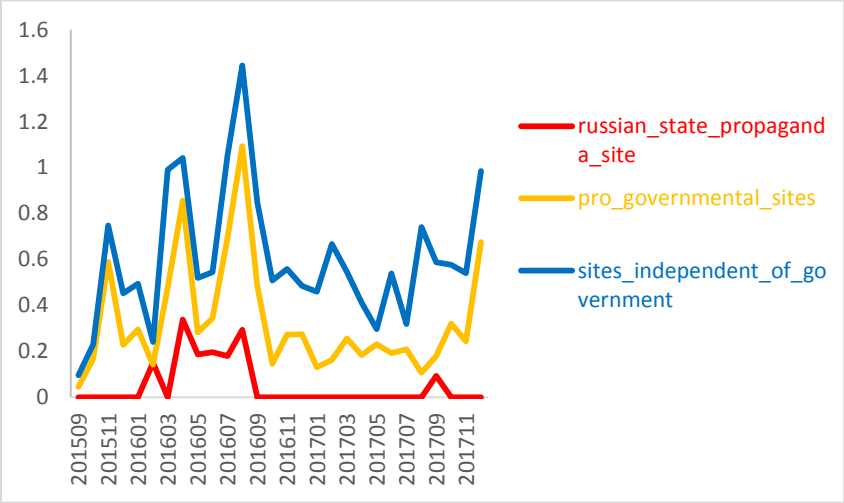
**p < 0.05; **p < 0.01*
Sources: CRCB

Figure 4. Share of articles that contain the category NEGATIVE on the nine sites under analysis, %, Sept. 2015–Dec. 2017, N = 475,617



Source: CRCB

Figure 5. Share of articles that contain the category NEGATIVE on pro-government propaganda sites, the Russian state propaganda site, and independent news portals, %, months, Sept. 2015–Dec. 2017, N = 475,617



Sources: CRCB

Table 4. Estimation of odds for articles that contain the category NEGATIVE on the nine news portals under analysis, Sept. 2015–Dec. 2017, N = 475,617, logit estimation

News portal	pr(NEGATIVE=1) coeff.
mindenegyben	-0.4872
888	1.5019*
magyaridok	1.6289*
lokal	1.1123
pesti_sracok	1.3429
origo	2.0526**
index	2.0873**
mno	1.9623**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	475,617

**p < 0.05; **p < 0.01*
Source: CRCB

Table 5. Estimation of odds for articles that contain the category NEGATIVE on the nine news portals under analysis (in groups), Sept. 2015–Dec. 2017, N = 475,617, logit estimation

	pr(NEGATIVE=1) coeff.
Pro-government propaganda portals	1.8881**
origo	2.4481**
Independent news portals	2.4262**
Reference: Russian state propaganda portal	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	475,617

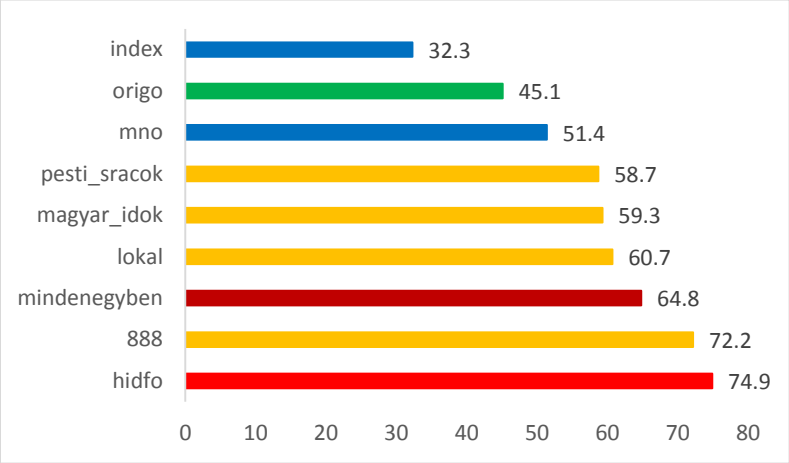
**p < 0.05; **p < 0.01*
Source: CRCB

Table 6. Share of articles that contain the word "migrant" and the category REFUGEE on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 475,617

News portal	pr(mig_d = 1)	pr(REFUGEE= 1)	pr(mig_d = 1) if REFUGEE = 1
	%	%	%
hidfo	22.00	29.39	74.87
mindenegyben	1.52	2.35	64.76
888	18.60	25.77	72.18
magyaridok	8.94	15.09	59.27
lokal	4.58	7.54	60.72
pestisracok	12.14	20.69	58.69
origo	2.75	6.11	45.07
index	2.29	7.10	32.30
mno	5.98	11.64	51.36
Total	0.46	10.96	55.26
Chi2(8)	1.7e+04**	1.7e+04**	2.8e+03**

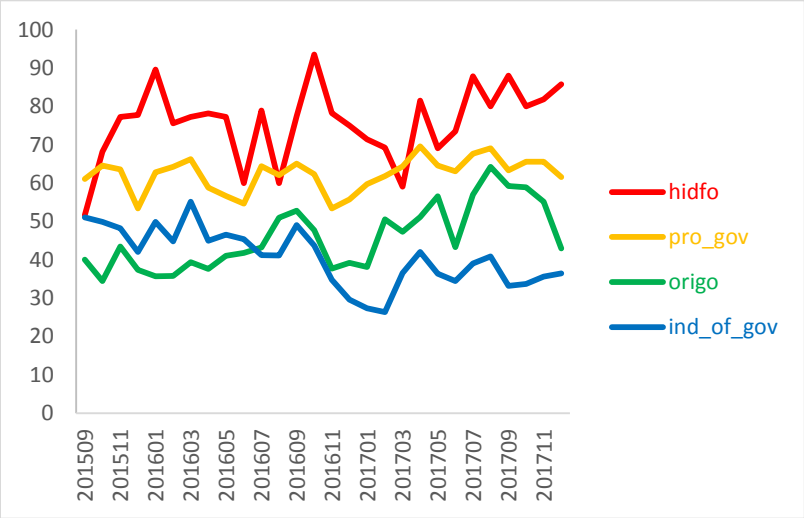
Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Figure 6. Share of articles that contain the word "migrant" and the category REFUGEE on the nine news portals under analysis, %, Sept. 2015–Dec. 2017,
N = 475,617



Source: CRCB

Figure 7. Share of articles that contain the word "migrant" within articles that contain the category REFUGEE on pro-government propaganda news portals, the Russian state propaganda site, and independent news portals, %, months, Sept. 2015–Dec. 2017, N = 475,617



Source: CRCB

Table 7. Estimation of odds for articles that contain the word "migrant" within articles that contain the category REFUGEE on the nine news portals under analysis, Sept. 2015–Dec. 2017, N = 52,143, logit estimation

News portal	pr(mig_d=1, if REFUGEE = 1) coeff.
mindenegyben	-0.4661**
888	-1.1284
magyaridok	-0.7095**
lokal	-0.6599**
pesti_sracok	-0.7287**
origo	-1.2825**
index	-1.8192**
mno	1.0242**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	52,143

Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 8. Estimation of odds for articles that contain the word "migrant" within articles that contain the category REFUGEE on the nine news portals under analysis (in groups), Sept. 2015–Dec. 2017, N = 51,706, logit estimation

News portal	pr(mig_d=1, if REFUGEE=1) coeff.
Pro-government propaganda portals	-0.5690**
origo	-1.2791**
Independent news portals	-1.3521**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	51,706

Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 9. Share of articles that contain the category TERROR on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 475,617

News portal	pr(mig_d = 1) %	pr(TERROR= 1) %	pr(TERROR =1) if mig_d=1 %
hidfo	22.00	23.53	22.77
mindenegyben	1.52	0.95	17.31
888	18.60	18.65	20.80
magyaridok	8.94	12.19	19.80
lokal	4.58	5.48	23.58
pestisracok	12.14	13.90	18.13
origo	2.75	5.56	17.95
index	2.29	5.48	17.34
mno	5.98	9.07	18.15
Total	6.06	8.54	19.55
Chi2(8)	1.7e+04**	1.1e+04**	51.2842**

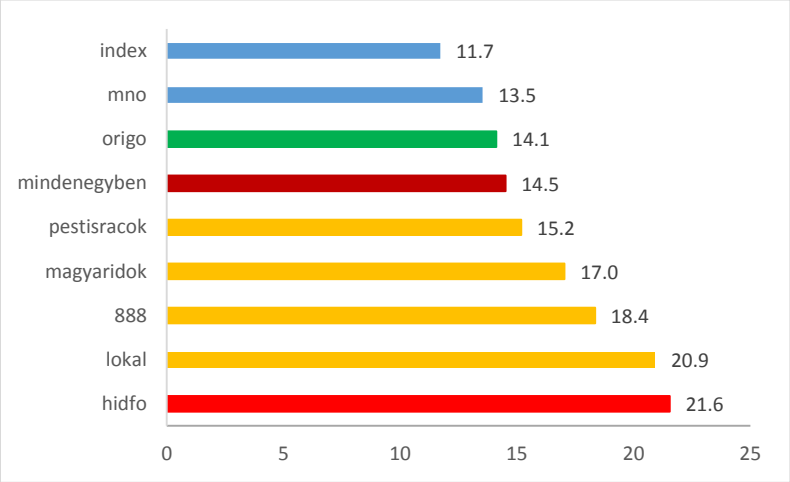
Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 10. Distribution of articles that contain the category TERROR within all articles that contain the word "migrant" by occurrence of words in the category TERROR, %, Sept. 2015–Dec. 2017, N = 5,634

News portal	The occurrence of words in the category TERROR in articles if mig_d=1 and TERROR=1, %				
	1	2	3–4	5 or more	Total
hidfo	22.96	20.74	19.26	37.04	100
mindenegyben	24.49	34.69	14.29	26.53	100
888	33.13	23.23	19.88	23.76	100
magyaridok	35.54	21.66	19.60	23.20	100
lokal	40.25	14.99	17.66	27.10	100
pestisracok	33.48	23.61	18.88	24.03	100
origo	31.36	18.53	17.52	32.59	100
index	37.99	22.07	17.32	22.63	100
mno	35.38	25.46	17.62	21.54	100
Total	34.66	21.92	18.78	24.64	100

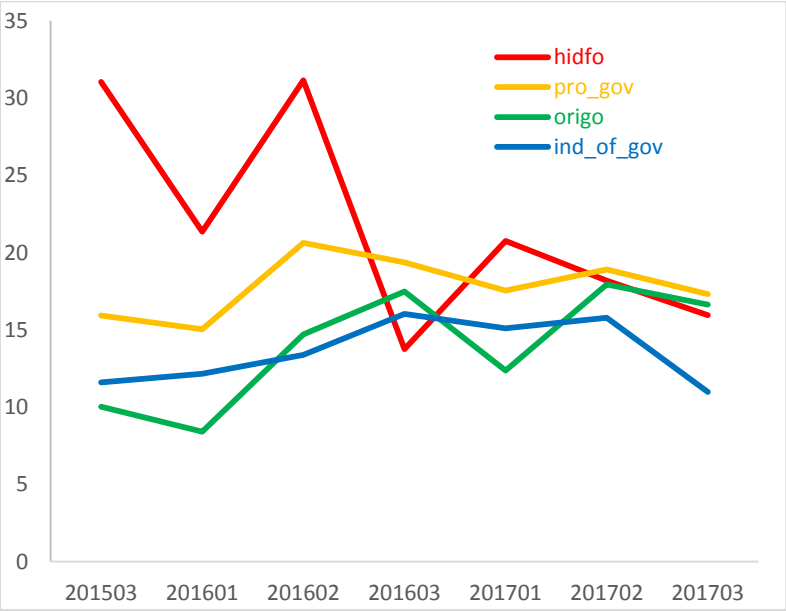
Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
Pearson chi2(24) = 69.5622 Pr = 0.000
Source: CRCB

Figure 8. Share of articles that contain the category TERROR within all articles that contain the word "migrant" (number of words < 600) on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 24,159



Source: CRCB

Figure 9. Share of articles that contain the category TERROR within all articles that contain the word "migrant" (number of words < 600) on the nine news portals under analysis, %, trimesters, Sept. 2015–Dec. 2017, N = 24,159



Source: CRCB

Table 11. Estimation of odds for articles that contain the category TERROR within all articles that contain the word "migrant" on the nine news portals under analysis, Sept. 2015–Dec. 2017, N = 28,813, logit estimation

	pr(TERROR=1, if mig_d=1)
News portal	coeff.
mindenegyben	-0.3550
888	-0.0570
magyaridok	-0.3093**
lokal	0.0049
pesti_sracok	-0.4583**
origo	-0.4196**
index	-0.8539**
mno	-0.6700**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	28,813

Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 12. Estimation of odds for articles that contain the category TERROR within all articles that contain the word "migrant" on the nine news portals under analysis (in groups), Sept. 2015–Dec. 2017, N = 28,813, logit estimation

	if (TERROR=1, if mig_d=1)
News portal	coeff.
Pro-government propaganda portals	-0.1203
origo	-0.3142**
Independent news portals	-0.6127**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	28,813

Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 13. Share of articles that contain the category VIOLENCE on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 475,617

News portal	Pr(mig_d = 1)	Pr(VIOLENCE= 1)	Pr(VIOLENCE =1) if mig_d = 1
	%	%	%
hidfo	22.00	4.79	15.35
mindenegyben	1.52	0.81	7.77
888	18.60	4.02	9.42
magyaridok	8.94	1.84	5.79
lokal	4.58	1.67	5.04
pestisracok	12.14	3.31	6.69
origo	2.75	1.94	4.64
index	2.29	2.37	6.59
mno	5.98	2.37	4.88
Total	6.06	2.20	6.54
Chi2(8)	1.7e+04**	993.1532**	201.0914**

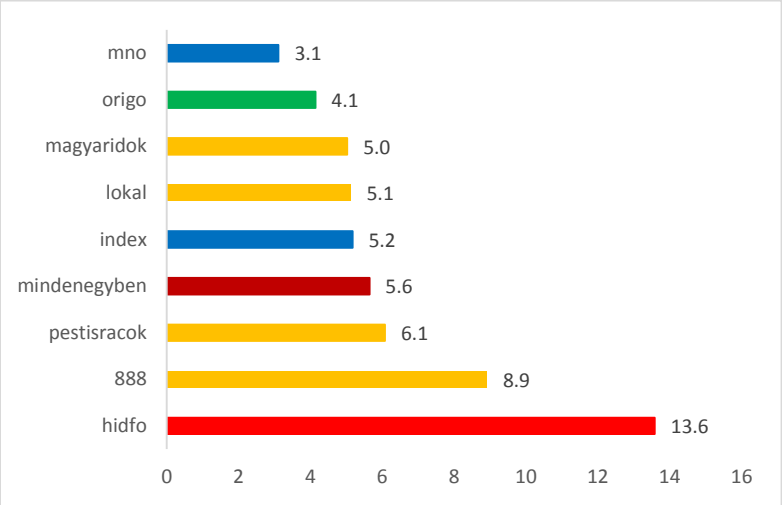
Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 14. Distribution of articles that contain the category VIOLENCE within all articles that contain the word "migrant" by occurrence of words in the category VIOLENCE, %, Sept. 2015–Dec. 2017, N = 1,883

