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BLOGS AND BULLETS II

NEW MEDIA AND CONFLICT AFTER THE ARAB SPRING

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ABOUT THE REPORT

In this report from the United States Institute of Peace's Centers of Innovation for Science, Technology, and Peacebuilding, and Media, Conflict, and Peacebuilding, a team of scholars from George Washington University and American University analyze the role of social media in the Arab Spring protests of 2011–12. It builds on a previous report, published in 2010 by USIP Press, titled *Blogs and Bullets: New Media in Contentious Politics,* and applies its five-level framework for studying and understanding the role of new media in political movements. The authors utilize a unique dataset from bit.ly, the URL shortener commonly associated with Twitter and used by other digital media such as Facebook. With these data, the authors are able to test empirically the claims of "cyberoptimists" and "cyberskeptics" about the role of new media in bringing down autocratic regimes in Tunisia, Egypt, and Libya and in spurring protests in other parts of the Arab World, such as Bahrain.

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CONTENTS

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Summary

- An extraordinary wave of popular protest swept the Arab world in 2011. Massive popular mobilization brought down long-ruling leaders in Tunisia and Egypt, helped spark bloody struggles in Bahrain, Libya, Syria, and Yemen, and fundamentally reshaped the nature of politics in the region.

- New media—at least that which uses bit.ly linkages—did not appear to play a significant role in either in-country collective action or regional diffusion during this period.

- This lack of impact does not mean that social media—or digital media generally—were unimportant. Nor does it preclude the possibility that other new media technologies were significant in these contexts, or even that different Twitter or link data would show different results. But it does mean that at least in terms of media that use bit.ly links (especially Twitter), data do not provide strong support for claims of significant new media impact on Arab Spring political protests.

- New media outlets that use bit.ly are more likely to spread information outside the region than inside it, acting like a megaphone more than a rallying cry. This dissemination could be significant if it led to a boomerang effect that brought international pressure to bear on autocratic regimes, or helped reduce a regime's tendency to crack down violently on protests.

- It is increasingly difficult to separate new media from old media. In the Arab Spring, the two reinforced each other. New media must be understood as part of a wider information arena in which new and old media form complex interrelationships.

- Of the four major Arab Spring protests analyzed—Tunisia, Egypt, Libya, and Bahrain—large differences were found across the four in the amount of information consumed via social media. The events in Egypt and in Libya (#jan25 and #feb17, respectively) garnered many more clicks on a much larger number of URLs than those in Tunisia and Bahrain.

- The protests in Egypt and Libya attracted more attention than those in other countries and also focused that attention on a more delimited set of content. Particular hashtags, such as #jan25, received a disproportionate proportion of attention.

- The trends also suggest very sharp peaks of attention pegged to dramatic events, such as the departure of Ben Ali in Tunisia, the Pearl Roundabout raid in Bahrain, and several key days during the protest in Egypt—especially the "Friday of departure," when Mubarak resigned.

Introduction

An extraordinary wave of popular protest swept the Arab world in 2011. Massive popular mobilization brought down long-ruling leaders in Tunisia and Egypt, helped spark bloody struggles in Bahrain, Libya, Syria, and Yemen, and fundamentally reshaped the nature of politics in the region. Internet-based social media such as Twitter, Facebook, and YouTube played a visible role in many of these movements, especially for foreign audiences experiencing the turmoil vicariously through real-time Twitter feeds or YouTube videos posted to Facebook pages.

There is a strong commonsense case that these new media mattered in the Arab uprisings. Many of the protest organizers who planned Egypt's January 25 march on Tahrir Square had a strong online presence. Facebook pages such as the Egyptian "We Are All Khaled Said" page served as key online gathering places for disaffected youth, conduits for information, and (to some extent) vehicles for organizing protests.[1] Twitter accounts from Arabs around the region

offer testimony to the attention paid to and inspirational effects across the region of the revolutions in Tunisia and Egypt. #Egypt was the most used hashtag on Twitter for 2011, beating out such formidable contenders as #JustinBieber.[2] And without the flood of video produced by Syrian activists, would the world have even known of the unfolding atrocities? It is unlikely that the massive growth in participation in new online social networks and the readily observable changes in the flow of information could have not mattered at all.

But how exactly did they matter? Much of the popular debate has revolved around two extreme poles. Cyberenthusiasts such as Philip Howard and Muzammil Hussain argue that "the Internet, mobile phones, and social media such as Facebook and Twitter made the difference this time. Using these technologies, people interested in democracy could build extensive networks, create social capital, and organize political action with a speed and on a scale never seen before. Thanks to these technologies, virtual networks materialized in the streets. Digital media became the tool that allowed social movements to reach once-unachievable goals."[3] Cyberskeptics such as Malcolm Gladwell argue instead that the revolutions were driven primarily by traditional forms of political organization and motivated by familiar grievances. Revolutions and protests, they argued, have happened for centuries without being updated in real-time on Twitter.[4]

These debates over the role of new media are familiar. In 2009, the media raced to declare the Iranian Green Movement's challenge to an allegedly fraudulent presidential election to be a "Twitter revolution," when in fact new media played little role inside Iran even if it helped drive international news coverage. The enthusiasm for a social media–centric interpretation of the Arab uprisings once again risks exaggerating its importance, blinding the public to other causal factors or powerful off-line actors or to the ways which the new media might empower status quo forces against their challengers. Skepticism of the exaggerated claims in turn risks leading to an unwarranted dismissal of any role for the new media when in fact it may have played a crucial, if more limited, role. Both undue enthusiasm and skepticism could lead not only to poor analysis but also to dangerously misconceived policy.

In a 2010 United States Institute of Peace (USIP) Peaceworks report titled *Blogs and Bullets: New Media in Contentious Politics*, we argued that existing analyses of new media and political conflict needed more rigorous research design, more robust data, and a tighter focus on specific causal mechanisms.[5] While rejecting sweeping claims about the primary role of the new media, we did not argue that new media is irrelevant. Instead, we proposed a framework that unpacked claims about the generic importance of the Internet into specific causal hypotheses: not "the Internet causes protest" but "social media allows activists on the ground to disseminate information about protests in real time." We broke down the possible impact of new media into five discrete causal pathways: effects on individual attitudes and competencies, effects on social networks and intergroup relations, effects on the organization of protests, and effects on international attention. We argued that proper investigation of these hypotheses would require better theory, better data, and more careful research methodologies.

In this report, we revisit those arguments in light of the Arab Spring. We argue that claims about the causal role of new media, no matter how intuitively plausible, need to be supported with compelling empirical data. Key conceptual and contextual problems also need to be addressed. Egyptian activists had been trying to ignite a revolution using blogs and social media for a decade, with little sustained success. The hundreds of thousands of people who made the Egyptian revolution by coming into the streets on January 25, 2011, did not learn about it through Twitter or Facebook. They saw it on Al-Jazeera, or out their windows. Internet pen-

Claims about the causal role of new media, no matter how intuitively plausible, need to be supported with compelling empirical data.

etration in Yemen, which has had one of the most sustained and resilient protest movements, is roughly 2 percent, while the Gulf countries, with the highest regional rates of Internet penetration, have experienced little protest. Many of the activists themselves now complain about the focus on new media, and bristle at questions about the role of Twitter or Facebook.[6] For them, the Internet was only one tool that they used alongside many others. As Wael Ghonim argued, "This is not an Internet revolution. It would have happened anyway."[7]

The Arab uprisings gave renewed policy urgency to these questions and also offered both a vast array of new cases and unique data. The USIP working group therefore returned with a more expansive, year-long research program. In February 2011, a workshop at Stanford University cosponsored by USIP, George Washington University's Institute for Public Diplomacy and Global Communication, and Stanford's Liberation Technology Program discussed the state of the art in empirical research and theory development relevant to the emerging Arab struggles. The scholars, activists, and representatives from technology companies particularly focused on the new data that might be used to address these urgent theoretical questions. In September 2011, a similar group convened at USIP in Washington, D.C., alongside senior U.S. policy officials to present new research to a public audience and to continue the conversation in a private workshop.

