

THE 2011 EGYPTIAN REVOLUTION ON TWITTER

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Noona Queen Oh

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ABSTRACT

THE 2011 EGYPTIAN REVOLUTION ON TWITTER

Noona Queen Oh, Ph.D.

Cornell University 2016

This dissertation examines Twitter communication from the 2011 Egyptian revolution to assess emotional, cognitive, and relational processes involved in mass mobilization against the state in order to understand the collective experience of revolutionary events, organization in communicative action, and the effects of the revolutionary process on actors. The work examines: (1) changes in emotional and cognitive states with interacting elements in revolutionary consciousness that motivated and sustained opposition; (2) coordinated information dissemination on social media that generated emergent organization in spatial-information networks about Egyptian protests; (3) affective solidarity formed from the diffusion of revolutionary humor that influenced subsequent participation in subversive communication; and (4) cognitive changes among participants and observers of revolution through the spread of messages that reflected imagined collective futures.

BIOGRAPHICAL SKETCH

Noona Oh finished graduate school in January 2016.

DEDICATION

For my family

For the good people of Egypt

For Dawn T. Robinson

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PREFACE

Revolutions are rare phenomena, but when they occur, the world stops to witness history in the making. For a student who came to Cornell University to study social movements, the opportunity to study a revolution during my graduate studies came as a surprise. While the cases of civil unrest in Iran and Moldova in 2009 and others hinted at possible things to come, the self-immolation of a Tunisian fruit vendor that started a chain of events, resulting in Tunisian, Egyptian, Libyan, and Yemeni uprisings and the diffusion of protest in North Africa and the Middle East (MENA), was largely unexpected. This work emerged in the context of changing interactions between citizens and governments influenced by information and communication technologies: social media enabled swift information diffusion and organized political action that ended a regime in 18 days.

In the wake of the Egyptian revolution, academics and public intellectuals first tried to make sense of the role of social media and researchers transitioned from debating the initial question of, ‘Did activists use it?’, to the following one: ‘What was its impact?’ This dissertation avoids addressing generic inquiries and instead seeks to understand revolutionary processes by examining how individuals collectively experienced events to assess the thoughts and emotions that drove political action and bound actors to each other. Revolutions are complex social phenomena and this research in an attempt to offer a comprehensive assessment of the emotional, cognitive, and relational processes involved in the series of events that led to the removal of Hosni Mubarak from power. Chapter 1 examines changes in revolutionary consciousness with cognitive elements and emotions reflected in Twitter communication. Chapter 2 examines organization in spatial-information dissemination about Egyptian protests. Chapter 3 assesses the diffusion of revolutionary humor that influenced subsequent participation in subversive behavior. Chapter 4 details psychological changes among participants and observers of revolution who were unified by dreams of alternative arrangements. Chapter 5 includes closing comments and considerations for future research.

In concluding this work, I reflect on the long path to this self-directed dissertation that began from a grant proposal that I initiated in late 2010 to procure funding for the study social movement networks on Twitter. Shortly after its submission, focus was shifted away from it to the incipient Egyptian revolution. I

first glimpsed at general Twitter data trends that were generated during the Arab Spring while I was involved in research that attempted to address the social media use debate. In spite of much time and effort spent, I withdrew from the Arab Spring social media project. Although I had no prospect of producing a complete volume on the subject, the ideas I wanted to pursue with the data lingered in my mind with the feeling that there was more to examine than what was done at that point. My attention kept wandering back to the Egyptian revolution and I developed the preliminary work for what would eventually become this dissertation. For much time, the work remained incomplete without any indication that the findings would ever materialize. When circumstances forced me to give up my prior dissertation research and left me with no alternative but to research this topic exclusively, things came full circle: someone who had at one point abandoned the study of social movements in graduate school ended up researching a revolution. I faced difficulties while pursuing research that had not been done before: the inability to find a receptive audience for the ideas until after major findings were made and fatigue from the efforts exerted to generate this work during the long research process. It was very hard to come this far. Dissertations can take years to develop and, while all research is imperfect, I cannot help but think that a better piece of work could have been made without the detours. But, life is full of detours.

The Twitter data was generated from collective efforts to dismantle a regime that caused Egyptians much suffering. Throughout the research process, I could sense the palpable emotions of individuals who existed under repressive governments: the frustration and hopelessness that led Mohamed Bouazizi to take his life through self-immolation in Tunisia; the helplessness of Khaled Said who was beaten to death by Egyptian police; and the anger and hopefulness of Egyptians who revolted with the belief that good changes would come. My challenging task was to study and to convey the convergence of feelings, ideas, demands, desires, and actions that propelled their revolution.

As I write this, protests continue around the world comprised of individuals seeking major political, economic, and social changes and recognition for many who yearn for a better life. Today, Egyptians have yet to realize the changes they struggled for, leaving me to wonder how much longer they will have to wait to see the #NewEgypt they dreamed of.

CHAPTER 1

REVOLUTIONARY MINDS

*“Dear god, please let me witness history. #jan25” – RashaYassin,
Egyptian Twitter user on January 25, 2011*

“It is only when this hidden transcript is openly declared that subordinates can fully recognize the full extent to which their claims, their dreams, their anger is shared by other subordinates with whom they have not been in direct touch.” – James Scott (1990: 223)

'The revolution we r having is for our mind, a revolution in the way we think, act and unite, ;ong live the revolution #jan25 #tahrir' – SamlDaouD, Egyptian Twitter user on February 9, 2011

Chapter one evaluates affective and cognitive states of revolutionary consciousness through collective discourse on Twitter during the Egyptian uprising to assess elements that motivated action and sustained the revolutionary process. Word associations were evaluated for changes in conceptual relations among terms related to religion, repression/violence, government, and individuals/collectives during the series of revolutionary events. Revolutionary demands for freedom interacted with religious beliefs during high-risk protest and protester deaths strengthened opposition to the Mubarak regime. Collective emotions reflected power dynamics between citizens and the state and the emotional trajectory of the uprising indicated protesters' gains from mobilization and territorialization. Variations in group categorization showed changes in self-perception among Egyptians as national identity salience increased with protest gains. Political outcomes can be inferred with components of revolutionary minds that reflect momentum generated through sequential experiences.

INTRODUCTION¹

In the wake of the Tunisian uprising, Egyptians from all social backgrounds across the country protested against the government for 18 days in the 2011 Egyptian revolution. Demonstrators from different cities traveled to Cairo to join the crowds in Tahrir Square and Egyptians living abroad returned to Egypt to protest², driven by shared experiences of social injustice and grievances accumulated during Hosni Mubarak's 30-year rule. The organizational foundations of movements (Zald and Ash 1966; McCarthy and Zald 1977) usually provide the basis for protest strength and large-scale mobilizations or "sudden mobilizations" (Reese et al. 2010) that respond to major events are often comprised of coalitions of social movement organizations that generate high protest participation through organizational power. However, in the absence of a strong organizational structure in mass mobilization during the Egyptian revolution, what generated the willpower and collective effort required to overthrow a government that involved continued opposition against repressive forces? Social media communication indicated interacting elements in revolutionary minds that motivated political action and the effects of events experienced during protests against an authoritarian regime.

The Egyptian Revolution

The Egyptian revolution began on January 25, 2011 in the wake of the Tunisian revolution which took place December 17, 2010-January 14, 2011. The self-immolation of a street vendor, Mohamed Bouazizi, in Tunisia (on December 16, 2010) and the death of Egyptian youth Khaled Said from police brutality six months prior (on June 6, 2010) were major events for the Tunisian and Egyptian revolutions that led to the diffusion of

¹ The chapters in this volume include excerpts from accounts by revolutionary participants and sources that documented protesters' thoughts, actions, and communications in the streets. They were used in place of interviews to show the elements examined with Twitter data were present during the revolution. The excerpts (as numerous as they are) were included to provide context about revolutions for readers who are unfamiliar with the nature of revolutionary protest and the environments in which revolutionary experiences are made. The experiences of participants, in their words, convey factors that influenced revolutionary action and reflect transformations among actors as situations changed. Without them, it is easy for detached commentary to negate the perspectives and experiences of participants without recognizing the realities of revolutionary protest in favor of accounts that are derived from familiar frames of reference involving non-revolutionary situations.

² Egyptians returned from abroad to participate in the revolution: "A writer friend flew back from Los Angeles, and a filmmaker friend from DC. A friend who fled Egypt 22 years ago vowing never to return, came back, on day eight. She decided it was time" (El Rashidi 2013: 63). "Egyptian friends are arriving from all around the world. Two of my friends left their children with their husbands and have come all the way from Canada, the United Arab Emirates and the UK to participate in the protests on Friday the 11th" (Tawfik 2011a: 75). Tweeted on Feb 2, 2011 by an Egyptian Twitter user: 'A friend of mine is leaving on an airplane to Egypt to join the Revolution. Tahya Masr! #Jan25 Jan25'. Tweeted on Feb 8, 2011 by an Egyptian Twitter user: 'A friend confirms 87 Egyptians flying back to Egypt to join our revolution on Friday. God bless u all #tahrir #Jan25#Egypt.' Mohamed ElBaradei, Amr Waked (actor), and Wael Ghonim were prominent Egyptians who flew back to Egypt to participate in the protests (Waked 2011; Ghonim 2012).

protests across the North Africa and Middle East (MENA) region, known as the Arab Spring. Twenty-six-year-old Bouazizi took his life in protest after his fruit cart was confiscated from a bribe-seeking Tunisian officer. Twenty-eight-year-old Said was beaten to death by Egyptian police in Alexandria and a picture of his disfigured face that was posted online generated anger among Egyptians who experienced mistreatment from the police during 30 years of emergency law under Mubarak's rule³. The Egyptian revolution is often called a Twitter revolution in reference to social media sites that were used during demonstrations that took place across Egypt. Twitter is a micro-blog networking site where users communicate in tweets or short messages comprised of up to 140 characters, @mentions (references used to mention or reply to others), hashtags (topical references that begin with #), and retweets (reposting another person's message and sharing it with the follower network with an @reply denoted with an 'RT').

State forces prepared for the planned day of protest and many Egyptians gathered at mosques for prayer before mobilizing into the streets on Jan 25 and other key protest dates. Jan 25, Jan 28, and Feb 4 were designated as the "Day of Rage," "Day of Anger," and "Day of Departure" when mobilization was strong. Protesters were cleared from Tahrir Square on Jan 25 and repression in Suez generated protester deaths as the revolution unfolded. Mubarak's first televised address was broadcasted at midnight on Jan 29 and protesters regained control over Tahrir Square in the early hours of Jan 29 after prolonged contestations with state forces on Jan 28. Nobel Peace Laureate Mohamed ElBaradei returned to Egypt and temporarily joined the protests before being put under house arrest on Jan 30. Communications interference was noted from the start of the uprising and the major shutdown of internet and telephone lines began on Jan 28. Protests continued during the information blackout and some users found ways to circumvent the Twitter blockage (Idle and Nunns 2011) until lines were restored on Feb 2. Although the Egyptian military was deployed, the army assumed a neutral position with limited involvement and did not intervene with violence when protesters and Central Security Forces (CSF) clashed (SETA 2012). Protesters defended Tahrir Square from attacks by Mubarak supporters (plainclothes policemen and fighters paid by the government) on Feb 2 and Feb 3 and continued to occupy the area until the revolution ended. Religious commemoration for the dead in Tahrir Square took place on

³ "Egypt's emergency law was introduced after the assassination of President Anwar Sadat in 1981. It gives the Egyptian government broad powers to arrest and detain suspects without charges, refer civilians to military courts, close dissident publications, and ban demonstrations" (Gröndahl and Mohyeldin 2011: 146).

Martyr's Day on Feb 6. Wael Ghonim, a Google employee who created the "We Are All Khaled Said" Facebook page before the Egyptian protests, was imprisoned early in the revolution and released from jail on Feb 7. After his release, he gave an emotional television interview that galvanized Egyptians and he invigorated protesters with his appearance in Tahrir Square on Feb 8. On Feb 8 and Feb 9, labor strikes across the country further weakened state control during a period of renewed momentum. Mubarak's third address was televised on Feb 10 at 10PM and angry protesters in Tahrir Square marched to the presidential palace when he refused to resign. The next day, Vice President Omar Suleiman announced Mubarak's resignation at 5:56 PM and ended the revolution⁴ (*see Table 1 for listing of key revolutionary events*).

⁴ "Vice President Suleiman appeared on state television and announced: 'Citizens, in these difficult circumstances the country is going through, the President Mohamed Hosni Mubarak has decided to leave his position as the president of the Republic, and has entrusted the Supreme Council of the Armed Forces to administer the nation's affairs'" (Cook 2011: 294-295).

Table 1. Key Egyptian Revolution Events, January 25-February 11, 2011

| Date | Events |
|-------------|--|
| Jan 25 | <ul style="list-style-type: none"> “Day of Rage” -Security presence in Cairo in the morning -Thousands of protesters mobilize in cities across Egypt -Protesters break police blockades and clash on streets, bridges in Cairo; protesters marched and merged with groups from different areas in Cairo -Police use tear gas to take control over Tahrir Square at night -Mobile signal interference noted |
| Jan 26 | <ul style="list-style-type: none"> -Protests continue in Egyptian cities -Repression and violence in Suez -Twitter blocked in Tahrir Square, Cairo, and other parts of Egypt until later in the day |
| Jan 27 | <ul style="list-style-type: none"> -Protests continue in Egyptian cities -Repression and violence continues in Suez -Mobile and landlines down in Suez, limited information about Cairo on Twitter |
| Jan 28 | <ul style="list-style-type: none"> “Friday of Anger” or “Day of Anger” -Friday prayers -Major shutdown of communication lines begins -Army arrives in Cairo, Cairo under lockdown with heavy police and military presence -Protesters in Cairo clash with security forces before regaining control of Tahrir Square in the early hours of Jan 29 -Curfew issued for Cairo, Alexandria, and Suez |
| Jan 29 | <ul style="list-style-type: none"> -Mubarak first televised announcement given after midnight (12:12AM) -Mubarak appoints Omar Suleiman to Vice President position, the first since 1981 -Army presence in other Egyptian cities as protests continue -Looting in Cairo, prisoners released from jails, Egyptians form committees to protect areas -Violence in Suez continues |
| Jan 30 | <ul style="list-style-type: none"> -Protests continue in Egyptian cities -F-16 fighter jets fly over Tahrir Square to scare protesters -Mohamed ElBaradei participates in the demonstrations and placed under house arrest |
| Jan 31 | <ul style="list-style-type: none"> -Large protests in Alexandria as demonstrations continue -Thousands continue to go to Tahrir Square |
| Feb 1 | <ul style="list-style-type: none"> -Mubarak’s second televised speech -Violence in Alexandria when protesters clash with Mubarak supporters at night |
| Feb 2 | <ul style="list-style-type: none"> -Communication lines restored -Protesters clash with Mubarak supporters in Tahrir Square in “Day of Camel” or “Battle of the Camel” -Egyptian museum catches on fire during clashes |
| Feb 3 | <ul style="list-style-type: none"> -Fighting with Mubarak supporters in Tahrir Square continues |
| Feb 4 | <ul style="list-style-type: none"> “Friday of Departure” or “Day of Departure” -Friday prayers -Protesters continue to amass in Tahrir Square |
| Feb 5 | <ul style="list-style-type: none"> -Mubarak supporters attack protesters again -Army reinforcements move into Tahrir Square |
| Feb 6 | <ul style="list-style-type: none"> -Martyr’s Day in Tahrir Square |
| Feb 7 | <ul style="list-style-type: none"> -Wael Ghonim released from jail and gives televised interview |
| Feb 8 | <ul style="list-style-type: none"> -Wael Ghonim appears in Tahrir Square -Thousands of workers go on strike in different Egyptian cities -Numbers in Tahrir Square keep growing |
| Feb 9 | <ul style="list-style-type: none"> -Labor unrest expands as workers strike continues -Protesters continue to amass in Tahrir Square |
| Feb 10 | <ul style="list-style-type: none"> -Mubarak refuses to step down during his third televised address at 10PM -Angry protesters march to presidential palace from Tahrir Square after Mubarak’s speech |
| Feb 11 | <ul style="list-style-type: none"> -Friday prayers -Suleiman announces Mubarak’s resignation 5:56 PM and ends the revolution |

REVOLUTION AND REVOLUTIONARY CONSCIOUSNESS

In discussing the Egyptian case, the term “revolution” is used over other words about political conflict based on the outcome of the protests that resulted in the removal of an individual from power and a change in government. The broader definition of revolution is used over the restrictive one:

According to one (broader definition), revolution (or political revolution) refers to any and all instances in which a state or political regime is overthrown and thereby transformed by a popular movement in an irregular, extraconstitutional, and/or violent fashion; this definition assumes that revolutions, at least those truly worthy of the name, necessarily require the mobilization of large numbers of people against the existing state. ... According to the other (more restrictive) definition, revolutions entail not only mass mobilization and regime change, but also more or less rapid and fundamental social, economic, and/or cultural change during or soon after the struggle for state power. (What counts as “rapid and fundamental” change, however, is a matter of degree, and the line between it and slower and less basic change can be difficult to draw in practice.) (Goodwin 2001: 9).

The Egyptian revolution is sometimes characterized as a series of demonstrations or an unfinished revolution due to continued political unrest and lack of changes in post-Mubarak Egypt (Lynch 2012; Shokr 2012; Al-Zubaidi et al. 2013). In this work, the assessment is limited to the 18 days of protest and revolutionary success is defined as the removal of Mubarak from power, not the establishment of other social, political, and economic changes sought by Egyptians. Although the Egyptian revolution involved economic and social grievances similar to the factors that generated a revolutionary situation in Tunisia, the main objective of the Egyptian protests was to end Mubarak’s tenure as the head of state with demands for his resignation. A message tweeted on Jan 26 reflected this distinction:

'what's happening in #egypt aka #jan25 is a revolution similar to what happened in Tunisia. The people want #Mubarak to leave. NOW.'

On Feb 11, many Egyptians could not believe the news of Mubarak’s resignation because it seemed like a distant goal. Tahrir Square was not planned to be an occupied, organized space for an extended duration. The area became a symbolic place for the revolution when protesters insisted on staying until Mubarak stepped down:

When protesters arrived at Tahrir on January 29, they did not come with the intention of creating a radical utopia. Despite the square’s name, “liberation” in Arabic, Egyptians did not think of it as a place with emancipatory potential before the 2011 uprising. In many ways, Tahrir had come to represent the overall decline of public space—people could barely congregate or mingle, let alone protest—under Mubarak’s thirty-year rule. The commune that Tahrir was to become was wholly improvised through the lived experience of sharing the area and protecting it from regime encroachment. As the revolution unfolded, Tahrir was elevated from a rally strike to a model for an alternative society (Shokr 2012: 42).

Shifting political situations and changes among actors are inherent in the revolutionary process: “It is, in fact, this element of mutation or transformation that marks the revolutionary crowd in its most typical form”

(Rudé 1959: 220). Revolutionary developments are generated from the interaction of exogenous factors and endogenous properties of actors in successive incidences, as demonstrated by the course of events during the French revolution:

here the tempo and character of the insurrection developed not so much through the intervention of external factors as by the swelling of the numbers of demonstrators by recruitment and the prevailing atmosphere of nervous excitement engendered by the approach of the meeting of the States General. The classic example of this kind of transformation are afforded by the two great Parisian insurrections of the summer and autumn of 1789. In the first a more or less peacefully disposed Sunday crowd of strollers in the Palais Royal was galvanized into revolutionary vigour by the news of Necker's dismissal and the call to arms issued by orators of the entourage of the Duke of Orleans. From this followed a sequence of events that could not possibly have been planned or foreseen in detail by even the most astute and determined of the court's opponents (Rudé 1959: 220-221).

Protest events can generate situations that are drastically different to what was prior to the event's occurrence and "alter expectations about the possibilities for future action, thereby facilitating further agency" (Beissinger 2002: 17).

In contrast to the well-developed body of work on structural, objective conditions that generate revolutions, there is limited understanding of the "subjective condition of revolutionary situations" and "mass revolutionary consciousness" associated with "mass revolutionary action" (Wolpe 1970). Political consciousness arises from systems of domination (Morris 1992) and terms such as "oppositional consciousness" (Mansbridge 2001) and "insurgent consciousness" (Smith 1991a) have been generated to explain the mentalities of movement participants that develop prior to engagement in political action. Oppositional consciousness is:

an empowering mental state that prepares members of an oppressed group to act to undermine, reform, or overthrow a system of human domination. It is usually fueled by righteous anger over injustices done to the group and prompted by personal indignities and harms suffered through one's group membership. ... it can include a host of other ideas, beliefs, and feelings that provide coherence, explanation, and moral condemnation (Mansbridge 2001a: 4-5).

The related concept of insurgent consciousness is defined as:

a collective state of understanding which recognizes that social change is both imperative and viable. ... Insurgent consciousness is not simply a rational, self-interested calculation, but an experience that involves the human mind, will, and emotion. Insurgent consciousness entails a mental awareness and reasoned evaluation; it involves a choice, a decision, a commitment; and it entails an emotional involvement, a sense of anger or moral outrage (Smith 1991a: 61-62).

The general constructs have been used to discuss actors who identify as members of a subordinated group and participate in movement activity (Groch 2001; Marshall 2001; Rodriguez 2001; Stockdill 2001). However, nascent consciousness that leads social movement actors to engage in various forms of political action differs

from revolutionary minds that transform when citizens of a nation as a subjected population engage in high-risk protest during a political struggle for their collective future.

While revolutionary situations have shared properties, variation among revolutions presents difficulties in generating a general theory of revolutionary minds that captures the complete range of psychological processes and changes involved across cases:

If ... revolutions are not “singular phenomena for which it is possible to state a single invariant set of necessary conditions, sufficient conditions, and internal sequences” (Tilly, 1992, p, 1084), then we cannot reasonably hope to ever be able to generate a universally applicable theory of revolution. An awareness of the variety and variability of revolutions will also go a long way toward explaining why there are more theories of revolution than the cases they purport to explain (Zahedi 2000: 13).

Given the variability of revolutionary minds, a focus on interacting elements is more a fruitful endeavor than seeking a model for a revolutionary mindset that explains all types of consciousness. This approach addresses the need for research that captures “the multidimensionality of the revolutionary process” (Allal 2013) and incorporates an “enlarged phenomenological perspective” that encompasses multiple meanings, ideologies, and perspectives involved in the Arab Spring uprisings that are absent in traditional social movement approaches (Khosrokhavar 2012). Discussions of revolutionary minds should encompass both the conditions that develop consciousness and transformations in response to progressive changes generated during the political process: “In this spontaneous effort lay the secret to Tahrir’s success ... a space where people worked things out, issue by issue and step by step, not where preconceived dreams came to realization” (Shokr 2012: 44-45).

In this work, *revolutionary consciousness* is conceptualized as consciousness associated with mass revolutionary action that involves changes in cognitive and affective states during the process of dismantling a regime or introducing a change in government. Revolutionary consciousness incorporates multiple factors that affect action and influence “people’s willingness to invest emotionally in the fate of some emergent collective entity and to take personal risks on its behalf” (Gamson 1992: 60). The term is utilized in a way that connects mind and action through meaning systems that motivate behavior:

humans construct complex internal systems of meaning, which include integrated networks of diverse beliefs, values, and goals. ... meaning systems serve as the filter through which people attend to and perceive stimuli; organize their behavior; conceptualize themselves, others, and interpersonal relationships; remember their past; and anticipate their future (Park et al. 2013: 157-158).

States of minds can be examined with communication that reflects the effects of cumulative experiences during mass mobilization against the state.

In the debate about social media use for revolutionary protest, early criticism de-emphasized the role of communication technologies with the assumption that mobilization requires strong social ties among participants based on a historical social movement case in the United States (Gladwell 2010). However, many sources affirm a shared narrative about the use of Facebook and Twitter to organize protests. Protester accounts (Ghonim 2012; Khalil 2012; Sghiri 2013; El Rashidi 2013; Mesrati 2013; Aldairy 2013; Dunia 2013), news reports (Hounshell 2011) (*see Appendix A2 for a listing of news reports about the use of Facebook or Twitter before and during protests in Algeria, Bahrain, Egypt, Iraq, Jordan, Libya, Morocco, Oman, Saudi Arabia, Syria, Tunisia, and Yemen*), and scholarly work (Howard et al. 2011; Starbird and Palen 2012; Lotan et al. 2011; Cook 2011) indicate that information and communication technologies were crucial in the Egyptian revolution and Arab Spring uprisings. The purpose of this work is not to add to this discussion but to move beyond it by utilizing social media data to examine revolutionary processes⁵. The availability of communication data from social networking sites used during protests now enable researchers to examine mass consciousness and changing minds of actors involved in political struggle. While prior focus on political consciousness has been limited to the formation of initiating mental states, an expanded scope of inquiry for revolutionary consciousness can incorporate cognitive changes generated during the political process and enable political outcomes to be inferred with social media communication that captures the psychological processes of insurgencies based on assessments of elements associated with the persistence of protest^{6 7 8 9 10}.

⁵ The other chapters in this volume show the importance of social media use during revolutionary protest and demonstrate that Twitter data is a valuable information source for political upheavals.

⁶ “When the demonstrations started [in January], I thought it was just one more demonstration that would be dispersed by the police as usual. But as time went on, there was a persistence that we had not seen before. I started believing it may go all the way” (El-Shamy 2011: 181).

⁷ “As I was collecting stones, I saw a young man with an open wound on his forehead. He went to the field hospital, got it stitched up and came back to throw again. He suffered another cut to the head and again went to the field hospital, got it stitched and returned to throw again. The next time he went out to throw stones he got hit very badly in the nose with a large stone. I was helping him along and he was crying, so I asked him why he was crying, and he said, “I can’t throw anymore. Every time I try to throw a stone, my nose bleed gets worse” ... he told me his only sin had been his habit of performing the early-morning prayer at the mosque. He had been taken by State Security, beaten, electrocuted in sensitive areas, hung up from a wooden plank in the ceiling and beaten again. They had done all this while saying, “You had better stop going to the mosque, you son of this and that.” He told me as we walked, “I will not be tortured again. I will not” (Mo’men and Mo’men 2011: 110-111).

⁸ “Then came the Wednesday known as the Day of the Camel, when the government sent bullies to force the people to leave Tahrir Square. ... Some of the stories I heard made me regret not being there. There was this man, for example, who was hit in the head; he went and got six stitches, then came back for more. He got another blow to the head and got nine stitches, and still

Appraisals and Word Associations

Revolutionary communication enables the study of “states and processes of the human mind based upon an analysis of the language used by a given speaker who owns that mind” (Colston 2007: 191).

Revolutionary discourse involves concepts, actors, entities, and actions that gain salience during political events and word usage indicates transformations among actors as “any changes going on in cognition should be paralleled by relevant changes in language” (Colston 2007: 191). Language reflected situational changes among Egyptians when their revolution began:

But on the 25th I knew that something momentous was happening: a determination for change and a new language had begun to appear (Gröndahl and Mohyeldin 2011: 140).

During the revolutionary process, the sequential experience of events affects the minds and actions of actors with a cognitive focus on the uprising: “Mental states not only cause speech acts and other behavior. They cause other mental states ... many mental states are both causes and effects of other mental states” (Rosenthal 2005: 94). Causation in states of mind occurs in different temporal contexts. In a short time frame, one thought immediately causes another and co-occurring words in textual communication reflect semantic associations among interacting cognitive components. In separate occurrences, cognitions are ordered and cognitive focus at one point influences subsequent mental states. Word frequencies and word associations indicate the primacy of concepts in revolutionary minds through text processing. Related concepts emerge from cognition about the factors that motivate political action and language generated from observing interactions among actors and groups during the political struggle reflects power dynamics as “media can provide insight into the battles and configurations of power within a movement” (Baylouny 2013). Communication includes a structure of claims-making that “brings together subjects, objects, and claims” (Tilly 2008) in word associations that reflect interactions among actors and targets of protest.

came back for more. Then he got another blow worthy of even more stitches, and still he came back for more. He then got a bullet to the shoulder, and he was crying because he couldn't go back for more” (Rushdy and Rushdy 2011: 232).

