Exploring Russian Cyberspace:

Digitally-Mediated Collective Action and the Networked Public Sphere

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Abstract

This paper summarizes the major findings of a three-year research project to investigate the Internet's impact on Russian politics, media and society. We employed multiple methods to study online activity: the mapping and study of the structure, communities and content of the blogosphere; an analogous mapping and study of Twitter; content analysis of different media sources using automated and human-based evaluation approaches; and a survey of bloggers; augmented by infrastructure mapping, interviews and background research.

We find the emergence of a vibrant and diverse networked public sphere that constitutes an independent alternative to the more tightly controlled offline media and political space, as well as the growing use of digital platforms in social mobilization and civic action. Despite various indirect efforts to shape cyberspace into an environment that is friendlier towards the government, we find that the Russian Internet remains generally open and free, although the current degree of Internet freedom is in no way a prediction of the future of this contested space.

Аннотация

В данной статье представлены основные результаты трехлетнего проекта, целью которого было изучить влияние Интернета на российскую политику, средства массовой информации и общество. Для исследования общения и деятельности пользователей интернета мы использовали различные методы: отображение и исследование структуры, сообществ и содержания блогосферы и контента в Твиттере; опрос блогеров, контент-анализ различных средств массовой информации: как с помощью автоматизированных методов, так и с помощью экспертов.

Мы открыли существование живого и чрезвычайно разнообразного публичного пространства, которое представляет собой альтернативу более контролируемым официальным средствам массовой информации. Мы считаем возможным говорить об электронных платформах, на основе которых происходит социальная мобилизация гражданских действий. Несмотря на различные попытки превратить кибер-пространство в пространство, поддерживающее правительство, наше исследование показывает, что Российский Интернет все еще остается свободным и открытым. Тем не менее, несмотря на существующую свободу Рунета, очень сложно делать какие-то предсказания относительно его будущего.

About this paper

The Berkman Center for Internet & Society at Harvard University, with funding from the MacArthur Foundation, is undertaking a three-year research project to investigate the role of the Internet in Russian society. The study will include a number of interrelated areas of inquiry that contribute to and draw upon the Russian Internet, including the Russian blogosphere, Twitter, and the online media ecology. In addition to investigating a number of core Internet and communications questions, a key goal for the project is to test, refine, and integrate various methodological approaches to the study of the Internet more broadly. More information about the project is available on the Berkman Center website: http://cyber.law.harvard.edu.

Introduction

This paper summarizes the results of a three-year research project conducted by the Berkman Center for Internet and Society at Harvard University to study and document the online activities of civil society, private sector and government, and to gauge the impact of these activities on Russian political and social life.[2]

Since the late 1990s, Russia's traditional media, especially the federal TV channels, have become less free, following the trajectory of the country's political system. In contrast, the Russian Internet, or RuNet, has remained surprisingly free from government interference, although experts have expected for some time that the Internet would also succumb to formal and informal control mechanisms by the Kremlin or its supporters. In contemporary Russia, the growth in Internet use and the influence of online activities on civic and political life are unmistakable. Through the use of several analytical tools and approaches, we have observed, documented and assessed the evolution and development of the Russian networked public sphere as an alternative to the more tightly controlled offline media and political space. The evidence collected through the study of the Russian blogosphere, Twitter and other online media clearly illustrate the emergence of an open, vibrant and diverse online media space that discusses and debates a wide range of political and social issues and that constitutes an independent alternative to broadcast and print media. This research also confirms the growing use of digital platforms in social mobilization and civic action, but draws into distinction issue-based campaigns and more traditional civil society organizations; finding that the former are more clearly manifest in Russian cyberspace while the latter are less evident.