These workshops focused on practical empirical research possibilities rather than on the increasingly unproductive debate between alleged "cyberutopians" and "cyberskeptics."[8] The huge amount of new online data, and the variation among outcomes in the Arab cases, offered an unparalleled opportunity to exploit new data sources and analytical techniques to test specific propositions about how and when new media may affect political conflict and peacebuilding. For example, social network data and blog-linking behavior could be gathered and analyzed to show unexpected relationships, while Twitter's dataset allowed the testing of propositions about attention profiles and social influence. Analytics from YouTube could reveal unexpected patterns of attention to different types of videos. Put simply, the massive amount of data now available online, or else held by private companies but potentially available for social science research, offered unprecedented opportunities for researchers to test claims and to develop hypotheses. But the same avalanche of data could also lead to poorly conceptualized studies that arrive at misleading, partial, or specious conclusions.

This report also begins to address a systematic bias in the online data generated during the Arab uprisings. Most data exploited to date represent the production of online information—who "tweeted" what, when—or the relationship between different social media users. We build on those findings by using unique data drawn from bit.ly, the URL shortener, to track who actually consumes information about the Arab Spring: where, when, and how. We find stronger evidence that new media informs international audiences and mainstream media reporting rather than plays a direct role in organizing protests or allowing local audiences to share self-generated news directly with one another. We also find some evidence to support regional demonstration and diffusion effects, as ideas and narrative frames spread through Arab social networks across borders. The key role for new media may be its bridging function: from an activist core to mass publics, from user-generated content to mainstream mass media, and from local struggles to international attention.

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Five Levels of Analysis

The 2010 report *Blogs and Bullets* proposed five distinct levels at which new media might affect political conflict: individual attitudes and behavior; societal connections and divides;

collective action; regime repression; and international attention. The course of the Arab uprisings produced a wide range of observable changes at all levels. In this report, we focus on the 2011 wave of popular mobilization in the Arab countries for reasons of policy relevance and to limit the scope of our research; we make no assumptions about the uniqueness of the Arab experience or about whether it is comparable with other movements, such as the London riots or the Occupy Wall Street movement. We go on to highlight a number of key questions that seem particularly amenable to rigorous empirical analysis. Did social media play an instrumental role in these protest movements? If so, was that influence primarily within each country (e.g., organizing or facilitating protests), within the region (e.g., a kind of domino effect where social media helped spread protests from Tunisia to Egypt and across the Middle East and North Africa [MENA] region), and/or external to the region (e.g., a megaphone effect in which new media brought news about the protests to the international community)?

Did social media play an instrumental role primarily within each country, within the region, and/or external to the region?

Individual

The first pathway for the impact of new media that we proposed was on individual attitudes, competencies, or behavior. Users of new media might think or behave differently from those not exposed to the information or modes of relations in systematic ways. The rise of a distinctive "activist" identity across the region offers fairly strong support for this proposition. Activists across the region, from Tunisia and Egypt to Bahrain and Yemen, seemed to demonstrate remarkably similar attributes. Most were young, well-educated, and urban. Most were drawn to street protest and distinctive forms of political action that were not widely distributed through other sectors of society. Most shared a common political vocabulary, a common disdain for both regimes and established opposition elites, and a broad pan-Arab political identity. They followed one another's political struggles on the Internet and in real life. And most demonstrated an almost unbelievable courage in challenging entrenched, violently repressive regimes.

It remains difficult to demonstrate a unique causal role for new media. These activists could have acquired these common identities and orientations through a similar cohort experience and exposure to similar real-world problems (education, employment, regional, and international events). Those inclined toward activism for other reasons may have gravitated toward new media when they were exposed to their peers using such tools. Still, the gap in worldviews between these individuals and the mainstream within their own societies—discussed in the following section—suggests some intervening variable. New media is at least a plausible candidate.

Society

There is also considerable support for hypotheses suggesting that new media promoted political and social polarization, and for those which suggest that new media might be more useful for contentious politics than for ordinary democratic politics.

Egypt offers particularly profound evidence that the same forces that forged a roughly common identity among activist users also distanced them from mainstream society. During January and February of 2011, hundreds of thousands joined dedicated activists to bring down Egyptian president Hosni Mubarak. But over the following year, a hard-core group of Egyptian activists continued to take the streets and call for "millions" to join them in denouncing the transitional military leadership. However, only a few thousand typically joined in these later protests. The results of the March constitutional referendum (where activists urged a no

vote but 82 percent voted yes) and of parliamentary elections (where Islamists swept the voting while activists and liberals scored extremely poorly) exposed the profound gap between activists and mainstream Egyptian society. During violent clashes between protestors and security forces in November and December around Tahrir Square, most Egyptians seemed to side with the authorities and the streets remained quiet only blocks away from the fighting. Few joined a general strike called by activists for February 2012.

When those differences fell along ethnic or sectarian lines, as they did in Bahrain, the results could be devastatingly destructive. Here, the polarization often found in online environments produced radically different identity narratives and reinforced hostile images of the "other." When major protests began in February, Bahraini protestors presented their demands as nonsectarian calls for democracy and human rights, and at one point attracted half the country's citizen population into the streets. But over the course of the summer, Sunnis and Shi'a became increasingly hardline, and public rhetoric increasingly sectarian. This sectarianism was not exclusively because of new media, of course. Traditional media carried sectarian messages, the Sunni monarchy promoted sectarian narratives, and arrests and repression of Shi'a who had not necessarily been activists contributed to the hardening divide. But online processes also clearly mirrored that divide, as Sunni and Shi'a partisans retreated to mutually exclusive networks and interacted in increasingly hostile ways.

Collective Action

The most direct impact for new media on the Arab uprisings would presumably be in its contribution to the organization and promotion of the protests themselves. Such arguments focus on distinct causal mechanisms linking new media to political outcomes. There is ample evidence of new media being used to organize and sustain protests during the Arab uprisings, though it is more difficult to demonstrate a unique causal role.

Then there is the question of whether new media actually helped to catalyze the protests themselves. Here again, the evidence for new media's impact is surprisingly thin. Some accounts emphasize that Egyptian activists had coordinated for many years via online tools.[9] This may have generated a greater sense of common purpose. And certain new media, such as the "We Are All Khaled Said" Facebook page, may have helped persuade Egyptians who came across the page that enough others shared their outrage that protest would be successful.

But even if those facts are true, they do not fully explain why the protests happened when they did and why many ordinary citizens were willing to join in. For those citizens, as opposed to the protest organizers, new media probably played a smaller role. For one, there is the simple fact that the Egyptian government shut down the Internet and short message service (SMS) on January 28. At that point, if not before, the mass of protestors was "composed primarily of people who have never updated a Facebook page or sent out a tweet in their lives"—no matter how "wired" some activists may have been.[10] In fact, the shutdown of the Internet may actually have spurred more people to protest—the opposite of what one might expect if Twitter, Facebook, or SMS were the primary means by which protestors were mobilized.[11] It is also possible that new media was important for some groups involved in protests but not others. Based on extensive interviews with Egyptians on the ground, Zack Brisson and Panthea Lee found that key constituencies (e.g., the labor and judiciary movements) were largely not online and many feared governmental Internet surveillance.[12] Brisson and Lee note that handwritten documents and simple face-to-face communication were important: "the amount of knowledge transfer that occurs in cafes, on street corners, and from roadside newspaper vendors is

immense." Ultimately, online tools may have made helped activists communicate with each other without directly catalyzing mass participation in protests.

