Digital Democracy, Digital Control:

Social Media, Civic Engagement, and the Rise of the Political Bot

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Abstract

*Uprisings and protests worldwide, from the Arab Spring across North Africa and the Middle East to Euromaidan in the Ukraine, have made use of social media in creative ways. Activists use these online tools in efforts to mobilize, organize, and publicize their grievances. Yet scholars take differing positions on the effectiveness of social media as a mechanism for collective action. Many believe that platforms like Twitter and Facebook have played a crucial role in the toolkit of contemporary activism and that these sites make group organization more efficient and effective. Others argue that using these sites adds little, and often exposes social movements to surveillance and censorship early in their formation. While some suggest social media have contributed to significant increases in civic engagement during contentious political situations, others contend that these networks are just as likely to be used for despotic purposes as they are to be used for democratic ones. This chapter covers the major debates over the use of social media during revolution and other political crises. The emergence of a new socially mediated tool of considerable political significance, the social media bot, is also explored. Powerful political actors are now harnessing bots—amalgamations of code that mimic users and produce content— for the purposes of online propaganda. We discuss the ways these bots have been used generally, and then move into the ways they are now being used politically. We contend that this computational propaganda is among the most significant consequences of the latest innovations in social media.*

1. **Introduction**

Academics, policy makers, and activists worldwide are increasingly concerned with the role of social media in revolutionary contexts and its use during other conflict and security crises. The 2009 Iranian presidential election brought about an enthusiastic interest in the organizational and publicity-oriented messaging power of such platforms for activists on the ground. The Iranian government’s interference with networks during this time, and state-based manipulation of social media tools since, suggest, however, that such enthusiasm be tempered.

Political activists continue to realize novel communication based affordances of nonpolitical social media sites such as Twitter, Weibo, YouTube, Google+, and Facebook (Zuckerman 2013; Aday et al. 2010; Edwards, Howard, and Joyce 2013). Protestors involved in the Arab Spring and Occupy Wall Street demonstrations made effective use of these online tools and opponents of standing governments in Ukraine, Syria, Turkey, and elsewhere continue to do so. Scholars argue that personalized communication-based media networks have changed the face of civic engagement (Bimber, Flanagin, and Stohl 2005). Bennett and Segerberg (2014) suggest that traditional notions of collective action during contentious political situations are now compounded with the emerging use of what they call “connective action” (p. 2), a brand of political organization that is personalized, mediated, and mobile via online social networks.

This chapter makes use of Howard and Parks’ (2012) three-part definition of social media. According to this explanation, “social media consists of (a) the information infrastructure and tools used to produce and distribute content that has individual value but reflects shared values; (b) the content that takes the digital form of personal messages, news, ideas, that becomes cultural products; and (c) the people, organizations, and industries that produce and consume both the tools and the content” (p. 359). This evolving mode of communication is unique in that consists of such an interactive combination of hardware and software, content and virality, and makers and users.

Both extent academic literature and popular commentary make much of social media’s effectiveness as a tool for political propaganda, demobilization, and disinformation. This dark side of social media’s political uses is often taken up in terms of political actors’ interference on participatory sites or via skeptical views of peoples’ genuine activist usage of such sites. Morozov (2011), for instance, argues that the net is often less a tool for advocacy and more one for entertainment and suggests that the web, and social media sites in particular, can function as a powerful tool for control.

Realistically, social media is neither wholly useful as a tool for political organization nor wholly effective as a tool for political control. Like most media these evolving modes of communication can function in ways that are both useful and distracting. Moreover, those attempting to garner a holistic understanding of social media’s usage during political situations ought to seek a moderate analytical frame, one that takes into account both the arguments of technological determinism (suggesting that communication tools cause social changes) and organizational determinism (suggesting that society causes technological changes) (Howard 2006; 2010).

