



ROBOTROLLING
2017. ISSUE 1

ROBOTROLLING

PREPARED BY THE
NATO STRATEGIC COMMUNICATIONS
CENTRE OF EXCELLENCE

PREPARED BY THE
NATO STRATEGIC COMMUNICATIONS
CENTRE OF EXCELLENCE



Executive Summary

Two in three Twitter users who write in Russian about the NATO presence in Eastern Europe are robotic or 'bot' accounts. Together, these accounts created 84% of the total Russian-language messages. The English language space is also heavily affected: 1 in 4 active accounts were likely automated and were responsible for 46% of all English-language content. Of the four states considered—Estonia, Latvia, Lithuania, and Poland—Estonia has disproportionately frequently been targeted by bots, whereas Poland and Lithuania have seen the least automated activity.

Our impression is that Twitter in Russian is policed less effectively than it is in English. Despite the high presence of automated activity, the period considered saw no large-scale,

coordinated robotic campaigns. The vast majority of bot activity is apolitical spam. For this reason, the polluted state of Twitter conversations about the NATO presence may be indicative of Twitter as a whole. The implications are stark: the democratising possibilities of social media appear—at least in the case of Twitter in Russia—to have been greatly undermined. The findings presented have practical implications for any policy maker, journalist, or analyst who measures activity on Twitter. Failure to account for bot activity will—at best—result in junk statistics.

This is the first issue of 'Robotrolling', a regular product about automation in social media published quarterly by NATO StratCom COE. ■

The Big Picture

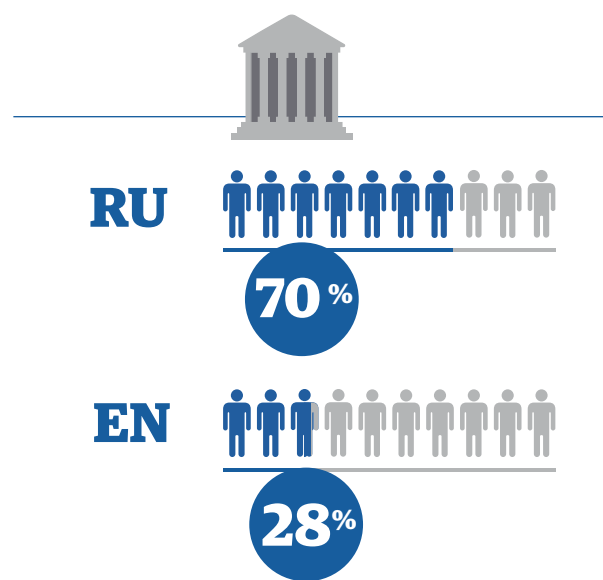
This issue of Robotrolling considers Twitter-mentions of NATO and one or more of the host countries Estonia, Latvia, Lithuania, and Poland. The period considered is 1 March - 30 August 2017. The total number of Tweets considered is 32 000¹ of which 1 in 3 are in Russian. The number of active users is 11 600, of which 1 in 4 wrote in Russian. Russian-speaking users are thus, on average, twice as active² as their English-speaking equivalents.

Our headline finding is that 70% of accounts active in Russian were predominantly automated. The equivalent for English-language content is 28%. The Russian-language bots created roughly 84% of all Russian messages about NATO in the Baltic States and Poland. For English-language bots, the figure is 46%.

The high numbers are partially explained by many media outlets and institutional accounts that automatically post links to new stories being counted as bots. Our findings are broadly in line with recent publications by teams at Indiana University and the University of Oxford. Please note the following caveats: the study is based on a sample of Twitter-data about military activity in the Baltics and Poland. This sample will not be perfectly representative of Twitter as a whole. Likewise, what holds for Twitter may not hold for other social media platforms. Future issues of this product will consider more representative data samples, will expand to consider other social networks popular in the region, and will employ more nuanced account classification. See our [online FAQ](#) for details on methodology. ■

¹ Numbers are reported to two significant figures. Percentages are rounded to the closest percentage point. Tweet-counts exclude retweets.

² A mean of 4.7 tweets per user for Russian, compared to 2.4 for English.



Country Overview

Russian-language content peaked in May/early June at the time of the largest NATO exercises, whereas English-language content peaked in March and April as Western troops arrived in the Baltics. Over the period considered English-language material was at a constant level, at roughly 3 400 mentions per month. Russian-language content fluctuated more, the number of mentions typically remained at around 2 000 per month, but dropped to 1 100 in July. The timeline for Russian-language content is shown in Figure 4; the one for English-language content is available upon request.

In the country-sections below, we focus on content promoted by Russian-language bots. Figures 2 and 3 compare the level of bot-created content about the three Baltic states and Poland. Figure 2 shows absolute values, whereas Figure 3 shows variation in the proportion of bot-created content.

Estonia

Estonia bore the brunt of Russian-language bot activity, both in terms of volume (4 200 mentions) and density (87% of mentions from bots). The issues most commonly discussed were the arrival of British troops, the stationing of US F35 aircraft, together with a number of military exercises. Additionally, the violation of Estonian airspace by Russian aircraft provoked commentary on social media in early May and early August.