⁹ “Eyewitnesses report acts of astonishing bravery. Doctors volunteering in the square’s makeshift clinics tell of bandaging the same wounded citizens more than once, only to see them race back to the battle lines” (Khalil 2011: 14).

¹⁰ “Right beside me, a young lady—a girl really, short and very thin—was energetically motivating us. She was throwing stones and was unstoppable. I tried with several others to dissuade her several times, telling her to fall back from the front. But there was no convincing her. In the end someone pushed her, almost hitting her for her own good, and they forced her to the back lines so she would not get herself killed” (Ghaffar 2011: 62).

Appraisal Sequencing and Affect Intensification

In political protest, cognitions determine the types and range of emotions felt by participants who experience a “constellation of emotions” (Benski 2005) while responding to “critical emotional events” (Yang 2005, 2000). Emotions are outcomes of sequential-cumulative appraisals where affective experiences occur in a continuous, recursive process (Ellsworth 2013): “Any perception or thought of an object or event occurs in a situational and temporal context. It thereby carries some meaning, which may influence the next moment of mental activity” (Frijda 2013: 169). Situational appraisals generate a state of readiness for further emotional responsiveness and subsequent ones generate a differentiated state that can involve varied degrees of affect experienced. *Affect intensification* is a process by which negative emotion intensifies through sequential-cumulative experiences that generate stronger reactions that are emotional and/or behavioral. Prior experiences may not involve intense emotional responses but their cumulative effects can lead to the amplification of affect in other situations and initial levels of negative emotions can affect the intensity of emotions in successive reactions.

Emotions from previous experiences that precede justice evaluations make individuals less tolerant of current injustices (Stets 2012) and affect intensification during conflict between citizens and the state can result from prolonged injustices endured by subordinate groups when grievances subsumed in systems of domination are directly expressed against authority (Scott 1990). Unaddressed grievances continue to have emotional weight when formerly marginalized voices reflected discontent during the Egyptian revolution: “These protests had touched a nerve. They were the voice of the collective anger which had built up over many years” (El-Menawy 2012: 77). Emotional reactions to revolutionary events are transformative experiences that contribute to the strength of protests and voices of contentious actors reflect collective emotions (Aminzade and McAdam 2001; Von Scheve and Ismer 2013) that drive political action and sentiments directed at protest targets through political communication. Mobilization requires shared affective experiences among the masses that can occur in the form of “emotional condensation” on networked media (Gerbaudo 2012) and real-time information exchange reflects the affective dynamics of protest with emotions shared through direct correspondence that

differs from emotion elicitation with information filtered through traditional mass media¹¹. Language constructs emotions (Klassen 2008) and sentiment analysis of Twitter data generated from the 2009 Iranian election protests showed an increase in anger and swear words in messages pertaining to Iranian politicians and a greater use of pronouns that indicated cognition about others (Elson et al. 2012) associated with assessments of group interests.

THE REVOLUTIONARY PROCESS AND EGYPTIAN REVOLUTIONARY CONSCIOUSNESS

Many factors are required to generate collective action on the scale of revolution and, as broad sectors of the population unify against the state, various cognitive components are integrated into political consciousness that help to sustain opposition. During the French revolution, the prevailing issue of subsistence combined with political ideas that were incorporated as the revolution continued¹²:

a satisfactory explanation of popular participation in, or abstention from, these movements cannot be given without proper account being taken of both political and economic factors and that concentration on the one to the exclusion of the other will only produce a distorted picture. Yet, when all is said and done, the inescapable conclusion remains that the primary and most constant motive impelling revolutionary crowds during this period was the concern for the provision of cheap and plentiful food. This, more than any other factor, was the raw material out of which the popular Revolution was forged. It alone accounts for the continuity of the social ferment that was such a marked feature of the capital in these years. ... Yet without the impact of political ideas, mainly derived from the *bourgeois* leaders, such movements would have remained strangely purposeless and barren of result; and had the *sansculottes* not been able to absorb and to adapt these ideas, their influence on the course and outcome of the Revolution would have been far less substantial than in fact it was (Rudé 1959: 208-209).

The class struggles in France involved revolutionary participants who mobilized based on economic and political factors when deprivation combined with ideas of liberty. Unlike the French revolution, the Egyptian

¹¹ A Bahraini Twitter user explained social media use during protests in Bahrain: "I was recording events on Twitter ... I was now in touch with the people. Twitter forced me to go to the scene itself, to follow events with my own eyes, to record them and transmit them myself. I was face to face with the truth of what was happening" (Aldairy 2013: 139). "Twitter was an incentive to visit the scene myself, instead of waiting for the news to reach me" (Aldairy 2013: 140). Tweeting about repression during the Bahraini protests: "I sent a series of tweets: Heavy fire and ambulances carrying the injured, all heading for Salmaniya Hospital, which is already full to capacity. Seriously injured man taken away on a pickup. Car belonging to a member of parliament driving in front of me. Journalist friend runs forward and says they're using live rounds. Young man next to me weeping hysterically. Seems his friend has been badly hurt. Stopped at an intersection in al-Naim. More than 8 ambulances have passed by" (Aldairy 2013: 144).

¹² "A month before monarchical authority collapsed into bankruptcy, a colossal hailstorm swept across northern France and destroyed most of the ripening harvest. With reserves already low after Calonne had authorized free export of grain in 1787, the inevitable result was that the months before the harvest of 1789 would bring severe economic difficulties. Bread prices would rise, and as consumers spent more of their incomes on food, demand for other goods would fall. Manufactures, hit by cheaper British competition under the commercial treaty of 1786, were already slumping; and there were widespread layoffs at the very time when bread prices began to soar. On top of all this came an unusually cold winter, when rivers froze, immobilizing mills and bulk transport and producing widespread flooding when a thaw finally came. So the political storm that was about to break would take place against a background of economic crisis, and would be profoundly affected by it" (Doyle 2001: 37).

revolution was not a class-based uprising but one that involved the participation of actors from all social backgrounds who were driven by desires for freedom from the Mubarak regime^{13 14}:

We need to first understand the base cause of this situation, how it started. This revolution started based on political demands, not economic ones. We never chanted for the reduction of the price of bread or meat, but we chanted that we wanted to overthrow the system, and this needs to happen (Bassiouny 2011: 131).¹⁵

Wealthy Egyptians protested alongside the poor, united by collective dissatisfaction with the state of Egyptian society under the existing political system:

'Wael @Ghonim: "we have a system that's destroying the citizen's dignity" #Jan25'¹⁶ (Feb 7)

This corruption, inflation, despotism and loss of our collective dignity eventually led to a failing state. Egypt was slowly collapsing under Mubarak. The government under Mubarak was so focused on protecting its own existence, and so concentrated on the systemic plundering of the nation's wealth, that it had no time or interest in developing or even maintaining the country and its citizens (Rushdy 2011b: 45).

Shared experiences of poor treatment at the hands of state agents contributed to common perceptions of the regime's illegitimacy:

Mubarak's henchmen turned Egypt into a police state, consisting of a police force, State Security apparatus and Secret Service, all of which have brutally suppressed ordinary Egyptians. A man could be jailed for weeks for wanting to pray in a mosque, without being charged or standing trial. He could also face torture. ... the vast majority of Egyptians have not been raped or tortured by their own police force. But even in daily life, Egyptian police dealt with Egyptians with contempt. They often did not look you in the face, and used derogatory or insulting language when addressing you. They could also turn violent without provocation. A policeman could push, slap, hit or punch anybody with complete impunity. Any Egyptian could be treated this way (Rushdy 2011b: 41-42).

The same combinational pattern in factors affected political participation during the Egyptian revolution as the primary reason for revolutionary action interacted with other elements during protests. In the Egyptian protests, religious beliefs interacted with political ideas and enabled revolutionary participants to continue opposition in the face of countering forces during the process of removing Mubarak from power.

¹³ "This was not a "revolution of the hungry". I met business people worth billions on the street. It was not a revolution by the Muslim Brotherhood; Christians were everywhere from day one. It was not just a "revolution by the youth"; young and old were here every day. This was not a revolution by the residents of Cairo; all over Egypt from Alexandria to Suez, Aswan and Sharkeya, everybody was involved. This was a revolution by all Egyptians for the freedom of all Egyptians from the regime of the last Pharaoh" (Rushdy 2011a: 34).

¹⁴ "I met four people I know in the square, people who have businesses or who are investors. The total worth of these four people easily tops 10 billion Egyptian pounds. One of them was severely beaten the following day" (Abdullah 2011: 208).

¹⁵ Although economic concerns were not the primary reason for revolution, the persistence of inequality in Egyptian society contributed to discontent with the Mubarak regime: "I went to Tahrir to offer my help as a physician. For a long time I've been very angry and upset about the great discrepancy between poor and rich in my country. As a pediatrician I often see children who are malnourished because they have to skip meals in order for every family member to eat something – Inas Mazen" (Gröndahl and Mohyeldin 2011: 81).

¹⁶ The tweet quoted Wael Ghonim's comment about the Mubarak government during his televised interview after his release from jail.

Religion and Spirituality in the Egyptian Revolution

Revolutionary consciousness involves emotional complexity, the experience of multiple emotions, often of opposite valence^{17 18}, among participants who experience sentiments beyond the scope of basic emotions felt in everyday social situations or general protest settings. Emotions felt during protests are generated from situational appraisals of political conflict and indicate the meaning of circumstances for actors who respond to the conditions:

Emotions are an important part of the human *motivational* repertoire, so that not only behavioral and subbehavioral changes but also full-fledged actions are among their expressions (and such actions also feed back into emotions). Paradigmatically, emotions are *responses to situations* of determinant types—for example, situations of threat, of defense, of good fortune, of aid, of rivalry, of loss, of good prospects, and so on (Roberts 2008: 491).

The depth and intensity of emotions experienced during revolutions are influenced by the extremes and scale of political struggle that is conceptualized as a war or perceived as a matter of life or death^{19 20 21}. A message tweeted on Jan 31 quoted Fidel Castro's statement that conveyed the tumultuous nature of the revolutionary process:

'#Revolution is not a bed of roses. A revolution is a struggle to the death between the future and the past. Castro #Jan25'

In situations where people are injured and killed, emotions are important but insufficient factors for participation and discussions of protest emotions (Goodwin et al. 2001; Jasper 2014, 2011, 1998) need to closely integrate the cognitive factors that mediate affective states that enable or inhibit protest. The strength of motivating factors determines the persistence of protest in the face of repression and social control:

It took us all day to break through the barricades that the security forces had made around us. ... they started attacking us with tear gas to disperse us. They were successful; we started breaking up into small groups and running from them

¹⁷ "I returned to the square with a heavy mix of feelings, hope and desperation. But inside me was this insistence. I had not gone to Tahrir to hear a speech, I had gone to get rid of this man" (Mo'men and Mo'men 2011: 107).

¹⁸ A Tunisian described the different emotions he experienced during the Tunisian revolution: "I was in a wretched state, torn apart by conflicting emotions: anger and contentment, pain and joy" (Sghiri 2013: 28).

¹⁹ "It had to be victory or death, no third alternative" (Mo'men and Mo'men 2011: 111). "This man has written VICTORY OR DEATH on a piece of cloth" (Khalil 2011). "We never surrender. We win or we die trying! ... And even if I die, I shall outlive my executioner." – Omar al-Mukhtar" (Assaf et al. 2011). A message tweeted on Feb 10, 2011: 'One protester at #Tahrir said "Give me liberty or give me death" on @CNN. Viva la revolution!' Some protesters wore burial dressing to indicate their commitment to the revolution: "Wearing makeshift shrouds, these men show their willingness to die for freedom" (Khalil 2011: 24).

²⁰ "I felt at the time that we were either going to come out of this victorious, or we would all be arrested and completely screwed. These were the only options. Either we win, or we will all be arrested and tortured. This meant that it had become a war. A war between those who wanted Mubarak to stay, supporting fear and humiliation, and those who wanted him gone, supporting dignity and freedom" (Waked 2011: 89).

²¹ "The next morning, it was like a scene from a war movie. Dead bodies, injured people, the field hospital overflowing. ... I personally counted at least 22 dead that night and would guess more than 1,000 were injured, some very seriously. That night we joked that if you got only ten stitches you were not really injured" (Ghaffar 2011: 63-64).

into the side streets. We could tell they were getting exhausted ... By nighttime I was getting tired myself. But I wanted to carry on demonstrating and so I did not go home (Ghaffar 2011a: 49-50).

Tahrir that day was a battlefield. You could see blood in many places, people being carried away from the front line. It was unbelievable, like you would see on television in Iraq or Palestine (Ghaffar 2011a: 54).

For high-risk protest, grievances or aspirations (and associated emotions of anger or hope from expectancy of success) alone cannot mobilize the masses in widespread contention (Pinard 2011). Anger is an important but insufficient factor because it diminishes once released and protests do not materialize in the presence of fear, in spite of discontent among a population. Political opposition against authoritarian governments entails high personal costs that can generate apathy (Voor het Regeringsbeleid 2006) or situations where “even the most aggrieved citizens may retreat into self-preserving silence” (Wickham 2002: 204).

Limited explanations of protest participation based on rational-actor models overlook the role of religious values and ideology that influence high-risk activism and the fight for social justice (Wickham 2002; Smith 1996; Wood 2003; Nepstad and Williams 2007). Religion affects commitment to political action in high-risk settings where “participation in an opposition movement is likely to be motivated less by self-interest than by deeply held values and beliefs” (Wickham 2002: 119). Religious beliefs influenced protest involvement for Islamic activists in pre-revolutionary Egypt when opposition against the Mubarak regime was suppressed:

Islamist ideology challenged the prevailing climate of fear and passivity by exhorting graduates to obey a higher authority, regardless of the sanctions they would incur as a result. The embrace of Islamist commitments was thus a form of psychic empowerment. “The committed Muslim is not afraid of anything except God,” Muhammad noted. “He doesn’t fear death.” ... a firm belief in the righteousness of their mission and its backing by God enabled many of them to overcome the paralyzing fear that inhibits protest in authoritarian settings (Wickham 2002: 170).

Individuals are disinclined to risk their lives in the absence of strong values or cognitive factors that mitigate death anxiety during revolutionary protest^{22 23 24 25 26 27}.

²² “There were the sounds of bullets assaulting the changes of the crowds. Two men came sprinting from around the corner, their faces gripped with terror. ‘It’s real, it’s real. Live ammunition, they’re using live ammunition.’ No one knew if it was true – we had heard this before. Minutes later, a procession with three bodies was carried into the square. One, of a young child. Thousands kneeled down in prayer” (El Rashidi 2013: 61).

²³ “As we left the safety beneath the bridge, snipers started shooting people down. People were being hit in the head, in the heart, in the chest. They were not shooting people in the legs or arms, they were shooting to kill. It was a massacre. Many people fell that day. One man was shot in the stomach and as we carried him back to the field hospital, he said, “Put me down here, just protect the square, don’t let these thugs get in.” It was heroic” (Ghaffar 2011: 63).

²⁴ “That Friday, I saw something I will never forget. There was a man called Yasser. ... He had received a direct shot to the face with these pellet guns they were using against us, the so-called rubber bullets. His whole face and neck and chest were covered in red spots. Yet he had the most amazing spirit, some people went over to him to try and help him remove these pellets, and he refused. He said, “Go to the front lines, I am fine; go to the front and help people there break through and get to Tahrir.” ... I saw people bleeding but still throwing stones. I, too, was certain that I would die that day. As I was running, I felt a sudden sharp pain in my shoulder; I had been hit by a rubber bullet. ... a guy running beside me also got shot. It must have been a live

Revolutionary action is influenced by the cultural environment and actors with strong religious traditions can integrate sacred elements into political opposition that fortifies dissent. Islam is a monotheistic religion that emphasizes submission to God (Esposito 2010) with Islamic spirituality centered on knowing and obeying God's will²⁸ (Nasr 1987). The faith has been characterized as "a religion of resistance" (Reis 1993) based on Islam's historical influence in revolts among subjected populations. It was an organizing force in slave uprisings in the colonial Americas during the 1800s where Muslim slaves gained a reputation for rebellion (Genovese 1992). In the 1979 Iranian revolution, religious figures utilized Islamic values to form a political consciousness that rejected existing social arrangements (Lafraie 2009). Religion has been overlooked in the Arab Spring in narratives that portray the events as secular uprisings for democracy without recognizing the role of religious beliefs in protest or limiting the scope of religion to symbolism²⁹ (Roy 2011; Sika 2012). Recent work has recognized religion a motivating factor for protest in the Tunisian and Egyptian revolutions as greater religious piety, indicated by the frequency of Quran reading, increased the likelihood of participation (Hoffman and Jamal 2014).

Religious beliefs can influence political contention without a religious ideological basis and spirituality, independent of prior levels of religious devotion, can be associated with political experiences. Egyptian revolutionary consciousness was affected by the deep embeddedness of religion in Egyptian society (Esposito 1998; Abdo 2000) among a population comprised of ninety percent Muslims and 10 percent Coptic

bullet because he immediately fell to the ground and stopped moving. May he rest in peace" (Mo'men and Mo'men 2011: 119-120).

²⁵ "There was the metal canister, which rocketed up into the air, exploding into volcanic fumes. ... Someone said they fired 50 in a row. Many people fell to the ground, choking. My own eyes were filled with tears that felt like blood. I wondered if I would be able to see again. If I would survive" (El Rashidi 2013: 61). "It was terrible to know that they did not care if they killed us. Every time I choked on a new bout of tear gas, I thought I could not stand any more, and that I would die there" (Nadi 2011: 186).

²⁶ "Many of us helped wipe the blood pouring from young men's heads. For the first time in our lives, some of us saw dead bodies lying on the streets. I tried to pry out a bullet from beneath a friend's skin. We ran for cover, from rocks, from Molotov cocktails, from thugs. We became paranoid. ... I had seen many knives stuck in many belts and trouser pockets. I had seen many guns, too. It took us a while to get used to the sight of the army and men with weapons on our streets. For days, we didn't know if they would shoot" (El Rashidi 2013: 63-64).

²⁷ "I could see snipers on the rooftops of buildings circling Tahrir Square and as the dead bodies started to come in, the realisation kicked in: yesterday's victory was only the beginning of the battle. It would have to get worse before it got better" (Hussein 2011: 163, 166).

²⁸ The literal meaning of 'Islam' means submission (submission to the will of God).

²⁹ The 1979 Iranian revolution was led by religious figures and succeeded with the support of secular sectors of society. The 2011 Egyptian revolution was not led by religious figures or religious organizations like the Muslim Brotherhood. It was initiated and organized by the Egyptian youth (much credit was given to the youth by older protesters, as stated in a message tweeted on Feb 4: 'Egyptian are chanting, this is the youth's revolution, this is the people's revolution #Jan25'). Due to this distinction, the Egyptian revolution is not considered a religious uprising and the secular characterization is dominant.

Christians (Sullivan and Jones 2008)^{30 31} with a shared understanding of religious values and spirituality that facilitated protests: “it is religion as habitus, the daily lived practices of a culture, that creates ties of affect, of meaning, of shared experience” (Sreberney-Mohammadi and Mohammadi 1994: 35). The many mosques of Cairo and other Egyptian cities served as places of worship and organization before demonstrators mobilized into the streets^{32 33}. Egyptians prayed on bridges they attempted to secure from state forces³⁴ and shouted religious expressions during the chaos of protest:

Police officers were shooting at people; they were trying to run them over with their vehicles, big blue ones with water cannons on top. And the demonstrators, these brave men, had nothing but their bodies with which to face this assault. It even sounded like a war. Bullets, screams, stones being thrown, and falling on cars. People shouting “Allah Akbar!” It was surreal and unbelievable (Ghaffar 2011a: 54).³⁵

The key protest dates were scheduled on the day of Friday prayer, a weekly communal ritual that holds great importance in Egyptian society (El-Menaway 2012)³⁶, and religious figures supported revolutionary efforts³⁷^{38 39 40 41} with displays of religious solidarity in Tahrir Square that bridged divides between Muslims and

³⁰ Reliable figures on the Egyptian Coptic Christian population are absent and contested. The Coptic Orthodox Church claims that up to 20-25% of Egyptians are Coptic Christians while some Muslim intellectuals and governments report that the composition is as low as 5%.

³¹ “Religion is dear to almost all Egyptians and is part of our cherished heritage. It runs in our blood, whether we are Muslims or Copts” (Amin 2013: 239).

³² “As soon as the prayers were finished at al-Istiqaqa Mosque, people started yelling “Allah Akbar!” (God is Great) and other slogans which were very beautiful and motivating” (Aziz 2011: 234).

³³ “I was sitting with some friends at a coffee shop on Thursday, January the 27th, and we started talking about Friday, the next day, and wondering what it would be like. Would the police be violent? ... I got a BlackBerry messages about the meeting points where the demonstrations would start. The list included all big mosques and churches in Cairo” (Aziz 2011: 233).

³⁴ “By the time we had reached the end of the bridge, it was time for the mid-afternoon prayer. ... We had just finished praying when we were showered with tear gas and rubber bullets. ... Panic kicked in and people started to run back. The tear gas was unbearable and I even contemplated jumping off the bridge at one point just to get away from the crippling effect. ... I watched the injured retreating. There was a lot of blood from where they had been shot at with tear-gas canisters at close range. I cannot begin to imagine what it must have been like on the front line. But despite the risk, there were plenty of brave and strong young men who continued to march forward” (Hussein 2011: 161-162).

³⁵ The expression “Allahu-Akbar” (God is great) was used as a politicized battle cry in the 1979 Iranian revolution (January 2008; Esposito 1998).

³⁶ “I took part in the protests for the first time on January 28th, Friday of Rage. I went with my father to the Mustafa Mahmoud Mosque for Friday prayers and met a friend of my father’s. Afterwards, we were headed for Tahrir Square in downtown Cairo. My first impression of the revolution came as the imam finished the prayer and a man called out, “The People Want to Topple the Regime!”” (Rushdy and Rushdy 2011: 230).

³⁷ “Friday the 4th was Departure Friday, the day we all thought would be the last in the regime’s life. I remember there was a problem with who should give the Friday prayer sermon, whether it should be Sheikh Gamal Kotb, or the official imam of Omar Makram Mosque. ... in the end, the official imam, called Mashar, gave the sermon. It was a wonderful sermon, inspirational and revolutionary and he invited the people to stay in Tahrir Square and assured them that what they were doing was completely “halal” and “shar‘y” [religiously correct]” (Soliman 2011: 244).

³⁸ “On Tuesday, February the 1st, I met Sheikh Emad Effat in the square; I had attended his class at al-Azhar University before joining the revolution a week before. I asked him about our class at al-Azhar, and he said, “The lesson is right here. I came here to learn, and so should my students.” I was so happy to hear this from my professor, and was happier when the number of Azhari sheikhs and imams increased daily, alongside the thousands of al-Azhar students who joined the revolution” (Nadi 2011: 187).

³⁹ “At noon of that day, I witnessed a scene that will always remain in my mind. Four of our neighborhood’s kids (aged between eight and ten) were holding small sticks I their hand and imitating what we had been doing the night before. ... they were copying also what some imams and priests were repeating by microphone from mosques and churches in an endeavor to raise the spirit of unity against looting in their communities” (El-Bendary 2013: 63).

Christians⁴². Religious elements that were salient in revolutionary minds directed political opposition: “sacred symbols do not work in isolation from secular ones; often the complement one another, working together to strengthen frames of action” (Harris 2001: 56).

Religious beliefs provided a means to overcome fear that deterred challenges to the government and enabled protesters to bear the strain of revolutionary participation^{43 44 45 46} through religious coping in response to distress or threats to their well-being:

Religion provides a sense of agency and control, regardless of the objective controllability of any particular situation (Newton & McIntosh, 2009; Rothbaum, Weisz, & Snyder, 1982). Sometimes individuals perceive a collaborative working relationship with God, (Krause, 2005; Pargament et al., 1988), whereas at other times they may feel relief and comfort in putting their fate in “the hands of God” (Abraído-Lanza, Vasquez, & Echeverria, 2004) (Park et al. 2013: 161-162).

The anxiety-buffering functions of religious beliefs protect individuals from fear of death (Soenke et al. 2013) and death during political struggle is less threatening from belief in martyrdom^{47 48}: “The Qur’an repeatedly declares that those who die striving in God’s cause do, in fact, live on, and while invisible to the eye they are

⁴⁰ “When the camels and horses first came into the square, many young men threw themselves physically at the animals to get them to stop. ... That day, we captured six horses and a camel. A video posted on YouTube from that day shows Sheikh Safwat Hegazy [a well-known television cleric who was present in Tahrir throughout the revolution] riding one of the captured horses” (Ghaffar 2011: 59).

⁴¹ “Thursday, February 3rd: Today a friend of ours set out from Helopolis, a suburb of Cairo, with a very large group of demonstrators bound for Tahrir. It is about a 13km walk. When they were almost there, they were met by armed thugs who threatened to attack them if they advanced any further. They turned back. That same morning my son’s sheikh [religious instructor] was beaten up as he was making his way to Tahrir” (Rushdy and Rushdy 2011: 223).

⁴² The bombing of a Coptic church in Alexandria on January 1, 2011 and other instances of religious violence during Mubarak’s rule strained Muslim-Christian relations in Egypt.

⁴³ “The mosque was packed. As Muslims prepared to pray, Christians surrounded the mosque to protect us ... My moment of contemplation was interrupted by the movement of police who had begun to surround the mosque as the sermon came to an end. They were in full riot gear. Anxiety was kicking in. One of my friends whispered the translation into my ear. The imam leading the sermon had just urged the young men to be strong, reassuring them that they were on the right path. I sat there appreciating the power in the imam’s speech. No wonder the governments control the sermons. They can do serious damage. His words motivated everyone and the momentum began to build. Uncertain about what would happen next, I stood up to pray. ... As soon as the Friday prayer finished with the recitation of peace, there was a roar of chants—“Leave! Leave!”—referring to Mubarak” (Hussein 2011: 159-160).

⁴⁴ “We had always lived in fear of the government and its secret police. ... I never realized that there was still a flame of passion that was left burning within me when it came to Egypt; I thought it had died completely. After the night of January 25th I found that the flame had become a wildfire that would consume my life for months, and push me towards dangers that I would have never imagined coming close to for any cause” (Bassiouny 2011: 128-129).

⁴⁵ “We had always been threatened. Fear was embedded in us. We were taught to fear the uneducated populace and the fundamental Islamists—there was always someone to be scared of. Yet suddenly I was standing in Tahrir Square and there were all these people from different backgrounds and no one was judging anyone. Their ultimate goal was their love of their country. There was a man who carried a sign, which for me was one of the best: “I used to be scared but now I’m Egyptian” (Ghaly 2011a: 146).

⁴⁶ Protest sign: “Forgive me lord, I was afraid and silent” (Khalil 2011).

⁴⁷ “I am not really brave. I am actually quite cowardly. ... But courage is like a disease, it comes to you suddenly. All of a sudden you are a brave man. Besides, there was no negative ending. Either victory or martyrdom” (Mo’men and Mo’men 2011: 111).

⁴⁸ Protest signs addressed the martyrs of the revolution: “To all the martyrs of the Freedom Revolution 25 January 2011 I wish I were with you” (Khalil 2011); “A banner for the martyrs reads: Those killed for the sake of God are not dead but alive with their Lord” (Gröndahl and Mohyeldin 2011).

nonetheless present” (Buturovic 2010: 139). Many Egyptians referenced their faith in their decision to participate in revolutionary protest:

I decided to go by myself. My family was very worried and urged me not to go because they feared the State Security police. I told them Allah would protect us protesters. I went to the mosque two hours before the Friday prayer, at noon, and found the same high spirits and the same determination among the protesters. ... Even though different protesters wanted different things out of the revolution, they all shared the same dream of freedom (Nadi 2011: 185).

