

**The Rhythms of News Storytelling on Twitter:
Coverage of the January 25th Egyptian uprising on Twitter**

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Abstract: This study traces the progression of the rhythms of news storytelling on Twitter via following the #egypt hashtag, used most prominently during the Egyptian uprising that led to the resignation of Hosni Mubarak. A frequency analysis is combined with computerized content and an in-depth discourse analysis to study news values and the form that news reported via #egypt took on, during the time period of January 25 to February 25. Results point to a hybridity of old and newer news values, with emphasis on the drama of instantaneity, the crowdsourcing of elites, solidarity, and ambience. The resulting stream of news is affective, combining news, opinion and emotion to the point where discerning one from the other is difficult, and doing so misses the point.

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Twitter, a micro-blogging service launched in 2006 and presently claiming 190 million individual users is increasingly being incorporated into news storytelling (Schonfield, 2010). Even though only about 5% of Twitter content is devoted to news, mainstream news networks frequently poll the twitterverse for public opinion, independent bloggers use it to promote their or other content, and journalists use it to supplement their own reporting (Ryan, 2009). Blogs and microblogs rise to prominence as news disseminators on occasions when access to mainstream news and/or other communication media is restricted or blocked (Howard, 2011; Papacharissi, 2009). For example, protests over the contested Iranian Election results of 2009 were live blogged on Twitter, once the Iranian government restricted access to mainstream media, independent journalists, mobile telephony, and other communication technologies. More recently, Egyptian protests that led to the resignation of ex-President Mubarak were organized through a complex network of communication that combined heavy Twitter and Facebook use with other forms of interpersonal communication. Egyptian freedom fighters have a tradition of using social media to stay connected and informed. Prior to the January 25, 2011 uprisings, Egyptian bloggers used Twitter routinely to report news, but also their own whereabouts, in the event they were captured and tortured by government officials, frequently generating publicity on behalf of imprisoned bloggers. This study explores the uses of Twitter as a news reporting mechanism during the Egyptian January 25th uprisings.

During this period, access to mainstream media was variably blocked, foreign and native journalists were intimidated and discouraged from reporting the news, and access to the internet was controlled and eventually shut down. Twitter provided a continuous and constant stream of events in real time. At a time when most news networks are forced to shut down foreign bureaus due to financial constraints, news feeds produced by citizens committing acts of journalism complement or substitute mainstream media reporting. Especially during events to which media access or coverage has been restricted, these news feeds become of central importance to both producers and consumers of news.

This content analysis examines Twitter archives spanning the time period ranging from January 25 to February 25, for the #egypt hashtag, used most prominently during the uprising. A computerized content computer-mediated text analysis is employed to identify volume and content patterns, topics, and prominent frames in the twitter posts included. The computer-mediated text analysis is conducted concurrently with a more focused discourse analysis, which examines both the patterns plotted by the content analysis and the archives themselves to understand the form and the content of news that is communicated via Twitter. Using prior seminal work that places emphasis on the form of news and its relevance to news values and socio-cultural context (e.g., Barnhurst & Nerone, 2002; Semetko, Blumler, Gurevitch, & Weaver, 1991, van Dijk, 1988), this study attempts to describe, map, and explain the evolving rhythms of news storytelling on Twitter, through the events of the 2011 Egyptian uprisings.

Twitter as news reporting mechanism

Growing research interest is dedicated to studies of how Twitter is employed as a news reporting platform. As a micro-blogging service, Twitter permits users to send short messages, or tweets, of 140 or fewer characters, about any topic to a select audience of followers. Tweets are potentially accessible to publics broader than the individual's followers, depending on whether the individual has set up the account to be public or private, and on how much they are re-broadcast to others via networks of followers. Individuals may associate their tweets with particular topics or content categories by inserting tags, known as hashtags, in their tweets. These hashtags, together with the repetition of words within tweets produce popular topics of conversation on twitter, known as trending topics. Research has shown that the majority of trending topics on Twitter tend to be headlines of breaking or persistent news on sports, cities, or brands (Kwak et al., 2010). Most mainstream media outlets possess a twitter feed and several journalists maintain their own news feeds, independent of or within the news organizations they work for. CNN, *CNN Breaking News*, *The New York Times*, *Breaking News*, *The Onion*, *Time*, and *People* magazine are within the top 100 most followed accounts on Twitter (twitaholic.com, May 2011).

Individual journalists and bloggers frequently also post news updates or break stories via their own news feeds. During the wave of Middle East uprisings in early 2011, widely known as the Arab Spring, most journalists reported live on Twitter and TV simultaneously or interchangeably. Reports of Osama Bin Laden were first leaked via the Twitter accounts of prominent journalists, seconds before they were leaked on TV, and of course several minutes before President Obama's address. In the aftermath of the Iranian election in 2009, and during the wave of Arab Spring uprisings, several of which are still underway, citizens took to twitter when other channels of information dissemination were shut down, to post and read news updates. In those instances, journalists and independent citizens engaging in acts of journalism provided constant streams of news updates via Twitter.

Early studies suggest that news values driving the dissemination of news via TV and print media further guide the reporting of news via Twitter, possibly leading to a lack of new dissemination strategies. News organizations typically forward print and broadcast stories to their news feeds, delivering the same news, over a different platform (Armstrong & Gao, 2010a). These news feeds may feature more multimedia reports, but they also reflect a slight male bias, as stories with male mentions tend to be retweeted more often than stories with female mentions (Armstrong & Gao, 2010b). Such uses may undermine the potential of Twitter, which works best in *premediated* situations where the story is changing so quickly, that TV or print media do not have the time to develop or mediate a fully sourced story, and examples of such situations include critical events like disasters, accidents, riots, and political events (Farhi, 2009; Grusin, 2010). Moreover, journalists using Twitter frequently experience confusion between their roles as reporters, editors, critics, or independent individuals, leading them to use twitter in a way that supplements their traditional role as information disseminators and prompting news agencies to issue guidelines regarding the use of social media (Ahmad, 2010; Emmett, 2009). The confluence and tension between news, fact, opinion, subjectivity and objectivity characterizes most of the news feeds twitter users consult. These trends suggest that already eroding boundaries will dissolve further, leaning toward uses of Twitter as a mechanism of public accountability, among other things

(Ettema, 2009, McNair, 2009). We would argue that a platform like Twitter affords journalists and citizens a direct hand at premediating, and mediating a news story.