Latvia

Latvia saw the second highest level of Russian-language bot activity, both in terms of volume (2 600 mentions) and density (85%). Automated content about Latvia focused on the Summer Shield exercise and the arrival of Canadian troops.

Lithuania

Automated content about Lithuania was less common than for the other Baltic States (1 600 mentions, of which 81% was from bots). The start of the Steadfast Cobalt exercise on 22 May drew considerable comment, as did two incidents in June involving NATO troops. The 11 July release of NATO TV's video about the Forest Brothers prompted further activity.

Poland

Poland, together with Lithuania, saw the lowest levels of automated activity, at about 1 800 tweets and a comparatively modest 80% of Russian-language content originating from bot accounts. Our data suggest that a story, hyped by Russian state media, detailing salacious accusations levelled at a Polish officer gained considerably more bot traction than did President Trump's visit to Poland on 6 July. Bot activity about Poland picked up in August. ■

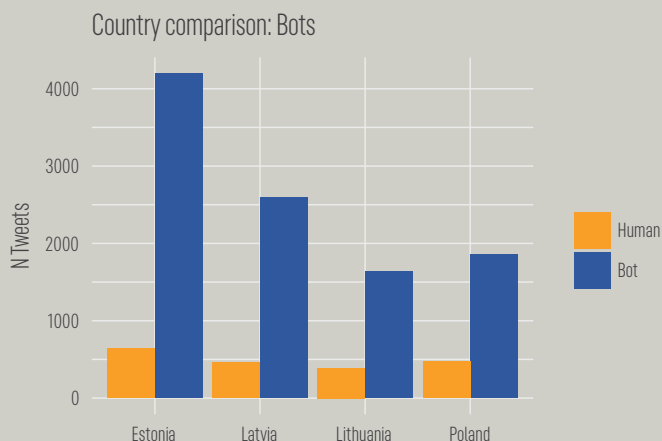


Figure 2: Distribution of Russian-language tweets mentioning NATO and Estonia, Latvia, Lithuania, or Poland.

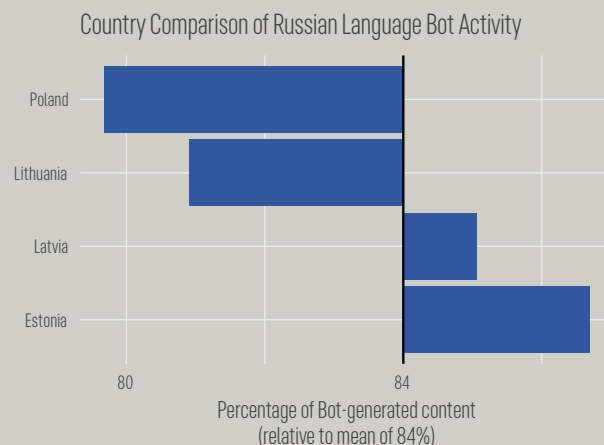


Figure 3: Comparison of the proportion of bot-generated Russian-language content per country. Numbers are relative to the mean for the Russian language content (86%).

Themes

Russian-language content correlates heavily with news coverage of military exercises, troop deployments, and minor incidents involving army personnel. English-language content was dominated by US domestic and foreign policy issues, notably President Trump's public comments about the Alliance, and his visit to Poland in early July. Incidents involving NATO troops were more heavily emphasised in the Russian environment. Nonetheless, to date, more attention has been paid to troop movements and exercises than to such incidents.

Figure 4 shows a timeline of robotically-generated Russian-language social media activity with key events labelled. Note the general downward trend in activity since the May/June NATO exercises. The distribution for human accounts follows the same pattern.

The automatically created content consists of a mix of benign content (e.g. by media outlets), spam and politically motivated material. Some generalisations can be made about the nature of bot content: material with hashtags relating to news (e.g. #news, #новости) were almost invariably bot-driven. This finding is in contrast to many previous studies of Russian Twitter, which have emphasised the practice of hashtag spamming to mask or dilute inconvenient trending topics. To date this has not happened for our area of interest. The 'Twitter conversation' about NATO-related news is mainly bots talking to other bots, bots promoting third party content and bots incrementally building more believable profiles.

The most common bot-type we observe copy-pastes headlines from online media outlets, either with or without a link and title image. News aggregators are another popular bot-type. Sometimes aggregator accounts rely on third-party services, such as dlvr.it, to automatically post any new articles by specific outlets or those that mention certain key terms. Additionally, numerous imaginary or 'fake' media outlets plagiarise or algorithmically re-write content from other media outlets and post these under their own name.

