



**EGYPTIAN DEMONSTRATORS USE OF TWITTER:  
TACTICS, MOBILIZATION, AND SAFETY**

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**Abstract**

This paper analyzes the use of Twitter during the revolution in Egypt for three key dates during the 18 days of protests in 2011 that led to the resignation of President Hosni Mubarak. The data show how the demonstrators used Twitter to organize the protests, to mobilize committed demonstrators as well as ordinary citizens, to provide tactical and strategic know-how, to provide surveillance, and to bear witness to the violent acts against them by pro-Mubarak forces. The surveillance information included tweets providing security information such as minute-to-minute updates on what streets were being blocked by police, what the police were doing, and instructions telling demonstrators what information to tweet if they saw someone being arrested or if they found themselves under arrest. Other surveillance information included information such as what the international and state media were reporting.

**Introduction**

Although many users of social media would like to take credit for setting the revolution in Egypt into motion, academic researchers have noted that historically, although media have played a role in revolutions, they do not cause them.

Anderson (2011) wrote that Egyptians and Tunisians revolted and toppled their governments in 1919, noting that the "global diffusion of information and expectations—so vividly on display in Tahrir Square this past Winter—is not a result of the Internet and social media" (p. 2). She wrote that the Fourteen Points speech of U.S. President Woodrow Wilson, which helped to spark the 1919 revolutions, "made its way around the world by telegraph" (p. 2). She added that the important story about the Arab revolts of 2011 "is not about how activists used technology to share ideas and tactics" but rather how and why their actions resonated with the public (p. 2). She noted the grievances of Egyptians:

The government's deteriorating ability to provide basic services and seeming indifference to widespread unemployment and poverty alienated tens of millions of Egyptians, a feeling that was exacerbated by growing conspicuous consumption among a business elite connected to Mubarak's son Gamal. . . The national police were widely reviled long before their brutal crackdowns at the inception of the January 25 revolt because they represented, in essence, a nationwide protection racket (pp. 4-5).

In a discussion of social media as a tool for protest, Papic and Noonan (2011) wrote that, although "current conventional wisdom has it that social networks have made regime change easier to organize and execute," social media "alone, however, do not instigate revolutions." They added that social media are only tools:

They are no more responsible for the recent unrest in Tunisia and Egypt than cassette-tape recordings of Ayatollah Ruholla Khomeini speeches were responsible for the 1979 revolution in Iran. Social media are tools that allow revolutionary groups to lower the costs of participation, organization, recruitment and training.

They added that, as tools, they have strengths and weaknesses and that their effectiveness is dependent upon how they are used by the leaders of the movements. Papic and Noonan stressed that one weakness of social media is the ability of government security services to monitor leaders and users. An example they discussed was the April 6<sup>th</sup> movement in Egypt when 40 leaders were arrested because they were identified through their Facebook pages.

Aouragh and Alexander (2011) criticized the "Internet hype" and the "simplistic claims that technology somehow caused" the Egyptian revolution, noting that it undermines "the agency of the millions of people who participated" (p. 1344). They wrote that, if activists had focused on Internet mobilization rather than on street-level organizing and mobilizing of Cairo's urban masses, then Jan. 25 would have been little more than "a footnote in the history books" (p. 1355). The authors concluded:

In contexts where the stakes are very high (arrest, torture, death, military intervention), it takes multiple tipping points to reach multiple crucial moments of significance. . . In these dramatic events, the online was merely a tool for the offline, although in specific stages of the events, an extraordinary tool. (p. 1355)

Wilson and Dunn (2011) would agree with that assessment, noting that digital media were not "as central to protester communication and organization on the ground as the heralds of Twitter revolutions" would have people think (p. 1263).