Whereas feeds of news organizations and journalists are modeled after the news values and practices of the parent organizations, organically developed hashtag feeds deviate from the organizational logic of prominent news values to provide coherence by blending fact with opinion, and objectivity with subjectivity. Inclusive of both news and conversations about the news, hashtags exploit the affordances of the Twitter platform more aggressively or innovatively than any news organization. They highlight the character of the platform as a social awareness stream, inclusive of news, among other things. Viewed alternatively, hashtags present a user-generated collaborative argument on what is news. Recognizing that is perhaps where the innovative uses of Twitter lie, several scholars examine emerging trends on twitter by studying the content of hashtags. Specifically, Yardi and boyd (2010a) studied users and content topics in a selection of hashtags and found that local topics featured denser social connectivity between posting users. Some research has indicated that social connectivity for breaking news is lower (Sakaki et al, 2010), while others have found that content in select hashtags follows a power-law distribution in terms of popularity, time, and geolocation (Singh and Jain, 2010). Building upon previous research, Naaman et al. (2010) distinguished between trends in *exogenous* categories, capturing an activity, interest, or event originating outside of the Twitter system (e.g., a natural disaster), and *endogenous* categories, capturing Twitter-only activities that do not correspond to external events (e.g., a popular post by a celebrity). Exogenous trends tended to generate more independent contributions, whereas endogenous trends tended to be more symmetrical, possibly reflecting a presence of stronger ties, except for local events, which, unlike other exogenous events, featured more discussion and less forwarding of information. Applied to Egyptian uprisings, these findings would suggest that social media use by those sharing a local connection might be characterized by cohesion and plurality of opinion expression.

In further investigations of the relationship between posts and connectivity, Yardi and boyd (2010b) studied twitter posts around controversial topics and found that replies between like-minded

individuals strengthened group identity, whereas replies between different minded individuals reinforced in-group and out-group affiliation. As a result, individuals increased their awareness of broader viewpoints but were restricted in their ability to engage in meaningful conversation. More recently, Wu, Hofman, Mason and Watts (2011) examined 'who says what to whom on Twitter' by looking at Twitter lists- a feature that permits users to organize people they follow into lists organized topically and found evidence of homophily in sharing.

Additional research underscores the connection between shared geo-locality and communal bonds strengthened via twitter posts, permitting forms of "peripheral awareness and ambient community" (Erickson, 2010, p. 1194). The practice of following opinion leaders on Twitter has been likened to emerging disciplines of listening in social media, characterized by background listening, reciprocal listening, and delegated listening (Crawford, 2009). In this manner, the practice of listening may strengthen connectedness with others (Hennenburg et al., 2009), resemble the practices of conversation (Honeycutt and Herring, 2009; Steiner, 2009), and add elements of physicality to web design (Hohl, 2009).

Information sharing and conversational uses of Twitter by journalists, news organizations, and individual users highlight the relevance of the platform as a social awareness system. As such, it introduces hybridity into the news system, by further blurring boundaries between information, news, and entertainment and by creating "subtle, but important shifts in the balance of power in shaping news production" (Chadwick, 2011, p. 6). Hermida (2010) terms this news environment ambient, suggesting that the "broad, asynchronous, light-weight and always-on" aspect of platforms like Twitter afford individuals "an awareness system [with] diverse means to collect, communicate, share and display news and information, serving diverse purposes . . . on different levels of engagement (p. 301). Within this system, homophily and in-tralite competition present dominant features, without at the same time excluding motivated and strategically oriented actors from influencing the resulting agenda of issues (Chadwick, 2011). The ambience, homophily, and strengthening of bonds between those sharing a geo-

local connection are essential in understanding the sociotechnical texture of Twitter, especially in situations that call for individuals to mobilize and show solidarity.

Twitter as a news sharing mechanism during uprisings

During protests, uprisings, or periods of political instability, Twitter is frequently used to call networked publics into being, and into action. Understandably, the homophily encouraged by Twitter lends itself to calls for solidarity among publics, imagined or actual, that share a common set of goals. The enhanced connectivity experienced between Twitter users with shared geo-locations could also help activate and deepen ties during uprisings. Ultimately, the ambient nature of this social awareness environment lends itself to providing an always-on, interconnected web of information that mobilized actors might utilize, serving as more efficient and “electronic word of mouth” (Jansen et al., 2009, p. 2169). At the same time, it permits individuals to change the dynamics of conflict coverage and shape how events are covered, and possibly, how history is written (Hamdy, 2010). A study of the linguistic construction of textual messages on blogs and Twitter in the Nigerian 2007 election revealed that citizens used these media to mobilize, participate in public discussions, and serve as watchdogs during the electoral process (Ifukor, 2011). Under these circumstances, platforms like Twitter force a radical pluralization of news dissemination and democratic processes (Dahlberg, 2010). In regimes where or during times when media are controlled, inaccessible, or not trusted, platforms like Twitter permit individuals to bypass traditional gatekeepers and contribute directly to the news process. However, these instances also expose the temporal incompatibilities between Twitter as news platform and the conventions of journalism. For instance, during the 2008 terrorist attacks in Mumbai, Twitter was useful in communicating breaking news, but also exposed the risks associated with reporting unsourced rumor as fact (Jewitt, 2009).

In recent protests following the Iranian 2009 election, Twitter permitted communication despite state censorship of other media coverage and access, affording citizens the opportunity to publish information and broadcast news, audio, and video account to other media and the world watching. Still, Twitter was accessible only to those with access to it and the skills to use it. Moreover, Iran’s online

censorship and surveillance made posting information and having conversations via Twitter unsafe. In fact, the majority of tweets during the post-election protests came from outside the country, with only a few updates coming from influential individuals inside the country (Christensen, 2009). In this case, the role of Twitter is better understood if reconceptualized “not in terms of whom the medium allowed to speak, but in terms of who could listen because of the medium” (Solow-Niederman, 2010, p. 35). As a result, Twitter is important because it allows a global audience to listen in on a conflict. The importance of listening to what is happening in remote parts of the world is heightened, as access to other media is blocked and Twitter becomes the primary mechanism of connection with those remote publics. Finally, as Twitter becomes the only, or primary channel of information we can tune in to, the form of news on Twitter and the values that belie it become of central importance. If that is the only channel of information sharing we can access, then what exactly are we listening to?