One recent study placed Twitter at the center of the revolution: "Twitter seems to have been a key tool in the region for raising expectations of success and coordinating strategy," and "the key media for spreading immediate news about big political changes from country to country in the region."[13] But the underlying evidence for these claims is based only on an analysis of tweets, without evidence of impact or dissemination outside of Twitter. There is good evidence that within Egypt itself Twitter is one of the least important sources of information, even for activists. In one survey of Tahrir Square protestors, which may actually overrepresent users of new media, only 13 percent named it as a medium used in protest activities.[14] In fact, social media was cited less frequently than "old media" such as television (92 percent) and firsthand communication via live conversation (93 percent). It is unlikely that Twitter spread more "immediate news" across the region than Al-Jazeera, with its estimated 40 million viewers. Twitter surely influenced Al-Jazeera coverage (where dedicated staff monitored new media throughout the crisis), but this is a different mechanism. Without traditional media, Twitter's impact would have been even more limited.

Regimes

Regimes also use new media in the service of their own survival. Too often, however, analysts focus on the tactics adopted by activists or citizens and miss the adaptations made by regimes and their proactive uses of the Internet. For example, Zeynep Tufekci argues that the widespread adoption of Facebook in the region provided

> the ideal infrastructure to create [an] information/action cascade . . . especially since these regimes seemed unable to develop potent ways to deal with the political consequences of digitally enabled social networking (even at the end, all Mubarak could do was clumsily unplug the whole Internet which certainly was of fairly little importance by then: the uprising was well underway; the die was cast).[15]

Yet as Evgeny Morozov and other skeptics point out, regimes are not necessarily so hapless or indeed helpless.[16] Arab governments used a wide range of Western technologies to help them monitor and control Internet use in their countries. They have found a depressingly diverse and robust set of methods to either exploit the digital media or to control its effects. They not only respond but also anticipate the actions of others. In fact, there is often an "authoritarian learning curve," in which regimes figure out how best to respond to demonstrations and other pressures and thereby increase their chances of survival.

During the Arab Spring, leaders sought to avoid the mistakes that they believed other leaders had made. For example, the Bahraini government facilitated the flooding of Twitter, online forums, and Facebook pages with proregime voices to disrupt the formation of any unified consensus or narrative. It spread stories about the alleged Iranian ties of the opposition, which, whether they were true or false, took a toll on its popularity. Other regimes went even further, using social media to hunt down activists and target them for arrest or murder. Bashar al-Asad's regime attempted to respond to videos of its violent repression by publicizing videos of its own that it claimed documented atrocities by the opposition against police and ordinary citizens. Many governments targeted online activists and bloggers, arresting them or forcing them into exile.

However, a focus on the regime's success in responding to threats associated with new media is just as one-sided as a focus on activists and protestors. We need to move toward a

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properly strategic account, which understands how each side can (at least some of the time) modify its tactics so as to respond creatively and intelligently to the other. A genuinely strategic theory of how protestors, regimes, and other actors use new media would include learning, whereby actors draw lessons from the success or failure of tactics that they have used, and then create and revise tactics for the future.

International Attention

The role of new media in influencing international attention is one of the most dramatic areas of influence confirmed by the Arab uprisings. Social media such as Twitter connected Western and Arab individuals to participants, bringing unique and unfiltered content. In Egypt, this meant identifying with the protestors in Tahrir Square. In Syria, it meant watching horrific videos of murdered civilians. There is also evidence that foreign governments directly monitored these new media sites to supplement their limited knowledge of the actors on the ground. It is not an accident that President Barack Obama explained in the spring of 2011 that he hoped that in the end of Egypt's transition, "the Google guy will win" (referring to "We Are All Khaled Said" Facebook page administrator Wael Ghonim).

Generally, however, the links between the local and the international were indirect. Journalists for mainstream media, whether Al-Jazeera or American newspapers and television, relied heavily on new media. In the case of Libya and Syria, almost all video footage used on the air came from users, either sent to the stations or uploaded to social sharing sites. Mainstream media outlets used social media to identify activists to interview for their stories, making many of them (particularly in Egypt) into international stars.

Thus, new media was a conduit for old media, increasingly providing the material for old media. Traditional media outlets, especially broadcasters, often turned to the online videos of "citizen journalists" rather than their own correspondents for on-the-ground real-time reportage of the protests in Tunisia and Egypt.[17] On YouTube, footage produced by citizens received a disproportionate amount of page views relative to videos produced by mainstream media outlets. Facebook, Google, and YouTube's own news page all direct traffic to these videos.[18] Indeed, Al-Jazeera's own analytics also revealed that the vast majority of referrals to its Egypt coverage came from Facebook and YouTube, not directly from its own website. On Twitter, discussion of the Tunisian and Egyptian revolutions influenced traditional media coverage of those events, and especially Al-Jazeera's, but were also themselves reflective of the old media coverage.[19] In addition, mainstream news organizations used Twitter as a way to contact activists. Egyptian activist Amr Gharbia describes how "during the sit-in in Tahrir, people from the international media often looked for our hashtags [grouped messages], and got in touch with us through Twitter. This was how we got to speak on their shows. So some communication with the international mainstream media started on the social networks."[20] All of this bolsters arguments for a "new media ecology" of pan-Arab media both old and new.[21]

Clearly, new media content during the Arab Spring—particularly user-generated video—has been routinely picked up, discussed, and rebroadcast by traditional news outlets within and outside the MENA region. As a consequence, citizens and policymakers elsewhere have had an important— if partial—window into events on the ground in Cairo and elsewhere. For example, consider the violent battles in Tahrir Square the week of November 21, 2011. The presence of activists online drew international attention to the battle and may have complicated the regime's claims that nothing out of the ordinary was happening. At the same time, the focus

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on these online activists may have led to an exaggerated sense of the scale of the conflict, leading many to believe incorrectly that a revolution comparable to January 25 had been reignited.

The Five Levels, Revisited

There is some evidence to support claims about the causal importance of new media at all five levels of analysis laid out in the original Blogs and Bullets report. The evidence is more mixed and difficult to decode than might be expected, however. The next section considers some of the methodological and data issues that must be taken into account.

Bit.ly: A Window into New Media Consumption during the Arab Spring

To sharpen our discussion of the strengths and limitations of new media, we turn to a new body of data. Much research into new media and the Arab Spring focuses on who is publishing content—for example, tweeting—but we know rather less about who is actually consuming that content. As noted, the mere act of publishing (i.e., output) is not synonymous with impact. And for media to have an impact, it must be consumed or received in some fashion. Consumption is also more important to political action. If new media has important consequences for protest, it is because it provides individuals with information that changes their behavior.

Of course data about information consumption cannot on its own tell the whole story of how social media affects political unrest. This would require, at a minimum, the demonstration of a relationship between the places and times that information was consumed, and the places and times that demonstrations or other political actions happened. However, gathering these data is a crucial intermediary step toward generating and testing these kinds of explanations. And even on their own, the data can show that some hypotheses are implausible. It is highly unlikely that Twitter allowed Arab Spring protestors to organize protests if few such protestors actually used Twitter during the period in question.

In this section, we present preliminary results that look at patterns of social media consumption during the Arab Spring in order to test a few of the many possible hypotheses about these events. We use data from bit.ly—a popular URL shortening service—to understand how Web users in the countries undergoing upheavals, in other Arab countries, and in non-Arab countries accessed and shared information relevant to the protests. To our knowledge, this is the first attempt to use bit.ly data in an investigation of the Arab Spring.

Bit.ly allows individual users to shorten URLs by generating links on bit.ly's own servers that forward users to the original URLs. Thus, for example, the Web address http://www.theatlantic.com/daily-dish/archive/2009/06/the-revolution-will-be-twittered/200478/ can be shortened to the link http://bit.ly/qk4Mlo and then shared. This service is especially useful to Twitter users, given the 140 character limit on Twitter posts, but is used more generally to facilitate linking and information exchange.

Our data allows us to identify particular bit.ly links, the URLs to which they resolve, and a variety of information associated with each link, including, most importantly, information about each click each link received. For obvious reasons of personal privacy, the data do not allow us to identify individual users or Internet protocol addresses. But the data do allow us to identify the country from which clicks originate in most cases.