1. **Social Media and Mechanisms for Change**

In this chapter, we argue that while social media has been a key causal factor in several important popular uprisings in recent years, this causal pattern is not likely to be permanent or even long lasting. Authoritarian regimes, like social movements, learn from the successes and failures of their ilk. And recently, automated scripts—or bots—have stifled public conversation online and plagued activists and civic leaders using social media. First, we introduce the research on social media and revolution. We offer a critical perspective on some of the high profile cases of political change, cases that have provoked our conversation about the importance of social media. However, our goal in reviewing this research is to highlight the debates and perspectival clashes rather than conduct case studies. Second, we discuss how social bots are impacting the relationships between social media use and political movements.

How was social media used during the Arab Spring and other recent moments of revolution and rapid political change? On one hand, writers like Gladwell (2010) and Staples (Staples 2013) are skeptical of the causal role of social media in revolution. Gladwell suggests that the most productive aspects of social movement organization have to happen face to face—over the lunch counter—and that there is sparse added value to having information technologies in the activist toolkit. There is little, he says, to political revolution that cannot be done with paper and a pencil. Others take this notion a step further. They argue that, while social media don’t have a causal role in political dissension, other things—prices of commodities or access to food—do (Williams 2012). Staples (2013) suggests that the cataloguing nature of technology and social networking can facilitate surveillance rather than afford liberation. Indeed, Gangadharan and Woolley (2014) outline instances of amassed online data, data often scraped from seemingly mundane social media profiles and search information, being used for oppression and discrimination.

Shirky (2010; 2011) takes an opposite position to those who negate the causal role of social media in political crises. Shirkey suggests there are several special organizational dynamics that arise only when social mobilization happens via digital media; that these new communication tools allow massive and rapid responses to democratic injustices. Scholars like Aday et al. (2010), Lotan et al. (2011), and Diamond (2010) argue that the myriad affordances of the internet and social media, of a globally networked society, enable communication tools like Facebook and Twitter to facilitate large-scale political dissent.

**III.** **Social Media and the Mechanisms of Successful Revolution**

Shirky (2008) was among the first to suggest that social media could help people to organize without the need of formal groups like unions, political parties, and non-profits. It was during Iran’s 2009 presidential election, however, that the world at large really began to pay attention to the particular revolutionary potential of social media. Blogs, traditional and micro, played multiple roles in the Iranian situation. Social networking platforms were used in political organization and communication efforts by protestors. People and groups concerned with the situation, both in Iran and elsewhere, used social media as news sources and publicity boards (Howard 2010). However, mediated organization efforts failed to produce an outcome favorable to Ahmadinejad’s democratically inclined opponents, despite widespread blogging on the subject and global condemnation of the election as rigged.

 The protests in Iran did, however, serve as both an example for revolutions to come and a provocation for a larger discussion on social media’s role in revolution. Andrew Sullivan (2009) of *The Atlantic* released a short piece, “The Revolution Will Be Twittered,” extolling the revolutionary potential of Twitter during the Iranian crisis. Sullivan’s suggestions spurred a profusion of articles taking on the subject and, at times, co-opting, altering, and poking fun at the original piece’s title (Gladwell 2010; Hounshell 2011; Lotan et al. 2011).

Thoughts concerning the Iranian protests catalyzed differing positions on just how social media are used during revolutions, how effective sites like Twitter are as organizing and publicity tools, and where these particular channels have been used most successfully for democratic *and* authoritarian aims. Examination of scholarship about recent large-scale social movements, the Arab Spring, Occupy, Los Indignados, and the Israeli Tent protests, reveals that social media have been and are used for democratic organization, global outreach, and news gathering in times of political crisis with varying degrees of success.

The rapidity of peoples’ democratic uptake of networking sites during the Arab Spring was aided by the preceding rapid diffusion of both the Internet and smart phones in North Africa and the Middle East (Khamis and Vaughn 2011). In a few short years, citizens in these regions were equipped with the technology necessary to effectively communicate via established social networks like Twitter and Facebook (Lim 2012; Radsch 2011). Now people could instantaneously post videos, photos, and videos of events on the ground to audiences local and global. Though thousands of such posts were read or seen by few, the viral nature of some of them helped get the word out globally (Nahon and Hemsley 2013).