News values and the form of news on Twitter

Research on the relevance of Twitter as a news platform suggests that it provides an ambient, always-on social awareness environment, where news-related and social information is shared. Information shared is multi-perspectival and story narratives are constructed organically and collaboratively, as individual citizens report the news and other information they deem relevant. Posts are informative or conversational, or both at the same time. This practice is important to those who post and to those who read or ‘listen in.’ The relevance of Twitter as a news platform is heightened when other news platforms are silenced, for a variety of reasons. In those cases, Twitter may enable global audiences to listen in and report on events deemed important.

If Twitter is to rise to such prominence as a news medium, what are the news values that describe its character as a medium for news sharing? The question of news values is an important one and one from which research on news media frequently commences, yet it has yet to be fully examined for the news environment of Twitter. Scholars interested in media have studied and theorized extensively on news values prevalent in a variety of media. Galtung and Ruge (1965) provided a first list of news values that determine what is most likely to be covered, including the news values of frequency,

threshold, unambiguity, meaningfulness, consonance, unexpectedness, continuity, compositional balance, elite nations/regions, elite people, and personification. These have morphed into the eight traditional news values that are observed in most newsrooms and imparted in most journalism schools: impact, timeliness, prominence, proximity, bizarreness, conflict, currency, and human interest. These values are not reflective of all journalistic traditions, and may be more frequently encountered in paradigms of journalism that are more pragmatic and prevalent in the US. On the contrary, sacerdotal orientations that characterize news approaches in several European countries frequently cover several events as inherently important, regardless of the aforementioned news values (Semetko et al., 1984).

Gans (1984), in the seminal *Deciding What's News*, explained that journalists based most of their decisions on what makes news on the following assumptions, or values: ethnocentrism, altruistic democracy, responsible capitalism, small town pastoralism, individualism, and moderatism. Some have associated these values with the objectivity paradigm, dominant in US journalism, and contrasted it to the partisan paradigm of news reporting, prevalent in a majority of countries in the rest of the world (e.g., Capella & Jamieson, 1997; Patterson, 1994). The tendency to identify two sides to a story and balance them out so as to produce objectivity has been associated with the tendency to report events episodically. By contrast, partisan coverage is more subjective but also frequently permits contextual and thematic coverage (e.g., Capella & Jamieson, 1997). Many researchers have explained how these differing news values are further reproduced, challenged and negotiated by media professionals, routines, organizations, extramedia factors, and ideological perspectives (Bennett, 1996; Schudson, 2003; Shoemaker & Reese, 1991; McQuail (2002) has synthesized this work to present a more recent list of primary news values in western media: large scale of events, closeness to home, clarity of meaning, short time scale, relevance, consonance, personification, negativity, significance, and drama and action. Still, as Hartley (1982) clarified, news values are ever-evolving and are about news *stories* and not news events themselves. Therefore, he offered the following categories that more fluid and inclusive of a greater variety of news cultures, and thus, more fitting to the context of this study:

- News values prioritise stories about events that are recent, sudden, unambiguous, predictable, relevant and close (to the relevant culture/class/location).
- Priority is given to stories about the economy, government politics, industry and business, foreign affairs and domestic affairs-either of conflict or human interest- disasters and sport.
- Priority is given to elite nations (the US, the UK, Europe, etc.) and elite people.
- News values often involve appeals to dominant ideologies and discourses. What is cultural and/or historical will be presented as natural and consensual.
- News stories need to appeal to readers/viewers so they must be commonsensical, entertaining and dramatic (like fiction), and visual (Hartley, 2002, p. 166).

News values shape how events turn into news stories. In the context of Twitter, news may be broadcast instantaneously and stories develop organically and collaboratively. News frames may be constructed by citizens and journalists contributing to the feed of news in atomized yet networked mode, and news values may be similarly crowdsourced to the values of the contributing publics. Or, they may reflect enduring news values which are the products of institutions and ideologies that have long been in place. In the context of uprisings, these institutions and ideologies of course may come under question or attack. This study investigates the news values of storytelling on Twitter and asks:

RQ1: What news values were prevalent in the Twitter news streams capturing the events of the 2011 Egyptian uprising?

News values shape the form of news stories told. Events take on the form of a narrative relatable to a variety of publics and audiences, and this form is historically sensitive (Nerone and Barnhurst, 2001). The organization and presentation of news reflects news values, and how news organizations relate to their publics, perceive audiences, and balance market and news values. News organizations have a long history of slow and reluctant adjustment to the affordances of newer platforms, frequently employing technological innovations, but not incorporating the new media “affect” into the dominant form of news (Barnhurst, 2010a&b, 2011). Newer media require a reconsideration of market values and are often temporally incompatible with fact checking and other conventions of

journalism. News institutions must reconcile and market and news values, but what form does news take on when citizens and journalists construct narratives collaboratively in circumstances of political instability? How do the affordances of Twitter inform these pluralized narratives? A second question this study undertakes then is:

RQ2: What form did news storytelling on Twitter take during the recent 2011 Egyptian uprising?

Method

The present analysis examined news values and the form of news on Twitter, during the period of January 25-February 25 and focusing on the Egyptian uprisings that prompted the resignation of ex-President Mubarak, as depicted via the #egypt hashtag. As the most prominent tag used during this period of turmoil, this tag also featured a majority of tweets cross-posted to other frequently used tags, such as #Jan25 or #Tahrir, thus expanding our sample further. Archives were obtained from the online archive service of Twapperkeeper, an online tool for capturing public timelines, or archives, of tweets more extensive than the ones provided by the Twitter API. The archives constructed included tweets generated during the aforementioned time period, and contained the text of the tweet, hashtags, keywords, date and time stamps in various formats, and miscellaneous bits of backend information that are recorded based on user set preferences. Usernames were also included, but were removed from the file for further analysis.