The spiritual connection to God enabled Egyptians to face violence and Muslim Brotherhood protesters who were affiliated with an Islamic organization also put themselves dangerous situations where death was certain⁴⁹

⁵⁰. Self-protecting behavior and fear generated from the sight of dying protesters may predominate in the absence of religious beliefs but Egyptians continued to revolt and death was not an impediment to protest^{51 52} as religious faith strengthened protest action^{53 54} and affected many participants’ willingness to sacrifice for a cause that increased possibilities of successful revolt^{55 56 57}.

Religious identities generated salience of religious values for protesters who adhered to social responsibilities outlined by the Muslim faith. Religious faith reinforced political action^{58 59} through the

⁴⁹ “Then a group of people—some were from the Muslim Brotherhood—decided to try and go on top of the bridge to remove the danger there. These men must have known that they would almost certainly die, because there was a large number of thugs on the bridge” (Ghaffar 2011: 62).

⁵⁰ “We were going through the fight and there were many members of the Muslim Brotherhood in the square praying to God for help and when someone would call out, “We need more men here,” four lines of Muslim Brotherhood would advance to the front lines to relieve the exhausted men” (Mo’men and Mo’men 2011: 110).

⁵¹ “Despite all the deaths and injuries, there is still a great mood inside Tahrir Square” (Tawfik 2011a: 71).

⁵² “Honestly, I was quite afraid at this point. This was the first demonstration I had ever joined in, so I had no idea how to deal with it or what to do. But despite my fear I was insistent that we continue, regardless of consequences” (Mo’men and Mo’men 2011: 98-99).

⁵³ “That faith gave us so much strength. Quoting the Holy Quran: “You did not throw when you threw, it was God who threw.” I swear I would see stones I was throwing going further than I ever thought possible, across huge distances. I never imagined that this arm here could throw that far” (Mo’men and Mo’men 2011: 111).

⁵⁴ Protest sign: “Down with Hosny Mubarak by God, from the heart” (Khalil 2011); “God is our protector. Leave, enough oppression!” (Gröndahl and Mohyeldin 2011); “The blue sign reads: *May God take his revenge on you, Hosni Mubarak, son of Naima*. In Arabic culture it’s an insult to be named after your mother” (Gröndahl and Mohyeldin 2011).

⁵⁵ Protest sign: “With my blood, I write another life for my country” (Khalil 2011); “My blood for your sake, Egypt, even martyrdom” (Gröndahl and Mohyeldin 2011). “We are the ones who will protect our country” (Rushdy 2011b: 126); “Our precious flag is flying high; if it calls on us, we will offer our souls for its sake” (Gröndahl and Mohyeldin 2011).

⁵⁶ “I saw once incident that will remain with me until I die. One young man was trying to get on top of the bridge to join the others there and a sniper aimed his laser pointer at his chest. The young man saw the red dot, looked towards the sniper and opened his jacket as if to say, “Shoot me, I’m not afraid to die.” The sniper shot him anyways. It was one of the saddest, bravest things I had ever seen. It became clear to the snipers and other thugs on top of the bridge that they were fighting a losing battle, against people who did not care anymore what happened to them, who were willing to die” (Ghaffar 2011a: 63).

⁵⁷ “This language of martyrdom was an integral part of the revolutionary discourse in Iran. ... As a radical religious scholar in Tehran noted in a mosque speech in late March 1978: “No movement is born without martyrs”” (Kurzman 2004: 69).

⁵⁸ “My involvement in this whole revolution was driven by my principles and by my feelings as one with the Egyptians as a Muslim” (Hussein 2011: 259).

⁵⁹ “I was excited by what I had seen in Tahrir on the first day. I campaigned on Facebook, urging people to go to Tahrir on Friday, January 28th. ... I have a group of friends to whom I send daily messages with a quotation from the Prophet’s sayings, so I started selecting relevant quotes, such as: “If any of you sees evil being done, you have a responsibility to try and stop it.” I

incorporation of Islamic values of community (Karamustafa 2008) and “love, justice, human values, and compassion for the oppressed and hatred for oppression and injustice” (Jafri 1987: 168). Foreign protesters also referenced prosocial values and solidarity with the Muslim community as reasons for participation in the demonstrations:

What amazed me most that day was that we weren't only Egyptians in the protests. I saw a couple of foreign teachers from my school, and we asked why they had come. One of them said: “For humanity.” He also said that he did it to help his Muslim brothers (Rushdy and Rushdy 2011: 231).

The combination of subversive and religious elements in revolutionary consciousness was also evident during religious rituals that sustained opposition through consciousness of God.

Prayer in Revolutionary Protest

Prayer is a central component of Islam (Toorawa 2010) and a means of expressing Muslim devotion that maintained Egyptians' spiritual connection with God during their revolution. Islamic spirituality involves constant invocation of God (Brohi 1987) as awareness of God should be at all times: “a Muslim's whole life is permeated by prayer. Indeed, every twenty-four-hour day is divided into time periods in which the five obligatory ritual prayers are to be performed; and there are supplications for every possible situation and event” (Toorawa 2010: 280). Ritual prayers occur at regularly scheduled times during the day and involve prostration in the direction of Mecca:

Regular formal prayer should be an external manifestation of this internal prayer. Regular prayers are prescribed five times a day: morning (fajr), midday (zuhr), afternoon ('asr), evening (maghrib), and night ('isha). ... Internal prayer, or prayer of the heart, however, has no fixed time. It should, in fact, be continuous and constant (Ashraf 1987: 114).

Prayers are a means to achieve nearness to God and realization of divine will: “Islamic prayer is a means of communion of the human soul with its Creator, who alone knows what destiny lies ahead for him and how it is to be realized by him in terms of the guidance he receives” (Brohi 1987: 133). Among the different types of Islamic prayer (Toorawa 2010) observed by Egyptians during the revolution, prayers of supplication requested God's help and strengthened group consciousness with feelings of oneness with members of the community (Ashraf 1987). Islamic rituals focus the inner state with some type of emotion (Steinfels 2010) and generate solidarity through cognitions about the self and others:

found an old decree by Al-Azhar scholars clarifying that any Muslim who does not speak out against tyranny and injustice is not fulfilling his obligations as a Muslim” (Mo'men and Mo'men 2011: 118).

ritual actions as effectively accomplishing certain goals: communication and expression, acquisition and transfer of merit, acquisition of good fortune and removal of bad fortune, moral self discipline, social cohesion, and social reform. Some of these goals explicitly include an interaction with the divine, some focus on the self, and some focus on the community (Steinfels 2010: 311).

Prayer maintained spiritual connections to God and other actors involved in the political struggle and many Egyptians, united through Islamic spirituality, perceived protest developments as influenced by the authority of God: “It is not only to experience God as beyond all things but also to see His “signs” in all things, to see God everywhere” (Nasr 1987: 314).

Responses to Death in Revolutionary Protest

Deaths during revolutionary protest increased religious salience as the “sacred emerges in moments and situations in which an individual or a group, even a people or an entire nation, experiences the presence or absence of a person or object as signifying life or death” (Fenn 2014: 183). Cognitive focus on the deceased involved the deaths of Bouazizi and Said that sparked the Tunisian and Egyptian revolutions and approximately 850 Egyptian lives lost during the struggle against Mubarak (Feather 2014). The loss of group members during political resistance has transformational effects on participants^{60 61} and anger manifests from violations of group solidarity (Collins 2004) that involve negative outcomes for group members^{62 63}. Violence against members of the group prompts responses from perception of dangers to group welfare: “When people bind their fate to the fate of a group, they feel personally threatened when the group is threatened” (Gamson 1992: 57) and feelings of responsibility for the social unit emerge when the group becomes a sacred object to

⁶⁰ “I flipped at this point, 180 degrees. Until that day, my demands were that the president should not be in power for more than two terms, that we dismantle the parliament and the senate, that all political prisoners be released, that we should have some political freedoms and that we free the various syndicates from the National Democratic Party cronies who were heading them. After what happened to us on the 28th, my request became much simpler: I wanted Mubarak to go. Absolutely with no discussion. Just leave. Anything else we were discussing or demanding could wait. I was emotionally devastated; I saw many people dead or dying, many. I don’t know if all of them died or just some or what, they were people being carried out with wounds and bleeding and beaten, just too much to bear” (Waked 2011a: 80).

⁶¹ “I was already starting to question my decision to stay away from the protests and give the new government a chance. The day before yesterday, I was sure. Today, I wasn’t so sure. Too many people were dying” (Rushdy and Rushdy 2011: 223).

⁶² “While the three men were talking to the commander of the force, some policemen grabbed one of the men and took him behind their lines and we could see them beating him up. This drove the demonstrators nuts. How could they beat up an older man who was just there to negotiate with them? We could no longer maintain control or ask the demonstrators to stay calm and peaceful ... people were really just going wild with anger and throwing stones everywhere” (Ghaffar 2011: 53).

⁶³ “A little after midnight, we had stayed—this young man and I—to swap shifts. He would collect stones and hand them to me to throw for a while and when my shoulder started to hurt, we would switch. During one of my throwing shifts, I reached behind me for stones, but nothing was laid into my hand. I looked back and found this lovely, funny man dead on the ground with a bullet in his head. I went hysterical. I got up from my hiding spot and I couldn’t help myself. In hindsight, I realize I could have been shot too, but at the time I was going crazy, I did not know what to do. I was screaming, “This kid is dead, this kid is dead—he’s been shot in the head!”” (Ghaffar 2011: 55).

be protected (Collins 2004). Mourning rituals concentrate political disaffection and strengthen claims-making as “memorializations of death are not only a matter of expressing grief and sorrow but also precipitate new actions in the social or political sphere” (Margry and Sánchez-Carretero 2011: 2). Meaning is gained through bereavement (Neimeyer 2015) and awareness of sacrifices reinforces commitment to protest from a heightened sense of responsibility for the collective⁶⁴.

OTHER AFFECTIVE AND LINGUISTIC INDICATORS OF POLITICAL OUTCOMES

While it is not possible to predict revolutionary events, inferences can be made about political outcomes based on indicators of the revolutionary process. Positive emotion and identity salience reflect psychological states from losses or gains made by the masses as actors respond to situational changes during political struggle.

Positive Emotion from Protest Gains

Territoriality and boundaries are central in the exertion of power (Dochartaigh and Bosi 2010) and protests involve the “constant interaction and struggle between competing forces seeking to define and control use of space” (Starr et al. 2011: 24). Among the principles determining protest behavior, dissidents aim for geographic concentration while minimizing the chances of coercion (Francisco 2010) and adaptation is reflected as groups disband and re-assemble in response to various forms of social control or repression (Starr et al. 2011; Fernandez 2008). Occupation of strategic geographic locations serves as turning points in political struggles by increasing expectancy of success. Expectancy of success is associated with positive emotions from confidence in the ability to predict and control the environment in collective action (Smelser 1962). In the micro-dynamics of violent social situations, Emotional Energy is gained when another side loses it (Collins 2008) and this process extends to large-scale contestations when collective emotions reflect revolutionary momentum from strategic gains made from mobilization and territorialization. Increases in positive emotions during political struggle indicate morale from perceived possibility for a desired revolutionary outcome.

⁶⁴ “Hundreds died that Friday night. And thousands were injured, and many died later of their wounds. Their smiling, hopeful faces are everywhere. ... This is our life’s work: we will create the Egypt they died for” (Soueif 2012: 39).

Collective Identity and Solidarity

Revolutionary experiences transform actors by changing self-perceptions and perceptions of group members and language conveys levels of solidarity through references to shared identities among “multitude of different situational, personal, and social identities that collectively comprise the self” (Park et al. 2013: 159). A collective identity refers to shared membership to a group or category (Klandermans 2005) and the identity becomes politicized when actors participate in a situation that involves a power struggle. Politicized collective identities involved in resistance are emotionally-laden and expressions of group salience are signals “not only to others but to the self; they’re messages *from* the self but also to the self; informing persons ... about the strength of their commitments, the relative salience of their identities, about who they really are” (Stryker 2004: 8). Revolutionary protest on behalf of a subjected population involves group-based emotions and the connections felt among actors who share an identity reflect bonds to the social unit: “The more important a group becomes in the life of its members, the more sacrifices the members are usually willing to make in its name, both from love and from duty” (Mansbridge 2001b: 254). Variations in group identification reflect levels of cohesion through references to group members based on different identities that gain salience during political struggle. Revolutionary consciousness entails changes in perceptions group members and how actors relate to others while engaging in actions for the collective welfare. ‘Protester’ is an identity centered on political action while ‘Egyptian’ is a category based on ties to a national unit based on a shared heritage and culture (Smith 1991b). National identity salience strengthens in response to gains made from revolutionary protest that increase solidarity, reflected by increased identification with the group based on affiliation to a larger social category over a narrower political identity.

DATA AND APPROACH

The unpredictability of revolutionary events and the variability of the revolutionary process prevents the generation of reliable expectancies about changes in revolutionary consciousness. I avoid outlining a limited set of conditions that incorporates assumptions about regularity and reduce the revolutionary process, the revolutionary minds involved and affected by it, and the changes associated with both to oversimplifications. Revolutionary consciousness was examined for interacting elements and the effects of

successive experiences on actors during the political struggle. Elements broadly refer to cognitive and affective components in consciousness and encompass factors and cultural properties that affect social cognition and situational appraisals among revolutionary actors.

Among the research traditions in the study of revolution, structuralist explanations concentrate on factors that cause revolutionary situations and actors are not given agency with a dominant focus on the state. While structuralists negate the role of the revolutionary actor (“Revolutions are not made, as revolutionaries would have us believe; they merely happen” (Farhi 1988: 232).), behaviorist perspectives focus on action and the approaches entail a singular emphasis on either factors or actors. A combined approach integrates the perspectives by examining sequential emotional and cognitive states that provide insight about revolution through subjective experiences of actors involved in the political struggle. Analyses focus on the combination of components in revolutionary consciousness in different temporal contexts that indicate causal interactions among elements (e.g., mitigating or strengthening another element or behavioral response).

I analyzed a dataset of 653,561 tweets in English and Arabic that contained protest-related hashtags (*see Appendix A3 for list of protest-related hashtags*) generated by Twitter users in North Africa and the Middle East from January 25, 2011 to February 11, 2011⁶⁵. Twitter communication was evaluated with word frequencies, word associations, and linguistic indicators of changes among actors that reflected the effects of prior experiences on responses to events through elements that have varying degrees of salience.

Semantic associations in revolutionary communication reflect interactions among factors, actors, actions, and entities⁶⁶: (1) the interaction among factors, (2) the interaction among factors and actors, (3) the

⁶⁵ (1) MENA Twitter users are young, English-speaking (Mourtada and Salem 2011a, 2011b) and may not be representative of the general Egyptian population. Although Twitter content was generated by a particular demographic, the data reflected more than just the perspective of Twitter users. It also captured the emotions and states of mind of Egyptian protesters as Egyptians communicated about revolutionary events and what was reported by the media. Egyptians tweeted about situational assessments, actions, speech, interactions among actors, and occurrences during the revolution. (2) Twitter users are likely to be less religious and it is possible that the data under-represents the level of religious thought based on religion words used in revolutionary communication. The Twitter data only captures prayers that are outwardly (verbally and textually) expressed. Levels of inner prayer among Egyptian protesters are likely to be higher than the levels of prayer accounted for in the data. (3) Given Egypt's large population, Egyptians comprise a large proportion of MENA social media users (Mourtada and Salem 2011a, 2011b). Approximately half of the protest tweets were generated by Egyptians, except during the communications shutdown from January 28, 2011 to February 1, 2011 (*See Appendix A1 for figures on tweeting levels and composition of retweeting users by country*). (4) The data included MENA Twitter users because messages broadcasted to the global audience informed actors outside of Egypt who shared information about protests and interacted with Egyptians while following revolutionary events (the causal effects of this are shown in chapter 4).

⁶⁶ In this chapter, “entity” is used to refer to a collective or governing body, in contrast to “actor,” which identifies human subjects.

interaction among factors and actions, (4) the interaction among factors and entities, (5) the interaction among actors, (6) the interaction among actors and action, (7) the interaction among actors and entities, (8) the interaction among actions, (9) the interaction among actions and entities, and (10) the interaction among entities. The interaction type for a word pair indicates the type of association among words in a given revolutionary context:

| | | | |
|-------------------|------------------|-------------------|-------------------|
| ‘factor’—‘factor’ | ‘actor’—‘actor’ | ‘action’—‘action’ | ‘entity’—‘entity’ |
| ‘factor’—‘actor’ | ‘actor’—‘action’ | ‘action’—‘entity’ | |
| ‘factor’—‘action’ | ‘actor’—‘entity’ | | |
| ‘factor’—‘entity’ | | | |

Co-occurrence links (when two words appeared in the same tweet)⁶⁷ reflect conceptual associations among terms related to religion, repression/violence, government, and non-identified individuals/collectives (*see Table 2 and 3*) in 131,998 tweets in English and Arabic communicated from January 25, 2011 to February 11, 2011 that contained at least one word from the four word categories. Main terms were generated from a lemmatized concordance wordlist from Egyptian tweets that contained frequently occurring words and words from the Arabic LIWC dictionaries (Hayeri, et al.).

⁶⁷ There were no duplicate counts for co-occurrence links (i.e., a tweet with the word “bombs” would not include an additional word pair count for “bomb”).

Table 2. Co-occurrence Subject Words from Protest Tweets

| Subject | Words |
|-------------------------|--|
| Religion | allah, christ, christian, christians, church, churches, copt, coptic, copts, god, imam, islam, jesus, lord, mosque, mosques, muslim, muslims, pray, prayed, prayer, prayers, praying, preacher, preaching, priests, religion, religions, religious, sermon |
| Repression/Violence | arrest, arrested, arrests, assault, attacked, attacks, battle, battles, block, blocked, blocking, blood, bomb, bombs, bombing, challenge, chaos, confrontation, confrontations, counter, dead, death, deaths, defense, destroy, destroyed, destruction, detained, detention, die, died, emergency, fatal, fatally, fighting, fire, forces, funeral, guard, gun, guns, hurt, imprisonment, injured, injuries, injuring, injury, kill, killed, killers, killing, martyrdom, martyr, martyrs, massacre, oppressors, repression, resistance, shoot, shot, suppression, throwing, thugs, torture, victim, victims, violence, violent, wounded |
| Government | amendment, committee, committees, constitution, constitutional, corruption, council, declaration, delegation, demand, demands, democracy, dictator, dictators, dictatorship, freedom, government, injustice, leadership, legitimacy, ministers, ministry, official, officials, parliament, political, presidency, referendum, regime, resign, resignation, revolutionary, revolutions, tyranny, tyrants |
| Individuals/Collectives | children, citizen, citizens, civilian, civilians, country, demonstrator, demonstrators, egyptians, everybody, for us, future, my parents, myself, nation, people, peoples, protester, protesters, the youth, kingdom, group, groups, human, individual, individuals, members, nation, young man, young woman, young men, young women |

Table 3. Combined Word Categories in Co-occurrence Figures and Tables

| Subject | Words |
|-------------------------|---|
| Religion | god (allah, god), christ (christ, jesus), christian (christian, christians), church (church, churches), copt (copt, coptic, copts), imam, islam, lord, mosque (mosque, mosques), muslim (muslim, muslims), pray (pray, prayed, prayer, prayers, praying), preacher (preacher, priests), preaching, religion (religion, religions, religious), sermon |
| Repression/Violence | arrest (arrest, arrested, arrests, imprisonment, detained, detention), assault (assault, attacked, attacks), battle (battle, battles), block (block, blocked, blocking), blood, bomb (bomb, bombs, bombing), challenge, chaos, confrontation (confrontation, confrontations), counter, crackdown, death (dead, death, deaths, fatal, fatally, die, died, killed), defense, destroy (destroy, destroyed, destruction), emergency, fighting, fire, forces, guard, gun (gun, guns), injury (injured, injuries, injuring, injury, hurt), kill (kill, killers, killing), martyr (martyrdom, martyr, martyrs, funeral), massacre, repression (oppressors, repression, suppression), resistance, shot (shoot, shot), throwing, thugs, torture, victim (victim, victims), violence (violence, violent), wounded |
| Government | amendment, committee (committee, committees), constitution (constitution, constitutional), corruption, council, declaration, delegation, demand (demand, demands), democracy, dictator (dictator, dictators, dictatorship), freedom, government, injustice, leadership, legitimacy, ministry (ministers, ministry), official (official, officials), parliament, political, presidency, referendum, regime, resign (resign, resignation), revolution (revolutionary, revolutions), tyranny (tyranny, tyrants) |
| Individuals/Collectives | children, citizen (citizen, citizens), civilian (civilian, civilians), country (country, nation, kingdom), protester (demonstrator, demonstrators, protester, protesters), egyptians, everybody, for us, future, my parents, myself, people (people, peoples), the youth, a person, group (group, groups), human, individual (individual, individuals), members, young person (young man, young woman, young men, young women) |

Word pairs among the interaction types have different meanings depending on the situational context that generated the associated cognitions. The following are selected word pairs for the ten interaction types:

factor/factor: 'freedom'—'God'
factor/actor: 'God'—'protester' or 'democracy'—'people'
factor/action: 'death'—'shoot'
factor/entity: 'violence'—'regime'
actor/actor: 'thugs'—'protester'
actor/action: 'protester'—'arrest'
actor/entity: 'protester'—'parliament' or 'people' —'country'
action/action: 'demand'—'arrest'
action/entity: 'demand'—'regime'
entity/entity: 'government'—'country'

Factor broadly refers to beliefs, ideas, and concepts that gained salience in revolutionary situations. The factor/factor word pair 'freedom'—'God' indicates a conceptual relation between a political idea and religious belief. Co-occurrences among factor and actor words indicate elements that affected actors in revolutionary situations. For example, the word pair 'God'—'protester' indicates religious salience with an association between words about religious belief and political actors. The word pair 'injury'—'protester,' another factor/actor interaction type, indicates the experience of violence among actors. 'Thugs'—'protester' captures interactions among opposing actors while 'parliament'—'protester' associates the target of protests with political actors in an actor/entity word pair. Associations between action words and actor words reflect directed action toward subjects such as social control activity by state forces with the word pair 'protester'—'arrest.' Factor/action word pairs that exclude subject words can show the outcome of directed behavior such as the escalation of conflict indicated with 'death'—'shoot' when mortality was associated with violent action.

Emotions

English text and Arabic text translated to English were processed using Linguistic Inquiry and Word Count (LIWC)^{68 69} (Pennebaker et al. 2001) to measure words that reflect emotional, cognitive, and social processes. I conducted sentiment analysis on protest tweets to analyze daily and hourly emotion word patterns

⁶⁸ LIWC is not a perfect method to measure emotion. Emotion is encoded in all dimensions of language (Majid 2012) but LIWC only captures affect through words identified in the LIWC dictionary. It does not capture many affectively-laden terms used in revolutionary communication. It should be considered a general measure and not an exact indicator of the levels of emotion words expressed in protest tweets. Also, the intensity of emotions cannot be reduced to quantitative measures and there is a need for a more nuanced, supplementary approach with qualitative examples of emotional expression.

⁶⁹ In the absence of an Arabic LIWC dictionary for emotions, the English version of LIWC was used to process English text and translated Arabic text for consistency.

for emotional reactions to revolutionary events using LIWC measures for affect, positive emotion, negative emotion, anxiety, anger, sadness, and swearing (*see Table 4*).

Table 4. Linguistic Inquiry and Word Count (LIWC) Elements Used

Affective categories: affect, positive emotion (posemo), negative emotion (negemo), anxiety (anx), anger, sadness (sad), swear
Subject categories: religion (relig)⁷⁰, death

Protest emotions were examined for affect intensification and variation in affective states based on hourly differences in positive/negative emotions that indicated the strengthening of one valence over the other during key revolutionary events. Tweets were assessed for emotional expressions that indicated the depth and extremes in sentiments felt and linguistic indicators that conveyed nuances of revolutionary minds, as quantitative measures alone cannot fully reflect human experience or important changes in cognition, affective states, and behavior during revolutions:

Analytic writing tends to overlook the fact that revolutions are psychologically electric moments, full of emotional charge and somatic intensity, which social scientific jargon is woefully inept at presenting (Sreberney-Mohammadi and Mohammadi 1994: xi).

Being in Tahrir was a three-week-long emotional, sensory, and cognitive rollercoaster ride. There were moments of euphoria, terror, depression, humor, and pride. ... It was an overwhelming experience in every sense of the word (Gröndahl and Mohyeldin 2011: 126).

Interactions among Cognitive and Affective States:

Interacting factors in the Egyptian revolution were assessed with word pairs that reflected associations among factor words and other word types in communication that reflected revolutionary minds. The interaction of cognitive and affective elements in revolutionary consciousness was assessed by the temporal co-occurrence of emotions, word frequencies, and word associations. The emotion regulation effects of religious beliefs on revolutionary actor were assessed by the co-occurrence of religious references in tweets about violence that indicated coping behavior during situations that generated anxiety. Hourly frequency

⁷⁰ False positives excluded from the LIWC religion word count, erroneously processed because of the root word “demon”: demonstration, demonstrations, demonstrator, demonstrators, demonstrating, and demonstrate.

counts of words in LIWC subject category for ‘religion’⁷¹ and ‘death’ were related to emotion word frequencies that reflected temporal overlap of interacting affective and cognitive elements.

The effects of sequential experiences on revolutionary action were assessed through language that reflected the presence of motivating factors and behavioral responses to increased human will. Variation in the daily frequency and proportion of words and word associations in the religion, repression/violence, government, and non-identified individuals/collectives word categories were assessed for changes in dominant cognitive focus as the revolution continued. Word usage and main word pairs were evaluated for the persistence of cognitive elements during protests and transitions in main word pairs that indicated prior cognitions in changing states of revolutionary consciousness. Revolutionary momentum generated through successive experiences was assessed by the increase in actor/entity word pairs that reflected the targeting of government entities. The effects of situational appraisals on the salience of identities shared among protesters were evaluated with changes in the daily counts of ‘Egyptian’ and ‘protester’ references⁷² made by Egyptian Twitter users. In addition, tweets were assessed for the effects of subjective experiences that generated meaning for political action and strengthened affective attachment to group members.