The way the Muslim world produces news also has a major hand in the role of social media during crises in this area. A shift towards truth and objectivity, stimulated by conversations about ethics among journalists online, has “helped raise standards of professional and pluralistic approaches to news production” (Howard 2010, 109). This said, during the 2011 Egyptian uprising the tone of semiofficial governmental newspapers reporting on the events differed hugely from the way people were talking about them on social media sites. The former group framed the protests as conspiracies against the government, while the latter deemed them acts of democracy and freedom from oppression (Hamdy and Gomaa 2012). Such biases within state run newspapers and television stations have been a major factor in turning people toward the Internet, and social media, for news.

While some journalists are forced to generate intra-state propaganda during times of conflict and unrest, they have been known to undermine these stories by publishing more openly with global media outlets and via social media weblogs. The widespread availability of transnational news online, the reliability of Al Jazeera’s online platform, and the growth and increased regard for Middle Eastern blog sites all additionally contribute to “the internet [being] used for news during times of particular social crisis” in this region (Howard 2010, 108).

Blogs remain among the most important social media platforms used for news and communication in times of revolution and democratic transition. The interactive and networked formatting of blogs provided design inspiration for sites like Twitter and these early user-generated tools were a preliminary site of interactive, and citizen-based, political conversation and commentary (Meraz 2009). Bloggers not only break news stories, they also police traditional news and report on stories not picked up by these larger organizations. The independence of bloggers allows them increased ability to report on human rights violations, corruption, and other governmental misdeeds. Blogs have also been widely used in the Muslim world and elsewhere to coordinate and report on protests (Sayed 2012). Indeed, during both the Occupy and the Indignado movements, blogs were the primary tools used for breaking (often first-hand) reports on new events, plans, and ideas (Skinner 2011; Gerbaudo 2012).

 In Tunisia, ground zero of the Arab Spring protests, activists used the “We are all Khaled Said” Facebook page as a site for spreading both the news of their organization efforts and the date for their first major protest (Baker 2011; Khamis and Vaughn 2011; Tufekci and Wilson 2012). The sites’ importance as a communication and management tool for protestors involved in Occupy is showcased by both the widespread profusion of far flung Occupy Facebook pages and the massive membership of OWS’ website (Caren and Gaby 2011; Gaby and Caren 2012).

A search for scholarly articles about Twitter’s potential political uses returns hundreds of pieces from respected journals. Recent uprising have been covered in the news under monikers such as “Twitter Revolution” and current scholarship and reporting are diffusely affected by original pieces on the thwarted Iranian revolution “being tweeted.” How, then, have protestors in recent political crises actually successfully used Twitter to mobilize?

Activists used Twitter, along with the now famous #Occupy hashtag, in successful efforts to assemble and organize individuals from innumerable backgrounds in public spaces from Wall Street to Oakland (Juris 2012). Throughout the Iranian election protests young people used Twitter to communicate at street-level, to find safe hospitals, to alert fellow activists to the movements of Basij militias. Indeed, the sites importance was deemed so crucial to democratic protestors that “the U.S. State Department asked twitter to delay a network upgrade that would have shut down service for a brief period during daylight hours in Tehran” (Howard 2010, 7).

Lotan et al. (2011) and Howard and Hussain (2013) reveal both the impressive variety of Twitter users and wide array of Tweet content affiliated with the Arab Spring movements. Both of these studies suggest a complexity of information about the people who were tweeting and the ways protestors were using the site: for organization, publicity, or more general communication. The appearance of large amounts of bot content revealed in the examination of these Tweets, and in later studies specific to the Syrian conflict, are a prelude of things to come in the latter portion of this chapter.

1. **Social Media and the Patterns of Control and Cooption**

Even though there are several examples of successful popular uprisings in which social media has played an important role, there are also examples of regimes controlling and coopting these tools. In Russia, Turkey, and Venezuela, political opposition have successfully used social media to draw international attention to human rights abuses. While civil leaders have demonstrated success at getting their message out, governments did not fall. For instance, while the Occupy movement had impressive global reach, many would agree that its energy has dissipated and that it failed to secure any lasting changes in public policy or governance mechanisms.