The Twapperkeeper datasets are delivered in standard comma separated value format (CSV), which sustains several inconsistencies and noise. We used a variety of programming scripts and filters to organize the data set into a workable format. We collected a total of approximately 1.5 million tweets from the #egypt tag, and measured frequency of tweets shared during the period analyzed via R, an open-source software¹ program. For the purposes of subsequent content and discourse analysis, we filtered out tweets containing Arabic characters, which resulted in eliminated approximately 400,000 tweets. We eliminated the tweets for practical reasons, as the foreign characters were unfortunately not recognizable by the content analysis tools. Still, given that our focus is on global news, listening

¹ Code used to perform the analysis is publically available at www.michaelbommarito.com

practices, and news values, the sample we worked with fit our study objectives of studying who tweets, but also who is able to listen, and what they are listening to. We analyzed a total of approximately 1.1 million tweets utilizing Latin characters, some of which were multilingual.

Computerized Content Analysis

A random sample of 9,000 tweets was drawn from the #egypt corpus of tweets. This sample was analyzed using centering resonance analysis (CRA), a mode of computer-assisted network-based text analysis that represents the content of large sets of texts by identifying the most important words that link other words in the network (Corman & Dooley, 2006; Corman, Kuhn, McPhee, & Dooley, 2002). The analysis of a just a portion of the tweets collected was necessary due to software limitations.

CRA calculates the words' influence within texts and sets of texts, using their position in the text's structure of words (Dooley & Corman, 2002). This influence is based on words' coefficient of betweenness centrality, defined by Corman et al. (2002) as "the extent to which a particular centering word mediates chains of association in the CRA network" (p. 177). As Dooley and Corman (2002) stated, "words with high betweenness, and thus influence, add coherence to the text by connecting strings of words that otherwise would not be connected" (p. 123). The results of aggregating the possible centers or nodes (the most influential words) in a message denote the author's intentional acts regarding word choice and message meaning. The concept of resonance also allows us to compare sets of text to detect similarities and differences. As Corman et al. (2002) stated the more two texts frequently use the same words in influential positions, the more word resonance they have. The more word resonance they have, the more the communicators used the same words, and the more those words were prominent in structuring the text's coherence. (p. 178). Based on these concepts, the tweets were analyzed to detect the most influential words.

Discourse Analysis

Qualitative textual analysis techniques (e.g., Fairclough 1995, 2000; van Dijk 1997) pursue a deep explanation of meaning by observing and recording patterns present in a mediated text. The

qualitative analysis sought to verify, expand, and illuminate the quantitative findings of the content analysis. This study examined discourse (as defined by Wood & Kroger, 2000 and Fairclough, 1995) as a text, using the Wood and Kroger definition of discourse as “all spoken and written forms of language use (talk and text) as social practice” (p. 19). Therefore, the aim of this textual analysis was to understand the “systematic links between texts, discourse practices, and sociocultural practices” (Fairclough 1995: 17). In identifying news values, we used Hartley’s definition of news values as ever-evolving and reflective of news *stories* and not news events themselves. Our goal was to understand how the medium of Twitter is employed in turning events into news stories, told by the hybrid and networked publics of journalists and citizens working concurrently. In analyzing the text, we referred back to this definition and prior categorizations of news values, identified in previous research and detailed in the previous section.

The sample for discourse analysis was assembled through a composite approach, using stratified sampling to construct a corpus of 150,000 tweets, or roughly a little over 10% of the total sample, which were read and analyzed in greater detail for the purposes of the discourse analysis. The files were also extensively perused to get a feel for the pace and progression of the twitter stream. The selected tweets were then read over, several times, to identify news values using the afore mentioned framework. Notes were taken regarding language use, tone, presence or absence of traditional news values and news values previously identified in research, focus, and differences and similarities in how people shared information over Twitter. We looked for thematic patterns, repetition, and redundancy in the trends that we observed. Finally, notes and findings were categorized and further analyzed, in light of previous research on news values and the form of news. The combined quantitative and qualitative approach sought to expand validity and reliability.

Findings

Two graphs were created to visually represent the sheer amount of information shared via Twitter during the 2011 uprisings in Egypt. As previously mentioned, a total of approximately 1.5 million tweets from the #egypt tag from January 25 to February 25.

Insert Graph 1 and 2 here

Both graphs present the amount of tweets shared in intervals of 5 minutes. Graph 1 shows over 10,000 tweets using the #egypt tag were exchanged on February 11, day of Mubarak's resignation, **on average, every 5 minutes**. Graph 2 offers a zoomed view of graph 1 in order to make possible a closer examination of the volume of tweets shared during the entire period examined. The frequency analysis of the entire sample is employed to trace the rhythms of news storytelling on Twitter. The computerized content and discourse analyses are used to identify prominent news values and to examine how they shape the form of news storytelling on twitter. Findings from the frequency, content and discourse analysis are summarized and combined, in response to our two main research questions below.

Hybridity of Old and New(er) News Values

The content and discourse analysis both indicated that the stream of news reflected a mix of traditional news values and values specific to the platform of Twitter. The discourse analysis suggested that the types of events covered and the tone of the coverage mimicked the tendency of traditional media to emphasize all of the following news values, as defined by McQuail (2002): large scale of events, closeness to home, clarity of meaning, short time scale, relevance, consonance, personification, significance, and drama and action. The only value identified in traditional media but not present in the twitter feed was that of negativity. Otherwise, and at varying degrees, information and opinions featured regularly on the twitter streams tended to revolve around larger scale events, in proximate locations, were intent on providing clarity and accuracy, prioritized more recent events, were reflective of drama and action, and associated specific persons with aspects of a story.

The computer-mediated text analysis of the #egypt tag showed similar patterns. The quantitative approach adopted in this analysis—centering resonance analysis—is designed to back out patterns of meanings found on precise mathematical rules, avoiding in this way coder bias and sometimes manifesting unexpected findings (Oliveira & Murphy, 2009). However, in this analysis the patterns found corroborate with the qualitative analysis.

Insert Figure 1 here

Words were arranged on the map based on how influential or central they were. The most influential words are those in black boxes; words with slightly lesser influence have gray boxes; and less influential words are unboxed. The lines in the map depicted levels of associations among words, with darker lines depicting stronger associations² (Corman & Dooley, 2006).