News portal	1	2	3–4	5 or more	Total
hidfo	34.07	8.79	12.09	45.05	100
mindenegyben	54.55	31.82	0.00	13.64	100
888	33.14	18.13	21.83	26.90	100
magyaridok	44.53	16.41	16.60	22.46	100
lokal	30.77	11.54	25.00	32.69	100
pestisracok	45.35	13.37	23.84	17.44	100
origo	40.94	17.32	21.26	20.47	100
index	50.00	11.76	18.38	19.85	100
mno	50.00	17.48	16.99	15.53	100
Total	41.1	15.99	19.22	23.69	100

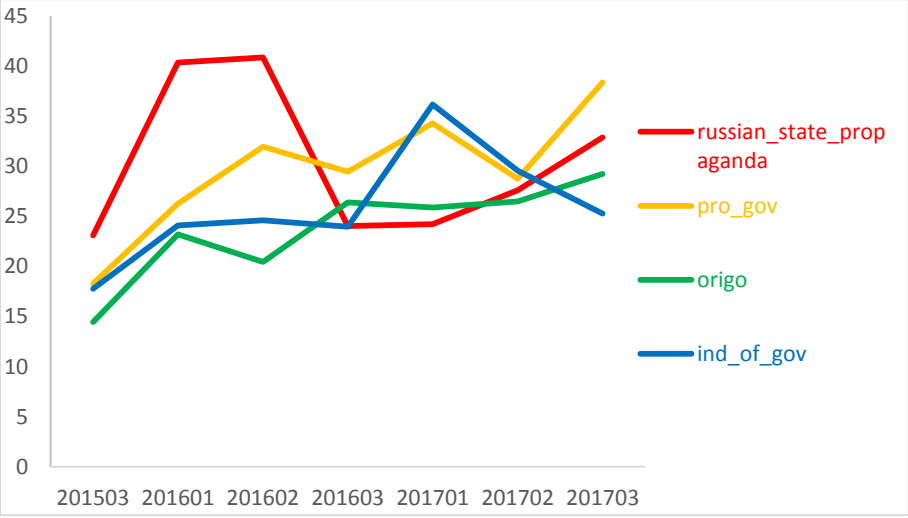
Source: CRCB

Figure 10. Share of articles that contain the category VIOLENCE within all articles that contain the word "migrant" (number of words < 600) on the nine news portals under analysis, %, Sept. 2015–Dec. 2017, N = 24,159



Source: CRCB

Figure 11. Share of articles that contain the category VIOLENCE within all articles that contain the word "migrant" (number of words < 600) on the nine news portals under analysis (in groups), %, trimesters, Sept. 2015–Dec. 2017, N = 24,159



Source: CRCB

Table 15. Estimation of odds for articles that contain the category VIOLENCE among articles that contain the word "migrant" on the nine news portals under analysis, Sept. 2015–Dec. 2017, N = 28,813, logit estimation

	pr(VIOLENCE=1, if mig_d=1)
News portal	coeff.
mindenegyben	-0.6317**
888	-0.5519**
magyaridok	-1.1208**
lokal	-1.2782**
pesti_sracok	-0.9757**
origo	-1.2953**
index	-1.1675**
mno	-1.3506**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	28,813

Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 16. Estimation of odds for articles that contain the category VIOLENCE within articles that contain the word "migrant" on the nine news portals under analysis (in groups), Sept. 2015–Dec. 2017, N = 28,813, logit estimation

	pr(VIOLENCE=1, if mig_d=1)
News portal	coeff.
Pro-government propaganda portals	-0.9218**
origo	-1.1286**
Independent news portals	-1.1257**
Reference: hidfo.ru	-
Trimesters (QDRM)	Y
Logarithm of number of words in the articles (LNWCNT)	Y
N	28,530

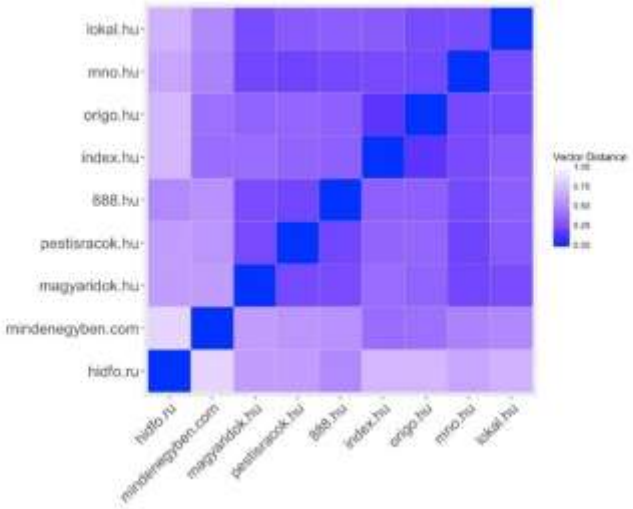
Note: mig_d [0,1] = 1 if the article contains the word "migrant", 0 if not.
**p < 0.05; **p < 0.01*
Source: CRCB

Table 17. Euclidean distances between vectors for the nine news portals under analysis based on the frequency of all the words in the corpus, 2010–2017,
N = 519,307

	index	mno	origo	mi	lokal	ps	me	hidfo	888
index	0.000	0.226	0.152	0.367	0.302	0.342	0.403	0.693	0.320
mno	0.226	0.000	0.228	0.207	0.238	0.197	0.489	0.621	0.220
origo	0.152	0.228	0.000	0.331	0.244	0.347	0.422	0.697	0.325
magyaridok	0.367	0.207	0.331	0.000	0.239	0.223	0.604	0.585	0.236
lokal	0.302	0.238	0.244	0.239	0.000	0.293	0.518	0.677	0.310
pestisracok	0.342	0.197	0.347	0.223	0.293	0.000	0.570	0.584	0.210
mindenegyben	0.403	0.489	0.422	0.604	0.518	0.570	0.000	0.834	0.554
hidfo	0.693	0.621	0.697	0.585	0.677	0.584	0.834	0.000	0.497
888	0.320	0.220	0.325	0.236	0.310	0.210	0.554	0.497	0.000

Notes: mi: magyaridok.hu; ps: pestisracok.hu; me: mindenegyben.com
The vector distance ranges from 0 to 1, where 0 represents equivalence and 1 represents maximum dissimilarity.
Source: CRCB

Figure 12. Euclidean distances between vectors for the nine news portals under analysis based on the frequency of all their words, 2010–2017