Russian cyberspace continues to be a contested area as actors naturally seek to shape the digital environment, although the struggle for influence and control is playing out in ways that we would not have foreseen three years ago. Given the increasing restrictions on offline media and political participation as well as documented attempts by the Russian government to shape online activities, we expected to see a strong government influence in cyberspace.[3] Yet, we did not observe a substantial impact of the government, either through filtering, surveillance or information campaigns. However, the power and reach of cyber attacks, in particular DDoS attacks, for which attribution is nearly impossible, has grown to such a proportion that they have incapacitated online communities and communication platforms for many days at a time. The use of offline threats intended to silence the most prominent critics remains a key strategy for reining in online speech.

This paper seeks to provide a succinct summary of the research and results of this project. Further details on the methods and research results can be found in a series of companion papers.[4] The following section introduces a simple framework, applicable to any country, for understanding the influence and use of digital tools on political and social processes, and gives a short description of the analytical tools and approaches we utilize for this project. The remaining three sections summarize the observations, evidence and findings for Russia.

Scope, Framing and Methods

This research project employed multiple methods to study online activity: the mapping and study of the structure, communities and content of the blogosphere;[5] an analogous mapping and study of Twitter;[6] content analysis of different media sources using automated and human-based evaluation approaches;[7] and a survey of bloggers;[8] augmented by infrastructure mapping, interviews and background research.

The primary focus of our research is on the study of the publicly facing Internet, including the blogosphere, Twitter and other online media. This by no means encompasses all of digital life; private and semi-private realms including email, social networking sites, chat forums and other platforms that are not so open to the public are important venues for online discussion and organizing. We believe that when considering the impact of the Internet on social and political life, the open Internet comprises the most salient and influential set of ideas and opinions that have been offered up for criticism, debate, redistribution and amplification, and encompasses a majority of the major efforts at influencing public opinion and motivating collective action online.[9] It also provides a useful gauge of the range and prominence of different views as well as the boundaries and contours of what constitutes allowable online speech.

The theoretical framework for this research, which we think is applicable to any country, draws on the premise that digital technologies reduce the individual costs of participating in civic life and alter the risks of doing so, and that this applies not only to the sharing of information and opinion but also to engaging in communities and collective action. A second dimension is that digital tools may facilitate a shift in individual motives and perceived benefits of civic participation. For example, some may be motivated by independent online media reports or emboldened by encountering like-minded individuals online to take action, among other possibilities. An important third dimension is the efforts to regulate cyberspace as none of the actions of individuals and civic groups occur in a vacuum: the actions and reactions of governments and others will influence both the real and perceived costs and benefits of engaging in collective action.[10]

For those with access to the Internet, it is less costly and more convenient to publish one's views and easier to find similar minded people. The costs of participating in collective action appear to be falling and the prospect of joining many like-minded individuals in expressing discontent with the status quo could mark a significant shift in the perceived benefits of engaging in civic and political affairs. Although the actual risks of participating in collective action are neither static nor predictable, the perceived risks of engaging in collective action may be changing as well. It is now possible for social movements to engage participants in many smaller incremental steps, each of which represent a less risky proposition than attending a meeting in person or showing up for a rally without being sure whether you are likely to be joined by a hundred or ten thousand people. While many have expressed skepticism over the impact of low-risk online political movements, for example joining a Facebook group, the very possibility of signaling widespread dissatisfaction in online platforms and escalating participation through small incremental steps might be crucial towards building popular support in environments where more open or explicit participation is perceived as dangerous. For those that aspire to inspire others to act or become civic leaders, the Internet offers a lower cost means for making one's case and seeking to recruit

others. It is harder to predict the relative risks for leaders and prominent online voices compared to analogous activities offline; they are in some respects more vulnerable as their words and actions are easily tracked, but their very prominence can offer a level of protection. Drawing on this simple theoretical framework, we generally expect to see a rise in civic and political activity online with campaigns that evolve online spilling out into offline activity, and offline activists expanding their influence using digital tools.