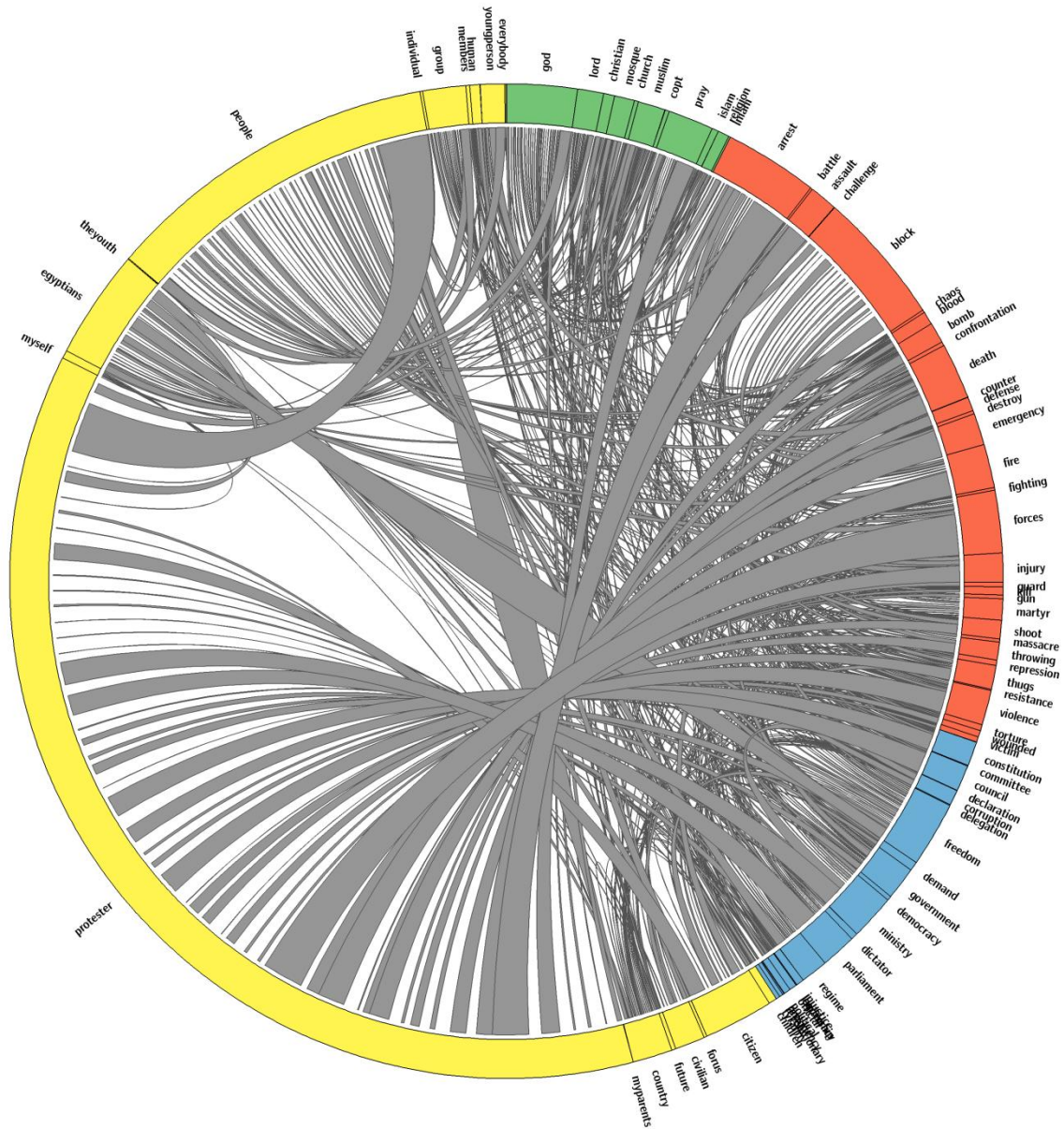
FINDINGS

Figure 1 shows word usage and word associations among the word categories on the first day of the uprising that reflect interacting elements in revolutionary consciousness. The outer circle bar indicates word occurrence and the inner lines indicate word pairs with religion, repression/violence, government, and individuals/collectives words.

⁷¹ The LIWC religion dictionary is different from the religion word list used for co-occurrence links and word counts by category.

⁷² The Egyptian identity word count included ‘Egyptian’ and ‘Egyptians’ while the protester identity word count included ‘protester,’ ‘protesters,’ ‘demonstrator,’ and ‘demonstrators.’ The Egyptian identity counts are distinct from the co-occurrence link and word counts ‘egyptians’ in the individuals/collectives word category.

Figure 1. Associations among Religion, Repression/Violence, Government, and Individuals/Collectives Words in Protest Tweets on January 25, 2011^{73 74}



⁷³ Color key: Religion (green), Repression/Violence (orange), Government (blue), Individuals/Collectives (yellow).

⁷⁴ The bars of the circle graph indicates word occurrence and the lines show co-occurrence links between a pair of words.

Figures 2-5 shows the daily frequencies and percentages of words and word associations by word category. Table 5 lists the 5 most frequently occurring words in each word category by day and Table 6 lists the 10 most frequently occurring word associations in each word category by day.

Figure 2. Proportion of Word Associations by Word Category in Protest Tweets

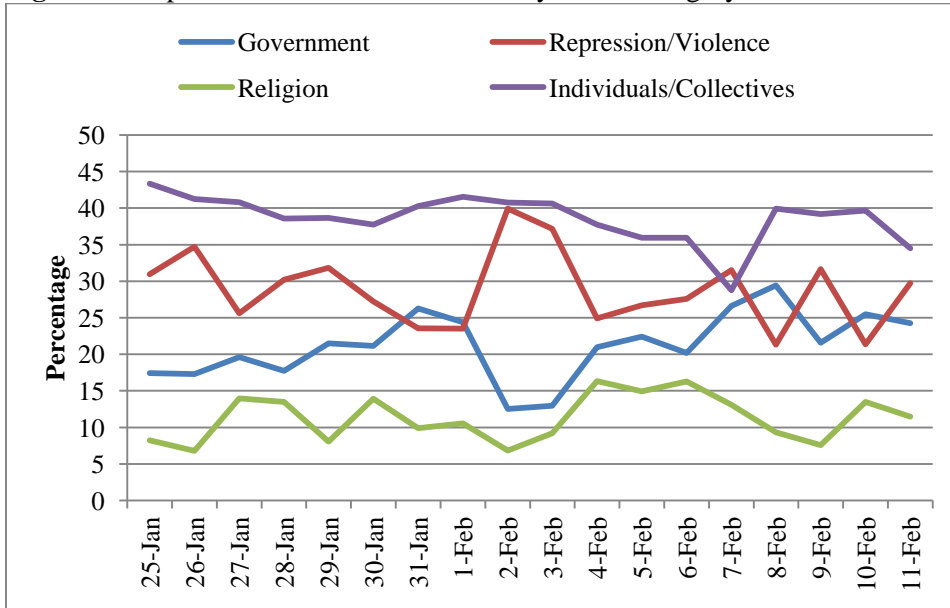


Figure 3. Total Word Association Frequencies by Word Category in Protest Tweets

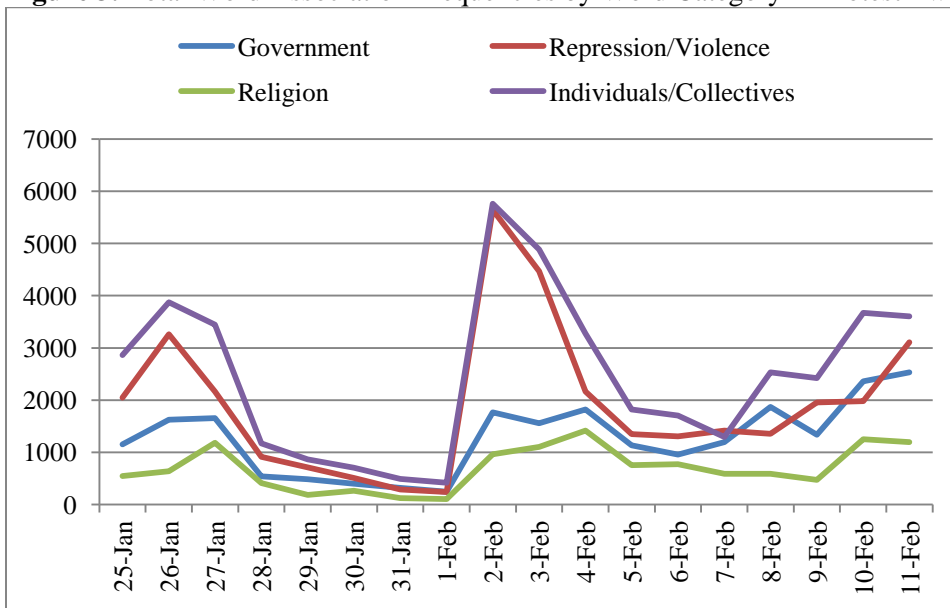


Figure 4. Proportion of Words by Category in Protest Tweets

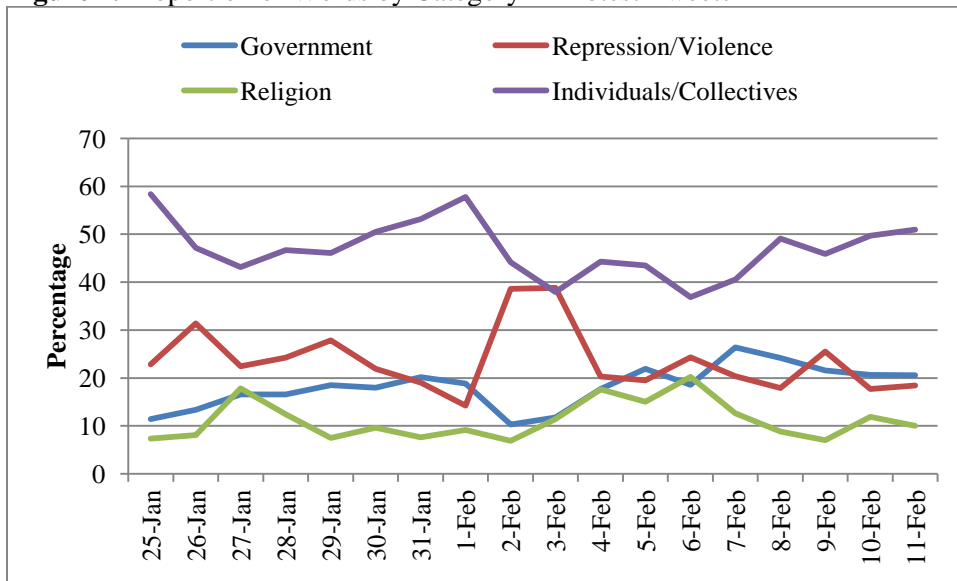


Figure 5. Total Word Frequencies by Category in Protest Tweets

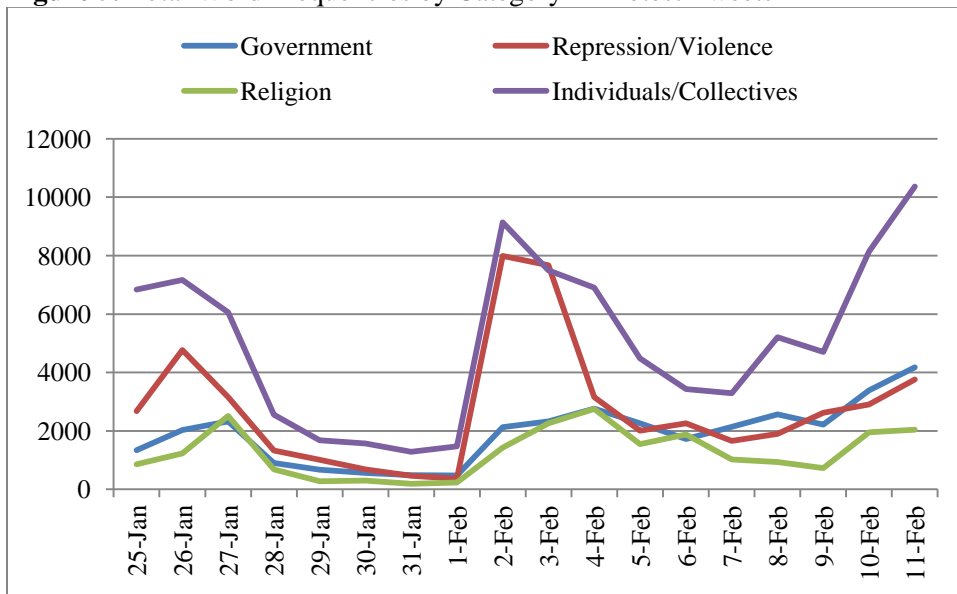


Table 5. Top 5 Frequently Occurring Words in Protest Tweets by Word Category⁷⁵

| Date | Religion | Repression/Violence | Government | Individuals/Collectives |
|-------------|--------------------------------------|--|---|---|
| Jan 25 | god, pray, muslim, lord, mosque | block, arrest, forces, death, fire | freedom, ministry, parliament, government, regime | protester, people, egyptians, citizen, group |
| Jan 26 | pray, god, lord, mosque, muslim | block, arrest, death, forces, injury | government, regime, freedom, ministry, demand | protester, people, egyptians, country, group |
| Jan 27 | pray, god, muslim, mosque, copt | block, death, arrest, forces, fire | government, regime, freedom, ministry, demand | protester, people, egyptians, country, citizen |
| Jan 28 | pray, god, mosque, muslim, christian | arrest, fire, death, forces, violence | government, regime, freedom, official, parliament | protester, people, egyptians, country, citizen |
| Jan 29 | god, muslim, pray, mosque, lord | thugs, death, fire, forces, arrest | regime, government, ministry, resign, freedom | people, protester, egyptians, country, citizen |
| Jan 30 | god, pray, muslim, lord, christian | death, arrest, thugs, martyr, fire | government, regime, freedom, ministry, demand | people, protester, egyptians, country, citizen |
| Jan 31 | god, muslim, pray, christian, lord | arrest, death, forces, violence, blood | government, regime, demand, freedom, ministry | people, protester, egyptians, citizen, country |
| Feb 1 | god, muslim, pray, christian, lord | thugs, death, chaos, arrest, block | government, freedom, demand, regime, political | people, protester, egyptians, country, group |
| Feb 2 | god, pray, lord, muslim, mosque | thugs, injury, death, violence, blood | regime, government, freedom, ministry, official | protester, people, egyptians, country, group |
| Feb 3 | god, pray, muslim, christian, lord | thugs, arrest, death, assault, blood | government, regime, freedom, resign, ministry | protester, people, egyptians, country, group |
| Feb 4 | pray, god, muslim, christian, lord | thugs, arrest, death, blood, injury | freedom, regime, government, committee, demand | protester, people, egyptians, country, group |
| Feb 5 | pray, god, christian, muslim, church | arrest, death, martyr, thugs, blood | resign, government, freedom, regime, presidency | people, protester, egyptians, country, group |
| Feb 6 | muslim, christian, god, pray, copt | arrest, martyr, death, blood, kill | freedom, regime, government, demand, constitution | people, protester, egyptians, country, myself |
| Feb 7 | god, lord, muslim, pray, church | fighting, martyr, death, arrest, blood | freedom, regime, government, ministry, political | people, protester, egyptians, country, group |
| Feb 8 | god, pray, lord, christian, muslim | martyr, death, block, kill, blood | parliament, freedom, regime, government, ministry | people, protester, egyptians, country, group |
| Feb 9 | god, church, muslim, lord, pray | martyr, death, funeral, blood, kill | parliament, government, ministry, freedom, regime | protester, people, egyptians, country, citizen |
| Feb 10 | god, lord, pray, muslim, religion | death, martyr, violence, forces, blood | demand, regime, freedom, government, official | people, protester, egyptians, country, civilian |
| Feb 11 | god, pray, lord, muslim, mosque | martyr, blood, forces, death, fire | freedom, presidency, government, regime, council | people, protester, egyptians, country, future |

⁷⁵ Words ordered from most frequently occurring

Table 6. Top 10 Word Associations in Protest Tweets by Word Category⁷⁶

| Date | Religion | Repression/Violence | Government | Individuals/Collectives |
|--------|--|---|---|---|
| Jan 25 | pray—protester god—people god—egyptians muslim—arrest christian—muslim god—protester lord—people mosque—pray pray—mosque mosque—thugs | forces—protester arrest—protester emergency—protester fire—protester assault—protester violence—protester death—protester block—protester injury—protester thugs—protester | parliament—protester council—protester ministry—protester constitution—protester council—ministry freedom—egyptians freedom—protester regime—people freedom—citizen freedom—people | protester—people protester—forces protester—arrest protester—emergency protester—fire protester—parliament protester—assault protester—violence protester—council protester—ministry |
| Jan 26 | mosque—pray pray—egyptians god—people pray—protester pray—country church—mosque church—pray pray—people christian—muslim god—protester | forces—protester violence—protester arrest—protester injury—protester fire—protester death—protester block—protester death—people thugs—protester arrest—people | regime—people government—country ministry—protester government—people regime—protester government—protester government—block demand—people demand—protester freedom—egyptians | protester—forces protester—people protester—violence protester—arrest protester—injury people—regime protester—fire protester—death country—government protester—group |
| Jan 27 | muslim—pray muslim—copt pray—copt pray—mosque god—pray muslim—christian god—muslim christian—pray pray—people god—copt | forces—protester fire—protester arrest—protester violence—protester death—protester death—shoot injury—protester arrest—death assault—protester death—people | regime—people ministry—protester government—people demand—people freedom—people government—country government—protester regime—protester demand—protester government—pray | people—regime protester—people protester—forces protester—fire protester—arrest protester—violence protester—ministry people—government protester—death protester—demand |
| Jan 28 | pray—protester god—people pray—mosque muslim—christian pray—people muslim—arrest god—protester muslim—pray god—pray christian—pray | fire—protester death—protester forces—protester kill—protester death—shoot violence—protester shoot—protester death—people thugs—protester arrest—muslim | regime—protester regime—people government—people government—protester government—resign ministry—protester freedom—people regime—massacre freedom—egyptians dictator—people | protester—fire protester—death protester—forces protester—pray protester—regime people—god people—regime protester—people protester—kill people—government |
| Jan 29 | muslim—christian god—people god—country lord—people mosque—emergency god—muslim muslim—god muslim—kill mosque—people god—christian | thugs—people death—people death—protester forces—protester death—ministry fire—protester death—shoot shoot—death thugs—regime arrest—citizen | regime—people ministry—protester ministry—death government—people presidency—protester committees—people ministry—people regime—thugs regime—protester demand—people | people—regime people—thugs protester—ministry people—death protester—people protester—death protester—forces protester—fire people—government protester—presidency |
| Jan 30 | pray—protester muslim—christian god—people pray—funeral muslim—group muslim—members pray—people pray—martyr mosque—martyr god—protester | death—people funeral—pray death—protester arrest—thugs fire—protester thugs—arrest fire—ministry arrest—protester forces—protester funeral—martyr | regime—people committees—people demand—protester government—people regime—protester government—protester ministry—protester ministry—fire demand—people regime—egyptians | people—regime protester—people protester—pray people—death people—committees protester—demand people—god protester—regime people—government protester—death |
| Jan 31 | muslim—christian god—people god—protester god—egyptians | arrest—protester forces—people violence—people forces—protester | committees—people government—people regime—people legitimacy—demand | people—demand people—committees people—government people—regime |

⁷⁶ Word pairs ordered from most frequently occurring

| | | | | |
|-------|---|--|---|--|
| | muslim—people god—country muslim—islam pray—people muslim—country religion—people | arrest—people shoot—protester blood—martyr forces—legitimacy violence—citizen assault—protester | legitimacy—people legitimacy—forces government—regime legitimacy—protester regime—government regime—protester | protester—people protester—arrest people—forces protester—demand people—violence protester—forces |
| Feb 1 | god—people muslim—christian muslim—islam muslim—religion muslim—egyptians pray—freedom religion—muslim christian—copt christian—religion christian—egyptians | thugs—protester death—people arrest—people thugs—chaos thugs—people arrest—protester assault—thugs death—protester thugs—assault assault—protester | government—people demand—protester freedom—people freedom—egyptians demand—people demand—egyptians regime—people freedom—protester demand—regime democracy—people | people—protester protester—thugs people—government people—death group—protester protester—demand protester—group country—people people—freedom people—country |
| Feb 2 | god—people god—lord pray—people muslim—christian pray—protester god—protester god—destroy god—blood god—repression god—pray | thugs—protester assault—protester injury—protester violence—protester thugs—people thugs—assault kill—people arrest—protester death—people blood—martyr | regime—people regime—thugs regime—protester resign—massacre government—people ministry—protester official—protester regime—violence freedom—people government—thugs | protester—thugs protester—assault protester—injury protester—people protester—violence people—thugs people—kill protester—arrest people—death people—god |
| Feb 3 | muslim—christian pray—christian pray—muslim god—people pray—people pray—protester god—protester christian—protester god—lord muslim—protester | thugs—protester death—protester thugs—people death—people assault—thugs blood—people assault—protester death—shoot arrest—people shoot—protester | regime—people resign—chaos regime—protester regime—thugs freedom—people government—people freedom—god government—emergency ministry—official government—violence | protester—thugs protester—people protester—death people—thugs people—death people—blood protester—assault people—arrest protester—shoot protester—arrest |
| Feb 4 | muslim—christian pray—muslim pray—christian pray—protester muslim—protester god—people pray—people christian—protester pray—injury god—pray | thugs—protester bomb—protester thugs—people arrest—protester injury—pray assault—protester death—people arrest—people kill—protester violence—protester | committees—people demand—protester regime—people constitution—people demand—people government—protester democracy—people regime—protester democracy—protester official—protester | protester—thugs protester—people people—committees protester—pray protester—bomb protester—muslim people—thugs people—god country—people people—pray |
| Feb 5 | pray—christian muslim—christian god—people muslim—pray pray—muslim pray—martyr christian—martyr pray—protester christian—protester pray—funeral | death—protester martyr—pray thugs—protester martyr—christian thugs—group death—people martyr—protester assault—protester funeral—pray death—group | government—people presidency—resign resign—presidency regime—people committee—people resign—members government—protester freedom—people regime—protester demand—protester | protester—people people—government country—people protester—death people—god people—regime protester—thugs people—committee group—thugs people—death |
| Feb 6 | muslim—christian pray—christian pray—muslim pray—copt god—people copt—muslim pray—protester pray—martyr god—martyr muslim—egyptians | blood—people death—people arrest—demand death—martyr martyr—people arrest—citizen thugs—protester death—shoot martyr—pray death—funeral | demand—arrest regime—people demand—people freedom—people government—people regime—arrest constitution—government constitution—legitimacy freedom—pray legitimacy—constitution | people—blood people—death protester—people people—country people—god people—regime people—martyr citizen—arrest protester—pray protester—thugs |
| Feb 7 | god—people lord—people church—bomb | fighting—freedom arrest—people death—people | freedom—fighting regime—people dictator—people | people—regime people—god people—arrest |

| | | | | |
|--------|---|---|---|--|
| | god—martyr pray—people christian—muslim lord—death muslim—christian god—country god—death | thugs—protester blood—people blood—martyr bomb—church death—protester martyr—god battle—egyptians | democracy—people demand—ministry government—people ministry—demand constitution—people regime—death freedom—death | people—death protester—thugs people—lord people—blood people—youngperson protester—people protester—death |
| Feb 8 | god—people pray—people church—martyr muslim—christian church—copt pray—martyr lord—people church—kill church—protester god—protester | block—egyptians kill—protester fighting—freedom death—people death—human martyr—blood martyr—church injury—people arrest—people blood—people | parliament—protester parliament—people freedom—fighting ministry—council council—people ministry—protester ministry—people regime—people council—protester constitution—people | protester—people protester—parliament people—parliament egyptians—block protester—kill people—council protester—ministry people—ministry people—regime egyptians—people |
| Feb 9 | church—martyr god—people church—bomb church—pray church—victim muslim—christian god—lord christian—church church—death copt—church | funeral—egyptians thugs—protester thugs—parliament martyr—church kill—blood kill—citizen blood—citizen death—protester death—people death—injury | parliament—protester parliament—thugs ministry—people demand—people government—martyr government—people ministry—council ministry—protester parliament—people regime—people | egyptians—funeral protester—parliament protester—thugs people—ministry citizen—kill protester—myself citizen—blood protester—children myself—children protester—death |
| Feb 10 | god—people god—youngperson god—country god—pray god—political god—death god—lord lord—people lord—violence lord—country | forces—council violence—protester forces—people death—martyr forces—protester martyr—blood death—people guard—protester funeral—egyptians violence—egyptians | demand—people demand—protester regime—people committees—people council—forces government—protester official—protester government—official council—people government—people | people—demand people—god protester—demand people—youngperson youngperson—god people—regime country—people people—committees protester—violence people—forces |
| Feb 11 | god—people god—martyr god—country god—egyptians pray—people pray—protester god—freedom lord—people god—lord god—blood | forces—council fire—martyr fire—committees martyr—committees blood—egyptians blood—country forces—people martyr—blood martyr—god martyr—people | council—forces committees—fire committees—martyr council—people government—people freedom—people regime—people council—martyr demand—protester freedom—martyr | egyptians—country people—god egyptians—blood country—blood people—forces people—council people—country people—martyr protester—people protester—violence |

Interacting Factors: Political Demands and Religion in Revolutionary Consciousness

Twitter communication reflected interacting factors that affected political participation in the Egyptian revolution. The political demand of freedom from the Mubarak regime was continuously communicated by Egyptians who expressed their desires and claims against the state:

'Beating up protesters in kasr elnil. Protesters marching, chanting "freedom" #jan25' (Jan 25)

'only our faith in freedom can keep us free #jan25' (Jan 26)

'Going to sleep now and dreaming of freedom :) #Jan25' (Jan 27)

'THE PRICE WE ARE GOING TO PAY FOR FREEDOM... Is the BLOOD of our Beloved Ones... #Jan25' (Feb 2)

'I'm not an activist, or a fighter, without any agenda. Just that #Egypt#Revolution made me taste freedom for the first time] ...' (Feb 3)

'"Freedom is never voluntarily given by the oppressor; it must be demanded by the oppressed." Martin Luther King Jr. #jan25' (Feb 4)

'great remark today "graveyards are stable, we want freedom" #egypt' (Feb 6)

'People must know that protesters in #tahrir are not in for political representation. They want freedom. #jan25 #Egypt' (Feb 8)

'"Life without Freedom is like a body without a soul." ~ Khalil Gibran #Egypt #Jan25' (Feb 9)

'finally freedom :) proud to be egyptians.. #jan25' (Feb 11)

Egyptians demanded freedom while mobilizing in the streets on the first day of protests:

On the next street along, another crowd ... chanting the same word again and again: "Freedom...freedom...freedom," without any banners or placards. Security forces were perplexed as the cries of freedom reverberated between the buildings. They tried in vain to keep the latest crowd from joining the swarm ... As the horde expanded, they pushed on to the nearby Al-Galaa Street, incessantly chanting "freedom," as they marched on to Tahrir Square (El-Menawy 2012: 57-58).

'Freedom' was the most frequently used government word on the first day of protests and when Egyptians celebrated Mubarak's resignation. 'Freedom,' 'regime,' and 'government' were the main political words used and the top government word changed to 'government' (Jan 26), 'regime' (Feb 2), 'resign' (Feb 5), and 'parliament' (Feb 8, Feb 9) when demands strengthened and entities were targeted. 'People'—'regime,' 'people'—'demand,' and 'protester'—'demand' reflected claims-making against the state with actor/entity and actor/action word pairs. Tweets reflected the broadened claims against the state as protests continued:

'I like this game: whenever Mubarak gives a speech the protesters add another demand. #jan25 #egypt' (Feb 1)

'The 7 Demands of The #tahrir square Protestors: 1. Resignation of the president' (Feb 4)

'The 7 Demands of The #tahrir square Protestors: 2. End of the Emergency State' (Feb 4)

'The 7 Demands of The #tahrir square Protestors: 3. Dissolution of The People's Assembly and Shora Council' (Feb 4)

'The 7 Demands of the #tahrir Protestors: 4. Formation of a national transitional government' (Feb 4)

'The 7 Demands of the #tahrir Protesters: 5. An elected Parliament that will amend the Constitution to allow for presidential elections] ...' (Feb 4)

'The 7 Demands of the #tahrir Protesters: 6. Immediate prosecution for those responsible of the deaths of the revolution's martyrs] ...' (Feb 4)

'The 7 Demands of the #tahrir Protesters: 7. Immediate prosecution of the corrupters and those who robbed the country [of its wealth] ...' (Feb 4)

'look at our demands before #Jan25 and after and notice the result of provoking people and political stupidity' (Feb 11)

Calls for constitutional reform were made when possibilities for Mubarak's resignation increased:

'We demand 1st. the change of Constitution to start NOW 2. New parties including one for youth called Jan25 #EGYPT #Jan25' (Feb 3)

'Last time I checked the constitution is not a holy book, its man made so it can be man changed #Egypt #jan25' (Feb 9)

Discontent with oppression and inequality in Egyptian society contributed to the emergence of other demands that motivated revolutionary protest:

'#jan25 protester's demands: increase in minimum wage, dismissal of interior ministry, removal of emergency law, shorten presidential term'

'One hundred lawyers have gathered in front of the police station demanding demonstrators to be released. #EGYPT #JAN25'

'#Egypt call for general strike on Sunday "People Demand Overthrow of Regime for Dignity, Freedom, Social Justice" ...'

'In Tahrir: groups of young women are organizing themselves for women's rights demands #jan25 #egypt'

'Demand' was the most frequently used political word when protesters expressed their strongest calls for Mubarak's resignation on Feb 10.