The whole configuration of the map shows one tightly connected cluster of meanings, where the information tweeted about the uprisings in Egypt reflects many traditional news values. The most influential words and the tweets behind them illustrate the following aspects: closeness to home (represented by the words *Egypt* and *Egyptian*), personification (*Mubarak*), significance and relevance (*revolution*), and drama and action (*people and protest*).

The discourse analysis further illuminated these trends, suggesting that differences lie not in the news values that are prevalent, but in who makes the decisions based on the same news values. So, whereas in a traditional news room, it is the professional hierarchy and ethos that drives how these news values are applied to judge and cover events, in the case of Twitter, these judgments were made collectively and organically.

Because of the collectivity in the decision making, we noticed some variation in what these values mean for the context of Twitter. So, while the stream focused on larger scale protests, there was a pronounced tendency to ensure that smaller scale protests, occurring in cities peripheral or remote to Cairo were not neglected or undercovered. Proximal locations were covered, but attention was also called to connecting with remote areas of Egypt under turmoil. References were also made to uprisings in neighboring states like Libya, and reaction to the uprisings from potential strategic partners, like the US. In effect, this trend was identified through the computer-mediated text analysis of the #egypt tag too. Having Libya among the most influential words in the corpus of tweets studied highlights the fact that the stories shared via Twitter called attention to the political context of neighboring regions.

² Word influence assesses the extent that a word connects concepts that otherwise would be disconnected, creating coherence in a text. The values determining the most influential words (≥ 0.1), words with slightly lesser influence (> 0.05 and < 0.1) and the less influential words (> 0.015 and ≤ 0.05) followed the default parameters on the software used for the analysis (see Corman & Dooley, 2006, p. 9).

The stream leaned toward relevant news and opinions, even though the architecture permits irrelevance. Comments that were irrelevant or unrelated were simply not retweeted or ignored, and thus organically eliminated from the process of forming the dominant news story. The topical organization of the hashtag, including the fact that the tags were created specifically for the purpose of covering these events facilitated this focus. The nature of the events tweeted also facilitated the prevalence the news values of ethnocentrism, altruistic democracy and moderatism, which have also been previously identified by Gans (1984) as characteristic of western media. Several tweets reflected pride in the Egyptian ethnic identity, selfless declarations and actions in favor of democracy, and many urgent calls to cover events carefully, accurately, and not rush to judgment. It is not uncommon to encounter altruism and a measure of national pride during political uprisings, as well as an emphasis on using the media at hand to communicate the accurate and authentic version of what is happening to potential audiences and publics. At these times, individuals are recast as journalists. They function based on what they have been socialized to recognize as accepted news values, but they adapt them to the context, what the situation calls for, and their own perspective.

There, were however, specific news values that emerged, that were specific to the platform of Twitter and the context of the uprising, and we spend the next few paragraphs describing those. In line with Hartley's definition of news values as evolving, but shaping news events into news stories, we identified the four following prominent news values:

Instantaneity. We use the term instantaneity to describe the drama of events unfolding, being recorded and reported online instantly. The ability to live-tweet events as they happen presents the primary appeal of Twitter. At times when mainstream media are restricted in their ability to report, or disseminate information, it is because of this ability that platforms like Twitter rise to prominence. It is also this instantaneity that exposes the temporal incompatibility of Twitter with our conventional definitions of what is news, what separates fact from opinion, and subjectivity from objectivity. Instantaneity, or, the coverage of things that happen as they happen, reigns over the twitter news

stream, and individuals are free to tweet their observations. The tone and the language used emphasizes this tendency, with individuals retweeting and requesting instant updates.

The network map of the #egypt tag also supports this interpretation, with a number of other hashtags, such as #libya, #tahrir, and #mubarak emerging as the most influential words. The rhythms of updates posted reflect the consumption with instantaneity, with updates streaming every few seconds, and during certain events, on every second. The tendency to instantly communicate to as many publics as possible is also reflected in the urgency of the language employed and the repetition of instant reports from the ground, in ways that seek to affirm and spread word of mouth retellings of what is going on. Graph 2 illustrates these tendencies, with updates and retweets every second. The repetition of events on the one hand mimics the tendency of media to repeat breaking news and on the other hand, is afforded by the platform, which permits endorsement of information through repetition and crossposting. Tweets frequently use words that convey urgency, like now, live, happening now, and link to sites that offer live streaming of the events. Moreover, the constancy of the updates combined with the tone of the language drum up the heartbeat of a news feed and the movement the feed reflects and mediates.

Crowdsourced elites. It is common for news coverage to award priority to elite nations, organizations, or individuals. While there is no priority granting authority in the organically generated stream of news on Twitter, it is common for elite news organizations and specific individuals to be featured prominently in the stream of news. This is typically facilitated via the logic of tweeting and retweeting stories or news that come from prominent news organizations or individual citizens who provide constant news updates. #Egypt was characterized by patterns through which elites and individuals achieved prominence. In the first few hours that the stream was active, the news feed was populated by tweets of a general nature, commentary, some fact and some opinion. Gradually, as events and protests escalated, media elites started to participate in the news feed regularly, typically through cross-posting headlines and links to stories they were running on their web sites. At the same time, individual citizens, reporting events live or reporting reports of events on a regular basis emerged

as primary or adjunct sources of information. Elite status was awarded to those citizens through the practice of retweeting, but also through directly encouraging others to follow the timelines of specific bloggers, activists and ordinary citizens who tweeted constant updates. The tweets contributed from mainstream news sources typically assumed the objective and laconic tone of a headline, with the occasional exception of live tweets produced by journalists, through their individual accounts and not the generic outlet stream, as they were observing events taking place on site. Well known examples include the tweets filed by journalists like Ben Wedeman (@bencnn), Ivan Watson (@ivancnn), Nick Robertson (@nicrobertsoncnn), which were frequently integrated into the taped or live news broadcasts produced for the station affiliate. On occasion, these tweets would integrate fact with opinion, typically integrating reports of events with moderate and careful expressions of solidarity. For example, reporters frequently retweeted expressions of solidarity texted by Egyptians, as a way of reporting public sentiment. These conformed both to the news values of the parent news organization and the evolving values of the news stream. While media elites frequently dominated blocks of the feed through constant tagged updates, they were only awarded leader status through retweets or mentions.