To isolate bit.ly links relevant to the Arab Spring, we relied on Twitter data, culling every link included in a nonexhaustive sample of tweets from the following hashtags: #sidibouzid (Tunisia), #jan25 (Egypt), #feb14 (Bahrain), #feb17 (Libya). These tweets cover the period

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Table 1. Summary Information about Clicks on Bit.ly Links

Location of pro-test activity	Number of clicks	Number of URLs	Median number of clicks	Maximum clicks on any URL
Tunisia	514,367	4,669	25	15,109
Egypt	5,453,008	20,288	9	1,324,105
Bahrain	265,928	1,420	31	10,191
Libya	3,204,635	18,428	8	660,217

from roughly mid-January to early April 2011). The links include not only those with the shortener "bit.ly" but also a number of branded shorteners that bit.ly administers for a variety of clients (such as "nyti.ms" for the *New York Times*). We found that the top thirty branded bit.ly domains by frequency accounted for over 95 percent of all branded bit.ly links present among the tweets. Our analysis incorporates all unique links bearing the "bit.ly" domain name plus all unique links bearing one of the top thirty branded bit.ly domains, which yields a grand total of 44,805 links. Bit.ly provided us with data on when and where those links were clicked. Although all of the links themselves were shared on Twitter at some point, the bit.ly data are not limited to clicks that were generated from Twitter. People may have clicked on any particular link because it was shared via email, Facebook, or other websites.

There are real shortcomings to this data, about which we will be as transparent as possible in the spirit of our critiques above. It does not capture information shared via several other media, such as SMS, some of which are likely to be more useful to organizing protests in cases where the government has not shut them down. Furthermore, we have no way of knowing how representative readers of bit.ly links are of Web users as a whole. These data likely overrepresent Twitter users and underrepresent casual or less sophisticated Web users. Finally, and perhaps most important, we cannot link bit.ly data to actual political action. Obviously, we do not know the identity of individuals who click on bit.ly links and cannot query them about their involvement in protests. Thus, we will refrain from drawing any inferences about how consumption of information via bit.ly may have facilitated protest or other collective action.

Despite these shortcomings, the data also have several strengths. First, we are able to compare episodes of protest in different countries, rather than rely only on single case studies. Second, the bit.ly data provide a measure of information consumption, not just production. The data thereby allow us to construct a provisional account of who was consuming and sharing which Web content when.

Counting Clicks

We begin by presenting some simple summary statistics from the bit.ly data for each episode of protest (see table 1). The results suggest, first, large differences across these four episodes in the amount of information consumed via bit.ly. The events in Egypt and in Libya (#jan25 and #feb17, respectively) garnered many more clicks on a much larger number of URLs. There was also a much higher degree of concentration on select URLs. For example, one URL from tweets with the #jan25 hashtag garnered over 1.3 million clicks—approximately 38 percent of all the clicks on bit.ly links in these tweets. The protests in Egypt and Libya clearly attracted more attention than those in other countries and also focused that attention on a more delimited set of content (about which we say more later in this report).

Figure 1. Clicks by Date (number of clicks in thousands)
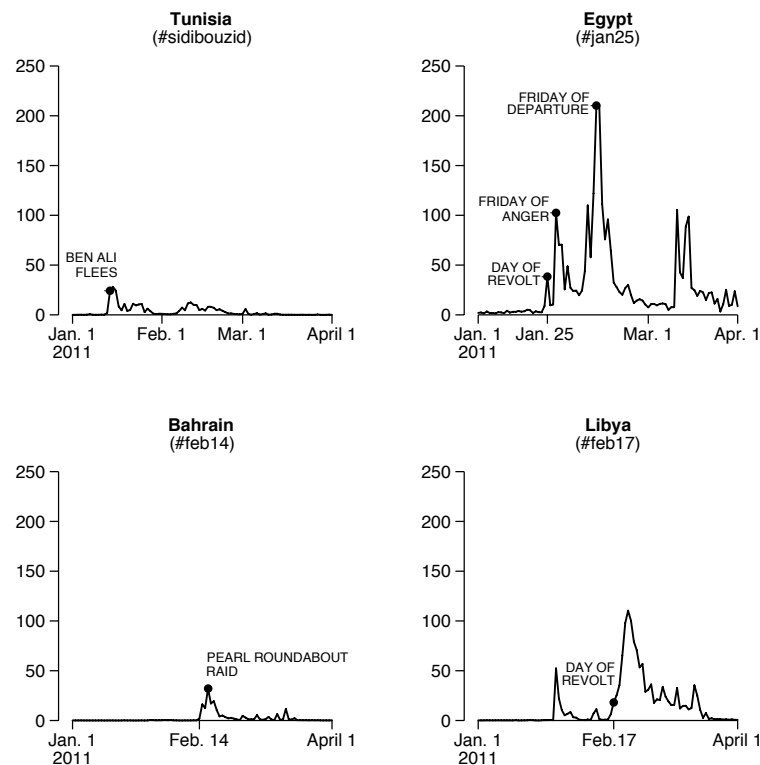
The trends in the number of clicks over time also tell us whether and how information consumption may derive from ongoing events. We plot the number of clicks for each protest episode between January 1 and April 1, 2011 (figure 1). These trends again demonstrate that far more clicks took place in and around the events in Egypt and Libya relative to the events in Tunisia and Bahrain. The trends also suggest very sharp peaks of attention pegged to dramatic events, such as the departure of Ben Ali in Tunisia, the Pearl Roundabout raid in Bahrain, and several key days during the protest in Egypt—especially the "Friday of departure," when Mubarak resigned. Notably, however, those spikes of attention tend to dissipate rapidly. Information consumption, at least via bit.ly links, was never sustained at the highest levels. It tended to ebb and flow in response to events on the ground, just like the production of tweets.

New Media as Megaphone

The patterns identified thus far—temporary spikes in clicks that correspond to widely publicized events—do not speak to who was clicking these links or where those people were located. This question of location matters a great deal. If the audience is primarily local, then information consumption is more likely to play a significant role in mobilizing protest or affecting dynamics on the ground. If the audience is regional or even global, then new media is arguably functioning as a megaphone, generating external attention from citizens, news media, and governments outside of the country. The mechanism by which it achieves this function might be called bridging.

Bridging is particularly valuable when traditional news sources are unavailable or regulated by the government, or when violence or repression makes it difficult for mainstream media to directly cover an unfolding story. For example, the Tunisian government tightly controlled the

Figure 2. Clicks by Location

Percent
of clicks

In Country   In Region   Out of Region
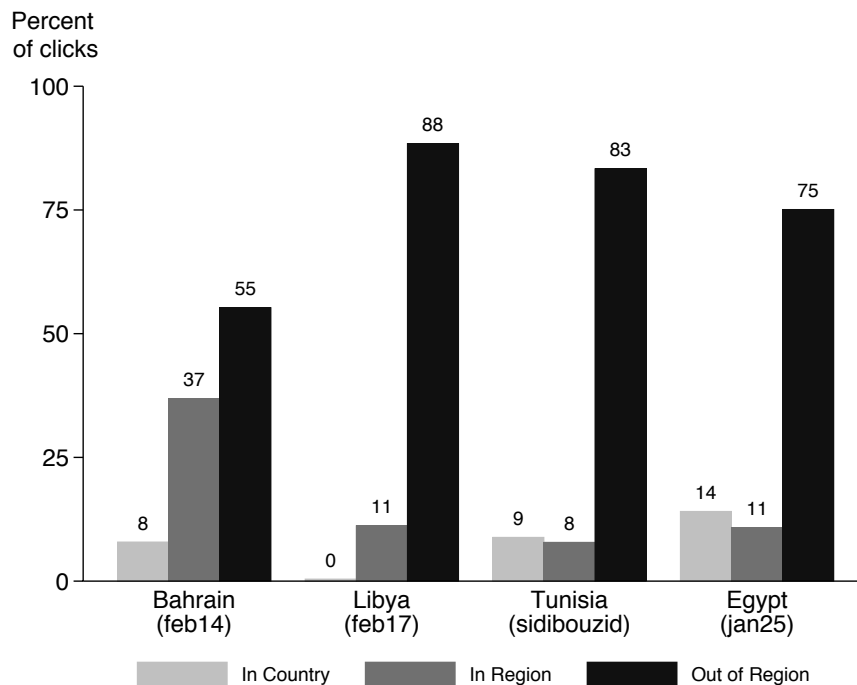
mainstream Tunisian media, making information available online all the more valuable. But in more open polities, which tolerate a higher degree of press freedom within their authoritarian structure, the Internet would become only one part of a complex media ecosystem. New media and user-generated content may also have mattered disproportionately in relatively distant cases such as Yemen, where few mainstream media had bureaus, or Syria, where first extreme repression and then extreme violence made it difficult for foreign journalists to operate.