The democratic ways in which social media has been used during times of political crisis generally pertain to uses in categories organizational, communicative, and informative. Morozov (2011) and others have led discussion into how social media are co-opted during such events to reinforce authoritarian control via the networked demobilization and silencing of protestors. Some scholars also argue that the ease with which people use social networking tools, and immediate nature of posting and parsing information, leads more to apathy than mobilization. Notions of slacktivism, censorship, and propaganda on social media sites are among the main criticisms delivered by those wary of social media’s political efficacy. There are several noteworthy instances of governments using sites such as Facebook and Twitter for nefarious means, and not all of them involve autocratic governments.

The blanket tactic of simply disabling social media sites during sensitive political moments has been used by both democratic and authoritarian regimes (Howard, Agarwal, and Hussain 2011). Enactors of such policies cite protection of authority figures, issues of national security, and preservation of social and cultural morals as reasons for disconnecting digital networks. Turkey, a democratic republic, prohibited access to Twitter and YouTube in 2014. The single party government of China is well known for not allowing its citizens access to sites like Facebook, YouTube, and Twitter. Instead, copycat sites like Weibo are available for micro-bloggers and the like, though they tend to be thoroughly censored and as such are used for political protest with limited success (Canaves 2011; Fu and Chau 2013). In Azerbaijan the government has favored subtlety over outright censorship when it comes to digital media. In this case, the government has worked to dissuade users from advocating for protest or using social media for political protest (Pearce and Kendzior 2012).

 Bailard (2012), using the analogies of digital media functioning in terms of “mirror-holding” or “window opening,” found that the Internet does not always enrich democratic values. In fact, her study suggested that critical Internet users in Tanzania became less likely to vote, whether due to apathy or disenchantment. The idea that social media contributes to distracting online noise is often cited as one of the chief issues with the civic potential of such platforms. Christensen (2011) defines slacktivist engagement on social media as “activities that may make the active individual feel good, but have little impact on political decisions and may even distract citizens from other, more effective, forms of engagement.” Morozov (2009) suggests that this apathy is the fallout of socially mediated politicking. A study by Christensen (2011), however, found no evidence to suggest that online activism substitutes for or supplants offline activism. Rather, this piece suggests recent research on the subject shows a positive, though weak, connection between online civic engagement and activist engagement offline.

1. **Revolution and the Automation of Social Media Engagement**

The arrival of new methods for exercising political manipulation on social media sites is among the most significant political consequences of the latest innovations in new media. Reporters worldwide have released stories about the increasing sophistication of governmental intrusion and propaganda on several social media sites (York 2011; Krebs 2012; Krebs 2011, 201; Qtiesh 2011). Many of these articles are specifically focused on the large number, and clever advancement, of social media bot technology. Bots generate more than 10 percent of content on social media websites, and 62 percent of all web traffic, according to security experts (Rosenberg 2013).

The word “botnet” comes from combining “robot” with “network.” It is used to describe a collection of programs that communicate across multiple devices to perform some task. The tasks can be simple and annoying, like generating spam. The tasks can be aggressive and malicious, like choking off exchange points or launching denial-of-service attacks. And not all are developed to advance political causes. Some seem to have been developed for fun or to support criminal enterprises, but all share the property of deploying messages and replicating themselves (Kim et al. 2010; Wagstaff 2013).

Chu et al. (2010) distinguish two types of bots on Twitter: legitimate and malicious. Legitimate bots generate a large amount of benign tweets that deliver news or update feeds. Malicious bots, on the other hand, spread spam by delivering appealing text content with the link directed toward malicious content. Botnets are created for many reasons: spam, DDoS attacks, theft of confidential information, click fraud, cyber sabotage, and cyber warfare. According to Kim et al. (2010), many governments have been strengthening their cyber warfare capabilities for both defensive and offensive purposes. In addition, political actors and governments worldwide have begun using bots to manipulate public opinion, choke off debate, and muddy political issues.

Social bots are particularly prevalent on Twitter. They are computer generated programs that post, tweet, or message of their own accord. Often bot profiles lack basic account information such as screen-names or profile pictures. Such accounts have become known as “Twitter eggs” because default profile pictures on the social media site ubiquitously feature an egg. While social media users access from front-end websites, bots get access to such websites directly through a mainline, code-to-code, connection, mainly, through the site’s wide-open application programming interface (API), posting and parsing information in real time. Bots are versatile, cheap to produce, and ever evolving. “These bots,” argues Rob Dubbin (2013), “whose DNA can be written in almost and modern programming language, live on cloud servers, which never go dark and grow cheaper by day.”