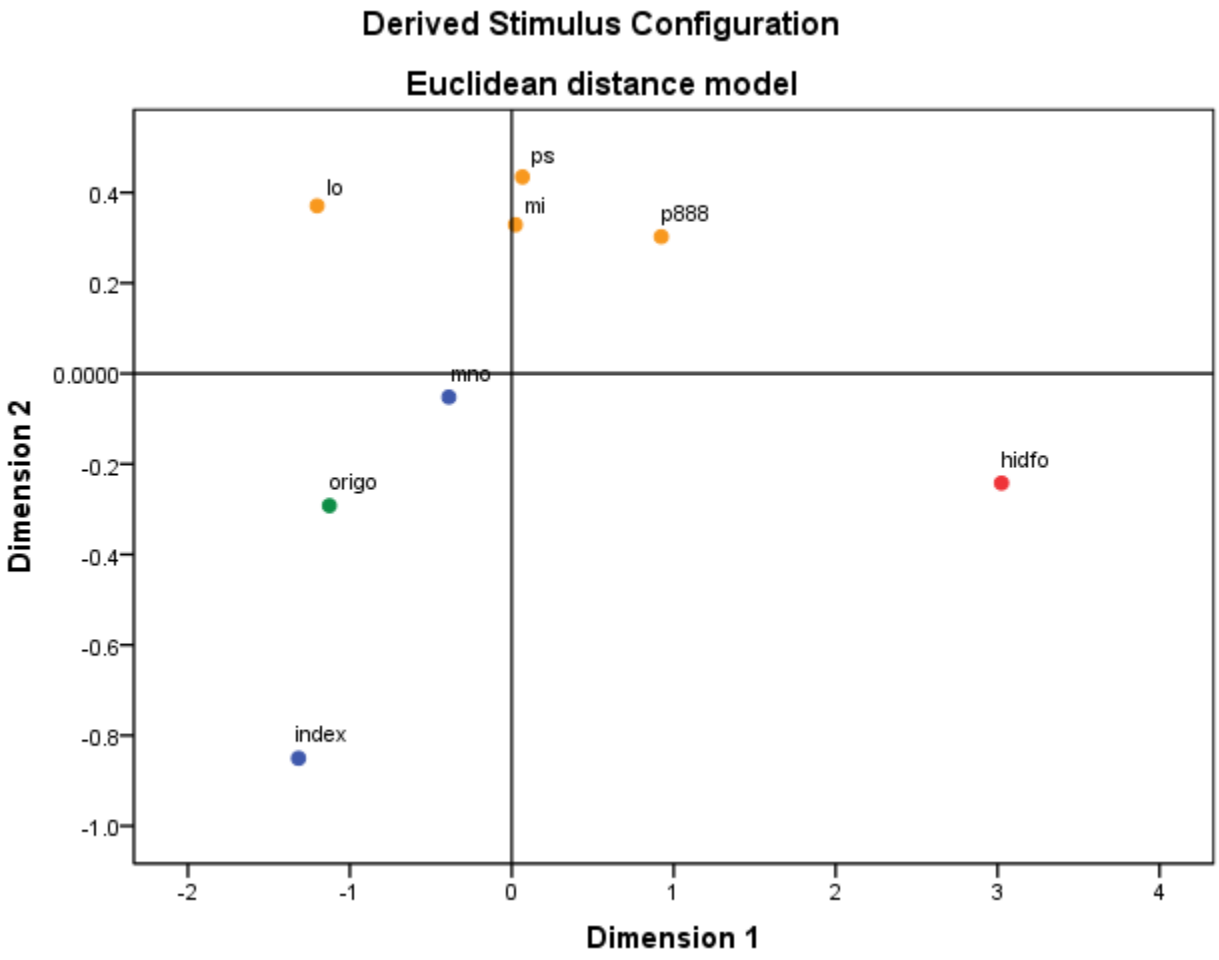
Note: The brightest squares represent maximum distance (maximum dissimilarity), and the darkest ones represent minimum distance (maximum similarity).
Source: CRCB

Tables 18. The share of articles that contain the 23 categories (the Russian Propaganda Vector) of the total number of articles on the nine news portals under analysis, %,
2015–2017, N = 475,617

	Category / word	hidfo	me	888	mi	lokal	ps	origo	index	mno
1	ttkssz_d	8.3	0.1	2.5	1.6	0.6	3.2	0.7	1.2	1.5
2	A_SOROS	0.3	0.0	0.4	0.3	0.5	0.4	0.1	0.1	0.1
3	orban_d	5.1	0.9	8.5	6.0	4.9	14.2	2.6	5.3	8.7
4	krrpc_d	2.6	0.1	2.1	2.4	1.6	4.1	1.3	1.9	3.4
5	nato_d	17.6	0.2	2.7	2.2	0.8	2.0	0.7	0.9	1.8
6	POLIT1	17.3	0.6	16.5	7.0	3.2	8.8	2.9	4.8	7.0
7	RUSSIAN	29.9	3.1	12.0	10.7	5.3	9.6	8.1	11.7	11.3
8	USA	31.9	2.0	19.6	11.7	6.6	11.4	9.4	13.3	12.5
9	HUNGARIAN	45.0	17.2	50.5	65.8	45.3	65.4	46.3	44.9	63.3
10	soros_d	6.1	0.2	5.5	3.1	3.3	6.3	1.0	1.3	2.0
11	MILITARY	50.0	6.8	34.3	26.7	16.8	30.6	20.9	21.5	26.8
12	EU	61.0	4.9	38.2	39.6	20.9	37.8	24.5	22.6	31.7
13	GERMAN	35.8	2.6	21.7	16.9	9.6	16.9	12.7	13.0	15.6
14	mig_d if c_ref=1	74.9	64.8	72.2	59.3	60.7	58.7	45.1	32.3	51.4
15	NEGATIVE	0.07	0.04	0.32	0.40	0.19	0.30	0.57	0.62	0.57
16	c_ter if mig_d=1	22.8	17.3	20.8	19.8	23.6	18.1	18.0	17.3	18.2
17	c_viol2 if mig_d=1	15.3	7.8	9.4	5.8	5.0	6.7	4.6	6.6	4.9
18	ISRAEL	3.4	0.4	5.5	3.1	1.8	3.4	2.3	2.4	3.5
19	ISLAM	15.4	1.2	18.3	10.4	4.1	10.4	4.9	5.0	8.5
20	SYRIA	14.1	0.6	11.4	6.7	2.2	5.7	2.7	3.2	5.3
21	LIBERAL	13.9	0.2	8.8	4.3	1.2	7.5	1.2	1.5	3.6
22	nyugat_d	22.2	2.5	9.3	10.2	4.4	8.9	5.4	5.9	9.6
23	ISIS	8.2	0.5	10.7	6.6	2.5	6.1	2.7	2.9	5.1