Eting, Faris, and Palfrey (2010) noted that digital communities can provide collective leadership in repressive societies:

The Egyptian blogosphere . . . is composed almost entirely by those in opposition to the government, and includes a range of opposition voices, including secular-minded bloggers connected to the Kefaya movement, more conservative Muslim brotherhood bloggers, and those dedicated to stopping torture and abuse by police. . . . These online communities in Egypt promote reform and serve as rallying points when key events take place such as the arrest of bloggers and activists. (p. 46)

Writing in 2008 about the politics of dissent, Cottle noted that demonstrations in both "moribund" parliamentary democracies and in "non-democratic regimes" are not only occurring "in public squares and on public streets" but they are also occurring "necessarily, in and through the media" (p. 853):

This is not new. From the chartists to the suffragettes, from Gandhi's acts of civil disobedience to Martin Luther King's civil rights marches . . . to the more recent 'anti-globalization' protests and 'summit sieges' of the G8 and WTO, protesters have sought to make use of the media's disseminatory reach. This is so whether via leaflets and posters, newspapers and newsreels, radio and television or mobile telephony and the internet.

What is unprecedented is the extent to which protests and demonstrations today have become reflexively conditioned by their pursuit of media attention, and need to be if they are to get their message across and mobilize wider support. (p. 853)

**Role of Social Media in the Egyptian Demonstrations**

In his book "Revolution 2.0: The Power of the People Is Greater than the People in Power," Wael Ghonim (2012), a Google marketing executive who was arrested during the demonstrations, detailed how social media were used strategically in Egypt to provide organization



and focus for a movement that was sparked by the Jasmine Revolution in Tunisia and the death of Khalid Said, a young Egyptian who was beaten to death by police in Alexandria on June 6, 2010. Ghonim's Facebook page, "We Are All Khalid Said," resonated with Egyptian youth.

A small number of journal articles on the Arab Spring and the Egyptian Revolution have been published to date. A number of the authors of the articles have noted the organizational and/or mobilizing role of social media in the Egyptian protests (Aouragh & Alexander; Chebib & Sohail; Newsome, Lengel, & Cassara; Rinke & Roder; Van Niekerk, Pillay & Maharaj; Wilson & Dunn) and that social media connected and motivated protesters (Wilson & Dunn). Aouragh and Alexander said that, although the shutdown of the Internet made mobilizing and organizing the protests more difficult, it did have the effect of angering people, prompting them to participate in the demonstrations.

In a commentary on the revolution, Attia, Aziz, Friedman and Elhousseiny (2011) suggested that the strong bonds that developed among young people using social networks as well as their word-of-mouth behavior may have led to the formation of positive attitudes toward participating in demonstrations to achieve political change in Egypt.

The fact that protesters viewed social media such as Twitter as credible "might be because most of the news and updates come straight from the eye witnesses and are uncensored and unedited" (Chebib and Sohail, p. 156). Lotan, et al., who researched information flows on Twitter during the Egyptian and Tunisian revolutions, found that news on Twitter is "being co-constructed by bloggers and activists alongside journalists and that there may be a 'boomerang' effect from on-the-ground reportage to MSM and back to regional sources—an emerging symbiosis between professionals and non-professionals" (p. 2000).

### Twitter Usage

Twitter, a free microblogging service established in San Francisco, CA in 2006, allows its users to send 140-character messages called tweets that can be accessed on cell phones or on the Internet. Twitter users can follow other users or they can be followed. They can be as active or as passive as they want to be since they do not have to respond to users who send messages. Although estimates of the number of its users are widely divergent, Twitter does not provide updates of its user figures very often. In September of 2011, it reported that it had 100 million users worldwide.

An analysis by Evans (2011) showed that only 12,900 Twitter users identified their location as being from Egypt in January of 2011. He indicated that the number probably doesn't accurately reflect the actual number of users, noting that many users do not provide location information since they want to protect their identities. And, research by Kwak, Lee, Park and Moon (2010) indicates that the number of Twitter users doesn't tell the whole story. They found that any retweeted tweet reaches an average of 1,000 users regardless of the number of followers of the original tweet since there is a fast diffusion of information after the first retweet. Another factor that may facilitate Twitter use is that mobile penetration in Egypt was 72% in 2009 (Ghannan, 2011).

During the height of the demonstrations from Jan. 24-30, there were 1.3 million tweets worldwide that included the words "Egypt, Tunisia, and Yemen," as compared with only 122,319 from Jan. 16-23. Evans noted that the most commonly used hashtag was #jan25.

Egypt, the most populous country in the Middle East, has the largest national cluster of bloggers in the Arab blogosphere (Etling, Kelly, Faris, & Palfrey, 2012). As of December 31, 2001, there were 21.7 million Internet users in Egypt and 9.4 million Facebook users ("Usage and population," 2012).