The presence of civic discourse online is clearly evident in Russia. Similarly, we are able to document the online efforts to coordinate collective action. Assessing changes in the level of overall participation in civil society is more difficult; offline organizations, which are adapting in different ways to the introduction of digital technology, are being joined by new organizations which build at their inception on a strong online presence. Casual observation suggests that the level of civic and political participation in Russia is on the rise, illustrated most prominently by the recent mass protests against falsification of the 2011 Duma elections, but also by many other examples that took place during the period of our data collection, including volunteer efforts during the 2010 forest fires, the drivers' movement, anti-corruption efforts, and the Khimki forest protests, to name just a few. Given the number of contributory factors, we are unable to gauge how much of this might be due to the affordances and use of digital technologies, and how much is due to larger shifts in the political, economic and social environment.

For this project, we employ a number of methods for documenting political and civic activity online. These methods concentrate on different segments of Internet activity in Russia and to different degrees explore the structure of online networks, participation in online life, the content and substance of online discourse and communities, and the perceptions of online participants. Our inquiry focuses on two broad aspects of online activity: *the networked public sphere* and *digitally-mediated collective action.* Yochai Benkler defines the networked public sphere as a set of practices that members of a society use to communicate about matters they understand to be of public concern and that potentially require collective action or recognition. Attributes of a networked public sphere include universal intake and the potential for bottom-up agenda setting, filtering for potential political relevance (issue salience) and accreditation (credibility), synthesis of public opinion, and independence from governmental control.[11] Digitally-mediated collective action spans a range of different activities, including issue-based campaigns, political protests, social movements and the formation of new civil society organizations. Our primary focus is on civic and political activity online, recognizing that the boundaries and labels around these activities are unclear and the subject of considerable academic debate. Moreover, we also recognize that online groups formed around non-political activities at times also engage in political activities and causes. Digitally-mediated collective action may draw upon the ideas and debates of the networked public sphere, and the various forms of collective action may originate online or adopt digital tools for recruiting supporters and coordinating collective action.[12] In our research, we look for evidence of both the networked public sphere and digitally-mediated collective action, recognizing that these two categories are part of a continuum rather than representing two clearly distinct sets of activity.

The blogosphere study employs link analysis to reveal the implicit structure of the Russian blogosphere and to identify the clusters that emerge from linking behavior, as well as evaluating the nature of discourse and areas of media attention in different areas of the Russian blogosphere.[13] The Twitter studies offer an analogous look at the structure of Russian Twitter while also tracking the propagation of ideas and hashtags within and between different communities in Russian Twitter. The text analysis of different sets of online sources using Media Cloud provides a means to compare the agendas put forward by different segments of the media ecosystem. An online survey of Russian bloggers adds a view of opinions and perceptions, and background research puts the other research into the context of government actions and Internet regulatory practices. None of these methods maps perfectly with our aspirations to catalogue and understand online activity and its impact of political and social life in Russia, but collectively offer a multi-faceted perspective and evidentiary basis for the project.

We divide our observations and conclusions into the following three sections. The first section is devoted to the emergence of the networked public sphere in Russia, describing the nature of online discourse, including efforts to influence the Russian media agenda and to offer alternative frames for discussing news and politics. The second section focuses on findings from the data and observations about the impact of the Internet on Russian issue-based campaigns and social movements. The final section provides an assessment of government efforts to control and shape the Internet in Russia.

The Emergence of the Networked Public Sphere in Russia

Through our research into multiple Internet and media platforms we find compelling evidence of an emerging and increasingly powerful networked public in Russia. Benkler portrays the networked public sphere as an online space where members of society can cooperate, present political opinions, and collectively serve as watchdogs over society, all through an online, cooperative, peer-produced model that is less subject to state authority than the traditional media. Ideally, it is a system where anyone can participate and where a system of collective filtration highlights issues of greatest concern and that warrant collective action or recognition. This system allows for a shift towards more bottom-up than top-down agenda setting.