The high frequency of 'freedom' and 'God' and similar levels of government and religion word use in revolutionary communication indicated that political and religious factors were equally salient during the uprising (*see Figure 5*). For many Egyptians, revolutionary action was seen as sacred:

'The people of #Egypt are shaking armored trucks yelling "ALLAHU AKBAR!!!"...Allah hears them. He hears all. #AfricaUp #DevilsDown #Jan25' (Jan 29)

'One Imam just told me the protest is as holy as prayer. Doctors, singers, holy men - all here in Tahrir Sq #Cairo #jan25 #Egypt' (Jan 31)

'#Egypt translation: The victory of God is near. Victory is only an hour of steadfastness' (Feb 1)

'"Rebellion against tyrants is obedience to God." (B. Franklin) #Tahrir #Egypt' (Feb 2)

'#Tahrir looks like Mecca in Hajj with a difference, Christians are praying there too.' (Feb 4)

'Chant at #Tahrir: Koran and Injeel (bible) demands u to leave #egypt #jan25' (Feb 6)

'Some people forget that the voice of the people is the voice of God.#Egypt #jan25 #Mubarak' (Feb 11)

Scenes of prayer in Tahrir Square evoked thoughts of Mecca, the location for Hajj, a religious pilgrimage for Muslims and ‘mosque’ was salient when religious buildings were used as sites for mobilization. ‘Muslim,’ ‘Christian,’ and ‘Copt’ indicated religious identity salience in revolutionary consciousness and the consistently occurring ‘Muslim’—‘Christian’ word pair reflected religious unity (the word pair was prominent during an interfaith memorial held in Tahrir Square for Martyrs’ Day on Feb 6). A Twitter message from a Tunisian advised Egyptians to have faith in God, indicating the importance of religion for both Tunisian and Egyptian protesters:

Message me as a young Tunisian participated in the Tunisian revolution to every Egyptian man will come out today to ask dignity to put your trust in God'

The political demand for freedom combined with consciousness of God and the word pair ‘God’—‘freedom’ increased on Feb 3 when Egyptians sought God during the attacks in Tahrir Square. Egyptians expressed belief in God’s authority with religious interpretations of events and religious expressions reflected belief in God when the revolution ended:

Random people hugging in the streets, shouting “Freedom!” and “God is great” #jan25'

Factor/actor word pairs ‘freedom’—‘Egyptians,’ ‘freedom’—‘people,’ ‘freedom’—‘protester,’ ‘God’—‘protester,’ and ‘God’—‘people’ also indicated the effects of political ideas and religious beliefs on revolutionary actors. The actor/action word pair ‘pray’—‘protester’ also reflected Egyptians’ connection to God through religious behavior and the concept of freedom was tied to religion through the factor/action word pair ‘freedom’—‘pray’ when Egyptians asked God for assistance during their revolutionary struggle:

Don't forget the power of ur prayers, Pray for a better future, for democracy, for dignity, peace & freedom. LONG LIVE EGYPT. #25Jan' (Feb 4)

Let's all pray now, for #Egypt, for our martyrs and for our freedom..' (Feb 8)

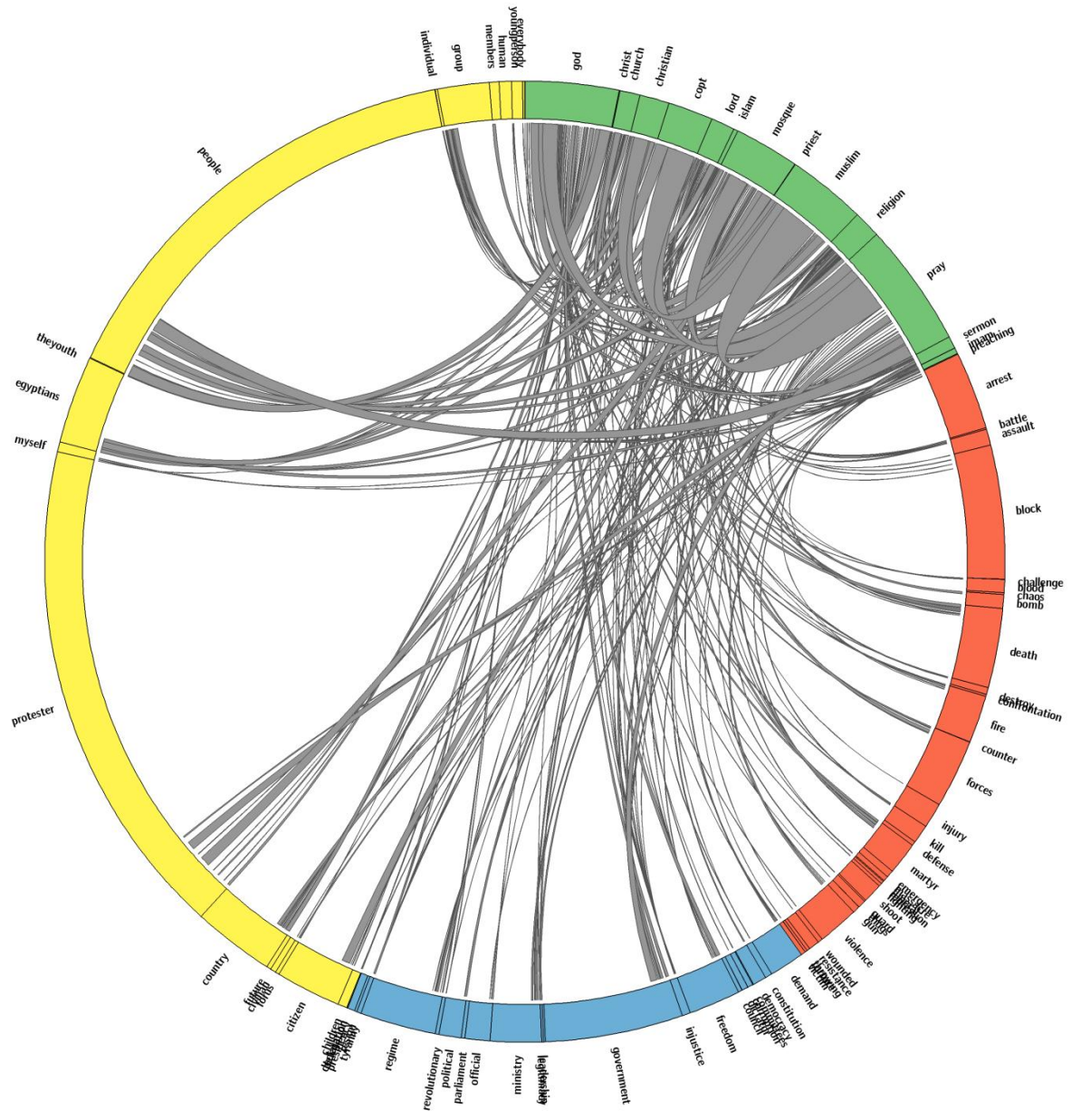
I saw at that time an old man, maybe 70 years old, sitting on the sidewalk reading from the Quran. I saw a young lady in tight jeans and a sleeveless t-shirt, not at all conservatively dressed or religious-looking, holding her hands up to the sky in prayer whispering, “Allah, help us please...” with such sincerity, straight from her heart (Mo'men and Mo'men 2011: 122).

Prayer was a behavioral feature of Egyptian culture that was integrated into revolutionary action and prayers expressed in the streets and on Twitter affected the emotions, solidarity, and claims-making of protesters.

Religious salience increased during the first stage of the revolution as Egyptians mobilized across the country while experiencing social control and repression. ‘Pray’ was the most frequently used religion word

from Jan 26-28 and religion co-occurrences increased on Jan 27 in response to violence in Suez the prior day
(see Figure 6).

Figure 6. Associations with Religion Words in Protest Tweets on January 27, 2011



Consciousness of God strengthened during episodes of violence as Egyptians engaged in religious coping in response to anxiety felt during protests (*see Figure 7*):

'Chilling and beautiful: AJE is showing protestors praying Isha to a soundtrack of gunfire and explosions. #jan25 #jan28 #egypt' (Jan 28)⁷⁷

'Saw one of the stone throwers crying and asking God to forgive him. "Its only coz they beat us first." he said. #Jan25' (Feb 2)

'Speakers telling people to hang in there. Pro-change people reciting Quran: "And that God helps you, none can overcome you" #Egypt #jan25' (Feb 2)

'Gunshots and chanting and Allahu Akbar in Tahrir Square #Jan25' (Feb 2)

'#25jan #jan25 Watching Aljazeera in the background sounds like a high powered rifle, pro-gov are using snipers, God help us ...' (Feb 3)

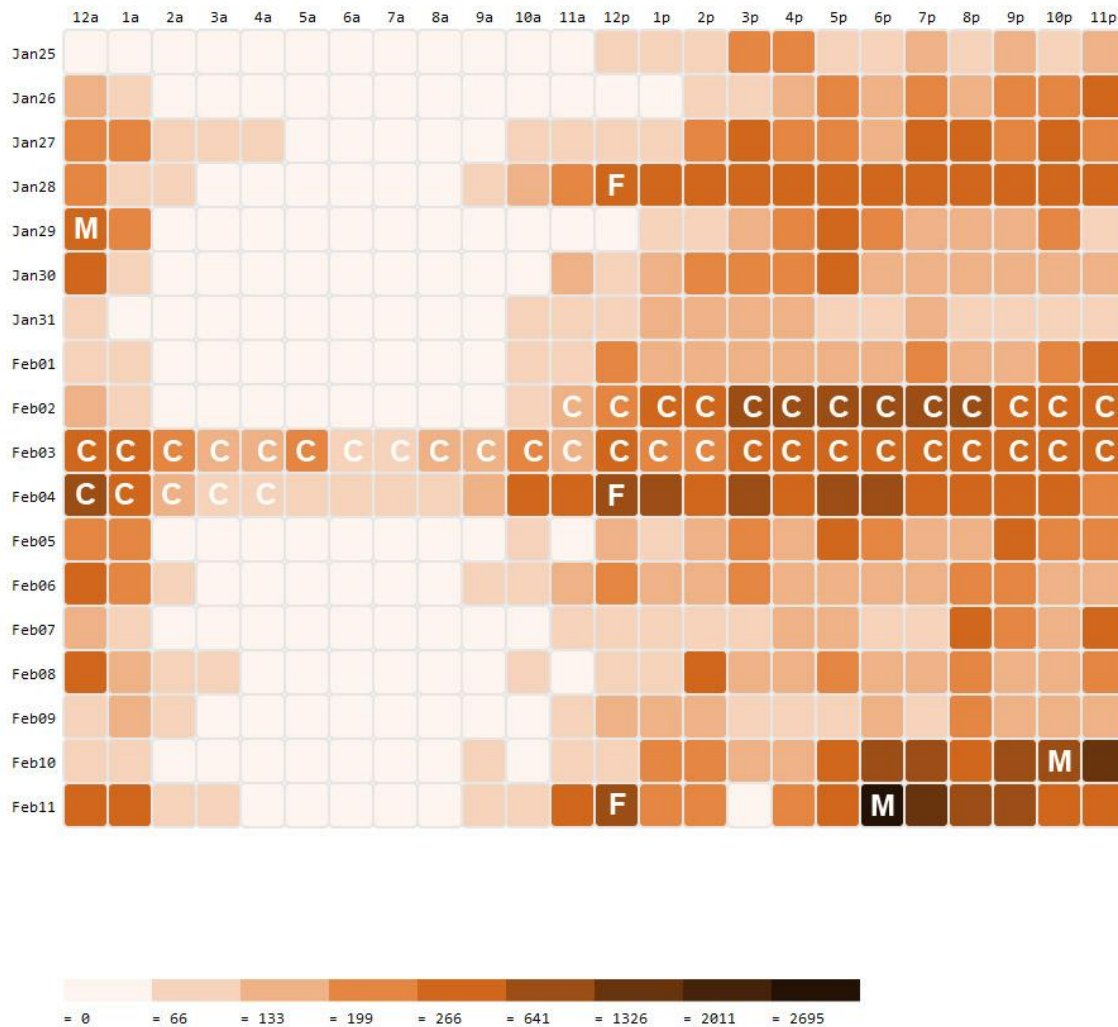
'Early morning in #Egypt. God alone knows what lies ahead. Please keep watching and praying for the brave people fighting. ...' (Feb 3)

'Lord please let #egypt be safe please hold the egyptian people n ur hand' (Feb 3)

'#Pray #Pray #Pray #egypt peace. Please GOD grant us your mercy for no more violence #jan25' (Feb 4)

⁷⁷ AJE is an abbreviation for the Al Jazeera English news channel. The tweet refers to night prayer ('isha), the last of the five daily ritual prayers.

Figure 7. Frequency of Religion Words in Protest Tweets by Hour^{78 79 80 81}



⁷⁸ Bins for figure read as: 0-65, 66-132, 133-198, 199-265, 266-640, 641-1325, 1326-2010, 2011-2694, 2695-data maximum.

⁷⁹ F – Friday prayer; M – televised speech; C – Clashes with Mubarak supporters in Tahrir Square.

⁸⁰ The LIWC word counts for religion includes counts for ‘allah’ but the subject dictionary did not capture mentions of ‘inshallah,’ ‘masha’allah,’ some variations of ‘allahu akbar’ or ‘allah akbr’ or ‘allaho akbar,’ and other religious expressions that contained ‘allah.’ The general trends are reflected but exact counts should be higher.

⁸¹ Mubarak’s resignation announcement was made on Feb 11 at 5:56PM. In the figure, the televised address was marked for 6PM to associate the event’s occurrence with the closest hour.

Egyptians asked God for mercy and protection during dangerous revolutionary situations and faith in God sustained protests:

'#GodBlessEgypt and all #Egyptians They Can do whatever to US but inshallah WE WILL PREVAIL we WILL OVERCOME and WE WILL ...'⁸² (Jan 26)

'Respect respect respect to Egyptians, Courage and god willing to give you the strength to keep going #Jan25' (Jan 28)

'God only places burden on those who are strong enough to carry it #Egypt #Jan25' (Feb 5)

Discourse reflected the loss of fear among protesters who accepted the risk of death:

'#Egypt Protests: Eyewitness accounts | BBC ~ "People are behaving as if they are ready to die." #Jan25' (Jan 25)

'12:21 PM Youth are marching in Maadi, chanting: "Our blood, Our souls, We'll sacrifice for you our country." #jan25 ...' (Jan 25)

"The Egyptian people broke the barrier of fear, and once that is broken, there is no stopping them," #Jan25 #egypt' (Jan 27)

'Protesters Sign: "Mubarak in front of you are 80 Millions Martyrs" #Egypt #Mubarak #OmarAlMukhtar' (Jan 30)

'People were dying in front of me in central Cairo and we were returning stronger #jan25 #Egypt' (Feb 1)

'Upon hearing gunfire in #Tahrir, people --not intimidated-- started chanting: "We're not leaving. You're leaving." #Mub[arak] ...' (Feb 6)

Determination was expressed among Egyptians who were willing to sacrifice their lives as protests continued:

'#Egypt #Jan25 the revolution aint over, we are just recharging, tomorrow a new day, bigger, stronger and higher' (Jan 26)

'Morale is high. People have a strong resolve, doesn't look like these people are willing to settle for less than their demands. #Jan25' (Feb 4)

'The protests enter its 15th day and the people are stronger than ever. Lets see how it turns out. #Egypt' (Feb 8)

'The Egyptian authorities forget that their power and forces is belittled by our revolutionary spirit. We will win. #jan25' (Feb 10)

Religious figures supported opposition during religious rituals that strengthened claims-making and

maintained revolutionary action:

'Friday sermon on #tahrir square: "We demand regime change, change of constitution, release of political prisoners" #egypt #jan25' (Feb 4)

'Sheikh El Mehalawy in Qa'ed Ibrahim mosque in Alexandria calling for continuing the "revolution" and not losing hope. #Jan25' (Feb 4)

⁸² "In-sha-allah" means "God willing." It is a commonly used Arabic phrase. Unlike references to God used in colloquial English that may be devoid of religious connotation (e.g., "good lord"), the frequent use of religious expressions such as "Allahu-Akbar" does not diminish its meaning to adherents of the Muslim faith: "The soul of the Muslim is composed of Quranic formulas and quotations which the faithful recite in the language of the Quran whatever might be their mother tongue. ... in planning all future action, realizes that the future is determined by God's Will by asserting *inshā' Allāh* ("if God wills"). The attitudes embedded in these and many other Quranic formulas determine the framework of the spiritual life of the Muslim. Through them he places his action in God's hand and the past and future in the care of His Will and Providence" (Nasr 1987: 4).

'As soon as prayers ended in #Tahrir, chants sprung up immediately: “Down with Mubarak”, “The People Want to Topple [the Regime] ...’ (Feb 4)

'Friday prayers in Tahrir and in Alexandria: the Imams back the revolution and ask protesters to continue #jan25 #egypt' (Feb 11)

Cognitions of God and the social unit were associated during communal prayer that relieved tension and addressed the spiritual needs of protesters:

'Protesters calm down for call to prayer. #egypt #jan25' (Jan 25)

'Time for evening prayers. A moment of rest and reflection to gather renewed strength against an evil dictator #Mubarak #Egypt #Jan25' (Jan 29)

'Having this peaceful moment listening to AlFajr prayer, may Allah protect this country and peace prevail tonight :) #jan25 #egypt' (Feb 5)

The moments of reflection increased focus on the revolutionary objective and Friday prayers held on Jan 28 (before protesters reclaimed Tahrir Square), Feb 4 (the day after protesters defended Tahrir Square from attacks), and on Feb 11 (the last day of the uprising) generated high religion word frequencies during the day when religious salience persisted in revolutionary consciousness. Egyptians experienced various degrees of spirituality with scenes in Tahrir Square that juxtaposed the sacred and the secular:

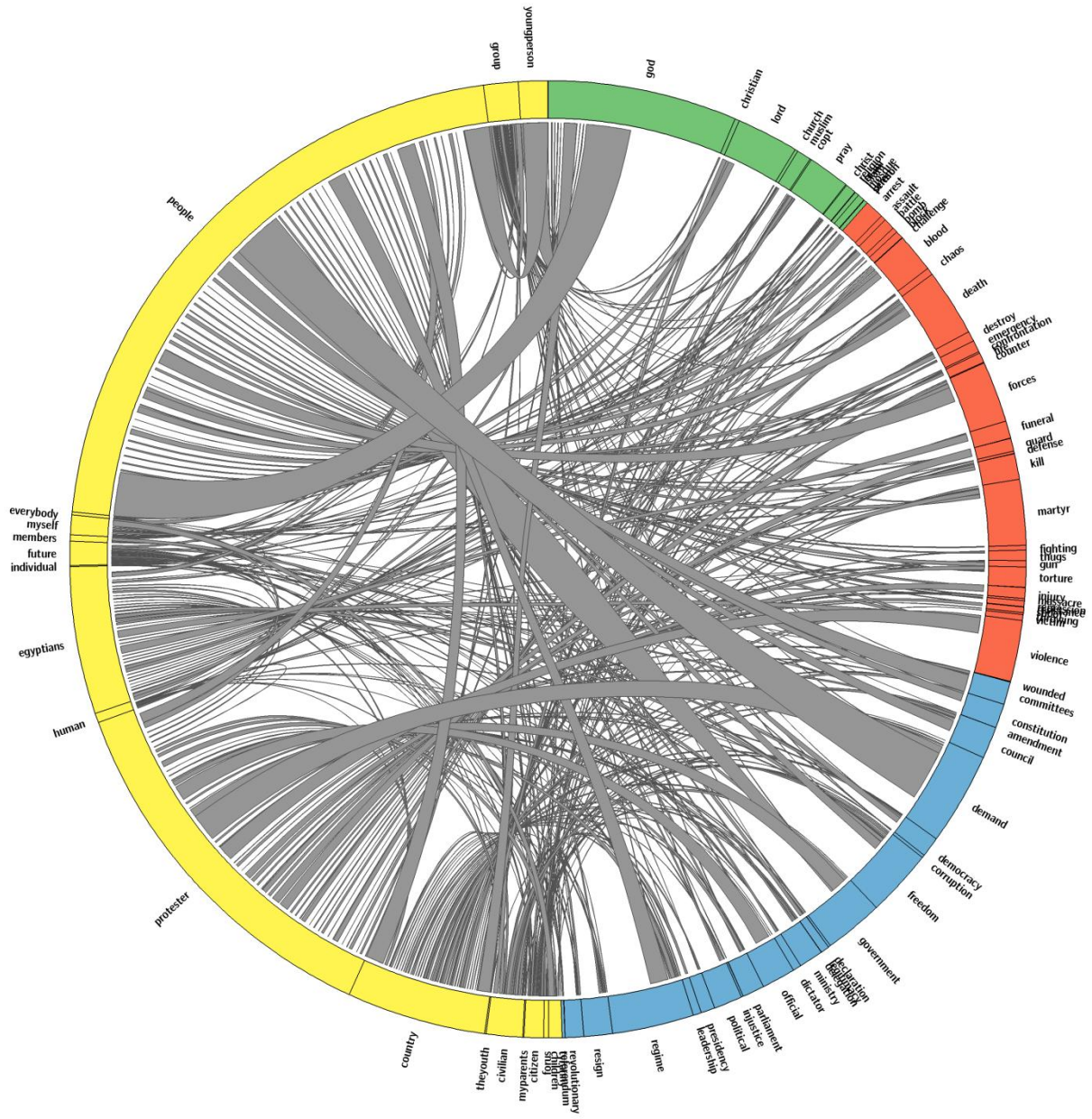
'Almost midnight in Tahrir and there's a rock concert. And a sermon. Across from each other. #jan25 #egypt' (Feb 8)

'One channel has people going around a rock in Mecca and another has people going around tents in Tahrir. Guess which I I'm glued to. #jan25' (Feb 8)

Word pairs with 'God' were frequent on during pivotal moments when protesters' spiritual connection strengthened. 'God'—'people' co-occurrences were high when Ghonim was released from jail, on Feb 7, a key event during the revolution. On Feb 10, 'people'—'demand' and 'God'—'people' word pairs were frequent when revolutionary actors who were empowered by religious beliefs made demands against the state (see Figure 8):

'We who will decide our future..... #Egypt God with people in #Tahrir square' (Feb 10)

Figure 8. Associations with Individuals/Collectives Words in Protest Tweets on February 10, 2011



Egyptians sought God's blessing and guidance when the outcome of the revolution was anticipated on Feb 10 and after Mubarak's televised address (*see Table 7: Feb 10*). Many Egyptians interpreted tumultuous weather before Mubarak's televised address as a sign from heaven and protesters contemplated God's plans without loss of faith when Mubarak did not step down. On Feb 11, word associations with 'God' increased and Quranic and biblical verses were referenced when Mubarak resigned and the outcome was attributed to divine will (*see Table 7: Feb 11*).

Table 7. Selected Tweets with Religious References, February 10-11, 2011

Feb 10

Tweeted Before Mubarak's Televised Address:

'Eat. Pray. Protest. #25Jan #Egypt #tahrir'
 'Clouds, too, are marching towards #tahrir. It's a yes from heaven, people! #Jan25'
 'It's raining in Nasr City, Cairo, Egypt .sky is open, so pray !! #YaRab :) #Tahrir #Jan25'
 'now raining in #tahrir square and ppl are pray asking God for help in getting rid of Mubarak'
 'Massive thunder blast, lightning forks, sheet rain... I think God is preparing for a very powerful finale.. #Jan25 #Egypt #Tahrir'
 'Lightening thunder and rain in tahrir square all screaming Allah Akbar w ya rab #Jan25'
 'As the police were scattering in front of the protesters, thunder cracked followed by 'allahu akbar.' #egypt #jan25'
 'The loud burst of thunder over Cairo one minute ago was god's sign of solidarity with the revolution. #jan25 #egypt'
 'Our voices rocked the sky I believe Angels and God hearing our voices and Requests! ..Ya Rab #jan25'
 'i cant breathe , fear, excitment, am trembling. is it happeing or will it be a cold shower on the Egyptian proud people ?GOD ! #jan25'
 'If you believe in GOD, now would be the time to pray for Egypt. #Jan25 #Tahrir #Egypt'
 'Dear God, Please give #Egypt what #Iraq couldn't have, the joy of a change without bloodshed and an end to a dictatorsh[ip] ... '

Tweeted During and After Mubarak's Televised Announcement:

'God Damn HIM! he is burning our Country down! #Mubarak #jan25'
 'God, please protect our #Egypt. I lost sense of everything. Please, guide us to do what's best for our home. #Jan25 #25Jan #Tahrir'
 'Mubarak's speech main purpose was to deflect the revolution from peaceful, into rage,, but I still have my faith in God. Ya Rab! #Jan25'

Feb 11

'Friday sermon in Tahrir telling ppl to stay on the track of the revolution, because it is the right path. #Egypt #jan25'
 'Sermon focuses on goodness of revolution and evils of regime #egypt #jan25'
 'protester steps up to lead friday prayer in front of pres palace #jan25 #egypt'
 'The most crowded Friday prayer just ended. Some are headed to Tahrir and others to the presidential palace. Lines and lines of people #Egypt'
 'May Allah protect all Egyptians and lead them to true freedom! #FreeEgypt!'
Tweeted After Mubarak's Resignation Announcement:
 'Mubarak steps down to Allahu Akbar ringing out in Tahrir Square. #egypt #jan25'
 'MUBARAK OUT ... MILITARY IN CHARGE ... ALLAHU AKBAR #JAN25 #EGYPT #TAHRIR #MUBARAK'
 'Thank you God, Thank you. Thank you Martyrs, thank all of you who have been relentless throughout, long live Egypt #jan25 ...'
 '#Egypt #Jan25 The Egyptian Revolution concludes in success. All praise to God and the power he has given his people!!!'
 'God does not change the condition of a people unless they change what is in themselves (Q 13:11) #aren #jan...⁸³
 '"He changes the times & the seasons; He removes kings, and sets up kings" -Bible (Dan2:21) #Jan25 #Egypt #Tahrir #Mubarak⁸⁴
 'Thank God #Jan25 is a revolution that succeeded since the start. Long live freedom #Tahrir will be a holy place Long live # ...'