### Method

The Twitter data used in this study are for three key dates during the 18 days of demonstration in Tahrir Square in Cairo. The data is part of a larger Twitter data set from the Egyptian revolution that has been collected and archived. Tweets were collected during 24-hour periods for the #jan25 hashtag for Jan. 25, Feb. 2, and Feb. 11, 2011.

Since Twitter allows the public to collect tweets only up to seven days after they are posted, PeopleBrowsr Playground, a tool designed for marketing professionals to monitor mentions of their products in social media, was used. PeopleBrowsr makes the entire Twitter "firehose"—Twitter's name for its full archive of tweets from 2008 onward—available for searching. Even with Playground and two software programs written by the third author, obtaining tweets for the study was a process of trial and error because the sheer size of the Twitter files caused the program to crash repeatedly. Although the programmer originally wanted to run many search terms at once, this was not possible because the data set was too large; each search term had to be set up individually and run on its own. The tradeoff was that this allowed for the collection of complete information on each tweet.

First, a text file was produced in JavaScript Object Notation format (JSON). The advantages of automatically saving raw returned data as JSON rather than manually saving the text of tweets was that every tweet came with extra information not normally available through Playground's graphical user interface. The JSON tweet data included the ID number of the tweet, the exact time it was sent, any recorded latitude or longitude, the username and registration date of the user who sent the tweet, whether the tweet was original or retweeted from another user, and demographic information.

The automatic collection of data provided information that would have been impossible to collect manually since the Playground interface doesn't allow for fine-tuning the time of day the tweets are sent. For example, the tweets obtained for this study are spread out during a 24-hour period. Since the JSON files are in machine language, a second post-processing software program written in Python was used to provide a text file of tweets that was primarily in Arabic. The program also removed duplicate tweets from the data sets.

### Study Dates and Sample

Three key dates during the 18 days of demonstrations in Tahrir Square in Cairo were selected for analysis. They are: (1) Jan. 25, the first day of the demonstrations, (2) Feb. 2, the most violent day of the demonstrations when protesters were attacked by pro-Mubarak thugs rampaging through Tahrir Square on camels and horses and in cars and armored vehicles, and (3) Feb. 11, when President Hosni Mubarak resigned.

Samples were drawn for each of the days from the thousands and thousands of tweets that were generated for each date; the Jan. 25 file contained 2,057 pages in Word, the Feb. 2 file, had 1,411 pages in Word, and the Feb. 11 file had 1,455 pages in Word. It was determined that sample sizes for the first two dates should be about 250 tweets and that the sample size for Feb. 11 should be larger—about 500—to capture the different events of that day. Demonstrators didn't know whether the day would be one of arrests and deaths or whether it would be the day that President Mubarak finally decided to resign.



The sample size for Jan. 25 was 249, for Feb. 2 was 236, and for Feb. 11 was 482, for a total sample size of 967. The sample was drawn by using both random numbers to determine starting points and kth numbers or skip intervals (the number of pages divided by the desired sample sizes) to determine how many pages would be skipped before another tweet was drawn.

### Measurement

The coding categories for Twitter users were as follows (1) the extent of their participation, (2) five-point Likert scales measuring their levels of activity during demonstrations (3) the roles they played during the demonstrations, (4) the celebratory tweets posted after President Mubarak resigned, and (5) their emotional state. The tweets were also coded to determine whether the tweet was an original tweet or a retweet. In addition, since the tweets were drawn during a 24-hour time period for each date and proportional to the time of day they were sent, whether the tweets were sent during the day or at night was also coded.

The coding was done by three research assistants. Two coders from Egypt who are fluent in both Arabic and English coded all of the Arabic tweets and some of the English tweets. An American coder worked only on coding the quotes in English.

### Results

#### Tweet Profile

In the samples analyzed, about one-third of the tweets/retweets were sent in English. The reasons that so many tweets were in English was because Twitter users were urged to translate tweets from Arabic to English so they would reach a wider, global audience and focus attention on what was happening in Egypt (Ghonim, 2012).