The location-specific patterns in the bit.ly data examined thus far—temporary spikes in clicks that correspond to widely publicized events—suggest that bit.ly traffic largely consists of consumers outside of the countries where the protests took place. That is, it would appear that bit.ly, in part via Twitter, was functioning like a megaphone. For each protest event, we divided those who clicked on bit.ly links into three categories—those located within the country, those located outside of the country but still in the MENA region, and those located outside of the MENA region—and calculated the proportions of clicks from each category (figure 2).[22] During all four of the protest events, the majority—and at times the vast majority—of clicks came from outside the country. Only in the case of Bahrain did a large percentage of clicks (37 percent) come from within the region. This is not a surprise, given that Internet penetration is much greater in many countries outside of the region than within the region. But the lack of surprise does not make the pattern any less important.

While new media can function as a megaphone, broadcasting information to a larger external audience, the downside is that this audience has a short attention span. As figure 3 shows, the spikes in attention pegged to dramatic events are driven by this external audience. For the bit.ly links relevant to the events in Egypt—which were more numerous than during the other three protest events—trends in consumption outside of the region spiked notably around key events (particularly the day of Mubarak's resignation).[23] Trends in the region and within Egypt had some of this same pattern but did not spike nearly as drastically.

Figure 3. Clicks on Egypt Links by Location

Number of clicks
in 1000s
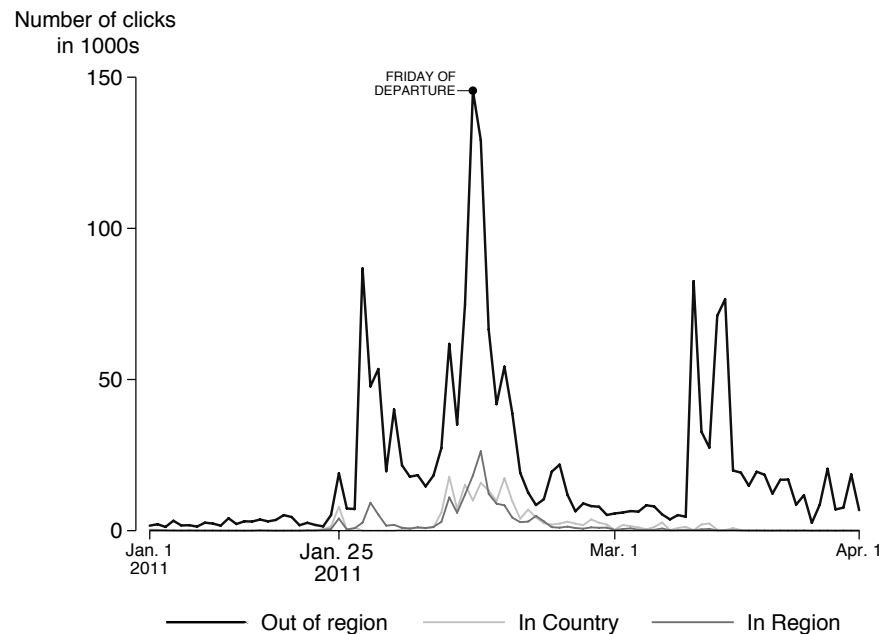
The extent to which bit.ly links served to inform people outside the region does not mean that they, or any other form of new media, played no role within these countries or the MENA region as a whole. But the data make it clear that the links were more heavily consumed outside the region than inside it. This pattern in turn suggests (although it does not prove) that these links were more important in drawing external attention to the protests than in drawing attention within the specific countries or within the region as a whole.

The bit.ly data potentially allows us to examine the content of the Web pages whose URLs were shortened via bit.ly and disseminated via Twitter and other means. Although a full-scale analysis of this content is beyond the scope of this report, examination of the most widely clicked links reveals an important fact: there is no easy way to disentangle the influence of new media from that of older media, such as television. New media must be understood as part of a wider information arena, in which the somewhat hoary categories of new and old media form complex interrelationships.

Consider, for example, the case of Egypt. The four most popular bit.ly links outside of the region were simply links to live streaming video—including one from the Japanese news website 47news.jp (the most clicked-on link) and the ubiquitous Al-Jazeera feed. (The fifth most popular link was a CBS News story about the attack on American reporter Lara Logan.) Within Egypt and the region, the most popular links were completely different: several were YouTube videos, and a few others were news stories. A similar pattern held during the Libya uprising. Outside of the region, the two most popular links were the al-Jazeera live feed and a similar feed at livestream.com. Within the MENA region, three of the five most popular links were videos uploaded to YouTube or Facebook.

> *New media must be understood as part of a wider information arena, in which the somewhat hoary categories of new and old media form complex interrelationships.*

Toward Better Analysis of New Media and the Arab Spring

Few would deny that new media played a highly visible role in the unfolding of the "hashtagged" Arab revolutions. But there are major methodological challenges inherent in determining the

actual causal impact of new media on protest and other forms of contentious politics.[24] Data alone cannot resolve these challenges. It is not just a question of asking Twitter-using activists how they used Twitter, recounting the contents of a protest-centered Facebook page, or presenting correlations between the number of Internet users and protest incidence. The explosion of new data does not on its own allow us to draw valid descriptive or causal inferences. For example, in our analysis of the bit.ly data, we can offer remarkable new insights into the consumption of information, but we cannot demonstrate that consuming this information led to changes in political attitudes and behavior. Unsurprisingly, we find that media data tell us most about . . . media. We have only tantalizing hints as to how new media might change the attitudes and competencies of citizens in the Arab world and elsewhere. But these very hints lay out a road map for future research.

A particular risk is that, like the proverbial drunk searching for his lost key under the streetlight because that is where he can see, researchers simply gravitate toward the data that are most available, regardless of their limits. For example, SMS may have been the most important form of communication during some protests, but it is almost completely ignored by researchers because the data cannot easily be accessed. Even the most sophisticated empirical analysis will not help if the source data are systematically skewed. These data might lead scholars to ignore key political actors or to exaggerate the importance of those who are easily found online. Egypt's salafis, for instance, might be poorly represented among English-language Twitter accounts, but they had enough presence on Egypt's streets to win over 20 percent of the votes in the parliamentary elections.

Scholars might also gravitate toward new media outlets that are most generous in supplying data, even if they are not the most relevant to the questions being asked. For example, Twitter provides relatively accessible data that are tailor-made for statistical analysis. But Twitter may also provide a skewed portrait of online activists and activity, particularly when only English-language tweets are accessed and where Twitter users are not representative of the relevant population of interest. These qualities in turn have led to conclusions that exaggerate the size of the audiences of those new media outlets that readily provide data, that fail to grapple with the many differences between the users of those outlets and the broader population of citizens, and overestimate the significance of those outlets in facilitating protest or other political outcomes. Consequently, these conclusions have also tended to portray digital resources as isolated from broader suites of revolutionary tools that include off-line technologies and network ties. Ultimately, we cannot assume that mere output—some number of tweets—equals impact.