The Russian blogosphere provides an alternative to government information channels and elite-controlled media. The agenda in political blogs, as measured by cosine similarity scores generated by Media Cloud, is markedly different than that of government Web sites, mainstream media and TV. Media Cloud data also demonstrates the occurrence of bottom-up agenda setting, in which bloggers are able to place and promote issues of political importance into the mainstream media and the public agenda, such as election falsification following the 2011 Duma election, discussion of the Arab Spring protests, and Anti-Seliger protests in Russia.[17] Based on link analysis from our Russian blogosphere study, we see—as we have in the English, Persian and Arabic language blogospheres—that user generated content sites such as YouTube and Wikipedia are the top outlinks for bloggers.[18] This is not only illustrative of the collaborative ecosystem that helps to fuel new media but also highlights the appearance of alternative sources of primary reporting

and information that lie outside of traditional media sources. Moving beyond agenda setting to the framing of news and political actors, there are a growing number of important examples that demonstrate the capacity of new media to choose the words and perspectives to describe news events. One example documented in our research is the way in which bloggers were able to shift the discourse away from the pro-government Seliger Youth Forum to a discussion instead of the opposi-tional Anti-Seliger event that also drew attention to the Khimki forest protests. This was done in part by simply organizing an alternative protest event before the Seliger youth camp and promoting it extensively in blogs and social media. This 'counter protest' was eventually picked up by traditional and Web native newspapers, and even pro-Kremlin bloggers were forced to react to it.[19]

We find evidence of this bottom-up agenda-setting function across several sectors and topics, marking a notable change in the dynamics of the Russian media ecosystem, eroding the influence of the government in the overall media ecosystem. The government still retains a significant, if no longer exclusive, role in agenda setting. This is especially true for national leaders such as Putin, who remain at the center of political discourse, both online and offline, based on the continued power of the bully pulpit, but also no doubt through its influence over many traditional media outlets. This is likely also a reflection of Russia's semi-authoritarian political system, where Putin has dominated politics and political discourse for the last decade. We also find evidence in comparative text analysis using Media Cloud that TV, along with the mainstream media and even bloggers, hew fairly closely to the government line on some government initiatives, such as President Medvedev's policy to modernize the economy.

The Russian Internet and its various platforms do not yet offer universal intake, but access trends point to rapid changes over time. Internet penetration is growing rapidly, and is now approaching 50% in Russia, which may mark an important tipping point.[20] Internet penetration is still heavily concentrated in Russia's major cities and urban centers, but that is where the majority of the country lives, with 73% of its population located in urban centers.[21] We also see signs that locally distinct online communities are developing in regional cities and moving outside of Moscow and St. Petersburg. Findings from our Twitter research show clusters of users in regional cities such as Samara, Chelyabinsk, Novosibirsk, Krasnodar and Vladivostok.[22] We also find salient hashtags with long-term commitment from users in some of these same cities, indicating sustained commu-nities of users in these areas.[23] There is no apparent gender divide on the Russian Internet. Based on our link-based blog research as well as a survey of Russian bloggers, contributors appear to be split equally between men and women.[24] Still, use remains skewed towards younger, wealthier, and urban users, as it does around the world.

The watchdog function of the Russian Internet appears especially strong. There are a large and growing number of examples of Russians identifying problems of common concern and coming together online to push back against abuses of the state or powerful corporate interests. Several examples that we identified in our research are illustrative of this trend. A community of activ-ists and bloggers were able to highlight the negative impacts of a planned Gazprom tower in St. Petersburg on important historic areas of the city. Their reporting helped to mobilize opposition to the project by one of the most powerful state-owned enterprises in the country, which was also formerly headed by President Medvedev, and ultimately put a stop to construction.[25] Other online

efforts offered critical reporting on the Russian forest fires, the Khimki forest campaign, the Anti-Seliger protests, and the drivers' movement. More recent examples where we are still gathering and reviewing evidence include attempts to crowdsource election monitoring efforts, and reporting and aggregation of election violations via online tools during the Duma election of 2011.