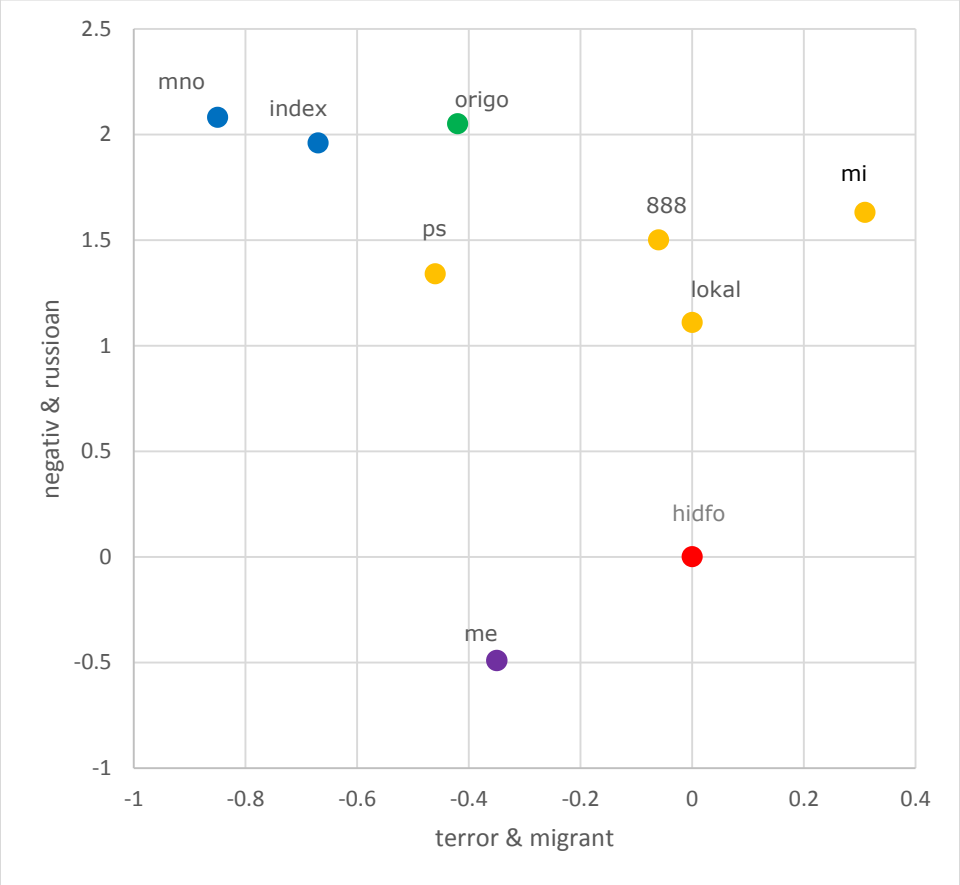
Note: lo: lokal.hu; ps: pestisracok.hu; mi: magyaridok.hu; me: mindenegyben.com
Source: CRCB

Figure 13. Positions of the eight news portals in the coordinate system calculated with the MDS (Multidimensional Scaling) method and based on the RPV (occurrence of the 23 categories and words) 2015–2017, N = 475,617



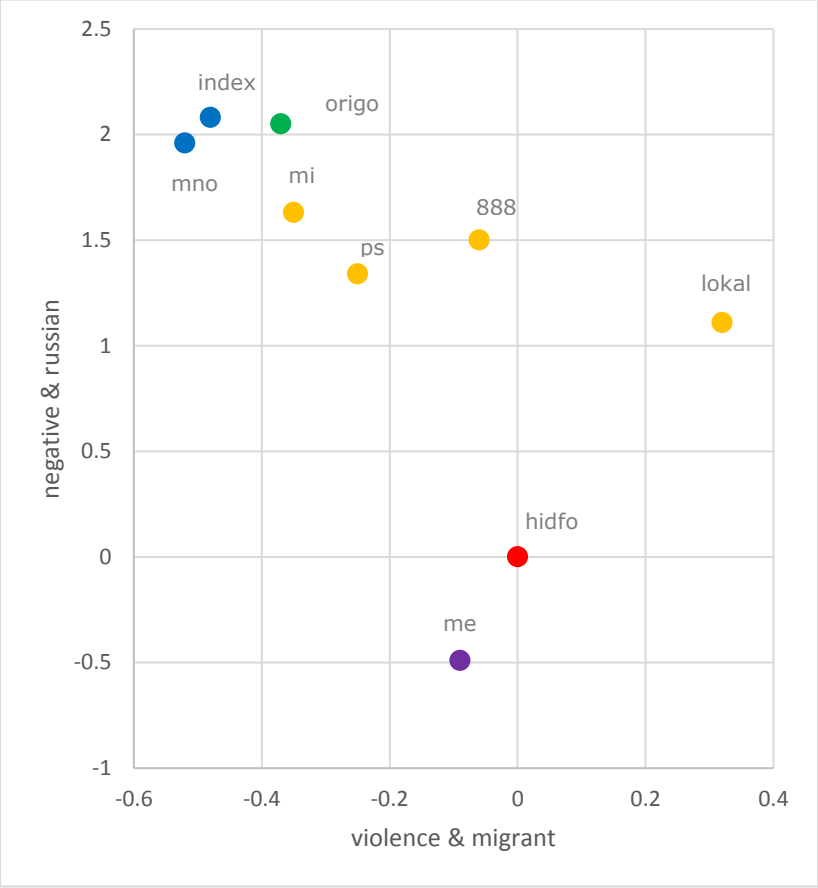
Note: lo: lokal.hu; ps: pestisracok.hu; mi: magyaridok.hu; p888: 888.hu
RPV: Russian Propaganda Vector
Yellow points: pro-government propaganda news portals
Red point: hidfo.ru
Blue points: independent news portals
Green point: origo.hu
Source: CRCB

Figure 14. Positions of the news portals under analysis in a coordinate system created by the "NEGATIVE and RUSSIAN" and "migrant and TERROR" conceptual relationships, Sept. 2015–Dec. 2017, N = 475,617



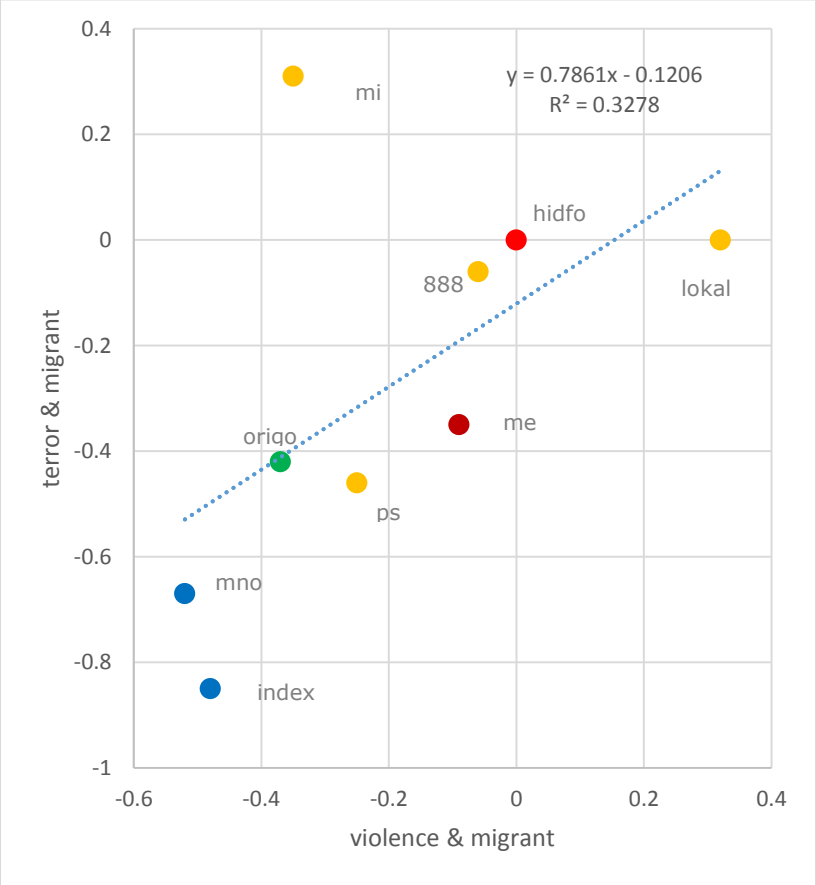
Notes: The coordinates for the news portals are controlled by the publication dates (trimesters) and lengths of the articles (logarithm of number of words).
me: mindenegyben.com; ps: pestisracok; mi: magyaridok
Red point: hidfo.ru
Yellow points: pro-government propaganda portals
Blue points: independent news portals
Green point: origo.hu
Purple point: mindenegyben.com
X axis: Information on the share of articles which contain the "if migrant, then violence" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Y axis: Information on the share of articles which contain the "if migrant, then terror" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Reference: hidfo.ru, with coordinates (0,0)
Source: CRCB