The percentage of tweets and retweets was fairly stable across the three dates although the number of original tweets was slightly higher on Jan. 25 and on Feb. 11 than on Feb. 2. On Feb. 11, 44% of the tweets were original and 56% were retweets and on Jan. 25, 43% of the tweets were original and 57% were retweets. A close reading of the tweets in the sample shows that on Feb. 2 some Twitter users were frantically sending retweets to let others know about the violence they had seen or experienced. On that day, 39% of the tweets were original and 61% were retweets.

Table 1 shows the time of day that the tweets were sent. It is interesting to note that the highest percentages of tweets were sent during the day on Jan. 25 (65%) and Feb. 2 (61%), as compared with daytime tweets sent on Feb. 11 (37%). One reason for this is that, after President Mubarak resigned, it was safe to be at the scene and tweeting. Also, after 18 days of protests, part of the celebrating for Twitter users was sending tweets and retweets about their reaction to his historic removal as president.

**Table 1**  
*Time of Day of Tweets (N = 967)*

Time of Day	% Jan. 25 (n = 249)	% Feb. 2 (n = 236)	% Feb. 11 (n = 482)
Day	65	61	37
Night	35	39	63

#### Participation and Activity Levels

Table 2 shows that the number of tweeters who were participants or demonstrators steadily increased across the three days, from 48% on Jan. 25, to 76% on Feb. 2, to 99% on Feb. 11. As the revolutionary movement grew in size, the percentage of supporters of protesters showed a marked decline during the three dates.

**Table 2**  
*Extent of Participation by Twitter Users (N = 1,056)*

Extent	% Jan. 25 (n = 246)	% Feb. 2 (n = 227)	% Feb. 11 (n = 482)
Participants or demonstrators	48	76	99
Supporters of protesters	51	19	1
Bystanders at protest	1	4	—
"Couch" sitter or pro-stability	—	1	—

Table 3 shows that there were more very active participants on the first day of the planned demonstrations in Tahrir Square in Cairo as well as in other cities across Egypt than on the other two days. This may have been because answering a call on Facebook to go to Tahrir only "to find myself alone," as one Twitter user messaged, heightened the sense of being a participant. On Jan. 25, 71% considered themselves to be very active or active participants.

The number of very active or active participants increased over time, with the percentage rising to 97% by Feb. 11. It should be noted here that the high levels of reported activity provides evidence that the sample was composed primarily of Egyptians.



**Table 3**  
**Activity Levels of Twitter Users during Demonstrations (N = 936)**

Level of Activity	% Jan. 25 (n = 238)		% Feb. 2 (n = 481)		% Feb. 11	
	Very active participant	24		7		2
Active participant	47		75		95	
Neither active nor non-active participant	12	3		1		
Non-active participant	8		7		2	
Very non-active participant	9	8		—		

**Participant Roles**

Table 4 shows that, on Jan. 25 and Feb. 2 and to a lesser extent on Feb. 11, Twitter activists were doing more than just demonstrating. They played five different roles, depending upon what was needed at the time. The five roles were: (1) Coordinating and organizing, (2) mobilizing, (3) tactical and security, (4) surveillance and security and (5) bearing witness.

On Jan. 25, Twitter users were heavily engaged in mobilizing activities (20%) that were necessary to encourage large numbers of Twitter users as well as ordinary citizens to participate and in fulfilling the tactical and strategic role (23%) that was needed to keep one step ahead of the police and security forces who were trying to deter their movements to central locations such as Tahrir Square.

On Feb. 2, when the demonstrators were being arrested, beaten and/or killed, the activists played a key surveillance and security role (30%) by tweeting about the violence as well as fulfilling the bearing witness role (19%).

On Feb. 11, which turned out to be a peaceful, celebratory day, about 46% of the Twitter users were simply participants in the demonstrations. On this day, 30% of the Twitter users were tweeting and retweeting what the media were reporting—trying to find out what was happening. Would there be more violence against the demonstrators or would President Mubarak finally be resigning?