The evidence is compelling that Russians are producing and sharing information online that is collectively determined to be of public importance, and in doing so, circumventing the tighter restrictions on traditional media. The ability of Russians to organize and act on that information appears to be equally, if not more important, than the simple access to information and collective filtration of topics and identification of salient agendas. In other words, it is not only the collaborative creation, filtering, and amplification of important political issues that is important to the emerging networked public sphere, but also the ability to act collectively by leveraging the lower barriers to group action brought on by online organizing.

Digitally-Mediated Collective Action: Social Movements and Issue-Based Campaigns

The online threat to authoritarian states goes beyond the sharing of information online and is heightened when online communication facilitates the formation of civil and political communities that engage in collective action. The ease and low cost of organizing online helps social and political groups to fluidly connect users across vast geographic spaces, and set or reframe political and news agendas. In Russia, where opportunities for formal political participation are extremely limited, social movements and civic groups may offer the last venue for Russian citizens to participate substantively in the public sphere and to push back against the abuse of power and corruption by powerful elites.[26] It borders on the tautological to state that Russian social movements and civic groups use the Internet to organize. We have repeatedly found evidence of community building, protest organization, and numerous other more creative forms of collective action, including creating humorous posters and YouTube videos and even miniature doll protests that spread online and then get picked up by some mainstream media outlets. We also find persistent communities of users around these issue-based campaigns. These groups include an interesting mix of newer online groups and activists with a strong organic online presence, along with more typical civil society structures.

Like classic social movements, these groups and issue-based campaigns have a long-term focus and clear goals, and do not see victory in one-off protest events, but instead seek to address injustice through the culmination of many actions over time. Unlike big news events such as the Domodedovo airport or Moscow metro bombings which grab a significant amount of attention for a very short period of time, the Russian movements and issue campaigns demonstrate long-term commitment and persistent issue salience by dedicated online groups.[27] The fact that almost none of these groups have a traditional brick and mortar civil society footprint may make them less susceptible to offline government pressures. It also appears that those who act as part of larger groups, including predominantly online communities such as Navalny's RosPil or the new election monitoring project RosVybory, have some level of protection that is not as apparent for those that act on their own, such as officer Dymovsky's famous direct YouTube appeal to Putin.[28]

The emergence of these myriad groups and their distinctly Russian flavor, and focus on issues of hyper-local concern, is consistent with the historical context and earlier observations of Russians' perceptions of civic and political groups. Our survey of Russian bloggers indicates that Russians have very low levels of trust in formal institutions, even lower than those in the US where support for institutions has also steadily declined. Russian bloggers in particular have especially low levels of support for political parties, TV, and nearly all formal government institutions, from the police to the courts to the central government. The highest (although still comparatively low) levels of support among bloggers are for charitable and social groups, followed by environmental groups. We find unique clusters of bloggers focused on these issues in the blogosphere, and have already discussed the importance of the Khimki forest protests and other ecological efforts in Russia.

The demands for justice, dignity and equal opportunity are a common theme in many successful Russian social movements. Examples where corruption and abuse of power have ignited strong online responses include the Khimki highway project, numerous car accidents caused by officials with special privileges and flashing lights that often escape without prison time or even criminal charges, and the more recent massive election falsification protests. Over time, all of these actions, on seemingly unrelated issues, help organizers learn what tactics work and which issues have salience with the broader public, and help build trust between participants within and across organizations. This learning, cooperation, and building of interpersonal and inter-organizational trust, seem to make it easier for users to put individual differences aside, and to unite on issues of common concern at critical political moments, exemplified by the recent election falsification protests. Several key players in the election falsification protest movement are the same leaders that we have observed in our research who emerged in some of the most active online movements and issue-based campaigns unrelated to elections.