The use of political bots varies across regime types. Political bots tend to be used for distinct purposes during three primary events: elections, spin control during political scandals, and national security crises. The usage of bots during these situations extends from the nefarious cause of demobilizing political opposition followers to the *seemingly* innocuous task of padding political candidates’ social media “follower” lists. Bots are additionally used to drown-out oppositional or marginal voices, halt protest, and relay “astroturf” messages of false governmental support. Political actors use them in general attempts to manipulate and sway public opinion. It is clear that understanding the creation and usage of this technology is central to generating political equality both on and off line and in fostering genuine advancement of democratic social media possibilities.

Differing forms of bot generated computational propaganda have been deployed in several other countries: Russia, Mexico, China, Australia, the UK, the USA, Azerbaijan, Iran, Bahrain, South Korea, Morocco, Syria and Iraq among them. Current contemporary political crises in Thailand, Turkey, and the ongoing situation in Ukraine are seeing the emergence of computational propaganda.

In Mexico, bots have been used on Twitter by both ruling and minority parties. In several circumstances over the last five years Mexican political groups have used bots in attempts to twitter-bomb, or massively spam, the messages of their opponents. In cases like these, bots are programmed to co-opt the opposition’s hashtags and send out thousands of garbled or propaganda-laden tweets to block any counter-organizational or communication efforts. In the United States, the United Kingdom, and Australia bots have been used to pad politicians’ follower lists. These fake followers can be purchased for nominal prices with the intent of making a user seem more popular or influential. In Syria, the Assad regime has used automated bot scripts to send out large scale propaganda. These accounts are programmed to look like real users and send out messages in support of the Syrian government.

Bot generated political content on social media has potential to effect widespread user populations. Citizens, voters in democratic countries, are often the target of tactics like follower padding. If a politician can seem like they are influential on social media they can seem in touch with young people and the tech-community. Journalists, foreign groups, and individuals are likely the intended target for fake user/bot-driven governmental propaganda coming from authoritarian or contested regimes. Such countries have been known to hire public relations and marketing firms in attempts to seem more legitimate to the global community and authorities like the United Nations. Bots are an increasingly prevalent tool in many of these governments’ efforts to sway public opinion both locally and internationally.

Table 1 presents a pilot sampling of the diversity of regime types and bot producers around the world, with a democracy score from -10 fully authoritarian to +10 fully democratic (Marshall and Jaggers 2010). This preliminary case list suggests that bot usage is often associated with either elections or national security crises. These may be the two most sensitive moments for political actors where the potential stigma of being caught manipulating public opinion is not as serious as the threat of having public opinion turn the wrong way.

Table 1: Social Media, Bots, and Political Conflict

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| --- | --- | --- | --- |
| Country | **Year** | **Polity** | **Deployer, Assignment** |
| Australia  | 2013 | 10 | Political Parties – hiring bots to promote candidate profile and policy ideas. |
| Azerbaijan  | 2012 | -8 | Government – attack opposition, manipulate public opinion about public affairs. |
| Bahrain | 2011 | -8 | Government – attack opposition, manipulate public opinion about public affairs. |
| Canada | 2010 |  | Political Candidates and Parties – buying followers on social media. |
| China | 2012 | -8 | Government – disrupt social movements, attack protest coverage, and manipulate public opinion about public affairs. |
| Iran | 2011 | -6 | Government – attack opposition, manipulate public opinion about public affairs. |
| Israel  | 2012 | 10 | Government, military – information war with Hamas and PLO |
| Mexico | 2011 | 8 | Political Parties – misinformation during Presidential election. |
| Morocco | 2011 | -6 | Government – attack opposition, manipulate public opinion about public affairs. |
| Russia | 2011 | 4 | Government – attack opposition, disrupt protest coverage, manipulate public opinion about public affairs, and influence international opinion on Crimea. |
| Saudi Arabia | 2013 | -10 | Government – attack opposition, manipulate public opinion about public affairs. |
| South Korea | 2012 | 8 | Government – using social media to praise elected head of Government. |
| Syria | 2011 | -8 | Government – attack opposition, manipulate public opinion about civil war, misinformation for international audiences.  |
| Thailand | 2014 |  | Government – using bots to support coup. |
| Turkey | 2014 | 10 | Candidates – using bots to give impression of popularity. Government – using bots to manipulate domestic public opinion. |
| UK | 2012 | 10 | Candidate – using bots to give impression of popularity. |
| UK | 2014 | 10 | Government – using bots to manipulate public opinion overseas. |
| US  | 2011 | 10 | Candidate – using bots to give impression of popularity. National Security Agency – using bots to manipulate public opinion overseas. |
| Venezuela  | 2012 | 2 | Government – attack opposition, manipulate public opinion about public affairs. |