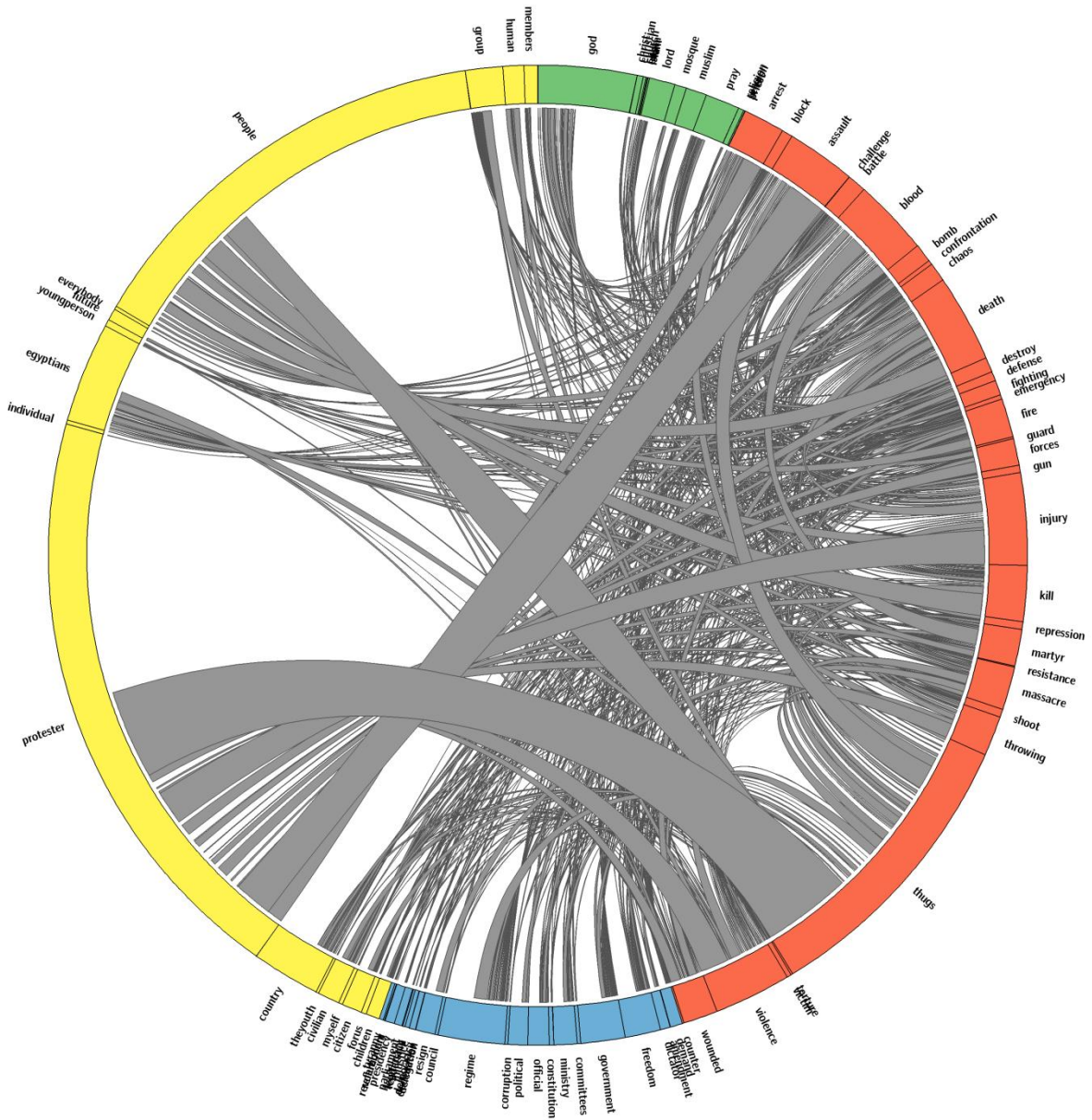
⁸³ Quranic verse cited in the tweet

⁸⁴ Biblical verse cited in the tweet

Interacting Cognitive and Affective States

The interaction of events and elements in revolutionary minds was most evident during periods of conflict that generated major changes in states of consciousness. Contestations with state forces in the first phase of the revolution were reflected by the frequent use of ‘block,’ ‘arrest,’ and ‘forces’ among repression/violence words and ‘forces’—‘protester’ and ‘thugs’—‘protester’/‘people’ word pairs emerged during conflict with security forces and Mubarak supporters in Tahrir Square (*see Figure 9*). ‘Thugs’ was frequently mentioned when Mubarak supporters attacked protesters in Alexandria, Port Said, and Mahalla on Feb 1 and in Cairo from Feb 2-3.

Figure 9. Associations with Repression/Violence Words in Protest Tweets on February 2, 2011

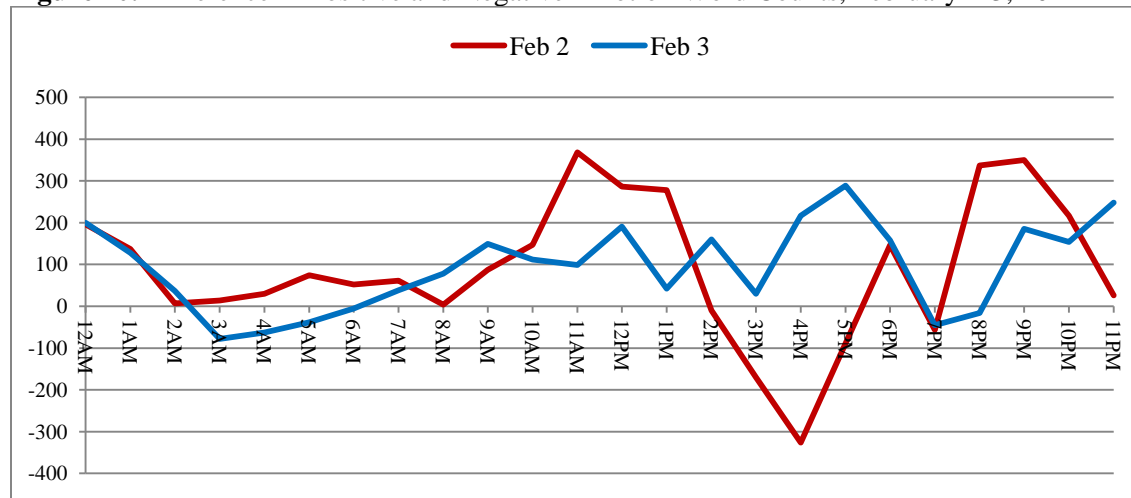


Among the various emotions felt by protesters, anger that accumulated during Mubarak’s rule was openly expressed in revolutionary protest:

‘Today I heard insults hurled at Mubarak u could never dream of hearing in in public. People feel they’re free a[gain] ...’
(Feb 1)

Appraisals of violence during contentious interactions generated strong emotions and levels of positive and negative emotion in protest tweets indicated variation in the dominant valence of affective states in response to changing events. Figure 10 shows the difference in positive and negative emotion words in protest communication on Feb 2 and Feb 3 during clashes in Tahrir Square.

Figure 10. Difference in Positive and Negative Emotion Word Counts, February 2-3, 2011

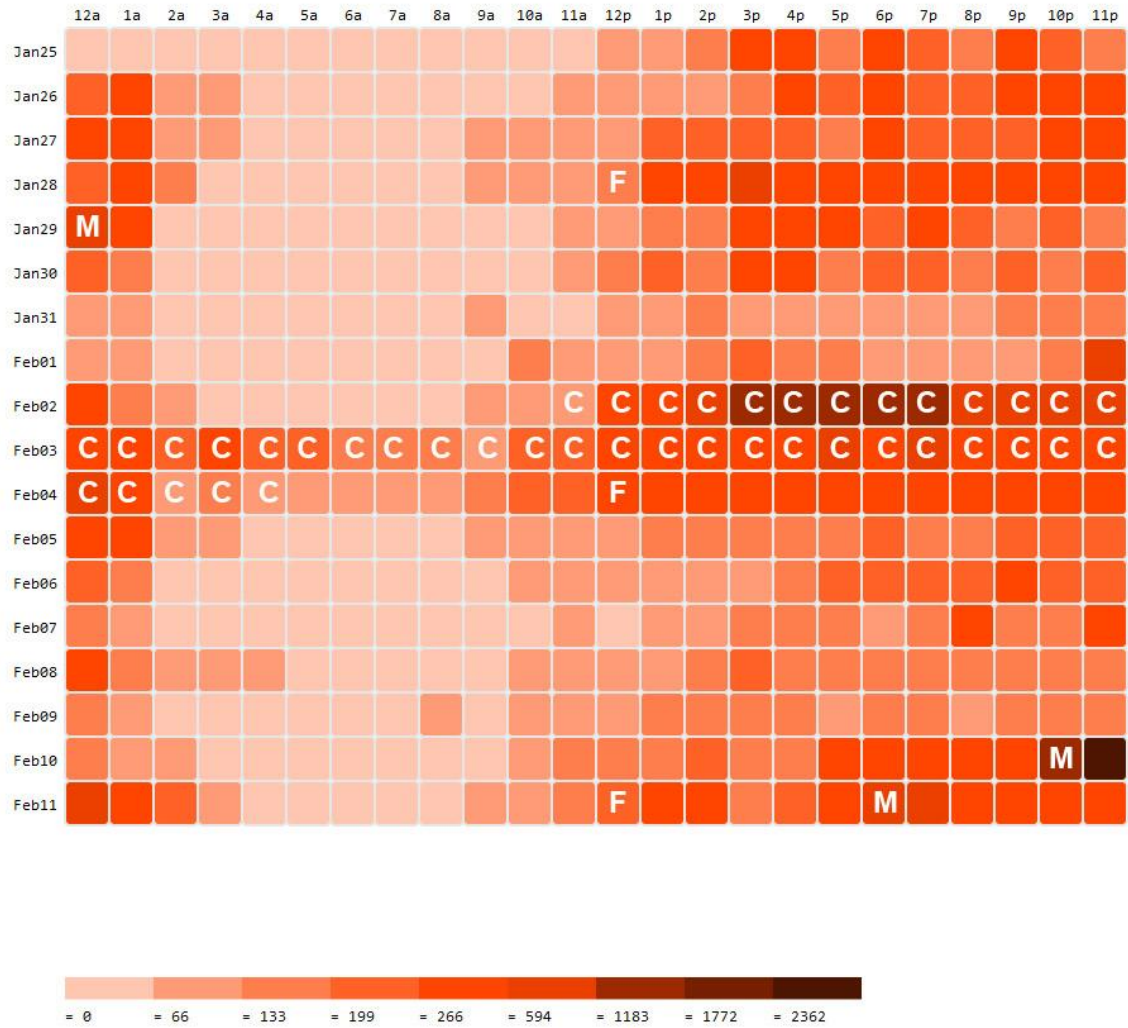


Events during Clashes with Mubarak Supporters at Tahrir Square: February 2, 2011, 11AM: Hundreds of Mubarak supporters reached Tahrir Square and attacked protesters; **4PM:** The number of Mubarak supporters increased when groups from the Pyramids area came riding camels and horses to remove protesters from the square; **Sunset (approx. 6PM):** Protesters drove away Mubarak supporters and confiscated camels and horses; **February 3, 2011, 12AM:** A midnight attack with fights continued through the night; **2AM:** Pro-Mubarak groups continued to attack from the bridge leading to Tahrir Square; **3AM-4:30AM:** Snipers shot at protesters in Tahrir Square until dawn prayers began.

Negative emotions increased when Mubarak supporters began attacking protesters at 11AM on Feb 2 and positive emotions increased as protesters secured Tahrir Square the next day. Word pairs with ‘God’ increased on Feb 2 and Feb 3 when protesters engaged in religious coping and the temporal co-occurrence of increases in anger, religious expression, and mortality salience corresponded to the increase in negative emotions over positive emotions during the escalation of conflict when reinforcements of Mubarak supporters arrived (*see*

Figures 11, 12, and 13). As violence continued through the night and into the next morning, more negative emotions were expressed until the conclusion of dawn prayers that increased the frequency of religion words at around 5AM on Feb 3.

Figure 11. Frequency of Anger Words in Protest Tweets by Hour^{85 86 87}



⁸⁵ Bins for figure read as: 0-65, 66-132, 133-198, 199-265, 266-593, 594-1182, 1183-1771, 1772-2361, 2362-data maximum.

⁸⁶ F – Friday prayer; M – televised speech; C – Clashes with Mubarak supporters in Tahrir Square.

⁸⁷ Mubarak’s resignation announcement was made on Feb 11 at 5:56PM. In the figure, the televised address was marked for 6PM to associate the event’s occurrence with the closest hour.

Figure 12. Frequency of Swear Words in Protest Tweets

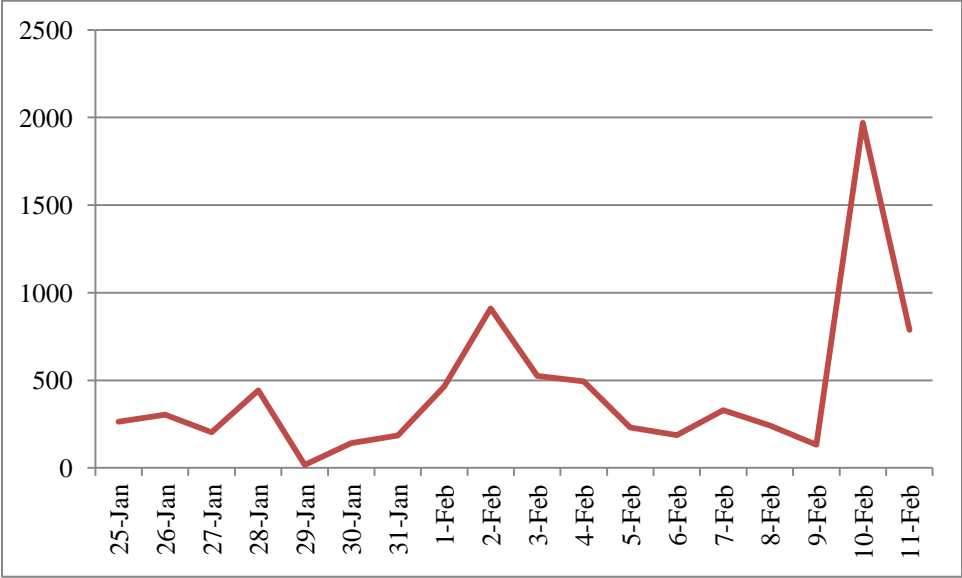
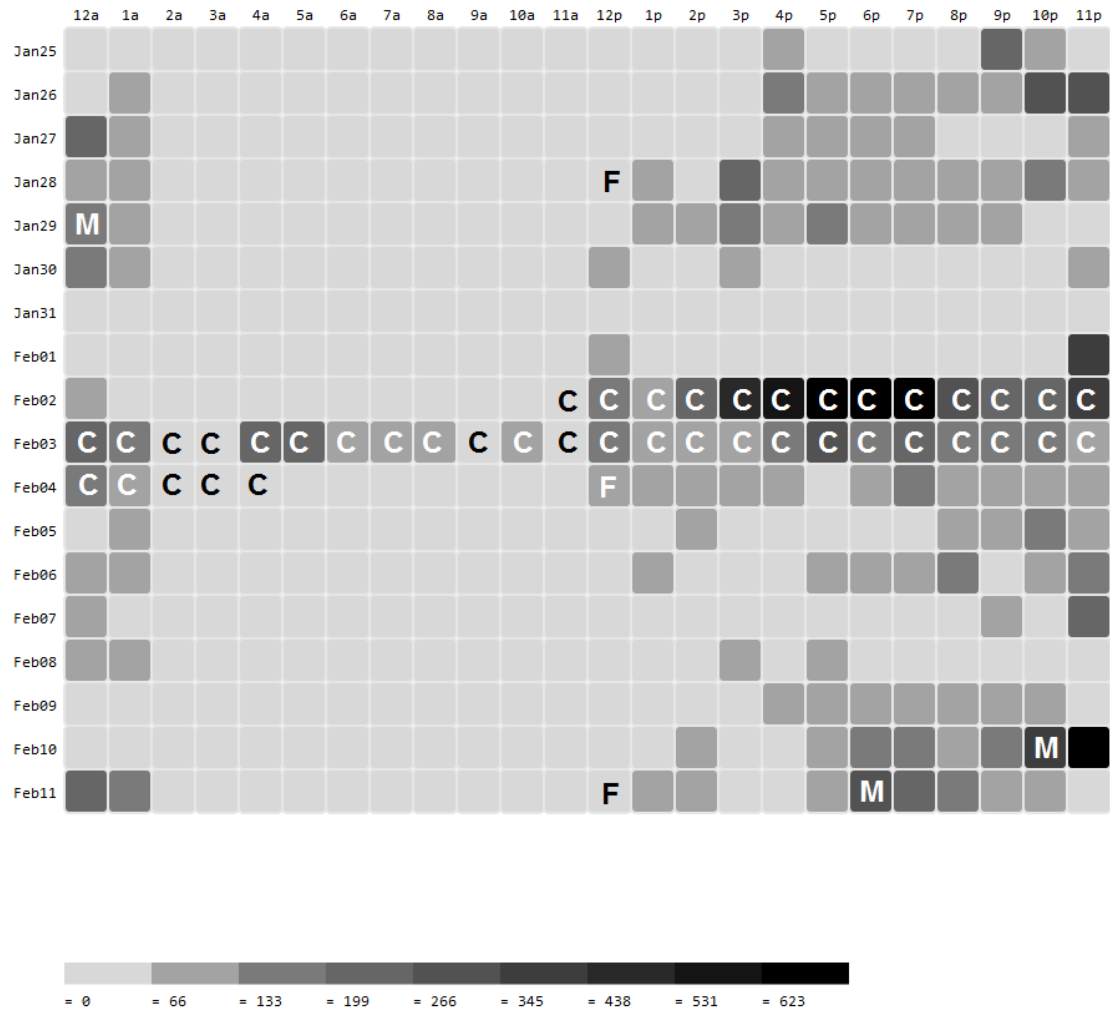


Figure 13. Frequency of Mentions of Death in Protest Tweets by Hour^{88 89 90 91}



⁸⁸ Bins for figure read as: 0-65, 66-132, 133-198, 199-265, 266-344, 345-437, 438-530, 531-622, 623-data maximum.

⁸⁹ F – Friday prayer; M – televised speech; C – Clashes with Mubarak supporters in Tahrir Square.

⁹⁰ The LIWC word counts for death underreports levels of mortality salience in tweets by excluding counts of ‘martyr,’ which was frequently used to refer to protester deaths during the revolution. The general trends are reflected but exact counts should be higher.

⁹¹ Mubarak’s resignation announcement was made on Feb 11 at 5:56PM. In the figure, the televised address was marked for 6PM to associate the event’s occurrence with the closest hour.

Violence in Tahrir Square generated anger and the salience of religious beliefs among Egyptians who combined consciousness of God with states of mind focused on conflict:

'People are throwing stones and more gun fires right now! #Egypt #jan25 Oh God, I see them pulling bodies!!' (Feb 3)

'toll now is 4 dead today in #tahrir may God curse you mubarak for killing your own youth #jan25' (Feb 3)

'Please God, please stand with the people standing for justice and freedom. Please protect Tahrir tonight. #Jan25 #Egypt' (Feb 3)

'Call for Fajr prayer echoing around Tahrir. We'll divide into different groups and keep alert while praying. #Tahrir'⁹² (Feb 3)

'Photo: bloody protesters at dawn prayers. #jan25' (Feb 3)

'God be with our fallen freedom fighting martyrs The regime will answer for the blood that has spilled! Inshaaa2 allaah! #egypt #jan25 #25jan' (Feb 3)

The increase in anger words and swearing, a stronger verbal expression of anger, indicated affect intensification during the clashes when combinations of cognitions in revolutionary minds increased the intensity of emotions experienced. Social control and repression in the early phase of the revolution generated anger and the attacks in Tahrir Square by plainclothes policemen, thugs paid by the government, and snipers that shot at protesters intensified negative emotion with the continued use of violent tactics against Egyptians. More deaths and injuries during the defense of the area added to levels of negative emotion felt in response to prior deaths from the mobilization period and strengthened the resolve of participants:

I am so angry today: it is an ugly day followed by an ugly night. It begins with armed thugs on camels and horses, and ends with continuous gunshots and hundreds of people seriously injured and many dead. ... this is the one day that leaves me totally enraged. Even if they kill us all, I will not leave until Mubarak is out of office (Tawfik 2011a: 70).

Thugs, mercenaries, and plainclothes police were paid by Mubarak's party to use violence in the square. Many protesters were seriously injured in attacks on the square, but at the same time it showed Mubarak's regime for what it really was. There was no pretense any more. These violent actions just strengthened our resolve to continue. We knew there was no going back (Nadi 2011: 188).

Appraisals of harm for group members were associated with negative emotions and swearing directed at Mubarak:

'A father of a martyr arrived carrying his picture and chants roared even more heliopolis club main gate'

'They say blood is the price of change, but every drop of blood being shed is so dear to me. Fuck you Mobarak. Fuck you. #Jan ...'

'Mubarak, go to HELL. Are you happy with the blood of your own people on your hands? You are SCUM. #Jan25 #Egypt'

'#Tahrir 10 Injuries .. and 2 Deaths .. Damn you Mubarak and your regime'

⁹² Fajr prayer (dawn prayer) is the first prayer that Muslims observe in their five daily prayer rituals.

'At least 80% of people here are bruised/bandaged. You'll pay for this, Mubafuck. #Tahrir #Jan25'

#Mubarak regime = FULL responsibility 4 every death, injury, any destruction #Jan25 revolution. Pro-democracy demos = ...'

The strength of affective bonds to members of the collective was reflected by emotional responses to negative outcomes for group members and deaths of Egyptians at the hands of state forces generated behavioral responses from protesters:

'BREAKING NEWS: A CSF TRUCK ROLLED OVER A PROTESTER AND THE PEOPLE DESTROYED THE TRUCK via @gamaleid #Jan25 #Suez' (Jan 26)

'my aunt from Alexandria:the Police officer who tortured Sayed Bilal till death was killed by angry people #Egypt #Jan25' (Jan 30)

Starting on Feb 5, 'martyr' became a main repression/violence word and 'blood' was frequently used in reference to protester deaths as mortality salience persisted during the last stage of the revolution. 'Blood'—'people' and 'death'—'people' word pairs were frequent when Egyptians mourned the dead on Martyr's Day on Feb 6. Egyptians experienced sadness from the loss of lives and protesters were affected by the shared grief during bereavement:

'Many people are crying now as they are praying for the dead .. :(#Tahrir' (Feb 4)

'Cant stop my tears watching the martyrs' families :(#Egypt #Jan25' (Feb 6)

'I've seen lots of tears since #jan25 ,nothing moved me except the tears of the parents of martyrs, and @ghoneim 's honest (unneeded) apology' (Feb 9)

Memories of protester deaths remained in revolutionary consciousness and 'death' and 'martyr' word pairs increased as the rising death toll reinforced opposition against Mubarak:

'police preventing funerals for the dead in #Egypt. funerals for martyrs were key rallies for #Tunisians. ...'⁹³ (Jan 26)
'after burying the martyrs the crowd moved all over alexandria and are still going stron[g] #Jan25' (Jan 30)

'One man told me "After the death of 300 martyrs this week, I can't accept having him for one minute more." #Jan25' (Feb 2)

'The Martyr is giving more faith to the people in #tahrir square' (Feb 3)

'i cannot stop thinking of those who died #jan25 #egypt #tahrir' (Feb 3)

'People are devastated for the martyrs. Praying for them and chanting against Mubarak. Very emotional scenes. #Tahrir' (Feb 3)

⁹³ Deaths in Suez on January 26, 2011 generated strong public reactions: "The bodies of two demonstrators killed in Suez generated anger: There is a very strong tradition in Egypt, and throughout the Islamic world generally, that commands the dead be buried as soon after death as possible. It also ties into very strong notions of respect for the dead that date back to our ancient history. When the families of the dead protesters appeals for the return of the bodies of their loved ones from the authorities, they were refused. ... The insult infuriated the demonstrators more than anything that had gone on that day. ... Not only was it an insult to the grieving families, it was an insult to the very culture of the people" (El-Menawy 2012: 78).

“We lost a lot of people and we lost them for a cause. We lost them for the end of #Mubarak.” ~ Female activist in Tahrir ...' (Feb 3)

'Khaled Said was barbarically beaten to death by the police of #Mubarak on June 6, 2010. #Egyptians march in his memory. # ...' (Feb 5)

'Let's never forget all those who died for us to live like humans.. #25Jan #Egypt' (Feb 6)

'just saw the pics of the ppl who died in #Tahrir ...I now see a reason 4 the protestors 2 stay #jan25 #25jan #Egypt' (Feb 6)

'A symbolic funeral for those who died while chanting down with Mubarak and down with tyranny #Tahrir ...' (Feb 7)

'Mother of the martyr Mohammad Mahmoud.. Looks devastated but insisting.. RIP #Jan25 #Tahrir' (Feb 9)

'Our martyrs ..Our martyrs ..Our martyrs ..Our martyrs .. #Jan25 #Tahrir' (Feb 10)

The deaths of young protesters gave meaning to the political struggle and strengthened commitment to the revolutionary cause:

'The deaths of the young people, who spoke their mind, shldnt go to waste. #Egypt' (Feb 6)

'So many young people died since #Jan25... Their blood cannot be for nothing!!! Keep going to Tahrir... keep asking for you ...' (Feb 6)

'A woman is walkingf in the street praying loudly, asking God to rid us of Mubarak the murderer of Egyptian youth #Jan25' (Feb 6)

The word association ‘youngperson’—‘God’ was frequent on Feb 10 when protesters recalled the deaths of young protesters during Mubarak’s televised address. Revolutionary action was motivated by desires to generate changes for the young generation:

“For your sake and your children's, for the sake of those who died in #Tahrir, come to Tahrir.” ...' (Feb 4)

I make good money. My wife and I had just had a child. So, like many others, it was easy to think, why change things? There was stability under Mubarak. I felt secure. Personally I did not have any problems and my future was looking pretty good. It’s easy to tranquilize yourself with these thoughts; you even feel that you’re right. But it was specifically because I had had a child recently that I needed to go against these thoughts. Maybe it was okay for me to accept the situation for myself, but I could not accept it for my son. It was my absolute responsibility to change my thinking (Waked 2011a: 77).

Cooperative behavior emerged during changing situations that affected how Egyptians oriented toward one another:

If someone had something to eat, anyone could join in; they didn’t even need to ask. If someone had a load of bread, he would take a tiny bite and pass it on, and so on until everyone had had a bite of it. A cup of tea would be passed around between maybe seven or eight people before it was finished. I think if we had tried this just two weeks before in Cairo, the first person would have gulped down the entire cup of tea without thinking about anyone else. Behavior was changing; people were becoming selfless (Ghaffar 2011a: 64).

'#Egypt Richest and Poorest #Copt and #Muslim #Bearded men and #Hijab-less women Secular and Devout No one in #Cairo si ...' (Jan 29)

'Egyptians conducting the best symphony ever. Some protest, some protect. Youth on the ground, elderly praying. People United. #Egypt #jan25' (Jan 30)

'The youth of #Egypt cleaning the street, taking care of the country, and the rise of volunteerism...!' (Feb 1)

'Doctor in #Tahrir tells me she flew from Lebanon to treat those injured by the baltagiyya - people aren't planning on he ...'⁹⁴ (Feb 6)

The word pair 'committee'—'people' increased from Jan 29 to Jan 31 when Egyptians organized to protect neighborhoods from thugs and criminals. Collective efforts were sustained by strong affective bonds to the social unit^{95 96}:

I am falling in love with a million people. #tahrir' (Feb 4)

'There is a purity that rose among the "residents" of Tahrir Square... It's unprecedented; humanity in its most authentic form #Jan25 #Tahrir' (Feb 6)

'was never more proud to be EGYPTIAN , this MY country , MY dream and I will fight for it till the end ,#egypt #jan25 (Feb 7)

'My heart is bursting with love for my country and it's people. #Jan25 #Egypt #Balady' (Feb 8)

'Strange how my body is exhausted, yet everytime I think of/remember #Tahrir & #Jan25 I get this surge of energy & want 2 run&bounce around!' (Feb 9)

Tweets reflected changed perceptions of group members with references to different identities:

"Citizens" turned into "protesters", turned into "revolutionaries", turned into "freedom fighters". How many are now "martyrs"? #jan25' (Feb 3)

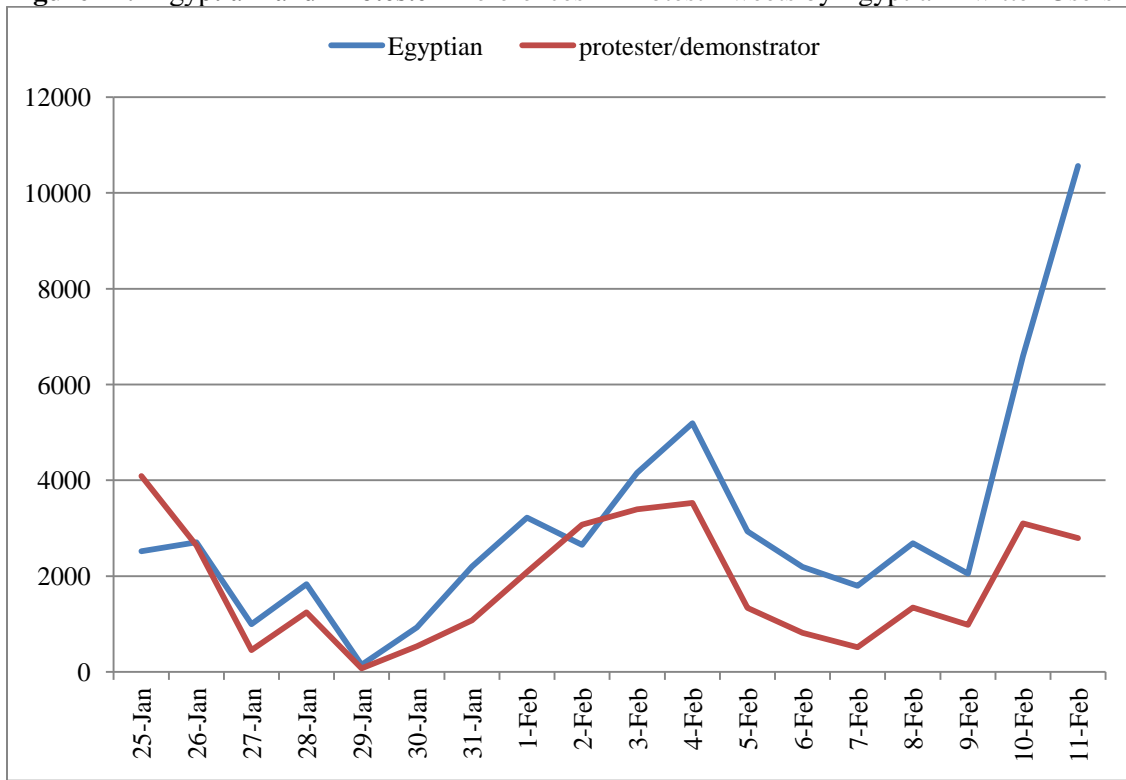
'Protester' was the main word among individuals/collectives word pairs and it was more frequently used than 'people' during key mobilization periods on Jan 25-28, Feb 2-4, and Feb 9 when actors were unified based on political action. 'Group' and 'myself' were more frequently used on Feb 6 when religious rituals during Martyrs Day increased the salience of associations to the social unit. Figure 14 shows changes in 'Egyptian' or 'protester' references among Egyptian Twitter that indicated changes in the basis of affiliation to actors who shared an identity.