Without the online communication and organization space, many of these leaders, movements, and protests would have a difficult time ever reaching a substantial audience in Russia. The TV and government often ignore, or actively seek to undermine, opposition leaders and activists. For example, protests against election falsification were ignored for nearly a week on TV but were a major issue for bloggers. Putin demeaned protesters by associating them with monkeys and arguing that he mistook the white ribbons that mark the movement for condoms. This criticism only lead to more online and offline mockery of Putin, further uniting the opposition. Even without TV coverage before the Bolotnaya protest, organizers were able to use social networks, blogs, Twitter and YouTube to rally between 50,000 and 70,000 protesters in Moscow (and tens of thousands in other cities), easily the largest protests in recent Russian history. By many estimates an even larger protest with more diverse participants took place on December 24th on Sakharov prospect, with upwards of 100,000 participants.[29]

The diversity of online voices and communities reflect the range of political opinions and values of Russian society. There exists a large cluster of nationalist bloggers in Russia. While some are focused on Russian and Soviet history and the military, some of the most-linked-to nationalist bloggers are extremely xenophobic, call for violence against non-ethnic Slavs, promote "Russia for Russians" and frequently use dehumanizing and demeaning language to describe those from the Caucasus and southern Russia. The DPNI (Movement Against Illegal Immigration) forms a

central online node for the nationalist community and is extreme enough to have been banned recently in Russia. On the rare cases when the Russian courts shut down Web sites, they are often affiliated with these nationalist causes. Democracy, and in particular popular protests, makes for strange bedfellows; different nationalist groups have played an important part in the current election protests, and have consistently also been part of the Strategy 31 protests which we frequently encounter in our research. This campaign unites democrats, human rights groups, and nationalists to rally on every month with 31 days, in support of the right to protest as is enshrined in Article 31 of the Russian Constitution. The ability of these disparate groups to put aside their varying agendas affirms the strength of Russian social movements and, in particular, the salience of the issue of election falsification.

Based on our earlier framing, we would expect to find a significant amount of civic activity on the Russian Internet, and we do. Not only is there ample evidence of collective action originating and amassing online in Russia, but in aggregate, the blogosphere and related online communities constitutes a new digital institution in itself, where new ideas, perspectives and actions are debated and refined.

The level of online and offline civic activity is not what one would expect given the conventional wisdom in Russia regarding low levels of support for institutions and weak civil society structures. The type of civic organizations that seem to have the most success in Russia are issue-based campaigns that are organized mostly online but perform both online and offline actions. In contrast, many primarily offline organizations appear to be less successful in leveraging online tools and organizational capacity. These include traditional political parties and civil society organizations, which tend to have less support online.

It is unclear whether the relative prominence of online groups is indicative of an actual measure of their broader popularity. There are a number of factors that could contribute to the disparity in online support between primarily Web native organizations and more traditional ones. It is possible that this merely reflects the practices and preferences of the constituents of online groups and that the groups that have a larger online following are supported by younger, more connected constituents, and the smaller online presence of traditional organizations reflects only the fact that their backers are less active online. The lack of support online could also be the result of the reluctance of these organizations to engage with their constituents online or a lack of capacity. Another possible explanation is that the popularity of online communities stems from obstacles and pressures that limit their ability to organize offline. Untangling these factors and better understanding the influence of offline and online organizations requires further research.

Internet Control in Russia

Most countries around the world that have historically maintained tight media and political controls, have also extended those controls to the Internet. Russia is unusual in the degree of freedom found online compared to offline media and political restrictions. The absence of Internet filtering is notable. Based on tests run through the OpenNet Initiative, we continue to find no evidence of significant technical filtering of the Russian Internet.[30] However, government signals and rhetoric

have pointed towards efforts to rein in Internet speech using a variety of formal and informal controls. Nevertheless, we find the Russian Internet to be remarkably free, and that attempts by the government at formal and informal controls have been largely ineffective.