Figure 15. Positions of the news portals under analysis in a coordinate system created by the "NEGATIVE and RUSSIAN" and "migrant and VIOLENCE" conceptual relationships, Sept. 2015–Dec. 2017, N = 475,617



Notes: The coordinates for the news portals are controlled by the publication dates (trimesters) and lengths of the articles (logarithm of number of words).
me: mindenegyben.com; ps: pestisracok; mi: magyaridok
Red point: hidfo.ru
Yellow points: pro-government propaganda portals
Blue points: independent news portals
Green point: origo.hu
Purple point: mindenegyben.com
X axis: Information on the share of articles which contain the "if migrant, then violence" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Y axis: Information on the share of articles which contain the "if migrant, then terror" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Reference: hidfo.ru, with coordinates (0,0)
Source: CRCB

Figure 16. Positions of the news portals under analysis in a coordinate system created by the "migrant and TERROR" and "migrant and VIOLENCE" conceptual relationships, Sept. 2015–Dec. 2017, N = 475,617



Notes: The coordinates for the news portals are controlled by the publication dates (trimesters) and lengths of the articles (logarithm of number of words). me: mindenegyben.com; ps: pestisracok; mi: magyaridok
Red point: hidfo.ru
Yellow points: pro-government propaganda portals
Blue points: independent news portals
Green point: origo.hu
Purple point: mindenegyben.com
X axis: Information on the share of articles which contain the "if migrant, then violence" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Y axis: Information on the share of articles which contain the "if migrant, then terror" implicit statement: a higher value represents a higher probability of this statement occurring; the value for hidfo.ru is a reference value.
Reference: hidfo.ru, with coordinates (0,0)
Source: CRCB

A2. Categories used in the analysis

RUSSIAN = {"Putin" | "Russian" | "Russia"}

NEGATIVE = {"doping" & RUSSIAN | "Panama" & RUSSIAN | "Nemtsov" | "Malaysian" | "Montenegro" & "putsch" | "Navalny" | "Politovskaia" | "Berezovski"}

VIOLENCE = {"eroszakoskodik" | "molesztal" | "zaklat" | "megfogdos" | "fogdos" | "eroszakol" | "megeroszakol" | "nemi" & "eroszak" | "szexualis" & "eroszak"}

"eroszakoskodik": to browbeat
"molesztal": to molest
"zaklat": to harass
"megfogdos": to finger
"fogdos": to touch lightly
"eroszakol": to rape
"megeroszakol": to rape
"nemi eroszak": rape, abuse
"szexualis": sexual
"eroszak": violence

ttkssz_d = "titkosszolgalat"
"titkosszolgalat": secret service

A_SOROS = {"Soros" & "migrant" & TERROR}

orban_d = "Orban"

krrpc_d = "corruption"

nato_d = "NATO"

POLIT1 = {"Merkel" | "Trump" | "Obama" | "Clinton"}

8. USA = {"USA" | "United" & "States" | "Washington" | "Trump" | "Obama" | "Clinton"}

HUNGARIAN = {"nation" | "Hungarian" | "national" | "Hungarians" | "Hungary"}

soros_d = "Soros"

MILITARY = {"harc"| "tamadas" | "tamad" | "haboru" | "fegyver"
| "fegyveres"| "hadsereg" | "katona" | "terrortamadas"}

"harc": fight
"tamadas": attack
"tamad": to attack
"haboru": war
"fegyver": weapon
"fegyveres": armed
"hadsereg": army
"katona": soldier
"terrortamadas": terror attack/terrorist attack

EU = {"Europe" | "Brusszel" | "EU" | "Europai " & "Unio"}

"Brusszel": Brussels

"Europai": European

GERMAN = {"Merkel" | "Berlin" | "nemet" | "Németország"}

"nemet": German

"Nemetorszag": Germany

ISRAEL = {"Jerusalem" | "héber" | "Jewish" | "Izrael"}

"héber": Hebrew

"zsidó": Jewish

"Izrael": Israel

ISLAM = {"muszlim" | "iszlam" | "muzulman" | "arab" | "iszlamista"}

"muszlim": Muslim

"iszlam": Islam

"muzulman": Musulman

"arab" : Arabic

"iszlamista": Islamist

SYRIA = {"Sziria" | "Aleppo" | "Asszad" | "Isis"}

"Sziria": Syria

"Asszad": Assad

LIBERAL = {"liberal" | "balliberalis" | "ballib"}
"balliberalis": leftist-liberal
"ballib": leftist-liberal (with a negative connotation)

west_d = "west"

ISIS = {"Isis" | "Iszlamic" & "allam"}

"Iszlam": Islamic

"allam": State

A3. Who are the authors of the Putin-related articles published on hidfo.ru and mindenegyben.com: Linguistic profiling

Introduction

1. Below is a linguistic profile addressing the question of the social status and native language of the author(s) of the articles on hidfo.ru and mindenegyben.com. We reviewed a total of 42 articles published on hidfo.ru from 2 January to 31 January 2016.

Procedure

2. The linguistic profiling of hidfo.ru does not therefore cover all the texts in the corpus (the entire corpus of texts/articles published on hidfo.ru from 2010 to 2017 contains 3210 items). The analysis of texts from a particular period represents an attempt to outline possibilities as to the authors of various texts, relying on the method of linguistic profiling. Linguistic profiling involves examining the text as a whole, while considering a variety of layers. The procedure does not involve the testing of a hypothesis; rather, it leads to comments being made on a text by the profiler.

3. In the first phase of examining hidfo.ru, it was shown that the texts were not necessarily written in Hungarian; rather, they were translations.

4. In the second phase of the study, which included stylistic analysis, it became apparent that a journalistic style was mixed with an academic one. In linguistic profiling, this may be taken as a hint of the qualifications or even professionalism of an author.

5. The question addressed in the third phase of the study was whether the author was a man or a woman. Due to the stylistic features of the texts, this question cannot be answered clearly: neither journalistic nor academic styles possess gender attributes. This, of course, only applies to the journalistic style of news genres, but not, for instance, to the genre of the feuilleton.

6. The fourth phase of the study involved a profile of the site mindenegyben.com. Typically, this site offers articles taken from various news portals. As these texts are borrowed almost word for word, most of the corpus consists of texts not written by the blog author. Due to the features of the blog genre, however, the corpus also includes texts written by that author. The latter can be profiled based on various criteria. In such cases, however, it should be noted that linguistic features of Internet language should be distinguished from an author's unique textual features. Therefore, certain spelling or grammar errors (e.g. confusing "j" and "ly", which both form the /j/ sound in Hungarian words (the first sound in "yard" or "yet" in English) or

confusing various abbreviations) do not lend themselves to far-reaching conclusions, for they may be features of Internet language. Thus, due to its structure, mindenegyben.com requires a profiling procedure different from that used in examining hidfo.ru.

7. A non-exhaustive list of the literature related to our analysis can be found at the end of this paper. One reason we have included the list is that, to the best of our knowledge, no profiling manual exists. The titles listed aided us in thinking about language, which is the basis for linguistic profiling.