**Table 4**  
**Roles of Twitter Users during Demonstrations (N = 915)**

Extent of Participation	% Jan. 25 (n = 236)		% Feb. 2 (n = 210)		% Feb. 11 (n = 469)	
	Coordinating/Organizing	13		9		3
Mobilizing	20	17		16		
Tactical/Strategic	23		10		—	
Surveillance/Security	14		30		30	
Bearing witness	10		19		5	
Just participating	20		15		46	

The coordinating and organizing role included tweeting instructions on meeting places, organizing life in Tahrir Square, and sending in doctors and medical supplies where needed. Activists began coordinating the Jan. 25 demonstrations in the morning. At 8:33 a.m. a Twitter activist sent this tweet: "Everyone should check 'We're all Khaled Said' facebook page at noon to see if there are any changes in meeting places." At 10:51 another organizing tweet was posted: "Demonstration of 'gama't el dewal' street will be at 2 pm starting from 'mostafa mahmou square . . . arrange with your friends and start moving.'" On Feb. 2, there was an urgent tweet for doctors: "There is a spot in Tahrir square . . . that has turned into an urgent care unit. We need syringes, thread, gauze and surgical instruments. There are a lot of wounded people. Please retweet."

The mobilizing role included such things as encouraging people to participate by allaying their fears and concerns about the dangers of doing so, making appeals on the basis of the need for dignity, freedom, and justice or that Allah is with us, and remembering the sacrifices made by Khalid Said and others. On Feb. 2, a Twitter user wrote: "Let's stand together and continue in our strike for our rights to work and have freedom and social justice." Another post was: "Sheikh Karadawy says to youth in tahrir square: Stay in Tahrir and be strong, you either live with dignity or die as martyrs."

The tactical and strategic role involved warnings about what the police and security forces were doing as well as providing information on how to bypass Twitter and Internet shutdowns. On Jan. 25, the government blocked web sites such as Facebook and Twitter. One activist tweeted: "You can use Chromed Bird from your google chrome browser. It is still working and not blocked."

The surveillance and security role was aimed at keeping demonstrators as safe as possible such as providing minute-by-minute updates on what streets were being blocked, what areas to avoid, what police and security forces were doing, and instructions on what information to tweet if they saw someone about to be arrested. On Feb. 2, one Twitter user reported as follows: "Ayman Nour via twitter said: I am surrounded now by thousands of hired thugs in 'Bab el louq' area." Another reported: "Black BMW in Dokki & mohandeseen filled with men in neqab shooting at random."

The bearing witness role, to a large extent, involved documenting violent actions by pro-Mubarak forces by tweeting about them, by taking pictures, by making videos, and by informing the news media about the violence that was occurring. On Feb. 2, activists posted tweet after tweet of the violence they witnessed: "there is a slaughter in Tahrir Square. They are killing and attacking unarmed protestors with weapons and using tear gas." Another Feb. 2 tweet: "I am literally sitting on one of the thugs right now." And still another tweet. "After horses and camels, thugs are bringing dogs now to #Tahrir. Shame on you #Mubarak, really shame on you."

A number of bearing witness tweets such as the following tweets provided monitoring of what the Egyptian media, Al-Jazeera, and other international media were reporting about the demonstrations: " 'Al Jazeera': Deaths and hundreds wounded in clashes in Tahrir Square" and "Al Jazeera correspondent at Tahrir square says thugs are beating us up using police weapon and throwing us with iron balls."



**Participant Disagreement**

There was remarkable solidarity among Twitter users, with very few disagreements expressed in their posts on the need to demonstrate, what should be done, and how it should be done. The posts indicate that it was like they were all of one mind. On the rare occasions that a user voiced disagreement with the tweets of other Twitter users, there generally was a straight-forward reason given and there was an absence of personal attacks. The percentage of disagreements that were voiced ranged from less than 2% on Jan. 25 to 6% on Feb. 2, with Feb. 11 in the middle at 3%. One tweet showing a disagreement was posted on Feb. 2 after President Mubarak's speech: "Please all people go home. That's enough. We have got what we asked for. Let the man die in his country. He's just a couple of months away from leaving and we're in control now."

**Emotional State**

For almost two-thirds of the Twitter users, their emotional state was discernable in their tweets. Table 5 shows their emotions were fairly dependent upon what happened on a particular day. On Jan. 25, 35% were happy or euphoric at the large turnout at the demonstrations across the country. Even more (81%) expressed their "happiness or euphoria when President Mubarak resigned. The violence against demonstrators on Feb. 2 resulted in slightly more than half expressing anger at President Mubarak and the pro-Mubarak forces. One activist reacted with gallows' humor: "Egyptians are waiting for the score of today's demonstrations. In case of winning, we'll be playing with Tunis in the finals, God willing."