For another example, what can we learn about the distribution of political views from studying online data? Howard and Hussain state that Egyptian authorities were surprised that "a large network of relatively liberal, peaceful, middle-class citizens would mobilize against Mubarak with such speed. Islamists, opposition-party supporters, and union members were there too, but liberal and civil society voices dominated the digital conversation."[25] Sophisticated analysis of the digital conversation could presumably determine empirically if this claim is accurate. But that would leave unaddressed the larger question of whether online discourse misrepresents the real distribution of voices in Egypt. For example, perhaps Islamists were just as active in online discourse—but in Arabic, not English. Or perhaps they or other groups were involved in off-line discussions and political organization. The results of parliamentary elections that began in late November 2011, in which the Muslim Brotherhood and Islamists scored massive victories while only a small handful of liberals and activists managed to win seats, are at least suggestive.

Many claims about new media's relevance have exceeded what the evidence can support.

To be clear, our claim is not that new media have been irrelevant to the Arab Spring. It is that many claims about their relevance have exceeded what the evidence can support. Without more careful and specific analysis, arguments about the role of new media in the Arab Spring may suffer from the same flaws as accounts of Iran's "Twitter revolution," leading to faulty policy responses and unwarranted expectations. In both cases, there were relatively few active users of new media technology, compared with those who were using traditional forms of media or communicating face to face. These conditions make it unlikely that Twitter or any other new medium was significant in mobilizing protestors directly. But in both cases new media channeled information to Western consumers of news, rather than those who engaged on the streets of Tehran or Cairo.[26] In Egypt, this may have led Western governments to put pressure on Mubarak's regime, hastening its downfall. Finally, both the Iranian and Egyptian cases demonstrate the importance of seeing new media as a tool that can serve the goals of authoritarian regimes, not just antiregime protestors. Efforts to shut down or slow down digital channels are one example. The Mubarak government also sent out its own text messages via SMS.[27] New media can facilitate democratization and protest but also make them more difficult. Ultimately, there is no simple story in which new media made it much easier to mobilize mass protest, hence precipitating the Arab Spring.

In our first report, we urged scholars and policymakers to move beyond broad claims about the impact of the "Internet" or "new media" in favor of more precise causal mechanisms linking specific aspects of these media to specific outcomes. Given that the events of the Arab Spring have continued to elicit many claims much stronger than the available evidence would warrant, we outline three ways in which our thinking about new media might be refined and improved. Our advice can be summarized thus: (1) pay attention to failures, (2) ask smaller questions, and (3) remember that tyrants tweet too.

The Importance of Failures

First, it is important to think carefully about which cases to study and what sorts of evidence to consider. Roughly speaking, there are four possible outcomes, involving the presence or absence of new media activism and the presence or absence of a revolutionary movement. Too often attention focuses only on successes, and in particular the combination of new media activism and a revolutionary movement. This singular focus misses those cases where new media activism fails to produce such a movement, and it misses when such movements develop without the contribution of new media. Scholars must be sure to consider the full universe of comparable cases and be careful about including only successes or of discounting negative findings within cases.

Research focusing on the "success stories" of Tunisia and Egypt cannot ignore why these technologies apparently "worked" in these countries but failed elsewhere, even in countries where they are more prevalent. Consider Facebook. Facebook, some have argued, is perhaps most effective at organizing protests and creating or bringing together disconnected individuals and collectives into one social network. Charlie Beckett posits that the diffuse, horizontal nature of digitally produced networks in fact make these movements harder to break.[28] There are certainly anecdotal examples of its importance, such as the "We Are All Khaled Said" page.

However, a calculation of Facebook penetration of Arab countries as of April 2011 found that the highest rates were found in the UAE (45 percent), Bahrain (34 percent), Qatar (34 percent), Lebanon (23 percent), and Kuwait (21 percent)—only one of which (Bahrain) experienced sustained mobilization.[29] We examined all MENA countries and carried out a

simple test of the relationship between the presence of large-scale protest events—in Tunisia, Egypt, Libya, Syria, Yemen, and Bahrain—and the degree of Internet penetration. There was no significant relationship.[30] This finding of course does not prove that no relationship exists between new media and activism. However, it does suggest that there is no simple relationship between the degree of penetration of online networks and the likelihood of large-scale protest.

The same dangers inherent in case selection also arise when researchers focus on certain historical moments in a country or set of countries but ignore or downplay other moments. Howard and Hussain write: "For years, discontent had been stirring, but somehow the drivers of protest never proved sufficient until mobile phones and the Web began pervading the region."[31] This does not fully capture the significance of earlier protests. In 1983, for example, an outburst of economic protest in the south of Tunisia—not dissimilar from what happened in Sidi Bouzid—quickly spread not only to other Tunisian cities but also to Algeria. Facebook was not required. In 1989, southern Jordan experienced protests that led the king to initiate a then-unprecedented transition to limited democracy. Egyptian protest activity began to gather steam from 2000 to 2003, in response to Israeli-Palestinian violence and the United States' plans to invade Iraq, well before there was any significant use of new media.

Of course, neither our very simple analysis of Facebook penetration and MENA protests nor the episodes of protest that took place before the advent of most new media prove that new media failed to facilitate any specific episode of protest. We simply illustrate the sort of empirical breadth that analyses of new media and contentious politics should strive for—and especially the importance of expanding the universe of cases beyond only those countries with major protest events or time periods when those events occur. A theory that explains Egypt but not Libya, Bahrain but not Qatar will not be satisfying. It may be that new media helped foster dissent across these countries. But we lack the evidence to test this argument.

Smaller Questions

One problem in accounts of the Arab Spring is that they explicitly or implicitly seek to answer a question—"What caused the Arab Spring?"— that is simply too big. It is certainly too big to be answered by pointing to any single causal factor, such as new media. The Arab Spring was the result of broader social conditions such as economic and political stagnation, political activism via social movements, and many small decisions by key actors such as political regimes. If any of these factors had been significantly different, the Arab Spring might not have occurred or might have taken a very different form. Thus, accounts that simply emphasize new media miss what we previously referred to as the "hidden variables" that animate a much more complex causal story.[32] Scholars and policymakers ought to focus on much smaller questions, breaking up the larger phenomenon of the Arab Spring into a set of smaller causal questions that could conceivably be evaluated with available data.

As an illustration, consider the following rendering of what happened in Egypt in 2011. We might divide the protests into *three stages:* the creation of an activist movement that could organize protests, the organization of a protest that turned into mass demonstrations, and ongoing social organization after the revolution. Each of these may ultimately require a different explanation.

First was the creation of a *core group of activists* that could organize protests. It is plausible, but not certain, that there would have been no revolution without this core (after all, massive protests emerged in 2011 in a number of other Arab countries that did not have such a core of dedicated activists). Over a period of years, a group of at most a few thousand dedicated

individuals had come together to form a loose movement, the Kefaya, that organized successive protests against the Mubarak regime. Later, the April 6 Youth Movement used Facebook to organize support and publicity for labor strikes in al-Mahalla al-Kubra. Here, new media may have played an important role. Activists could organize semipublicly through blogs, online forums, Facebook, and other spaces. New media might therefore have served both to reduce the transaction costs of finding like-minded people and to generate collective identity among group members once they had discovered each other. It also provided this core with a means to communicate among itself. In the absence of new media, this movement could plausibly have been considerably weaker.

But creating a hardy band of activists may not lead to broader collective action. Egyptian activists had tried many times before 2011 to provoke a broader mobilization, which resulted in nothing that resembled the extraordinary events of January 25. Hence, we need to look at the *second stage,* when smaller demonstrations became genuine mass protests. Here, heavy use of the Internet among a small group of key actors is insufficient to explain mobilization. Moreover, it is hard to argue that social media would have led to mass mobilization without other media. Even after most Egyptians' access to the Internet had been shut off, people were able to use information from satellite television, person-to-person communication, direct observation, and collective knowledge to coordinate. For example, certain times (Friday after prayers at mosques) and places (Tahrir Square in Egypt, the Corniche in Alexandria) provided obvious "focal points" for protestors. Many people joined protest marches in Egyptian cities when they saw them proceed past their windows.