Critically, we do not find evidence that efforts by the government to push its message online through supporters, paid or otherwise, are very successful. The mere presence of pro-Kremlin bloggers does not necessarily translate into influence as the broader online community is not compelled to link to such blogs or to adopt pro-government messages. In studying the blogosphere, we do not find a distinct cluster of pro-government bloggers among the nearly 11,000 most-linked-to bloggers in Russia. Pro-government blogs are rarely found on our map of prominent blogs as measured by in-links from other bloggers. The blogosphere in particular appears to be an online space where pro-government elements have not been able to gain a toehold.[31] Similar to Egypt, we found several groups of oppositional bloggers (broadly defined), but little obvious support for the government.[32] Pro-government issues, such as the Seliger Youth Forum, do not attract much attention in the blogosphere.[33] Also, compared to other semi-authoritarian and authoritarian states, bloggers are rarely arrested or jailed for their online activities or writings.

However, we do find that pro-government users are more successfully entrenched in Twitter. Specifically, pro-Putin youth groups like the Young Guards and Nashi, and elected officials allied with them, have a distinct Twitter footprint. Still, we find many of the same oppositional groups as we do in the blogosphere on Twitter (with the exception of the nationalists) so more pro-government users have not crowded out oppositional communities.[34] Also, hashtags that are popular with pro-government users are not widely adopted outside of their own cluster.[35] We also found evidence that one cluster of Twitter users—those centered on the Medvedev policy of modernization—is popular primarily because it is promoted by bots and instrumental Twitter users.[36] It is not surprising, given the high level of instrumental activity on Russian Twitter, and the use of the state to push one of their initiatives with techniques typically used by online marketers, that during recent election falsification protests there was a significant amount of automated, and, we believe, human hashtag pollution of protest-related hashtags.[37] This prevents these hashtags from being used by organizers and forces users to rely on well-known, trusted users instead of allowing larger groups to contribute to and follow selected protest hashtags.

Online surveillance, which is authorized by SORM and other laws, is widely believed to be pervasive in Russia. Nevertheless, Russians do not seem to substantially alter their online behavior due to perceptions of government surveillance. One indication of this is comes from our survey of bloggers. Although a majority of Russian bloggers report that they often use a pseudonym, we hypothesize that this is rooted in the cultural norms of RuNet, rather than fear of persecution; a majority of bloggers who use a pseudonym also report that maintaining anonymity is not important to them.[38]

There are two methods for controlling online speech that appear to have a greater impact than pro-government information campaigns and are likely to be perpetuated by the government or their sympathizers to limit speech on the Internet. The first is offline attacks and threats against journalists and others critical of the federal and local officials and powerful business interests. Examples include the attack on journalist and blogger Oleg Kashin, presumably for his coverage

of the Khimki forest issue or criticism of Nashi; a brutal beating against local Khimki newspaper reporter Mikhail Beketov, who was beaten so severely that he remained in a coma for months and can no longer speak or work as a journalist;[39] and the handful of journalists killed, as many believe, for coverage of human rights violations in Chechnya and the North Caucasus, including Anna Politovskaya and Natalia Efemirova from Novaya Gazeta. Sadly, there are many more examples.

The second persistent threat to online speech in Russia is DDoS attacks. The disabling of nearly twenty independent news and election monitoring sites on Election Day is the most extreme and most wide-reaching example of coordinated DDoS attacks in Russia to date. The timing and targeting of these attacks strongly suggest that they were carried out to silence political speech. Based on our research and data from Arbor Networks, it seems extremely unlikely that these attacks were not coordinated, since all of the sites under attack were targeted by just two botnets. The nature of these attacks makes it nearly impossible to definitively attribute blame to any group or user. However, it seems quite plausible that these attacks were carried out by the government or Kremlin sympathizers given their coordinated nature and the timing of the attacks, which coincided almost exactly with the opening and closing of the polls on Election Day.[40] Given the effectiveness of these attacks in bringing down a great proportion of independent speech online, we should not be surprised to see additional large-scale attacks, perhaps during the presidential elections in March.