A parallel and more vocal stream of opinion leaders emerged, consisting of bloggers, activists and intellectuals with some prior involvement with online activism that was associated with the uprisings. These included senior Google executive @ghonim, or Wael Ghonim, who had been secretly incarcerated by Egyptian police for 11 days and interrogated regarding his work as the administrator of the Facebook page, "We are all Khaled Saeed", which had helped spark the revolution. They also featured citizens with little to none prior involvement with activism, as was the case with @gsquare86 or Gigi Ibrahim and Mona Seif or @monasosh, both activists/bloggers who rose to prominence through documenting events. And they also included individuals who were not in Egypt during the entirety of the uprisings but who received and retweeted reports, together with their own opinions and comments, as was the case of Mona Eltahawy @monaeltahawy. The discourse analysis revealed that organically emerging leaders interacted with media elites, through processes of retweeting, mentions, and commenting, but differed in the form of their updates, with organic leaders frequently being more

openly emotive and media elites trying to balance the values of the parent news organization with the drama of the reports forwarded on twitter.

Solidarity. Tweets documenting events and expressing opinion reflected overwhelming expressions of solidarity. The emergent news streams were characterized by a hybridity of new reports and solidarity, so much so that it became difficult to separate fact from expression of camaraderie, and doing so perhaps misses the point. The network map of prominent words emerging in #egypt reflects this solidarity, in the dense connections that place ‘revolution’ and ‘people’ in the core, connect them to sites of struggle (‘tahrir’) and unity against the cause of the struggle (‘mubarak’, appearing both as a word and a tag), as well as unity for the country of Egypt (also prominent as a word and a tag). The centrality of ‘revolution,’ compared to the presence but peripheral position of ‘protest’ suggests a tendency to affirm this movement as revolutionary, and thus distinguish it from protests that might connect publics but not result in decisive breaks with past hierarchies of governance.

These tendencies are further affirmed by the discourse analysis, revealing a confluence of solidarity and news sharing that is not uncommon during the course and escalation of movements. For example, tweets frequently featured calls like “Its time to come back NOW and join your fellow brothers and sisters,” or “If the dove is a symbol of peace the #Twitter Bird is a symbol of freedom,” or “Muslims and Christians Work Together in a New Egypt,” and “#Libya and #Egypt one hand together ..#Revolution until victory against all dictators” that typically ended with a link to additional content; a photograph, blogpost, live stream, or just a list of several relevant tags and users to follow. The solidarity findings are consistent with previous research, which points to greater social cohesion and a measure of homophily among individuals sharing both topical interests and geolocation.

Ambience. Finally, the constant pace, frequency, and tone of tweets contributed to and constructed an ambient information sharing environment. We term this a news value, because not only does the architecture of the medium invite the constancy and continuity that constitute ambience, but also because the continuous updates, even if redundant, contributed to the creation of a live and lively environment that sustained online and offline expressions of the movement. For example, as graphs 1

and 2 illustrated, on February 11, the day of Mubarak's resignation, thousands of tweets repeated the same news, before, leading up to, but also well after the event of the resignation had been widely disseminated, even by mainstream news outlets. These tweets did not constitute news updates, but sustained an always-on news environment. They were also focused on communicating personal news, personal emotion, and a genre of news that we term *affective*.

Affect refers to emotion that is subjectively experienced, and has been connected to processes of premediation, enabled by newer media, that frequently anticipate news or events prior to their occurrence (Grusin, 2010). #Egypt is characterized by mounting, emotive anticipation, expressed through posts that are shared to inform, but also frequently simply for the sake of opinion expression and release. These constant and repetitive stream of updates sustains a lively stream of news that is always on, and thus mediates a networked movement that never sleeps. Drawing emotive tweets from those in Egypt and supporters from abroad, tweets conveyed news, solidarity and emotion ("Proud of you Egyptians! Over 20k Ideas and More than 630k votes. Everyone is thinking what should be Egypt 2.0 <http://bit.ly/hF5F65>"), sustain cohesion even when there is no news to report ("Good morning sunshine... Good morning my sweet lovely Egypt :) #Egypt #Jan25"), communication emotion, opinion and affection in 140 characters or less ("Seeing amazing footage on AJA ppl are helping the army clean #Tahrir. Oh #Egypt I love u #Jan25 <http://dlvr.it/GQ53L>"), and also invite others to maintain an ambient stream of news that is accurate ("Triple-check news before you retweet. At least today. This is not a video game #Jan25 #Egypt #Tahrir #jan24"). In response to our second research question, concerning the form of news, we explore affective news further.

The Form of Affective News

The shape and rhythm of #egypt is reflective of a form that we characterize as affective, for a number of reasons. Early tweets resembled conversation openers, in that they were too general or too specific; inquisitive and anticipatory in a phatic mode. The streams commenced in an amorphous manner, with tweets like "#Egypt 's street awakening tomorrow #Jan25 #Revolution" or "Egypt is about to have a Facebook revolution," both retweeting and endorsing the sentiment conveyed in a Time

magazine article by the same title. Slowly, the pace of posting attained regularity, with several tweets posted first in a matter of hours, then minutes, then seconds, as reflected through the rhythms of posts depicted in graphs 1 and 2. Eventually opinion leaders emerged, in the form of frequent posters whose tweets were retweeted, and through this means attained visibility, and potentially, credibility.

Mainstream media began to chime in, especially as the protests attained greater visibility, and despite the fact that internet access was shut down. Once internet access was reinstated or workarounds became available, the stream regained regularity, and more voices joined the conversation, from Egypt, neighboring countries, some countries in Europe, and primarily, from the US. The texts expressed opinions and reported facts, but rarely new ones.

Tweets blended emotion with opinion, and drama with fact, reflecting deeply subjective accounts and interpretations of events, as they unfolded. Perhaps this is an illustration of what Robinson (2010) had termed 'finding one's own place in the story', in discussing blogged accounts of Katrina catastrophes. Revolving around this *drama of instantaneity*, tweets were personal, emotive, and involved the sharing of opinion and fact without distinguishing between the two. The drama of instantaneity almost created the perception that events were occurring at a pace faster than that of reality, or as one individual put it on January 25, 2011: "amazing how #social media make #history happens faster...#egypt #Tunisia."