**Table 5**  
**Emotional State of Twitter Users during Demonstrations (N = 604)**

Emotions	% Jan. 25		% Feb. 2		% Feb. 11
	(n = 64)	(n = 136)		(n = 404)	
Fear	16		16		3
Anger	17		51		8
Sad	12		15		4
Happy	30		10		75
Euphoric	5			6	
Other	20	—	8		4

**Feb. 11: Time for Celebration**

At long last, on Jan. 11, demonstrators achieved their goal of forcing President Mubarak to resign. On that day 46% of the tweets were celebratory. The discipline and self-sacrifice was over. As Table 6 shows, it was time to party and to celebrate their victory.

Many post-resignation posts used sarcasm to express the victory over Mubarak. Some Twitter users joked about how Mubarak had previously made fun of youth using social media but that now it was their turn to make fun of him. Some tweets referred to Mubarak as the new friend of Zein El Abdeen, joking that Zein El Abdeen is telling Mubarak not to forget his play station joystick before leaving Egypt. A frequent retweet @Ghonim was that "Mubarak said he will be running for the presidency in Tunisia and million of Tunisians are calling for Bin Ali to return." One Twitter user sarcastically said that he will miss his "La Vache Qui Rit" laugh, which refers to an old joke that compared Mubarak's laugh to that of the cow on "La Vache Qui Rit" cheese packets.

Twitter users also expressed how it was still so hard to believe that Mubarak was gone, saying that they feel Egyptian state media will announce that, if people don't leave Tahrir right away, they will bring Mubarak back. Another Twitter user said: "Somebody please pinch me because I still can't believe what happened today." Others joked about his stubbornness and how it took him so much time to realize that it was time for him to go, comparing him to the persistent girlfriend who wouldn't take 'no' for an answer.

**Table 6**  
**Celebratory Tweets on Jan. 11, 2011 when Egyptian President Hosni Mubarak Resigned (N = 223)**

Content of Tweet Message	%
Time to celebrate	26
Victory: We won	22
Pride in being Egyptian	18
Thank you: Khaled Said, martyrs, WaelGhonim, demonstrators	10
Can't believe Mubarak resigned	10
Egyptians made history	8
No more fear	5

In addition to the celebratory posts and jokes, Twitter was full of messages expressing hope and a new beginning for individuals and Egypt. One Twitter post read as follows: "I'm sorry #Egypt, I promise to be a better citizen. A BETTER EGYPTIAN!! I love my country #jan25 #tahrir RETWEET." And, there was this frequent retweet: "RT @Ghonim: A call to all well-educated Egyptians around the world. Come back ASAP to build our nation."

And, it was fitting that while some were celebrating, Twitter users went back to their pre-resignation role of coordination and organization, putting out a call for volunteers. Posts similar to the following were tweeted and retweeted: "Tomorrow morning I'll be in #Tahrir to clean it. Our country will be clean and we will start from tahrir out to every place."





## Conclusion

The societal forces that led to the resignation of President Mubarak are many and complex. Activists, including those who used Twitter and other social media, tapped into and gave voice to long-standing grievances of the Egyptian people against President Mubarak and his supporters. This study showed how demonstrators used Twitter to fulfill three participation roles that are a necessary condition for any social movement to be successful: (1) coordination and organization, (2) mobilization, and (3) tactical and strategic communications.

But as previous research has indicated, the revolution might not have gotten off the ground if it had not been for the organizing, mobilizing, and tactical work that activists did behind the scene to make their case with ordinary Egyptians. It was the combination of their parallel work at the street level and their skillful use of Twitter and other social media that made the difference.

The activists also used Twitter and its mobile technology in two ways that had not been envisioned in quite the same way before—as internal and external media. Twitter users became a small army of participant-reporters serving their internal media—Twitter itself—to keep themselves informed and flexible so that they could react quickly to what pro-Mubarak forces were doing. This was the surveillance and security role.

But, probably even more important, Twitter activists were fearless on-the-scene citizen journalists serving external media. What they did so well was to use Twitter and other technologies to bear witness to violence in a way that was accepted as credible and usable to journalists from more traditional media. They did this by documenting what they saw with factual accounts and pictures and video taken with cell phones. And, just as they understood the need to gain the support of Egyptians, they also understood the need to tell their stories to the world through their tweets to the media.