Finally, even when sufficient mass mobilization occurs to oust an old regime, there is no guarantee that this will create any *enduring mass movement.* After the revolution's initial success—the fall of a dictator, for example—the third stage, rebuilding the political sphere, becomes paramount. Over the long run new media may help build a freer civil society.[33] Facebook, for example, has been used since the January 25 revolution to organize Egyptian women, thereby illustrating how social media may be vehicles for empowerment.[34] But Internet-based social movements could ultimately fail to shape the emerging political order, particularly if they fail to establish and sustain long-term institutional connections. Indeed, recent evidence from the MENA region suggests an important difference between digitally based social networks and traditional political organizations. Because the former often have a "leaderless," nonhierarchical structure and a relatively small constituency and membership, they are ill-equipped for engaging in traditional political processes such as party building and campaigning.[35]

In Egypt, activists empowered by the Internet have thus far struggled to muster traditional forms of political power. Few of the activists formed or joined political parties, or fielded candidates for the elections scheduled to begin on November 28, 2011. Instead, many preferred to continue protesting in Tahrir or to form NGO-style election monitors or engage in specific campaigns such as demanding an end to military trials. In contrast, the Muslim Brotherhood, which has built its online outreach on top of a far more traditional political movement, has proved more adept at seizing political opportunities. In November, large-scale protests challenged the Egyptian government in Tahrir Square after its violent repression against an attempted sit-in, which galvanized international attention and drew a rare public American rebuke of the military leadership. But a week later, Egyptians turned out to vote in large numbers despite an activist appeal to boycott, and Islamists almost completely swept liberal and activist parties in the election. Both forms of political impact matter, but they are best decoupled and understood on their own merits.

Digitally based social networks . . . are ill-equipped for engaging in traditional political processes such as party building and campaigning.

Thinking of a phenomenon like the Arab Spring as a multistage process allows us to ask more finely tuned, and therefore useful, questions. This reflection includes not overgeneralizing from the Egyptian experience. It is entirely likely that different dynamics characterized the various stages of mobilization in other countries where movements succeeded or failed. Even so, by looking at mobilization not as a discrete event but as a causal sequence, we can begin to formulate better comparisons among the different protest movements that have constituted the Arab Spring. Our questions become smaller, but our answers become better.

Diffusion, Demonstration, and Crossing Borders

The Arab cases suggest a possibly, but not necessarily, unique degree of cross-border attention, diffusion, and interaction. The surge of protests in Yemen that immediately followed the fall of Hosni Mubarak suggests the dangers of examining any case in isolation. The solution to this problem is to "cross borders," by which we mean consider multiple episodes of contentious politics in different countries. Crossing borders also poses a second advantage: it allows analysts to see how information diffuses. For example, cross-region networks may have helped turn the fall of the Tunisian government into an example used by dissidents in other countries, such as Egypt, Bahrain, and Syria.

But this sort of contagion is poorly understood. Do states topple like dominoes, whereby successful protests in one state lead to successful protests in others? Or is contagion more like a brushfire, in which protests develop and potentially spread haphazardly? How, if at all, did it matter that almost every Arab protest movement adopted its own "hashtag," thus placing itself as a chapter in a single narrative and equating its efforts with those of the Egyptians in Tahrir? Did this simply reflect already existing identification, or did it actually shape the way people understood their own situation? Answering these questions will, again, require attention to new and traditional new media.

New media are only one part of a much wider transformation of the information environment, which includes satellite television, the press, Wikileaks, and much more. There must be a larger attempt to place new media within the context of other media. Our research demonstrates that new media are inextricably bound up with the old. Tweets inform Al-Jazeera's coverage, but some people also tweet nothing more than Al-Jazeera's live feed. Second, analysis should, wherever possible, pair data on new media with data on the phenomena they are supposed to affect. It is very difficult to gauge the impact of Twitter using only tweets. Survey data on political attitudes, databases of protest events—all of these and more are increasingly necessary.

The Unique Dynamics of Violence

The Egyptian and Tunisian revolutions featured often brutal street fighting at key moments but never descended into sustained, violent conflict. This lack of violent conflict led many early enthusiasts to celebrate the uniquely peaceful implications of new media. Daniel Ritter and Alexander Treschsel argue that "the successful use of ICTs [information and communication technologies] seems to be correlated with nonviolent revolutions in particular, not their violent counterparts."[36] This assertion is difficult to reconcile with the course of events in Bahrain, Yemen, Syria, or Libya. Bahrain saw a violent, sweeping, and thus far largely successful crackdown on protestors. Yemen has witnessed episodic outbursts of extreme violence. Libya and Syria devolved into full-scale internal war.

This variation is not explained by the absence of ICT in the violent cases. Social media was used extensively by movements that quickly became deeply involved in violence even if they were not the initiators of violence. In Bahrain, the protest movement had been using online forums and blogs extensively for nearly a decade. In Libya, a small but visible group of online activists engaged heavily with other Arab social media to draw attention to their struggle. And in Syria, activists outside of the country played a disproportionate role early on in the conflict in distributing videos of regime violence and accounts of protest. This online narrative of protest likely raced ahead of the actual events on the ground, helping to spur outside attention and regime suspicions even before significant mobilization took hold. It is true, and significant, that none of these cases began as violent uprisings. They took up arms, when they did, only after suffering intense regime repression. But at least some of them did.

New media have arguably had a sustained and durable effect on the political effectiveness of violence. Half a decade ago, Egyptian activists made a real impact by distributing disturbing cell phone videos of police abuse. Such video testimony has now become the norm rather than exception. Over the course of 2011, citizen-generated video has been a ubiquitous presence online and in traditional media. Shocking videos of Syrian regime forces attacking protestors, often with graphic images of the dead and wounded, seem to have powerfully shaped the global and regional response to that crisis. Similarly, videos of protests with clearly marked times and locations can refute regime claims.

The online dissemination of documentation of regime violence follows both of the key patterns highlighted in this report: bridging and broadcasting. The flows of images and video brought the firsthand experience of activists and local observers to a far wider audience than would previously have been possible. Videos posted to Facebook pages or directly to YouTube were recirculated on Twitter or shared through other social networks. They were also increasingly used by mainsteam media, both Arab networks and international networks, that lacked direct access to those theaters. These videos, which provided only a partial and easily manipulated part of the story, had a clear (if unquantifiable) effect on how regional and international audiences came to understand the conflicts in Libya and—especially—Syria.

There seems to have been a qualitative change in the way protestors, regimes, external publics, and the international community now respond to such violence. Whereas in the past, massacres in Hama, Syria, or Halabja, Iraq, went largely unreported and had few consequences, regime violence this year has attracted UN Security Council resolutions, military intervention, Arab League sanctions, and International Criminal Court referrals. Even in Bahrain, an internationally backed report has now officially documented many of the repressive practices first revealed on social media and later denied by regime supporters. This new transparency has contributed to an increasingly robust new norm against a certain degree of regime violence. The effects here are not obvious: condemnation has not stopped the killing in Syria, expectations of intervention may actually encourage protestors to turn to violence, and double standards or failure to enforce sanctions could easily undermine the emergent norm. But the new information environment, and particularly user-generated videos, already seem to have fundamentally changed the game.

This is one manifestation of a broader mechanism by which new media helped bring information about the Arab Spring to an international audience—the idea of "external attention" that we discussed in our first report. External attention raises the possibility of what Margaret Keck and Kathryn Sikkink call "boomerang effects," in which activists in one country can create political momentum in another country to put pressure on their own home government.

External attention raises the possibility of . . . "boomerang effects," in which activists in one country can create political momentum in another country to put pressure on their own home government.