The progression of tweets was reflective of patterns of repetition and mimicry, similar to trends observed between and within mainstream news organizations (Boczkowski, 2010). Prominent and popular tweets were reproduced and endorsed, contributing to a stream that did not engaged the reader cognitively, but primarily emotionally. Frequently, the same news was repeated over and over again, with little or no new cognitive input, but increasing affective input. This tone of many tweets was deeply emotive but on occasion reflective of the expressive habits of western media, as tweets from western media were frequently quoted with commentary or simply retweeted. The result reflects a confluence of a conversational norms, one that is frequently effected through the oral practices of conversation, reflexivity and reciprocity and opinion expression and listening.

The habitus that developed as individuals fell into familiar practices of information and opinion sharing but also adapted to the context of the platform *and* the situation reflected a blend of both oral and print cultures. Herein lies the unique character of this platform, the mass communication potential of which is frequently overemphasized at the expense of its interpersonal dimensions. Availing themselves of the affordances of the platform for both interpersonal and mass communication, users engaged in practices of authoring, listening, and editing digital-word-of-mouth-news. The news produced blended information from mainstream outlets with rumor, fact, opinion, and corrections or edits to prior reports. Calls for and pledges of solidarity and mobilization were extended and received from all directions, and as the internet shut down, posts became more other-directed, concerned with getting the word out.

In response to the internet shutting down and the state monitoring online practices, the stream became more populated with foreigners, or those with secure access to the stream. The resulting stream became even more dense and emotion-filled, characterized by repetition, restating, resaying, and similar expressive patterns that we are more accustomed to encountering in the oral traditions of interpersonal communication. Links to multimedia stories, mainstream and independent media resembled the interpersonal gestures of pointing, nudging, and affirming. They also featured insider Twitter jokes, like “A government that is scared from #Facebook and #Twitter should govern a city in Farmville but not a country like #Egypt #Jan25,” or “Deleting Dictator...Deleting Installation files...Some files could not be removed. Country still being used...Aborted.#Egypt #Mubarak,” that adapted cosmopolitan references to the local context. The blend of humor, news sharing, opinion expression, and emotion is reflective of the affective patterns of interpersonal conversations. In this manner, affective and ambient news streams might not be perceived as journalistic substitutes, but rather, as alternatives to existing journalistic traditions.

Affective News Streams

Considerable speculation is devoted to how the use of social media platforms like Twitter and Facebook enabled movements forming around the Arab Spring, possibly rendering these Twitter or

Facebook revolutions. Some point out that people protested and brought down governments long before social media existed, and that Facebook and Twitter are simply places where revolutionaries congregate online (Gladwell, 2011; Morozov, 2011). Others maintain that use of social media accelerated the development of social movements in those countries, in ways similar to those in which the printing press, and other media facilitated revolutions in the past (Tufekci, 2011; Ingram, 2011). At the same time, it is important to not lose sight of the fact that these are *human* revolutions, ultimately enabled by human cost and sacrifice (York, 2011; Zuckerman, 2011). Understanding Twitter news feeds that developed around the Egypt movement as affective news streams of awareness can help us specify what part these media play in revolutions.

The objective of this study was not to determine the influence of these platforms during the recent mobilizations, but rather, to study how, in the midst of mobilization, news events were turned into news stories. So we focused on the news values that shaped how events were turned into stories, and considered the form that news storytelling took on. But the stories told about an uprising have bearing in how that uprising is perceived, both by those on the inside and outside. Through the platform of Twitter, stories were told about this event that affected how Egyptians viewed themselves and the potential for political change. And these stories also affected how publics watching reacted and responded to this uprising. Once told, the impact of these stories remained and resonated, and thus turning the internet on or off did little to curtail an effect –or perhaps, a new media affect- in rendering. There are findings of this study that carry important implications for the interplay between Twitter and journalism, and Twitter and mobilization that merit additional discussion.

First, news feeds collectively generated by citizens, bloggers, activists, journalists, and media outlets expose the temporal incompatibilities between live tweeting news and reporting. Activists participating in uprisings are keen on documenting events, lest their stories not get publicly broadcast. In doing so, their tweets attain the drama of instantaneity, which is compelling and engaging for readers. Instantaneity, however, is not compatible with fact checking processes of western paradigms of journalism, that are drawn to the drama of instantaneity, because it aligns with dominant news values

of relevance, proximity, and in particular, drama and action. The platform, however, does not afford journalists neither the time to process information, nor the privilege of being the first to report it. Thus, it frequently creates conflict for journalists balancing fact, opinion, and emotion, especially when entrenched in the goings on of the uprisings. These temporal incompatibilities are not insurmountable, but they require acknowledging the presence of not just one, but several different paradigms of news reporting and journalism. The practices of many journalisms acknowledge these temporal incompatibilities not as conflicts, but rather as values indicative of journalisms, not journalism.

Second, it is frequently assumed that because these movements and their corresponding feeds are developed collectively and organically, they are somehow leaderless. This study shows this to not be the case. Movements will always have events and people that inspire and drive them, and this movement is no different. This movement was energized by several bloggers, activists, informed citizens who turned to digital platforms of social association as primary forms of opinion expression and social connection, because other forms of opinion expression were not as accessible, under surveillance, or otherwise regulated. Digital platforms do not rob movements of their leaders. But they do permit movements to crowdsource their leaders, through mechanisms that reward those more involved and active in circulating information and organization mobilizations, offline and/or online. Through these processes it is possible for elites to dominate publics and conversations, but it is also possible to challenge these hierarchies of domination directly.

Third, it is essential to comprehend the meaning of affect in interpreting media use during mobilization. Emotion and emotional release are frequently incorporated within psychological approaches to communication, but not often integrated into examinations of the cultural meaning of uprisings and movements. We characterize these news streams as affective, because they blend opinion, fact and emotion into expressions uttered in anticipation of events that have not yet attained mediality through mainstream media (Grusin, 2010). By terming these streams affective we do not intend to overemphasize their nature as emotional. These streams are emotive, and as such present authentic reflections of affective reaction. The fact that they are affective works with the networked and always

on nature of these environment to sustain and nurture affective involvement, connection, and cohesion. Previous studies have traced networked mappings of twitterverse conversations to explain how they encourage social cohesion and connective around shared topics, interests and geolocality. We add a qualitative element to these findings, by explaining that in addition to these factors, it is also the affective quality of tweets that fuels and sustains these ambient streams of social awareness.