One implication of bots tending to rely on media for content is that the Russian-language social media environment is increasingly becoming an extension of traditional offline and online media. Most Russian media outlets are either directly or indirectly controlled by the state. By implication, even automatically generated Russian news-spam echoes state-sanctioned content. ■

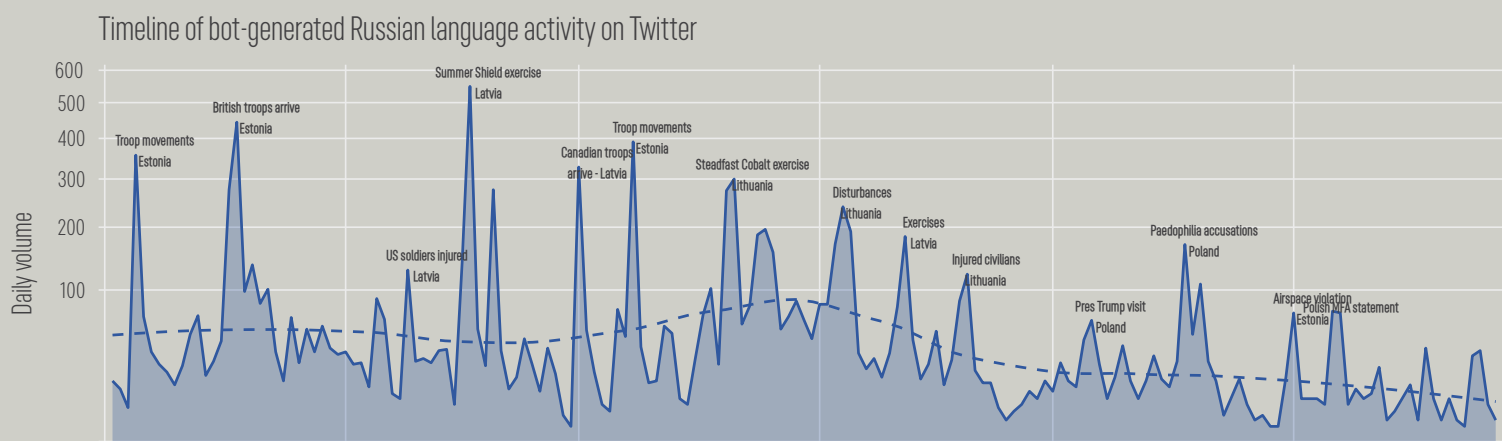


Figure 4: Timeline of activity by Russian-language bot accounts on Twitter.

Robo-topics

Compared to Russian, the English-language content saw a relatively smaller number of accounts responsible for a relatively large amount of content. That is, hyperactive bot accounts polluted the space, but the bot proportion of the population is estimated at a comparatively modest 28%. In the Russian environment, we see both high- and low-volume bots, resulting in a higher proportion of bot users, roughly 70% of the total. Low-volume bots are more likely to be politically motivated, while bots that aim to generate profits by favouriting, retweeting, or following tend to be as active possible.

Figure 5 illustrates the specificities of the Russian-language Twitter space. The figure is created so as to group together very similar accounts (see caption). There are a number of points to note about the graph. First, the graph connects similar users, so users with individual patterns are not depicted. Second, we can see a number of clusters of bot-users that are highly similar to each other. Such clusters are easy to detect as they exhibit high degrees of coordination and synchronisation. These clusters are common in the Russian-language space, but comparatively rare in English Twitter. Third, the yellow spaces in the centre of the graph depict more loosely coordinated accounts, many of which are similar to bots, but also exhibit some human characteristics. The smaller group to the left is a predominantly pro-Ukrainian cluster, whereas the large area to the right consists of pro-Kremlin Russian user accounts.

Russian Twitter-bots are distinguished by high levels of coordination. In the English-language content, the bulk of high-volume bots are lone actors. Such accounts tend to be banned within weeks or months of creation. In the Russian space, we observe dozens of virtually identical accounts simultaneously tweeting identical content. Many of these accounts were created in 2011–12, meaning their hyperactive behaviour has been tolerated for more than five years.

Why this difference between Russian and English language spaces? And why is the Russian space apparently dominated by fake accounts? The social media platform, Twitter, must bear some responsibility. Our impression is that non-English spaces are policed much less effectively, resulting in the toleration of behaviour patterns that would normally result in account suspension. This is problematic: around the world authoritarian states coerce domestic media into compliance. Social media can offer citizens an alternative space to express their views. Twitter's ability to serve this function is compromised if the volume of fake activity outweighs genuine content. ■



Figure 5: Network graph for most similar Russian-language Twitter accounts. The nodes represent users. Bot accounts are shown in blue. Node size is scaled by the number of tweets about NATO. Edges between users combine a number of measures of similarity.

Prepared by Dr Rolf Fredheim and published by

**NATO STRATEGIC COMMUNICATIONS
CENTRE OF EXCELLENCE**

The NATO StratCom Centre of Excellence, based in Latvia, is a Multinational, Cross-sector Organization which provides Comprehensive analyses, Advice and Practical Support to the Alliance and Allied Nations.

www.stratcomcoe.org | [@stratcomcoe](https://twitter.com/stratcomcoe) | info@stratcomcoe.org