These effects can have very important political consequences.[37] They may, for example, make it more costly for regimes under duress to violently suppress protests. Especially for those regimes that have formally committed to human rights, such suppression would highlight their hypocrisy and leave them vulnerable to pressure from the United States and other liberal international allies. The key is to determine how much social media content affects the decisions of government officials, nongovernmental organizations, and others who may put this kind of external pressure on a repressive regime. Tracking the flow of these videos and information through online media, and then how they have spread to mainstream media and into policy, would be a major contribution.

Conclusions

Our first *Blogs and Bullets* report proposed a five-level framework for studying and understanding the role of new media in political movements. Within just a few months, the Arab Spring presented us with gripping real-world test cases for our research paradigm. In this report, we have used these five lenses to examine the revolutions that occurred and, at least as importantly, those that didn't. And we have marshaled new data that allow us to focus on new media consumption rather than just its production, for an innovative empirically based analysis that allows us to be more confident about what we know, and don't know, about the role of at least some new media in these uprisings.

This combination of our previous analytical framework and new data allows us to draw the following conclusions:

- **New media outlets that use bit.ly are more likely to spread information outside the region than inside it.** This could be significant if it led to a boomerang effect that brought international pressure to bear on autocratic regimes or helped reduce a regime's tendency to crack down violently on protests. Clearly, however, this is not always the case, as the examples of Bahrain and Syria illustrate. But even where international pressure fails, the increased and transformed attention has reshaped how the world views these cases.

- **New media—at least those which used bit.ly linkages—did not appear to play a significant role in either in-country collective action or regional diffusion.** This does not mean that social media—or digital media generally—were unimportant. Nor does it preclude the possibility that other new media technologies were significant in these contexts or even that different Twitter or link data would show different results. But it does mean that at least in terms of media that use bit.ly links (especially Twitter), our data do not find strong support for these claims of new media impact on Arab Spring political protests.

- **It is increasingly difficult to separate new media from old media.** In the Arab Spring, the two reinforced each other. While Al-Jazeera and other satellite television channels leaned heavily on Twitter and other online sources, new media often referred back to those same television networks.

This points toward the next stage of analysis—generating new data that will allow us to answer these questions better. Better analysis will require more data that are not solely generated by new media itself, plausibly points toward causal relationships, and are not biased so as to overrepresent the causal consequences of new media.

One thing that would help the field tremendously would be to collect mobilization data that could be combined with data on new media use so that we could see whether different patterns of media consumption are associated with different patterns of mobilization within

countries, between countries in the relevant region or category, and outside both the country and the region. We have tried to address this important question here, and our results are, we think, a provocative and intriguing first step in this process. For instance:

- **Looking within the country could allow us to test theories of cascade dynamics.** How does information on protests spread within countries? Do particular forms of information make people more or less likely to join protests themselves? Better data could help us answer these questions, by conducting sentiment analysis on "tweets" or Facebook postings in the days immediately preceding the outbreak of protest to determine which kinds of sentiments were being expressed.

- **Richer data sources that explore relationships between countries within a given region would allow us to better analyze information diffusion.** Do states topple like dominoes in a process where successful protests in one state lead to successful protests in another? Or do patterns of contagion instead resemble a brushfire, in which different patches of protest develop in a haphazard fashion? In order to answer this and other important questions, we first need to know how information diffuses at a regional level. Sources that could help answer this question include Nielsen-like television rating information in the affected countries, data on ease of access to different media devices (TV, mobile phone, radio, etc.), and representative public opinion data that get at how protest participants heard about the movement.

- **Data that would allow us to see how information mobilized actors outside the region could reveal potential "boomerang effects" of new media.** Keck and Sikkink argue that "boomerang effects," in which activists in one country can create political momentum in another country to put pressure on their own home government, may make it more costly for the leadership of the country under duress to violently suppress protests.[38] Potential evidence for this effect might include correlations between numbers of video views, amount of media coverage of said videos, and concrete actions taken by regimes to end violent crackdowns. Such evidence would be consistent with a boomerang effect, but it would not by itself prove causation.

To advance our understanding of all three of these forms of diffusion, we need to do more than examine who is publishing content that relates to this unrest. We need to understand who is reading this content and how this content is influencing their actions. By analyzing data provided by bit.ly, we began to lay the foundations for an approach that does this, by looking at national, regional, and extraregional patterns of information diffusion. In the absence of further data we cannot do more than speculate as to the consequences of this diffusion for protests. However, we can dismiss putative claims about social media that require that certain populations of people be exposed to relevant information via social media, by showing that there is little or no evidence that the relevant populations were in fact exposed to the relevant information.

Such an understanding is extremely unlikely to generate the ability to predict future events that many policymakers would like to see. The Defense Advanced Research Projects Agency (DARPA), for instance, has launched a "Social Media in Strategic Communication" initiative that aspires to exploit the new social media information flows.[39] It hopes to be able to monitor social media in real time to detect potential threats and opportunities and to understand the "formation, development, and spread of ideas and concepts (memes)." Ideally, this would allow for prediction of important events or trends.[40] A CIA facility now tracks some five million tweets and other social media postings per day, with an eye toward mood and sentiment analysis.[41] An Electronic Freedom Foundation lawsuit uncovered efforts by the Department of Homeland Security to monitor social media for similar potential threats.[42] However, there are strong reasons to believe that this is a hopeless quest. Diffusion processes are highly unpredictable.

A better understanding of these processes will perhaps help policymakers gather information that is not obvious to individuals on the ground but that can be seen at the level of the network. But it will not provide much ability to predict future events. For example, the fact that 20 percent of Tunisian blogs were evaluating Ben Ali's leadership on the day he resigned his office suggests only that bloggers, like everyone else in Tunisia, were watching events unfold.

Nonetheless, a better understanding of the role of new media in the Arab Spring will be valuable to policymakers and researchers alike. Even if it does not allow us to predict the future, it provides us with a far better grasp of the forces potentially shaping politics in the twenty-first century, as political actors struggle to use these media for their various purposes. But it is important to get the empirical analysis right because there has never been a better chance for such research to make a real difference, not only for policy, but for the spread of democracy and the suppression of violence in the real world.

Notes

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23. For about 19 percent of clicks on Egypt-related links, the location of the individual could not be ascertained by bit.ly.

24. By "causal," we mean that a factor affected the likelihood of an outcome, such as protests, above and beyond other factors.

25. Howard and Hussain, "The Role of Digital Media."

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31. Howard and Hussain, "The Role of Digital Media," 41.

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About the Institute

The United States Institute of Peace is an independent, nonpartisan institution established and funded by Congress. Its goals are to help prevent and resolve violent conflicts, promote postconflict peacebuilding, and increase conflict management tools, capacity, and intellectual capital worldwide. The Institute does this by empowering others with knowledge, skills, and resources, as well as by its direct involvement in conflict zones around the globe.

An extraordinary wave of popular protest swept the Arab world in 2011. Massive popular mobilization brought down long-ruling leaders in Tunisia and Egypt, helped spark bloody struggles in Bahrain, Libya, Syria, and Yemen, and fundamentally reshaped the nature of politics in the region. Internet-based social media such as Twitter, Facebook, and YouTube played a visible role in many of these movements, especially for foreign audiences experiencing the turmoil vicariously through real-time Twitter feeds and YouTube videos posted to Facebook pages. There is a strong commonsense case that these new media mattered in the Arab uprisings. But did it matter and, if so, how? This report expands on a 2010 study titled *Blogs and Bullets: New Media in Contentious Politics* by applying that report's five-level analytical framework to understanding the role of new media in the Arab Spring protests of 2011–12.

Related Links

- *Blogs and Bullets: New Media in Contentious Politics* by Sean Aday, Henry Farrell, Marc Lynch, John Sides, John Kelly and Ethan Zuckerman (Peaceworks, September 2010)

- *Advancing New Media Research* by Sean Aday, Henry Farrell, Marc Lynch, and John Sides (Special Report, September 2010)