In regimes where expression is controlled and restricted, it takes a lot of courage to utter affective statements indicating dislike, hatred and anger at a dictator. In repressive regimes, these statements mean increased surveillance, prosecution and incarceration for those making them. In this sense, affective statements become political statements, and affect may signify the political. The incessant affective stream of 10,000 tweets every five minutes on the day of Mubarak's resignation presented a joyful political statement, whereas the affective statements calling others to action that preceded it were also political acts of dissent. Affective news streams are important for democracies, societies in transition and non-democracies, because they provide a form of emotional release that simultaneously invigorates and exhausts tension; what in lacanian terms is labeled *jouissance*, and (imprecisely) translated in English as affect. Affect is embedded in the circulatory drive that characterizes networked publics and the ambient streams of premediation they produce, sustained by ongoing reflexivity and connection (Dean, 2010; Grusin, 2010). However, affective attachments to media cannot produce communities, but may produce "feelings of community" (p. 22). Depending on context, these affective attachments may either reflexively drive a movement that aims at community, and/or capture users in a state of engaged passivity. The affective rhythms of news storytelling on #egypt produced feelings of community for an existing community of indignant citizens who had had enough. The digital path to regime change was aided by the extroverted nature of the Egyptian economy and the culture and the cosmopolitan values that drove the protest, which enabled connections with global publics. Absence or variation of the factors may complicate the digital path to regime change, and may explain the different results that followed digital mobilization in neighboring countries inspired by the Arab Spring (Howard, 2011). Whether the affective rhythms of news storytelling on #egypt are indeed

telling of the rhythms of contemporary revolution will be determined by time and curation of historical events.

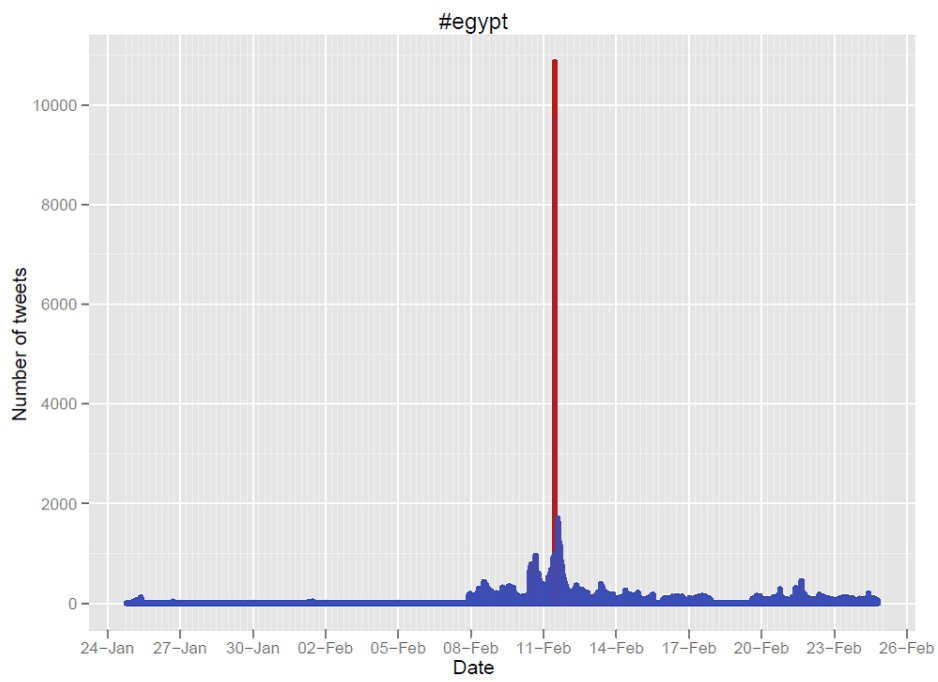
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Graph 1 – Timeline of #egypt



Graph 2 – Timeline of #egypt (detail)

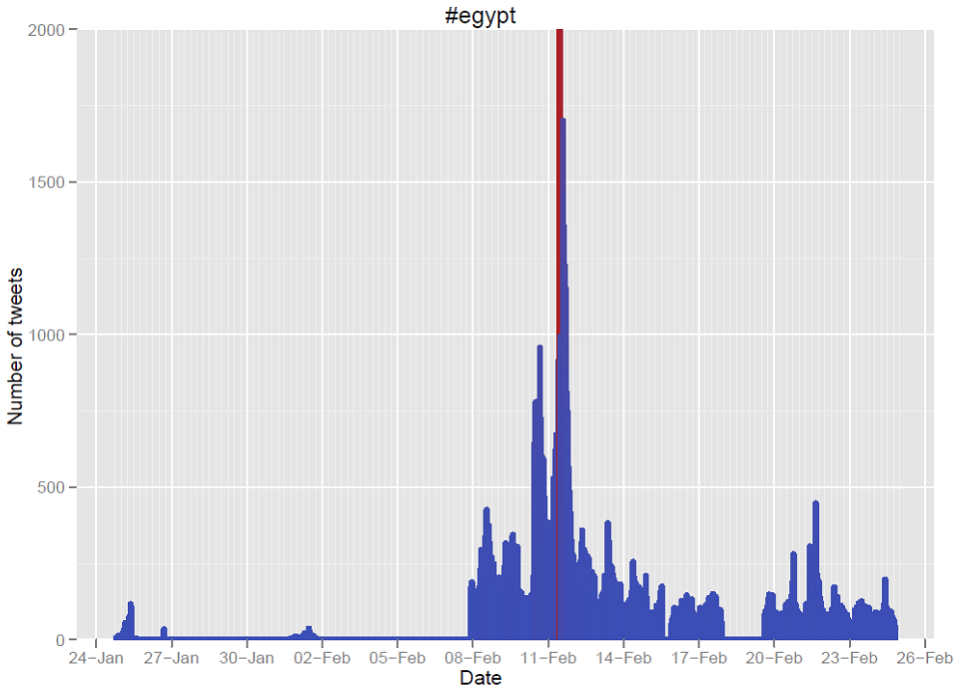


Figure 1 – CRA network map of #egypt tag