8. As the texts on a web portal should exhibit the features of a journalistic style, the presence or absence of such features may also form the basis for setting up a linguistic profile.

The study made it clear that in addition to a journalistic style, the texts bear features of styles from other fields.

9. Naturally, a profiler cannot be expected to be able to profile in various languages. Rather, the task consists in examining texts available in the profiler's native language and spotting the differences in relation to that language. Examining and aggregating the differences from a given mother tongue can also provide the basis for a linguistic profile.

The hidfo.ru site

10. The conclusion that the texts on the site were not originally written in Hungarian but were translations was drawn in the first phase of examining hidfo.ru. Below is a summary of textual features which support this claim.

11. Expressions and collocations alien to the Hungarian language (hidfo.ru):

- *megosztottságot hozott* (*?carried* [brought] *division*) (17 January 2016)
- *elkötelezettek* maradtak…támogatása *irányába* (remained committed … *toward* [to] support) (17 January 2016)
- további *zsarolási potenciálra tett szert* (*acquired* [ensured] *potential for* further *blackmail*) (16 January 2016)
- *hátrányára szolgál* (*?serves* [works to] *the disadvantage of*) (15 January 2015)
- *a merényletért…vállalta a felelősséget* (*assumed responsibility … to* [for] *the attack*) (14 January 2016)

12. The structures listed above as textual features allow us to set up the following profiles:

1. The author(s) of the Hungarian language texts on hidfo.ru translated foreign-language texts into Hungarian. The translators themselves are native speakers of Hungarian.
2. The author(s) of the texts translated foreign-language texts into Hungarian. The translators themselves are not native speakers of Hungarian. They may come from bilingual families where Hungarian is a second language, that is, not their mother tongue.

13. As noted earlier, in such a case it is advisable to consult an expert familiar with the target language of the translation (which, in this case, is Hungarian) and with the supposed source language (which, in this case, is Russian). This expert would, in this case, recognize Russian linguistic features as well as those characteristic of the translator. As a result of our consultation with such an expert, certain textual features have been identified as Russian linguistic features.

14. These include the structures *megosztottságot hozott* (carried [brought] division) (17 January 2016) and *bevándorlás támogatása irányába* (toward [to] support for immigration) (17 January 2016).[20] Multiple possessive structures identified through a syntactic analysis of the texts may also hint at Russian linguistic features in the original: *Az indonéz hatóságok az utóbbi időben a* ***terrorszervezet lehetséges kibontakozásának megakadályozására*** *az országba érkező…****felderítésében és elfogásában*** *a kínai szolgálatokkal kooperálnak* (The Indonesian authorities have recently cooperated with the Chinese services **in the detection and apprehension of** … entering the country to prevent the **potential emergence of the terror organisation**) (15 January 2016, 14:16). Another similar example: *A tábornok által tolmácsolt amerikai politikai szándék a szíriai kurdok által alkotott Szír Demokratikus Erők támogatására a török vezetés merev ellenállásba ütközött* (American political intentions conveyed by the general in support of the Syrian Democratic Forces formed by the Syrian Kurds met with stiff opposition [from] the Turkish leadership) (12 January 2016).[21] And another*:*

[20]Before citing any further examples, it is worth describing the logic followed by our analysis. When a translator renders a given text into his or her mother tongue (for example, when a Hungarian native translator renders a Russian text into Hungarian), he or she will strive to perform the task following the grammatical, lexical, and syntactic rules of his or her mother tongue. If a translation does not sufficiently conform to mother tongue specifications, this may be for various reasons: perhaps the translator is not a native speaker but just good at several languages, or the translator is a bilingual person translating from his or her mother tongue into his or her second language. Textual peculiarities will reflect the translator's mother tongue.

[21]The excerpt dated 12 January 2016, 19:45, is, at the same time, an example of a poor translation. Featuring a grammatically inaccurate predicate, the sentence is difficult to interpret. It does contain a multiple possessive structure, however.

Az egyeztetés Simicskó szerint az ***alaptörvény különleges jogrendi részének áttekintése*** *és megfelelő módon leegyeztetett esetleges* ***módosítása céljából szükséges*** (According to Simicskó, consultation is **necessary for the purposes of a review of the section in the constitution on the special legal order** and **of a potential amendment** agreed in an appropriate manner) (11 January 2016).

15. In the second phase of our investigation, a profile of the author(s) of the text was developed based on the stylistic features of the text. The texts on hidfo.ru may rightly be assumed to have been written in a journalistic style since they consist of news reporting in terms of their genre. The translator(s) made sure to maintain a journalistic style. Stylistically different phenomena result from textual features characteristic of legal jargon. This may lead to various conclusions on the linguistic profile. On the one hand, it may be concluded that the original texts also contained legal terminology; thus, the authors of the original texts were, for instance, law graduates or people familiar with legal terminology. Another conclusion would be to suppose that the original articles (written in a language other than Hungarian) did not contain legal terminology. Instead, the translator, who was familiar with Hungarian legal jargon, deemed it appropriate to use at least some legal terminology. Familiarity with Hungarian legal jargon allows us to suppose that the translator works or has worked in a field where this knowledge is indispensable. This field may be diplomacy or national security since legal terminology is not restricted to the law – it is used in other fields as well.

18. Expressions typical of legal jargon (including wordiness in sentence composition) are, for example, the following:

- 2016-*os évben* (*in the year* 2016) (15 January 2016);
- *kerültek lefektetésre* (*were laid down*) (15 January 2016);
- a *tavalyi év során* migránsok által elkövetett bűncselekményekről (on criminal offences committed by migrants *in the course of the past year*) (15 January 2016);
- *Köln tekintetében* egyetlen nap alatt (*with regard to Cologne* … in a single day) (15 January 2016);
- *annak okán* (*by virtue of the fact*) (14 January 2016);
- A fegyveres támadók a konzulátusra *kíséreltek meg betörni* (The armed assailants *attempted to enter* the consulate *forcibly*) (14 January 2016);

- afgán *kormány számára* (*for [formal]* the government of Afghanistan) (14 January 2016);
- semmit nem tett *annak érdekében* (he did nothing *toward that end*) (13 January 2016);
- nem *csak Európai Unió* egésze megosztott (it is not *merely the entirety of the European Union* that is divided) (17 January 2016).

16. The third phase of the analysis was aimed at establishing a socio-demographic feature of whether the author of the articles was a man or a woman. As noted earlier, male or female textual characteristics are difficult to establish in texts written in journalistic, legal, or academic jargon due to the stiff stylistic constraints imposed. Female and male textual peculiarities do not therefore appear as basic features of the text.

17. Analysis from this aspect of the texts published on hidfo.ru allows the conclusion that the likelihood of the author(s) of the texts under examination being women is about the same as that of their being men.

18. Considering the qualification(s) of the author(s) as a test factor still permits us to say that the presumed authors could be men as well as women, for familiarity with legal terminology is common to a range of non-gendered fields. There is therefore no need to assume that the profession of the author(s) of the texts is gender-related.

19. The analysis so far suggests that the Hungarian content on hidfo.ru presumably consists of translations from Russian. The assumption is supported by this passage: "In an article entitled 'Russians suspected of bombing in Istanbul', the index.hu liberal news portal reports..." (13 January 2016, 16:00). Hungarian readers need no introduction to the news portal index.hu as liberal: this is something Hungarian readers know; or rather, the characterization of index.hu as liberal media is a recurring feature in Hungarian political discourse today. The remark seems to be intended for readers who are not in the know because, for example, they do not live in Hungary; it may thus be assumed that the article was translated from a foreign-language original.