Overall, we find that the Russian Internet remains generally open and free despite the various on-going efforts to shape cyberspace into an environment that is friendlier towards the government, although the two notable exceptions—the periodic DDoS attacks against independent media sites and the violent attacks carried out against dissident writers—have a significant negative impact on Internet freedom in Russia. The relative freedom online in Russia is a product both of the ineffectiveness of several of the measures employed by the government and of the government's restraint in not enacting more draconian Internet control mechanisms as seen in several other countries. The relative degree of freedom is in no way a prediction of the future of this contested space. The Internet remains vulnerable to manipulation and control. It is possible that conditions for a free Internet in Russia will worsen under Vladimir Putin if he wins reelection, since he has not spoken out against censorship of the Internet as clearly as President Medvedev, and he also tends to philosophically align himself more closely with the security services and ministries that have argued for greater control over the Internet.

Looking Forward

Thanks to the tremendous amount of content created by users online, we may now have more data on human behavior than at any point in history. We also have the ability to study countries and gather political data that in the past would be dangerous if not impossible. This online data allows for a better understanding of what citizens identify as important issues, going far beyond what is possible by reading the words and opinions of government and media elites alone. Moreover, we can now also move beyond anecdotes, which just a few years ago formed the basis of most studies that sought to measure the impact of the Internet on civic activity in democracies as well as more autocratic states.

Over the course of three years, our research applied innovative tools to the analysis of Russia's online networks. Our multifaceted examination of the Russian blogosphere, Twitter and other online media documents the emergence of a vibrant and diverse networked public sphere that constitutes an independent alternative to the more tightly controlled offline media and political space, as well as the growing use of digital platforms in social mobilization and civic action. Despite various indirect efforts to shape cyberspace into an environment that is friendlier towards the government, we find that the Russian Internet remains generally open and free, although the current degree of Internet freedom is in no way a prediction of the future of this contested space.

We believe that the application of tools we used on this project marks a significant improvement in the study of online activity. First, we are able to identify and track the discourse of online communities and movements—including both emergent communities and those selected by researchers for special focus. We can now do this across multiple platforms; blogs and Twitter are especially fruitful for this type of analysis. With Media Cloud, we are able to identify and track agendas through multiple online media, including blogs, Twitter and newspapers (including both traditional and Web native varieties), building on the quantitative evaluation of the similarity and differences of various online media sets. We are developing the capacity to track organizations, links and memes. Overall, the analytical tools are becoming more effective at tracking who is talking at the individual and community level, as well as tracking the issues they discuss.

There is still much room for improvement, and several natural next steps in the evolution of our collective research efforts in this zone. We want to understand better *how* users and communities are talking about issues, specifically the sentiment and framing they employ. It may be that human coding is the best way to do this, and there are widely accepted methods for how to do reliable human coding. Further experimentation and better tools for doing this automatically are still needed. Meme tracking is also a goal that requires enhanced tools, as well as data from multiple platforms, including data for traditional radio and TV outlets that is not easily collected or comparable to online data. In general, more research is also needed in how audiences receive, process and accept or reject messages found online from various information sources. Finally, we believe that the research community is much further along in understanding information flows than the complex issues surrounding online organizing, such as how communities form online, why some groups are more successful than others, and the relative weight we should give to online versus offline factors for the success of various groups, issues and movements.

Endnotes

[1] Authors are listed alphabetically.

[2] The team benefited tremendously from the advice and/or assistance of a number of individuals and organizations, including: David Larochelle and Ethan Zuckerman's efforts on the Media Cloud project; Gregory Asmolov, Ivan Sigal, Alexey Sidorenko, and Veronica Khokhlova at Global Voices; Floriana Fossato and Sam Greene at the Center for New Media and Society at the New Economic School; Jaclyn Kerr at Georgetown University; Olessia Koltsova at the Higher School of Economics; Catharine Nepomnyashchy and colleagues at Columbia University's Harriman Institute; Sheldon Himelfarb at the US Institute of Peace; and Sean Aday, Henry Farrell and Marc Lynch at George Washington University.

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[16] "Topic Selection, Demographics, and Trust in Institutions."

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[25] Etling et al, "Public Discourse in the Russian Blogosphere."

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