## REFERENCES

- Anderson, Lisa (2011). Demystifying the Arab Spring: Parsing the differences between Tunisia, Egypt, and Libya. *Foreign Affairs*, 90(3), 2-7.
- Aouragh, Miriyam & Alexander, Anne (2011). The Egyptian experience: Sense and nonsense of the Internet revolution, *International Journal of Communication*, 5, 1344-1358.
- Attia, Ashraf M.; Aziz, Nergis; Friedman, Barry; and Elhusseiny, Mahdy F. (2011). Commentary: The impact of social networking tools on political change in Egypt's "Revolution 2.0," *Electronic Commerce Research and Applications*, 10, 369-374.
- Chebib, Nadine Kassem & Sohail, Rabia Minatullah (2011). The reasons social media contributed to the 2011 Egyptian revolution, *International Journal of Business Research and Management*, 2, 139-162.
- Cottle, Simon (2008). Reporting demonstrations: The changing media politics of dissent. *Media, Culture & Society*, 30(6), 853-872.
- Etling, Bruce; Faris, Robert; & Palfrey, John (2010). Political change in the digital age: The fragility and promise of online organizing, *SAIS Review*, 30, 37-49.
- Etling, Bruce; Kelly, John; Faris, Robert; and Palfrey, John (2012). *New Media & Society*, 12(8), 1225-1243.
- Evans, Mark (2011, January 31). Egyptian crisis: The revolution will not be tweeted. Sysomos. Retrieved March 5, 2012 from: <http://blog.sysomos.com/2011/01/31/egyptian-crisis-twitte/>
- Ghannam, Jeffrey (2011). *Social media in the Arab World: Leading up the uprisings of 2011*. Center of International Media Assistance: Washington DC.
- Ghonim, Wael (2012). *Revolution 2.0: The power of the people is greater than the people in power*. Boston: Houghton Mifflin Harcourt.
- Internet World Stats (2012). *Egypt (Arab Republic of)*. Retrieved March 10, 2012 from: <http://www.internetworldstats.com/africa.htm>
- Kwak, Haewoon; Lee, Changhyun; Park, Hosung; & Moon, Sue (2010). What is twitter, a social network or a news media? Paper presented at the World Wide Web Conference April 26-30, 2010. Raleigh: NC.
- Lotan, Gilad; Graeff, Erhardt; Ananny, Mike; Gaffney, Devin; Pearce, Ian; & Boyd, Danah (2011). The revolutions were tweeted: Information flows during the 2011 Tunisian and Egyptian revolutions, *International Journal of Communication*, 5, 1375-1405.
- Newsom, Victoria Ann; Lengel, Lara; Cassara, Catherine (2011). *International Journal of Communication*, 5, 1303-1312.
- Papic, Marko & Noonan, Sean (2011, February 3). Social media as a tool for protest. *Security Weekly*. Retrieved March 10, 2012 from: <http://www.cfr.org/democracy-and-human-rights/stratfor-social-media-tool-protest/p23994>
- Rinke, Eike M. & Roder, Maria (2011). Media ecologies, communication culture, and temporal-spatial unfolding: Three components in a communication model of the Egyptian regime change, *International Journal of Communication*, 5, 1273-1285.
- twitter blog (2011, September 8). One hundred million voices. Retrieved March 10, 2011 from: <http://blog.twitter.com/2011/09/one-hundred-million-voices.html>
- Van Niekerk, Brett; Pillay, Kiru; & Maharaj, Manoj (2011). Analyzing the role of ICTs in the Tunisian and Egyptian unrest from an information warfare perspective, *International Journal of Communication*, 5, 1406-1416.
- Wilson, Christopher & Dunn, Alexandra (2011). Digital media in the Egyptian revolution: Descriptive analysis from the Tahrir data sets, *International Journal of Communication*, 5, 1248-1272.
- Wolman, David (2012, February 12). Opinion—The digital road to Egypt's revolution. *New York Times*. Retrieved February 12, 2012 from: <http://www.nytimes.com/interactive/2012/02/12/opinion/sunday/20120212-tahrir-timeline.html?ref=twitter>