⁹⁴ "Baltagiyya" means "thugs" in Arabic.

⁹⁵ "God, I love these people. We deserve a better country and these young people deserve a better future. The level of love and solidarity I see and feel this morning is enough to help me recharge and continue" (Tawfik 2011a: 71).

⁹⁶ "I always felt that when you were in doubt, or down, just head to Tahrir. You became re-energized with the support of the people all around you and were convinced again that this was the best thing for us" (Ghaly 2011: 150).

Figure 14. ‘Egyptian’ and ‘Protester’ References in Protest Tweets by Egyptian Twitter Users



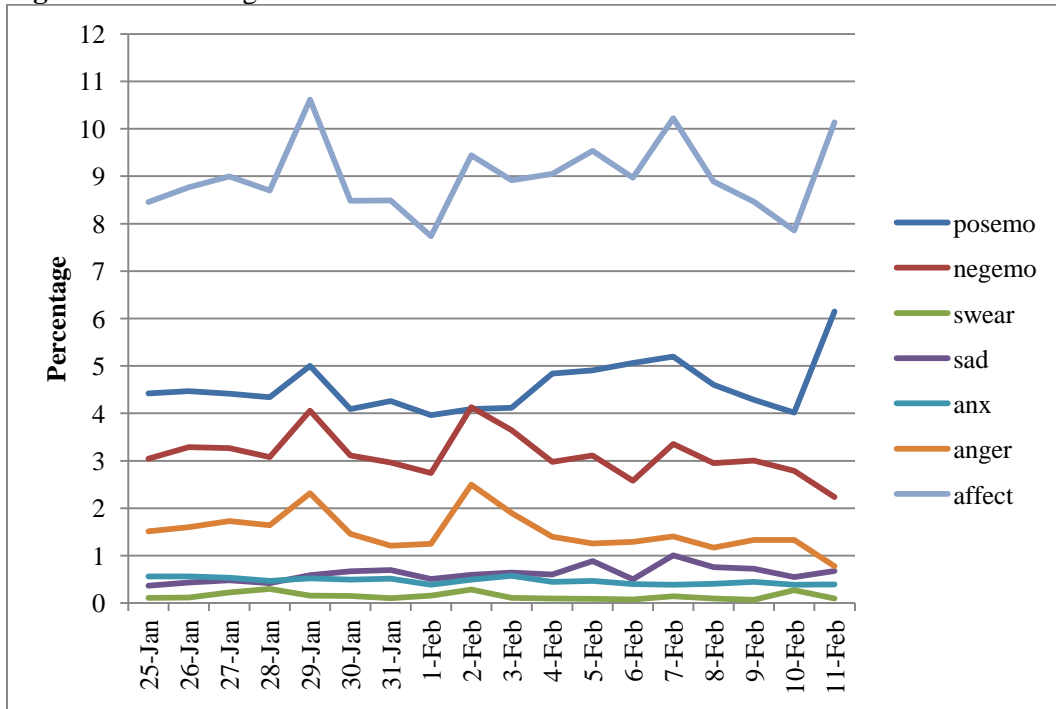
'Protester' references were higher when focus was on protest activity at the start of the revolution and during clashes in Tahrir Square on Feb 2. 'Egyptian' references increased after protesters reclaimed Tahrir Square on Jan 29 and as protesters defended the area on Feb 3. Identity use levels were similar until national identity references increased in response to perceived protest gains and as consciousness of the national unit strengthened during the last stage of the uprising. The changes in group categorization were also reflected in terms that indicated membership to a national entity, such as 'country' and 'citizen,' that were more frequently associated with other words as Egyptians were closer to reclaiming their country.

Turning Points and Revolutionary Momentum

Important revolutionary events affected the course of the uprising and the emotional responses to changing situations reflected awareness of developments made from protest activity. Figure 15 shows the percentage of emotion words in protest tweets⁹⁷ by day and variation in the composition of emotion word types corresponded to key events.

⁹⁷ Levels of emotion words were affected by the communications shutdown. Communications interference was noted when the revolution began on Jan 25. The shutdown went into full effect on Jan 28 and continued until lines were restored on Feb 2.

Figure 15. Percentage of LIWC Emotion Words in Protest Tweets



The percentage of words associated with positive and negative emotions followed concurrent patterns in the first half of the revolution but inverted after Feb 2 with more positive emotion expressed during the latter half. Negative emotion words in protest tweets decreased after the occupation of Tahrir Square on Jan 29 and the successful defense of the area that increased the resolve of protesters:

The experience was transformational. “The moment we were able to keep Tahrir was the happiest moment of my life,” said one young filmmaker who took part in the battle. “The Mubarak regime had always forced us to be losers. For the first time in my life, I feel like I belong to the winning side. Now I cannot leave this place.” The battle gave the denizens of the square a sense of ownership of the place, and a boldness mixed with resolve: it became imperative to hold onto Tahrir until their key demands were met (Shokr 2012: 44).

'Tahrir is now full of Heroes who would prefer to die fighting for their rights than living another day under oppression! JOIN us! #jan25' (Feb 4)

The general emotional trajectory of the uprising reflected the same pattern of changes in identity references that diverged after Feb 2 when perception of protest gains and revolutionary momentum strengthened positive emotions and affiliation to the national unit.

The different emotions and extremes in affective states expressed in tweets reflected responses to volatile situations and emotional complexity continued during the political process. Gradually, less intense

negative emotions were expressed and optimism increased in anticipation of a successful revolutionary

outcome:

'Wow. Voice of protester in #Egypt - so many emotions. Congrats @speak2tweet for the great servic[e] ...' (Feb 1)

'Tahrir square is electric. Too many people to move. Cries of joy and mourning for the dead. #jan25' (Feb 1)

'The words "sad", "worried", "angry" & "rage" aren't enough to describe how i feel .. Dear God protect my country plz! #Egypt #Jan25' (Feb 2)

'Can't believe level of positive energy among people inside Tahrir, singing, chanting, happy, but still very angry. #jan25 ...' (Feb 7)

'for the first time in days, going to sleep with an unexplained smile of hope, love, determination and worry bless #Egypt ...' (Feb 8)

Events involving prominent individuals, such as Mohamed ElBaradei's return in the early phase of the revolution, emboldened Egyptians who responded to changes in the political environment. Wael Ghonim's emotional televised interview after his release from jail on Feb 7 was observed by the public and Twitter users communicated about the important event:

'Wael @Ghonim : We were not moved by any agenda except for the agenda of our love for our country. #jan25.'

'Wael @Ghonim cries when he sees the pictures of the people who died #Jan25 #Egypt'

'He also offered his condolences for those who died. He said, "insha'Allah, we will change our country." @Ghonim #Jan25'

'It must fuck him over that people have died because of what he started on Facebook. @Ghonim It's not ur fault. #jan25'

His broadcast appearance generated strong reactions and affected meaning systems that sustained opposition:

'This talk show is playing out as an emotional H-Bomb being dropped on Mubarak. #Jan25'

'Ladies and gents, we just witnessed a self-proclaimed voice of the Egyptian youth eliminate the #Mubarak regime #Jan25 ...'

'Those worried that #Egypt revolution was beginning to sag, Wael @Ghonim gave it shot of adrenaline in the heart #Jan25'

'God bless you #Ghonim.. You've added a meaning to this generation & to the entire country..#Jan25'

'Wael @Ghonim breathed fire in the spirit of many Egyptians and in this revolution. There's no turning back. #jan25 #egypt'

'The Regime is falling apart. This is over. @Ghonim #jan25'

'The #Egypt twittosphere is drowned in tweets of support of @ghonim after his intvu and renewed determination to topple a dictatorship #jan25'

Ghonim's reactions that conveyed the thoughts and sentiments of Egyptians created noticeable changes among protest observers^{98 99}:

'My parents are now freakishly energized and want to go to #Tahrir after seeing Wael @Ghonim. Balances may shif[t] ...' (Feb 7)

'Many people are admitting "finally seeing the light" after Wael Ghoneim's interview. #jan25' (Feb 7)

'people who were against the protesters in #Tahrir are changing their minds.' (Feb 7)

Ghonim's tweeted statement about freedom, 'Freedom is a bless that deserves fighting for it. #Jan25,' was widely retweeted, as shown with high occurrences for the 'freedom'—'fighting' word pair on Feb 7 (*see Figure 16*).

⁹⁸ "And there was my mother, a fragile woman who is uncomfortable in crowds and had watched the protests unfold with fear on TV, who told me one day that she wanted to come out and march as well. She had been moved to tears by the story of Google executive Wael Ghonim, and by the stories of those killed" (El Rashidi 2013: 63).

⁹⁹ "If there were any Egyptians that wanted Mubarak to stay on as President before the nation bore witness to the young man's tears, there certainly weren't any more" (El-Menawy 2012: 261).

His appearance in Tahrir Square on Feb 8 had a catalyzing effect on protests^{100 101 102}:

#tahrir some people “converted”, some just got over their fear, & some r joining the winners. Plz welcome all to #jan25 & to #tahrir' (Feb 9)

'Different #egyworkers are demonstrating in solidarity with anti-regime protesters of #Tahrir; lawyers, teachers, factory workers' (Feb 9)

'First its the youth, then the brotherhood, then Cairo U's professors then the workers #jan25 #Egypt' (Feb 9)

'Micro revolutions are taking place within state establishments calling for corrupt managers to be fired. #Egypt #Jan25 ...' (Feb 9)

Actors gained meaning from key revolutionary experiences and generated similar levels of momentum that was seen when protests first began. At the start of the revolution, actor/entity word pairs such as ‘ministry’—‘protester,’ ‘parliament’—‘protester,’ and ‘council’—‘protester’ emerged when government buildings were targeted:

People were trying to make their way to the Ministry of Interior and that’s where the bodies were coming from. ... This Egyptian protest was full of symbolism. Shoes thrown at pictures of Hosni Mubarak; graffiti belittling the regime; the burning of the National Democratic Party headquarters; police vans being stoned by civilians – these were all powerful statements for anyone who had lived under this regime. But in this country, the Ministry of Interior was the mother of all symbols of oppression ... They were bent on marching towards it even if their lives were at risk (Hussein 2011: 166).

The proportion of government words and word associations decreased during periods of violence but, after conflict subsided, the percentage of government word associations continued to increase when focus was directed to the state during the last stage of the revolution. The sequential experiences of the defense of Tahrir Square, public memorialization on Martyrs Day, Ghonim’s televised interview, and Ghonim’s appearance in Tahrir Square prompted nationwide labor strikes and crowds of protesters targeting government buildings. Revolutionary momentum was reflected by the increase in actor/entity word pairs with ‘ministry,’ ‘council,’ ‘regime,’ and ‘government’ as protesters incapacitated the state before Mubarak resigned:

'Al-Jazeera: Thousands of protestors surround Peoples Assembly, Shura Council and Interior Ministry buildings in Cairo #Egypt #Jan25' (Feb 8)

¹⁰⁰ “Then on Tuesday the 8th, we had a huge protest, just huge. I remembered going to the ninth floor of a building in Tahrir and getting goosebumps as I looked down and heard hundreds of thousands singing the national anthem. It was a one-way road; this man was leaving, it was a matter of when” (Ghaly 2011a: 152).

¹⁰¹ “From then on, rank-and-file workers—both first-timers and those with a prior history of mobilization—organized a series of protests and strikes in almost all sectors. The fact that these actions were mostly about workplace-specific demands does not mean, however, that they had no impact on the outcome of the uprising. The mobilization of rank-and-file workers, in the form of strikes and protests at workplaces, starting 8 February, arguably constituted a tipping point in the Egyptian uprising” (Bishara 2012: 85).

¹⁰² “The revolution took on a momentum of its own, not only beyond the control of the government, but also beyond the control of organizers in Tahrir. There were strikes by government employees, factory workers and everybody else. Instead of getting a million people on Sundays, Tuesdays and Fridays, it looked as though we were getting a million people in Tahrir every day” (Soliman 2011: 246).

'100's took control of a stretch of road that included the main entrances to parliament, the cabinet office and the health ministry #jan25' (Feb 9)

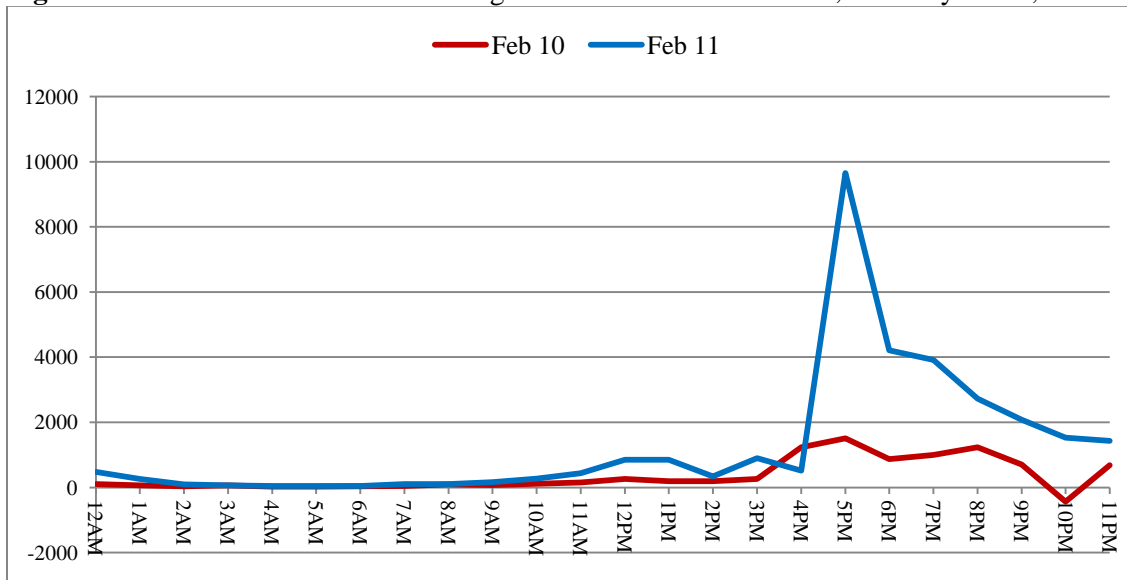
'been sleeping in front of the parliament for the past 2 days, it was also my first time to see it :D such a beautiful street. #jan25' (Feb 10)

'Hey, The situation in #tahrir, around TV building & the Parliament area is SOLID. All have determined to sacrifice their life ...' (Feb 10)

'We have protesters in tahrir, parliament, tv and on the way to palace. That's only in Cairo. #jan25 #egypt' (Feb 11)

Shared emotions gained from major events directed the actions of protesters and intense emotional responses continued during the last revolutionary events. Figure 17 shows the difference in positive and negative emotions expressed during the last two days of the revolution that reflected the extremes in affective responses to Mubarak's speech on Feb 10 at 10PM and the resignation announcement on Feb 11 at 5:56PM.

Figure 17. Difference in Positive and Negative Emotion Word Counts, February 10-11, 2011



Events during the Last Stage of the Revolution: February 10, 2011, 10PM: More negative emotions were expressed in response to Mubarak's televised address. **February 11, 2011, 5:56PM:** High levels of positive emotions were expressed when Mubarak's resignation was announced.

Levels of anger and swearing peaked when Mubarak refused to resign on Feb 10 (see Figures 11 and 12)^{103 104}:

¹⁰³ "I was in the square when Mubarak made his speech on the last Thursday, February 10th, saying that he was not leaving. People were screaming, "You bastard, don't you understand the word LEAVE?" (Waked 2011b: 254). "I sat with a friend and we both had radios glued to our ears to hear the speech. But once again, Mubarak was defiant and refused to go. My friend actually fainted with shock. Then the chant in the square rose "Yom el-Gomaa el-Asr, N'hedd Aleh el-Qasr!" (Friday afternoon, We Will Destroy the Palace With Him In It!)" (Mo'men and Mo'men 2011: 125).

¹⁰⁴ "Mubarak came on. A few sentences into the speech, he said he promised to severely punish those responsible for the death of all those martyrs... what?! This meant he wasn't leaving! My heart almost stopped. The rest of what he said was so antagonizing, patronizing, arrogant, disappointing, horrible—just horrendous! I really could not believe what I had just heard. I

'Does #mubarak exist merely to make our blood boil?!?!? Incredibly pissed'

#Tahrir Square is erupting in anger- 'huwwa yamshee' people with their shoes up in the air-¹⁰⁵

“Down, down with Hosni Mubarak” -- three million are now screaming in unison in #Tahrir. People are ANGRY!
#Jan25 #Egypt'

I've never seen such disappointment in my life. To say the Egyptian people are angry would be an understatement.
#jan25 ...'

'Oh My God !! People are fainting in #tahrir square as a result of #Mubarak 's speech !! What the hell ?????!!!'

“We are offended. We are angry. We cannot let Hosni #Mubarak get away with this.” ~ Protesters in the city of
#Alexandria ...'

'Chants: people want to execute the president #jan25'

'Anger swelling after mubarak's arrogance 5000 protesters surround state tv building also close to tahrir #Jan25'

'Protesters are marching in large numbers to the presidential palace. #Egypt'

Mubarak's speech intensified affect from cumulative negative experiences made during the political struggle:

It felt almost as if the speeches were being written with the intent of angering people. I couldn't imagine what he was trying to do. The speeches were increasingly provocative, designed it seemed to raise the level of anger, not to control it (Waked 2011a: 81).

Memories of past occurrences affected the anger that persisted after the speech and continued the next day:

The mood in Tahrir this morning is tense. Protesters are angry and frustrated. #egypt #jan25' (Feb 11)

The increase in negative words used in the hours leading up to the Feb 11 announcement indicated the effects of sequential appraisals¹⁰⁶ as Egyptians remembered Mubarak's address from the previous night.

Levels of positive emotion peaked in response to the resignation announcement (*see Figure 17*) and Egyptians experienced multiple emotions when they celebrated^{107 108}:

don't remember ever being so angry. My chest hurt and I was shaking. I was just too angry. I was speechless. I tried to breathe deeply to relax myself. I could not sit down, I was so tense. The reaction in Tahrir Square reflected what I was feeling; the roar was loud and powerful. ... Everybody was going to be on the streets tomorrow” (Rushdy and Rushdy 2011: 228-229).

¹⁰⁵ Displaying shoe soles to someone is an insult in many Arab cultures.

¹⁰⁶ “Looking back at things, every speech that Mubarak gave at the time, every decision he made—if he'd made them only three days earlier, we would not be where we are today. It was like he was always reacting, and always too late. So people's demands became stronger, the bar was raised even higher. Not only was he not listening to what the public wanted, he also inflicted on the public all these stupid, violent, inhumane actions” (Mo'men and Mo'men 2011: 121).

¹⁰⁷ “Suddenly, the vice-president came on. What now...? What?! Oh my God! He has resigned! This was too good to be true! Totally unexpected! Yes! Yes! Yes! We high-fived and hugged and kissed each other. We did it! We did it! It was unbelievable. We had been extremely angry just a few minutes ago. Now we were incredibly happy. I needed to concentrate for a few seconds to really let it sink in” (Rushdy 2011c: 256).

¹⁰⁸ “The minute Omar Suleiman said it, I stood on my chair, cheering, laughing ... Happiness, relief, hope, many feelings came out in hysterical tears the moment I returned to Tahrir Square from the cafe and looked up at the building where a huge banner hung with photos of the martyrs... I cried out all the pain and the anger, I cried for the innocent faces smiling at us from the banner, and their families who will miss them forever. God bless them and may they rest in peace. They paid the price of Egypt's freedom” (Tawfik 2011b: 254).

'Pride, dignity and hope reverberating through the streets of Cairo and nationwide. Umm adunya - for tonight at least #Jan25 #Egypt'

'Gross National Happiness. #Egypt #Jan25 #Tahrir'

'No songs.. poetry... or words can express the feelings exploding inside the people .. #egypt #jan25 #revolution ...'

'I have cried my heart out today. So happy we stood our ground and didnt let our martyrs down #jan25'

'Never in my life have I been that full of Pride, Hope, Gratitude, Faith, Content, Anticipation, Patriotism, Freedom, Peace and Love. #Egypt'

Egyptians reflected on the various actors and factors involved in the revolutionary process:

'#Feb11 thx to 6 April, Khaled Said, Tunisia, bravery, Selmeya, gov stupidity, @Ghonim, AJE, soc-media, martyrs, army & millions ppl'

'Above all I would like to thank our brave and valiant martyrs Your sacrifice has restored dignity and freedom to #Egypt god bless you #jan25'

'Thank you Mohamed Bouazizi thank you Khaled Said god bless u you gave ur life for us and our children to live #jan25 #egypt'

Among the word associations generated on the last day of the revolution (*see Figure 18*), the prominence of the word pair ‘Egyptians’—‘country’ reflected strengthened identification with the national unit as Egyptians’ gained a sense of ownership and pride that was lost during Mubarak’s rule^{109 110 111}:

‘Finally we got our FREEDOM back .. #Egypt now is OUR country, not Yours #Mubarak .. not YOURS !’

The ‘Egyptians’—‘blood’ word pair increased in frequency when protesters remembered the lives lost during the political struggle and ‘future’ was among the main individuals/collectives words used when the revolution ended. Egyptians assessed the significance of their collective efforts that ended the Mubarak regime:

‘30 years of suffering ended with 30seconds speech gave by Omar Suleiman. Nice job Egyptians #jan25 #mubarakgotohell’

In the last two days of the revolution, the word pair ‘forces’—‘council’ gained frequency when focus was directed to the Supreme Council of the Armed Forces before the impending regime collapse and the transfer of power to the group after Mubarak’s resignation. Small incidences started a chain of events leading to the Tunisian revolution that generated revolutionary responses from Egyptians who wanted to end their prolonged suffering during Mubarak’s presidency. Political communication reflected revolutionary consciousness and the series of developments generated from continued efforts of the Egyptian masses, as shown with the co-occurrence figures:

Jan 25 – Protester word pairs were dominant when focus was on protesters who mobilized across Egypt on the first day of the revolution (*Figure 1*)

Jan 27 – Religion word pairs increased in response to continued violence (*Figure 6*)

Feb 2 – Word pairs reflected clashes with Mubarak supporters (*Figure 9*)

Feb 7 – Focus was on Wael Ghonim and his statement about fighting for freedom (*Figure 16*)

Feb 10 – ‘Protester’—‘God’ and ‘protester’—‘demand’ word pairs reflected strengthened claims-making and religious beliefs in anticipation of Mubarak’s resignation (*Figure 8*)

Feb 11 – Egyptians thought about their country when the revolution ended (*Figure 18*)

Pride generated from collective efforts and the culmination of experiences was expressed by an Egyptian who proclaimed during the uprising:

‘It’s one of the greatest revolutions the humans ever witnessed! #Jan25 #Egypt’

¹⁰⁹ “I want to add that those days in Tahrir Square were days of amazing strength and courage. We had nothing but our faith in what we were doing. The enemy was well-trained, well-equipped, armed, while we had nothing. A new nation was born. People changed from within. We became stronger and more confident in ourselves” (Ghaffar 2011b: 253).

¹¹⁰ ““Hurriya!” (freedom) was the immediate cheer most people chanted. And then, for the first time: “Hold your head high, you are Egyptian!”” (Tawfik 2011b: 254).

¹¹¹ “I think for the first time in their lives, they began to feel that this country was theirs. They no longer felt they were guests in their own country” (Ghaly 2011: 152).

CONCLUSION

This chapter presented an approach for the study of revolution that combined different research traditions by evaluating the perspectives of revolutionary actors through communication that expresses their minds and reflected the political process. A more comprehensive understanding of the social phenomena is gained by examining various elements, events, and processes involved in political struggle rather than evaluating a singular dimension of revolution. Language reflected changes in revolutionary consciousness generated from sequential experiences among actors with shared emotions, cognitions, and demands. Revolutionary participants with strong faith in God continued protesting as their religious beliefs interacted with other elements that sustained mass collective action. Communication during mass opposition reflected the complexity of revolutionary situations and intensity of experiences that strengthened bonds and commitment among actors who rejected the political order.

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CHAPTER 2

ORGANIZATION IN EGYPTIAN REVOLUTION SPATIAL-INFORMATION NETWORKS¹¹²

*"the power of self organisation is the only way to get rid of dictators" – John Reed #jan25 #tahrir'
– omarsamra, Egyptian Twitter User on February 9, 2011*

Chapter two analyzes spatial-information networks of the Egyptian revolution to assess emergent organization generated from information dissemination on Twitter about protest developments in different locations. Coordination among core users combined influence exerted among followers in multi-step retweet chains and prior exchanges affected subsequent arrangements of users during the uprising. Spatial-information messages flowed from core users to disseminators who gained associational influence from joint communicative activity with information sources. Previous core users who transitioned into disseminator roles retained influence and maintained organization around emerging information.

¹¹² Chapter 2 is an abridged version and the unfinished parts were excluded. The work could not be completed in my remaining time in graduate school.

INTRODUCTION

The 2011 Egyptian revolution involved the juncture of political mobilization and social media used in parallel with demonstrations that took place across Egypt. When Egyptians consolidated their efforts to end the Mubarak regime, Facebook was instrumental in organizing before the uprising while Twitter was effectively used as protests unfolded. Revolutions require high levels of coordination among participants and rapid information dissemination enabled awareness of events in different parts of the country and in Cairo with many “Twitter accounts dedicated to providing minute-to-minute updates on events in Tahrir Square” (Ghonim 2012). During protests, Twitter users responded to high information demand within and outside of Egypt:

| Twitter User | Date | Tweet |
|--------------------------|--------|--|
| 'Islamqabas' (Egypt) | Jan 25 | 'RT @ahezz7: any news about protest in Tanta?' ¹¹³ |
| 'asalih1' (Saudi Arabia) | Jan 25 | 'The focus been on Cairo and Suez .. Any news about El-Mahallah and Mansoura demonstrations ?? #Jan25' |

When the revolution began, protesters faced security forces and “control mechanisms aimed at direct physical control of groups” (Starr et al. 2011: 41). Tweets informed about coordinated action in multiple Egyptian cities (*see Tables 1-3*) that was responded to by social control actions and repression during the mobilization period: “Police fired tear gas canisters, rubber bullets, and – the ultimate escalation – live ammunition. The goal, to be reached at any cost, was to prevent separate crowds of demonstrators from fusing together in city centers” (El-Ghobashy 2012: 36):

'Security began to use fire brigade and tear gas to disperse protesters in Kasr Al-Aini Street' (Jan 25)

'3:44 hundreds penetrate security barriers in Ismailia and shouting Down Down .. Hosni Mubarak' (Jan 25)

'Cairo | close the entrances and exits of 6 October Bridge and the presence of intense thugs and snipers on the bridge' (Jan 26)

'visible exchange of fire with live bullets between police and protesters in Sheikh Zoweid in Sinai' (Jan 27)

¹¹³ Egyptian Twitter user 'Islamqabas' retweeted a message by user 'ahezz7' who requested information about protests in the Egyptian city of Tanta.