20. In conclusion, we can say that the author(s) of the portal hidfo.hu may be men or women, may be bilingual (Russian and Hungarian), and are university graduates (but not translation majors) who are knowledgeable in legal and military terminology (or good at translation).

21. These conclusions were tested by analysing articles from other periods. We addressed the issue whether an article titled "Liberals Launch into the Creation of Idiotic *Feindbilder*", published on hidfo.ru on 28 August 2017 (http://bit.ly/2FKDU2r), was a translation from another language.

22. Based on our analysis, we concluded that the article in question is a Hungarian translation of a foreign-language text as evidenced by the following passages:

- ***"....miközben azt hazudják maguknak és olvasóiknak, hogy az ő erkölcsi magaslataikban soha nem gyártanak ellenségképet..."*** *"...while lying to themselves and their readers that they never produce enemy images in their moral heights…"* A Hungarian author would not use such a possessive form in a continuous text written in a journalistic style;

- " ... ***nyomdafestéket is elszenvedő módon kifejti****…" ...expounds it in a manner also suitable for printing..."* The collocation does not exist in Hungarian. A similar phrase which does exist would translate as "an expression unsuitable for printing". The translator either did not know the correct Hungarian phrase or provided a rough translation of the foreign language text;

- *„…….mert nekik **nincs nyáj**, amit össze kell tartani…" "...for they have no flock [nyáj] that needs to be kept together..." The word 'nyáj' should be 'nyájuk' with a possessive ending;*

- *"…a liberális sajtó **szájából ömlik a szennyvíz**…" "...wastewater [szennyvíz] spilling from the mouth of the liberal press…"* The colloquial Hungarian phrase would translate as *"muck pouring from his mouth"* (ömlik a szenny a szájából). The uncommon phrase *"ömlik a szennyvíz a szájából"* may be the result of a mistranslation. Interestingly, the same phrase *("ömlik a szájából a szennyvíz")* is used on magyaridok.hu (http://bit.ly/2tYdlBb) as well as pestisracok.hu (http://bit.ly/2u1GLyg), the latter misquoting ultraright Jobbik party leader Gábor Vona;

- *„…hiszen a **felvilágosult nyugatosok** közt nem szokás az ilyesmi…" "…since it is not customary among enlightened Westerners [nyugatosok]…"* Native Hungarian translators would not use the word "nyugatos" (instead of "nyugati") to translate "Westerner" because they know that the word only denotes the literary journal *Nyugat* (https://bit.ly/2EEqOPq). Hungarian native speakers would avoid this kind of formal match. Instead, they would use the adjective "nyugati" or the derogatory "nyugatimádó" (worshipper of all things Western) – so the person who translated the text is probably not a native speaker of Hungarian;

- *„…egyébként teljesen ráfekszik az amerikai külügyminisztérium által*

korábban sulykolt ellenségképre…"

- *"…at any rate, it completely overlaps the Feindbild previously promoted by the US Department of State…"* As an expression of comparison, this phrase is never used and is unfamiliar in the Hungarian language.

The mindenegyben.com site

23. Profiling the author of mindenegyben.com is a difficult task, for it is impossible to know whether the articles posted on the blog with an indication of the source were borrowed word for word or re-written. The linguistic level of the comments is of an even standard, so we can say that the linguistic profile is reliable. The linguistic level of the comments contrasts with that of the articles cited (depending, of course, on which portal is being cited by the author of the blog). In addition, texts from the Internet always require a multidimensional approach: features of Internet language should always be taken into consideration. Thus, a spelling mistake, even a one-off, should not necessarily be considered an individual textual peculiarity, as it may well be an Internet language feature. Incorrect punctuation is also an Internet language phenomenon. For example, some blog authors do not use punctuation. To sum up, Internet language profiling is multidimensional, and individual textual features are relatively difficult to categorize. This is also due to the nature of the blog genre itself. However, the same cannot be said of the linguistic features of Internet media outlets.

24. The author of mindenegyben.com compiles articles from various portals, sometimes adding comments of varying length. The comments are of an even standard. Their author is a high school graduate at most. Telltale signs include the following spelling mistakes (first the word is shown with the author's incorrect spelling, then correctly along with the time of publication in brackets):

- incorrect spelling of compound words (usually spelt as two words instead of one): *migráns áradat* (migránsáradat [flood of migrants], 30 March 2016), *úgy is* (úgyis [anyway], 30 March 2016), *menekült kérdés* (menekültkérdés [refugee question], 25 March 2016), *ajándék ételt* (ajándékételt [donated food], 25 March 2016);
- incorrect capitalization of proper adjectives: *Törökországi* (törökországi [Turkish], 30 March 2016);
- incorrect spelling of proper nouns: Az EU-nak *soros* szerint (According to soros [*sic!*], the EU…) (Soros, 22 March 2016);

- violating the boundaries of formal style by using vulgar expressions: "*…tényleg szar lehet...*" (…must really be crap…) (25 March 2016);
- incorrect combination of words: "*…mert a másikfele…*" (másik fele [the other kind], 25 March 2016).

25. Profiling the mindenegyben.com site, we have established the following textual features:[22]

- a poor standard of spelling (incorrect spelling of compounds and phrases, incorrect spelling of proper names, and incorrect punctuation),
- vulgarities,
- slang,
- inconsistent style and
- incoherence and
- poor syntactic structure.

26. Based on the above textual features, it can be established that the author of mindenegyben.com is a male, native Hungarian speaker with a secondary school education.

27. There is little likelihood that the authors of mindenegyben.com and hidfo.ru are identical.

[22]It should be noted once more that mindenegyben.com is a blog site. It consists of articles (various texts) drawn from other sites, with comments by the author of the blog. Our profiling is based on our analysis of the comments.

A4. The semantic distance between portals: The mathematical background of the quantitative linguistic method

1. Suppose that:

1.1. There is a relationship between the vocabulary in a text (and the frequency of certain words) and the message of the text (e.g., "migrant" vs. "refugee").

1.2. If the vocabulary and frequency of the words in the two texts are similar, then the two texts are written on the basis of a similar rhetoric and their political embeddedness is similar as well. In contrast, if the vocabulary in the two texts differs, their political embeddedness also differs (e.g., *Russia Today* vs. *The Washington Post*).

2. Given the assumptions above, differences between text *A* and text *B* were calculated as follows:

2.1. Let A_{freq} be the word frequency vector of text *A*, where each element of the vector indicates the frequency of a stem in *A*; thus,

$$A_{freq} = (a_{apple}, a_{pear}, a_{lemon}, \ldots),$$

where, e.g., a_{apple} denotes the number of times the stem "apple" occurs in text *A*.

Thus, text *A* is placed in an *N* dimensional space, where N is the number of unique stems in text *A*. Let the set of all possible words in this space be *K* such that set K has N number of unique words.

2.2. Defining the B_{freq} vector in a similar manner, text *B* is placed in the same *N* dimensional space as text *A*. Suppose word roots in texts *A* and *B* are members of the same set *K* (i.e., *A* and *B* are written in the same language).

2.3. To ascertain the extent of the similarity between *A* and *B*, a vector multiplication is performed between A_{freq} and B_{freq}. Thus,

where $k \in K$

the smaller this number, the greater the similarity between texts *A* and *B* in terms of content.

3. The same procedure is used for portals. When comparing portals, however, the operation should be performed using vectors that refer to the entirety of each portal.