Most of the coverage of political bot usage has occurred within mainstream media sources and personal blogs. Little empirical social or computer science work has been done to understand the wide-ranging creation, use, and effect of computational propaganda. Existing research on the topic of bots is limited to studies developing rudimentary bot detection systems, how bots challenge network security, and overviews of bots and botnets—networks composed of bots. Current research fails to develop an understanding of the new political bot phenomena, does not adequately explain the usage of these bots on social media sites, and rarely attempts to understand the makers of this technology. While botnets have been actively tracked for several years, their use in political campaigning, crisis management and counter-insurgency is relatively new. Moreover, from the users’ perspective it is increasingly difficult to distinguish between content that is generated by a fully automated script, a human, or both.

Bots are becoming increasingly prevalent. And social media is becoming an increasingly important source of political news and information, especially for young people and for people living in countries where the main journalistic outlets are marginalized, politically roped to a ruling regime, or just deficient. Sophisticated technology users can sometimes spot a bot, but the best bots can be quite successful at poisoning a political conversation.

1. **Conclusion: Technology of Liberation, Diversion and Deceit**

While there is actively scholarly debate about the role of social media in political revolution, the debate is mostly over the degree of emphasis that communication technology should have relative to other more traditional factors. Perhaps the emerging consensus is that unemployment, disenfranchisement, and social inequality remain important grievances, but that people have been using social media to become aware of each other’s grievances and discuss collective action.

 The next great challenge for the social sciences is to develop techniques for studying the ways in which political actors attempt to sway public opinion over social media. The challenge is to be able to document and demonstrate purposeful manipulation through political bots or computational propaganda. So much revolutionary zeal was generated by the powerful images and narratives that emerged from the Arab Spring, Green Revolution, and Gezi Park protests. But equally powerful are the regime responses that involve bots used with the intent of dissipating the social cohesion of revolutionaries online.

Bots and automated scripts do not simply burden digital networks. There is growing evidence that they can shape public opinion with immense implications for the study of political change. Moreover, the study of social change probably needs an epistemological overhaul as well. Many classically trained social scientists are actively disinterested in discussing the role of new technologies in mediating social relations, and are quick with accusations of technological determinism. Yet it has been the social researchers who make use of science and technology studies scholarship, who develop new tools for social network analysis, and who understand the impact of technology design on social outcomes, who offer the most compelling explanations of contemporary revolution.

We cannot be certain about how bots will constrain or incapacitate social networks during moments of political crisis and revolution in the years ahead. But what is certain is that new norms of interactivity and expectations for information access are being encoded in these automated scripts, and public leaders in both democracies and authoritarian regimes are imagining new ways of shaping public opinion in ways most social media users do not fully understand.

The work is urgent because the number of bots seems to be growing, and their sophistication seems to be improving—especially so for the bots that are derived with a political agenda in mind. New practices of social computing are being politically institutionalized now, and quick support will allow a new team of social and information scientists to focus on this unusual moment of political transition. This means that research on social media and revolution remains one of the most exciting domains of political inquiry, a domain in which the next generation of researchers must be equipped to understand both social processes of grievance formation and the technical affordances of the technology of the day.

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