Table 1. Tweets about Protesters Targeting National Democratic Party (NDP) Buildings in 13 Egyptian Cities, January 25-30, 2011¹¹⁴

| | |
|--|----------------|
| Jan 25: 'TV pictures show the headquarters of the ruling NDP in Cairo are on fire.' | ¹¹⁵ |
| Jan 25: 'New post Mansoura protesters smash NDP office' | |
| Jan 25: 'Storming party headquarters in Port Said' | |
| Jan 26: 'NDP offices and police stations are attacked and burned down by protesters in Suez' | |
| Jan 27: 'Al Jazeera breaking Protestors storm the NDP office in Al Fayoum Oasis' | |
| Jan 28: 'Al Arabiya Protesters storm ruling NDP party office in Tanta Egypt's 5th largest City' | |
| Jan 28: 'Al Arabiya Protesters torch ruling NDP party headquarters in Damietta Domyat' | |
| Jan 28: Urgent Egypt set fire to the headquarters of the National Democratic Party in Damietta' | |
| Jan 28: 'RNN destroy the headquarters of the National Democratic Party Damanhur and the burning of the headquarters' | |
| Jan 28: 'monitor people's occupy the headquarters of the National Party in Beni Suef and expel member parliament' | |
| Jan 28: 'BBC Arabic Protestors in Ismailia take over local NDP headquarters' | |
| Jan 28: 'Reuters NDP headquarters burnt down in Kom Ombo Aswan' | |
| Jan 29: 'Al Jazeera NDP hq in Luxor burned' | |
| Jan 30: 'Hundreds of protestors clash with security forces outside NDP headquarters in Asyut province' | |

Table 2. Tweets about Protesters Removing Mubarak Pictures in 6 Egyptian Cities, January 25-28, 2011¹¹⁶

| | |
|---|--|
| Jan 25: 'Mubarak's poster being destroyed in front of his own NDP offices in Mansoura' | |
| Jan 25: 'Cairo protesters tearing down Mubarak's posters. Wow.' | |
| Jan 25: 'Monitor Port Said Ruling party thugs clash with demonstrators and lose lifts a picture of Mubarak' | |
| Jan 25: 'Alexandria twenty thousand burning pictures, Mubarak and his family one by one security, standing in front of crowds unable' | |
| Jan 25: 'Huge neon Mubarak portrait destroyed, shattered to pieces in Raml Station, Alexandria.' | |
| Jan 25: 'Protesters taking down Mubarak's images off the streets in Mahalla' | |
| Jan 26: 'Demonstrators in Suez burn a huge picture of President Mubarak and loud cheers falling around the fire ...' | |
| Jan 28: 'eyewitness 150 thousand protesters in Port Said and take down the pictures Hosni Mubarak the island' | |
| Jan 28: 'in Suez protesters entering a formal headquarters and removing pictures of President Mubarak' | |

¹¹⁴ Tweets in English and translated from Arabic. Hashtags, @mentions, and links excluded.

¹¹⁵ Not all activity was associated with protesters. An account about the burning of the NDP headquarters in Cairo suggested that the fire was initiated by state agents: "At this time, we saw the National Democratic Party (NDP) Headquarters building being set on fire. We all knew at the same time that NDP officials were setting fire to it themselves because there must have been countless incriminating documents and evidence inside it. It was a very organized fire, first one floor then the next. It was not a random fire, as you would expect if demonstrators had started it. It seemed from the outside that they were going into each room and setting documents on fire" (Mo'men & Mo'men 2011: 100).

¹¹⁶ Tweets in English and translated from Arabic. Hashtags, @mentions, and links excluded.

Table 3. Tweets about the Destruction of Other Government Buildings, January 27-29, 2011^{117 118}

| |
|--|
| Jan 27: 'CONFIRMED: Protesters burnt down City Council building in Suez. Uncertain Protesters burn the local council building Ba ...' |
| Jan 28: 'Monitor burning building SSI Damanhur' ¹¹⁹ |
| Jan 28: 'Rasdna of Kafr El Dawar after burning the police station Kafr El Dawar protesters on their way to burn the building of the city' |
| Jan 28: 'Bander police station in Mahalla is totally burnt down. For years people were tortured & killed in Egyptian police station ...' |
| Jan 28: 'Police Headquarters burning in Suez' |
| Jan 29: 'Fayoum was burning as evidence in Central and courthouse were burned also were tossed State Security building with gasoline and fire...' ¹²⁰ |
| Jan 29: 'burning building SSI Ismailia' |
| Jan 29: 'Reuters burning headquarters of the National Democratic Party and the storming of the Bank's headquarters in the Egyptian governorate of Aswan' |
| Jan 29: 'Internal Revenue Service Building in downtown Cairo has been set on fire' |

¹¹⁷ Tweets in English and translated from Arabic. Hashtags, @mentions, and links excluded.

¹¹⁸ During the revolution, prisoners were released and government buildings were attacked. A worker at the Egyptian state broadcast noted on January 29, 2011: "That night, and the night before, around 20,000 prisoners escaped, thousands of firearms were stolen, 99 police stations were set on fire. 2,000 police vehicles, of all shapes and sizes, were torched" (El-Menawy 2012: 131).

The observer gave an account of attacks on January 28, 2011: "I didn't realise until later that this is what happened to 99 police stations, 19 in Cairo, across the country that night and the following, which had become targets of arson in the tumult which followed the demonstrations. This was a worrying development: prisoners escaped, and many police stations were looted of their weaponry before being burned down. The attacks were highly organized, coordinated and synchronized. This suggests that the attacks were not a spontaneous act of public aggression, but something that was planned. The attacks tended to pan out in the same way and at roughly synchronized times. The attackers would start by gathering around a police station, then the ones who were armed would shoot at it, before the crowd would break in and try to burn it down" (El-Menawy 2012: 118).

"The prisoners escaped not because they rioted and overpowered the guards, neither did they break out because the guards had fled. The prisons were broken into from outside. The reports that I heard, many of which came from the prisoners themselves, followed the same general pattern. In the middle of the night, the inmates suddenly heard the crack of gunfire close by. Within moments, bulldozers were driven into the prison walls, as the prisons were raided by gunmen, killing guards in the process. The raiders had their faces covered by their Keffayahs, or were wearing Bedouin dress. The same course of events was repeated in the main prisons of central Egypt (the region encompassing Cairo, Feyyoub and Burg Al-Arab). I believe that these attacks, and the systematic nationwide assaults on Egypt's police stations, were no coincidence. ... Many believed that this was the government's doing, that they had emptied the prisons in the hope of somehow marshalling these escaped convicts to harass the protesters. ... There are other stories as to why this occurred. Many of the prisons that were attacked held committed opponents of the government, not only Muslim Brothers but also members of more aggressive organizations, such as Al-Jihad, Hamas, and Hezbollah. One member of Hezbollah had managed to make it back to Lebanon to give a press conference within hours of his jail break. There have been reports of Hamas members making it back to Gaza with days of their escape. These men would have to have been aided and protected to get back so easily. Their escapes must have been planned. ... I do not suggest for a moment that these attacks were connected with the majority of peaceful demonstrators in the cities. Indeed, many of those demonstrators were liberals and secularists who also did not want to see a violent Islamist government take power. However, it must be understood that Egypt is a large country, with many different streams of opposition, some more fundamentalist than others. With such a breakdown in law and order, it is inevitable that opportunists will emerge to take their chances. ... There were also the criminal opportunists who came out that night: thugs who looted shops or tried to extort money from helpless citizens. ... With no police on the streets, there was nobody to stop these thugs heading out and stealing from business and neighborhoods" (El-Menawy 2012: 124-127).

When state forces disappeared, Egyptians formed groups to protect residential areas (a message tweeted on January 31, 2011: #EGYPT Egyptians form makeshift militias to stop looters: As police disappear from residential ...'). There were differing accounts about the groups responsible for the prisoner escapes and some protesters attributed the chain of events to the Mubarak government: "On Saturday the 29th, and also over Sunday and Monday, we were completely terrorized in our homes because there was zero security. There were all these thugs and prisoners and criminals. I think it was a tactic by the government to scare the people into thinking this was the only alternative to Mubarak's regime. I guess, after a while, when people realized it was just a tactic by the government, it made them angrier. People were asking how could the government terrorize its people, how could they make us go through this" (Ghaly 2011: 149).

¹¹⁹ State Security Intelligence (SSI) agency

¹²⁰ The tweet reported that state agents in Faiyum burned evidence in government buildings.

Users also identified false information presented by Egyptian state media^{121 122} and alerted others about individuals who were arrested, missing, or in need of assistance¹²³.

Coverage of revolutionary developments was provided by many individuals who observed developments on the ground and acquired information from mass media or other social channels. Effective organization requires continuous information exchange that generates a shared perspective necessary for coordinated action: “‘Communicative action’ is essential to collective action: it helps to create for people far from the physical action – in other cities and villages, and sympathizers abroad – the picture of a common cause, a joint frame of action” (Korany and El-Mahdi 2012: 12). Users identified information sources for different locations as Egyptians protested across the country:

'follow @linuxawy for updates from the ground in alexandria #jan25'
'Follow @norashalaby for live updates from ramses protest'
'Follow @alanany for updates on the situation in Sinai. Relatives of the detained r staging a protest'
'follow @Gsquare86 who is tweeting live from Shobra one of cairo's oldest and biggest neighborhousds'
'Follow @mohamedelgarhey for updates fresh pictures from #Tahrir Square #Jan25'
'Follow @ianinegypt & @Marwa_Alasar for updates from Suez. #jan25'
'FOLLOW @Jan25Voices to read updates from egyptians reached by telephone #egypt #mubarak #cairo'
'follow @HebzyA for updates from protest now heading thru dokki'
'Follow @mar3e for updates on #mahalla protests : the first time the large number of demonstrators in Mahalla # jan25'
'follow @Elazul he collects fantastic reports from neighbouhood watch committees all over cairo #Jan25'

Tweets that directed attention to sources were frequent during periods of high information demand and, when many users lost access to Twitter, connections formed among remaining users who sustained limited information flows:

'A tip: follow @nolanjazeera. He's still managing to get the news out of Cairo despite obvious difficulties #AJE #Eg[ypt] ...'
'FOLLOW @dancefromiraq who can still tweet from Cairo #egypt #jan25'

During the information shutdown period, Egyptians in Cairo maintained communication lines by assembling actors on the ground:

He was standing at his window, looking out over the Nile and the rest of the city. ... He pointed at a small moped riding along the Corniche ... Then he pointed out another motorbike: “Look, do you see the man with the beard, on the bike...he’s one of them...this is the third time he’s come round now!” ... The demonstrators were using a new form of communication. In lieu of mobile phones, motorbikes and mopeds were busy zipping across the roads and bridges, relaying messages between groups of protesters (El-Menawy 2012: 133).

¹²¹ A joke tweeted about the inaccurate broadcast coverage by the Egyptian state excluded news about protests: 'Q. Why did the chicken cross the street? A. According to national TV it didn't S Egypt'

¹²² Twitter accounts are referred to as 'users' for consistency but not all accounts are associated with actors (some may represent groups or affiliations with news organizations).

¹²³ A tweet directed to four Twitter users informed other about the detention of an Aljazeera English reporter, with the Twitter username 'AymanM,' during a crackdown on journalists: '@alaa @monasosh @Sandmonkey @3arabawy AJE's @AymanM has been detained by Egyptian military. pls RT with hashtag #freeAyman'

Actions that responded to information demand generated organization among actors in the streets and on social media who sought and shared information. In this work, spatial information is defined as information about geographic locations or activity in areas that is utilized to generate a shared perspective of situations involving coordinated action. In protests that unfold over space and time, spatial events become focal (Fernandez 2008) when locations become flashpoints on social media and information dissemination patterns reflect group formation among actors engaged in collective sense-making about changing situations. The processes that generate organization can be assessed by evaluating structures formed from communicative action as actors mobilized around information about revolutionary developments.

ORGANIZATION IN SPATIAL-INFORMATION DISSEMINATION

Researchers have addressed general questions of social media use during protests (Tillinghast et al. 2012; Theocharis et al. 2013; Lotan et al. 2011; Starbird and Palen 2012; Papacharissi and Oliveira 2012; Faris 2013) but work on organization in information networks during mass mobilization against the state is underdeveloped. In spite of increased attention on political influence on Twitter, extant work has not gone beyond identifying prominent users (Dubois and Gaffney 2014; Bennett et al. 2014; Theocharis 2013) and different types of users (Lotan et al. 2011) who shared information during protests (Meraz and Papacharissi 2013; Starbird and Palen 2012). Research has defined general mechanisms about aggregate information sharing in peer-to-peer networks (Bennett et al. 2014; Agarwal et al. 2014) but interactions among actors are not the central focus of analyses and the networks involving the most important information flows for protests have not been distinguished. In addition, information networks related to larger social movement process (Tremayne 2013) do not convey longitudinal changes in association networks among actors or groups involved in the political process.

During the Egyptian revolution, communicative actions that responded to mobilization in the streets departed from traditional forms of political participation and group association where “stable membership in an organization is substituted for a continuous communicative engagement with the ‘movement’ at large” (Gerbaudo 2012: 136). Networked groups on Twitter differ from associations that involve stable arrangements of followers and individuals who retain positions of influence:

A simple status structure would be a highly centralized system in which one person always leads (influences) and the others always follow (are influenced). Status in a more complex role system might involve different leaders for task and social activities ... Once such an emergent status structure is in place, however, it patterns the subsequent activities of members, which are likely to reproduce those same or very similar influence patterns (Arrow et al. 2000: 44-45).

In the absence of prior organization, communicative activity can generate arrangements among actors discussing changing political situations: “It is communication that organizes, rather than organization that communicates” (Gerbaudo 2012: 139). In emergent, self-organized groups that assemble without planning, “members are differentiated into jobs and roles and ordered in one or more hierarchies of relationships. The elaboration of ties thus reveals and creates new microlevel structure” (Arrow et al. 2000: 92). Protesters acquired different roles in organization formed among the crowds who attempted to regain control over Tahrir Square:

I remember at that time, we were organized in a very random way. Nobody was managing us, but some were hitting iron fences to make noise, others were breaking up the sidewalk for stones, others were carrying the stones and still others were throwing the stones. Automatically and without previous organization, if anyone got tired throwing, he would be replaced and so on (Mo'men & Mo'men 2011: 101).

Actors engaged in various tasks while coordinating against security forces and during attacks in Tahrir Square when the crowds “turned into a mass cooperative where everyone was involved in some form of labor to protect the square” (Shokr 2012: 44).

Coordination is defined as “the ongoing patterning of interaction among the group’s constituent elements as the group pursues its functions” (Arrow et al. 2000: 55) and coordination in communication networks is distinguished by differentiated communicative activity. “A communication network consists of interconnected individuals who are linked by patterned flow of information” (Rogers 1983: 28) and coordinated activity in spatial-information networks on Twitter consisted of retweeting messages through ordered responses. Twitter is a broadcast platform with low levels of reciprocity in information exchange (Kwak et al. 2010) and users who assume different roles (Tinati et al. 2012) are associated through information dissemination by retweeting. Tweets that consist of nested retweets contain usernames in chronologically listed RT @mentions, as shown in a message that was retweeted by ‘HebzyA’ on Feb 2:

RT @weddady: ALERT ALERT ALERT RT @3arabawy: RT @ianinegypt: Heavy gunfire ringing out over downtown Cairo. #jan25 #egypt'

Users are listed by retweet occurrence in the ‘user1’—‘user2’—‘user3’—‘user4’ sequence for ‘ianinegypt’—‘3arabawy’—‘weddady’—‘HebzyA’,¹²⁴ and the words ‘ALERT ALERT ALERT’ were added by ‘weddady’ to a retweet of the original message from ‘ianinegypt.’ The user in the first position of the retweet chain is an information source and actors in following positions are disseminators of the first user. Influentials are prominent users whose messages are frequently retweeted (González-Bailón et al. 2013) and users who gain recognition in the information network influence the communicative behavior of others. Influence in information-passing networks is conceptualized as the ability to generate retweets from followers (Reilly et al. 2014) and not follower counts in a user’s network. Influence varies among Twitter users based on the temporal order of information adoption where early adopters have more influence than late ones (Lee et al. 2010).

In spatial-information networks, the core is comprised of individuals who provide pertinent information and gains in central network positions are dependent on the capacity to respond to information demand. Users unable to provide new information lose centrality as situations change and information demand is filled by other sources. Once important actors are identified, influence from key users affect arrangements of actors who pursue the group objective of spreading information about developments on the ground. Actors are distinguished by levels of information dissemination on Twitter (Shen and Kuo 2014) and organization is generated from a “role system that emerges from group interaction produces a patterned set of influence links among members” (Arrow et al. 2000: 43). Retweeting implies conferral of support for the tweet (Bennett et al. 2014), unless indicated otherwise by commentary, and attention directed by influential actors increases the perceived value of the message. *Coordination among core users* generates organization in spatial-information dissemination by influencing follower responses in multi-step retweet chains. Prominent actors who share the same message extends the information reach from the network center from combined influence that links followers through joint activity as tweets are successively passed.

Individuals have varying durations of centrality and other users are able to gain central positions in the information network as followers orient around emerging information. Previous exchanges affect subsequent

¹²⁴ There is a limit to the number of retweets and usernames that can fit into a tweet with a 140 character limit. The content of the message is successively reduced for each retweet that adds an @mention. To address this, Twitter users often abbreviated words and used linguistic shorthand to preserve the information from the original message before passing it to others.

arrangements of actors who transition into different communication roles. Gains in centrality among actors in secondary positions of information dissemination can be facilitated by associational influence. *Associational influence* is influence acquired by associating with core users and gaining recognition as a disseminator of information sources. Supportive activity for influential actors facilitates the attainment of centrality when group members become familiar with users who assumed important disseminator roles. When focus shifted to users who provided new information, the communicative actions of actors who previously occupied key positions continued to affect network arrangements. Former core users can affect information passing by generating follower responses while assuming a disseminator role through influence retention. *Influence retention* is influence maintained from prior recognition as an information source after centrality loss. The three processes of core coordination, associational influence, and influence retention generated organization by shaping lines of influence in information sharing and communication roles assumed by actors discussing protest developments.

DATA AND APPROACH

Emergent organization in Egyptian revolution spatial-information networks were assessed by: (1) influence exerted by users, (2) changes in the network center (through losses and gains in centrality), (3) transitions in roles, and (4) coordination among users. Other characteristics of users can affect centrality gains or arrangements in the networks; however, the scope of the work is limited to assessing group dynamics based on measurable network indicators and properties of information dissemination on Twitter. The dataset used consisted of 206,103 tweets in Arabic and English generated by 17,329 Twitter users in North Africa and the Middle East (MENA) during the Egyptian revolution from Jan 25, 2011 to Feb 11, 2011. Tweets contained information about mobilization, repression/violence/social control, protester actions, and situational assessments of Egyptian cities and locations in Cairo (*see Appendix B for protest location terms used*^{125 126}). Network ties were gathered from egocentric data of user references made with @mentions and retweets and the core consisted of 20 users with the highest eigenvector centrality in the spatial-information network for

¹²⁵ Names of key protest locations in Cairo were collected from news articles, books, and autobiographical accounts of the revolution (Ghonim 2012; Khalil 2012; Cook 2011).

¹²⁶ Twitter users shared other types of information about the revolution but the scope of the analysis was limited to the spatial-information network to assess organization about developments on the ground.

each day (users who became central in the @mention network). Protest dynamics affected levels of organization in spatial-information networks and assessments focused on networks generated in response to high information demand during mobilization and contestations for control over protest sites from January 25, 2011 to February 3, 2011¹²⁷.

While most spatial-information retweets consisted of one-step retweets, multi-step retweet chains indicated coordination dynamics¹²⁸ among different types of users. Core networks were assessed for information ties among four classifications of core users: central user for a given day, central user from yesterday, central user from all previous revolutionary days (excluding yesterday), and a user who would later assume a central position in the spatial-information network. The core user categories distinguish actors based on the timing of centrality acquired at a given time during the revolution. Core coordination was assessed by the co-occurrence of at least two core users in multi-step retweet chains and associated pairs were presented in the following format:

‘core’—‘core’
‘core’—‘yesterday core’
‘core’—‘previous core’
‘core’—‘to-be-core’

Sequences of users usually included ‘non-core’ followers who retweeted messages from central actors or users with prior centrality in the network. For example, a spatial-information tweet shared about clashes with Mubarak supporters in Tahrir Square on Feb 2 generated a ‘core’—‘previous core’—‘non-core’ sequence with ‘evanchill’—‘Ssirgany’—‘arabchica’:

RT @Ssirgany: RT @evanchill: Tracers shooting up into the air near the Egyptian museum. APC is shooting to disperse Mubarak crowd. Getti[ng] ...!

Coordination between ‘evanchill’ and ‘Ssirgany,’ who shared a message about activity around Tahrir Square, generated a response from ‘arabchica.’ Core users also retweeted information that was provided by non-core users as shown in the ‘non-core’—‘core’—‘non-core’ sequence involving a message about the start of ritual prayers on Jan 28 with ‘Amiralx’—‘monaeltahawy’—‘1fleetingglimps’:

RT @monaeltahawy: RT @Amiralx: The call to prayer just sounded around Cairo...good luck to all on the streets. God help us. #jan25'

¹²⁷ The tweets from February 4-11, 2011 were primarily about the occupation of Tahrir Square until the revolution ended.

¹²⁸ A causal effect of coordination in spatial-information dissemination is discussed in chapter 3.

Communication chains were assessed for the presence of key users who generated follower responses. Mobilization around information sources was analyzed by shared follower bases among core users¹²⁹ that indicated levels of cross-cutting ties based on user @mentions and user flow patterns to core users that indicated distributed follower responses or concentration focus on select users who directed attention.

For select core users, I evaluated daily changes in the average position in retweet sequences¹³⁰ (one-step and multi-step chains) to assess continuity and transitions in roles assumed in information dissemination. The ordering of users in retweet chains determined position values: the user who tweeted the original message assumed the first position with a value of 1, the user who retweeted the original message in the second position had a value of 2, the user in position 3 who retweeted the message from the second user and had a position value of 3, etc. An average position value greater than 1 indicated that the core user shared messages from others and the average position value of 2 or greater indicated the user's primary role as a disseminator.

Core ties were assessed for centrality gains through associational influence and influence retention was shown with follower responses to messages retweeted by prior core users. The effects of previous information exchanges on group formation among central users were evaluated during two key time frames: the start of the revolution and when users regrouped to cover the clashes in Tahrir Square once communication lines were restored. Organization in information dissemination was assessed by the presence of reoccurring core users in core networks and continued information exchanges among influential users.

EMERGENT ORGANIZATION

Similar levels of spatial information were tweeted when the revolution began and in the last stage of the uprising when attention was on the occupation of Tahrir Square (*see Figure 1*). Spatial information tweets increased on Jan 28 as protesters reclaimed Tahrir Square and Feb 2 during clashes with Mubarak supporters. Approximately 70 to 80% of the spatial-information messages were retweets, indicating that key protest information was frequently disseminated during the revolution (*see Figure 2*).

¹²⁹ There are three ways users can share a follower tie: (1) Nested retweets typically generated from a two-step or three-step information flow, (2) A follower separately retweets messages and @mentions the users, and the less common activity of (3) @mentioning users without retweeting.

¹³⁰ Only original retweet chain positions were included in the averages. Duplicated counts of core user positions in retweets made by followers were not included.

Figure 1. Spatial-Information Tweets and User Counts during Egyptian Revolution

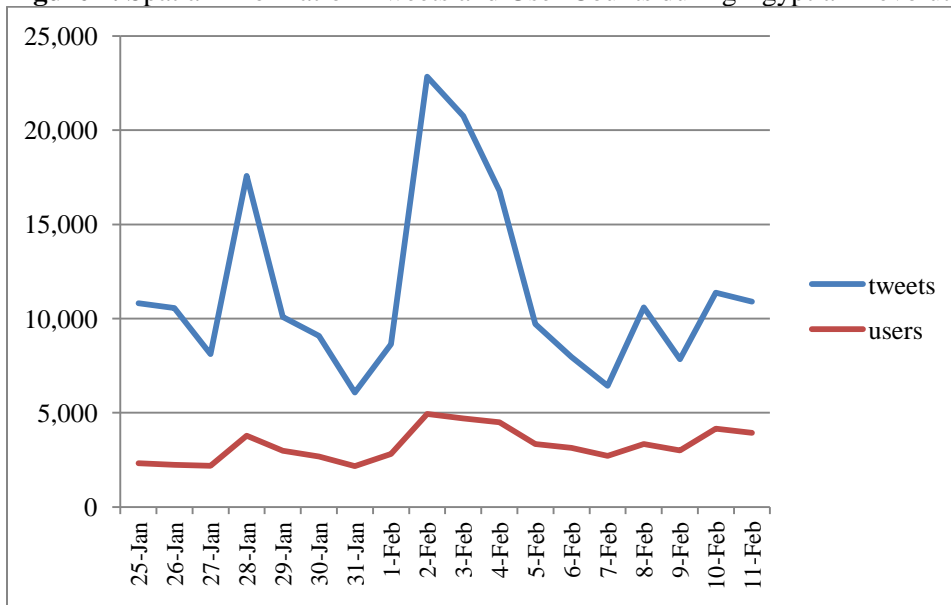


Figure 2. Proportion of Spatial-Information Tweets Retweeted

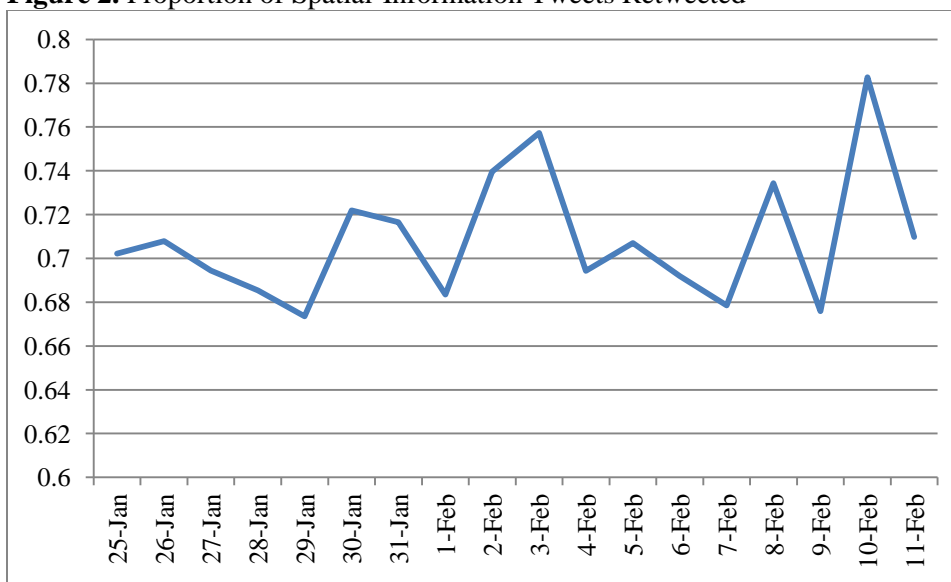


Figure 3 shows the spatial-information network on Jan 25 when users tweeted about the positions of state forces before demonstrations began. Egyptians clustered first in the communication network and gradually drew in MENA users as protests unfolded, with less connected users positioned around the inner graph. Approximately half of users who tweeted spatial information each day were Egyptians.

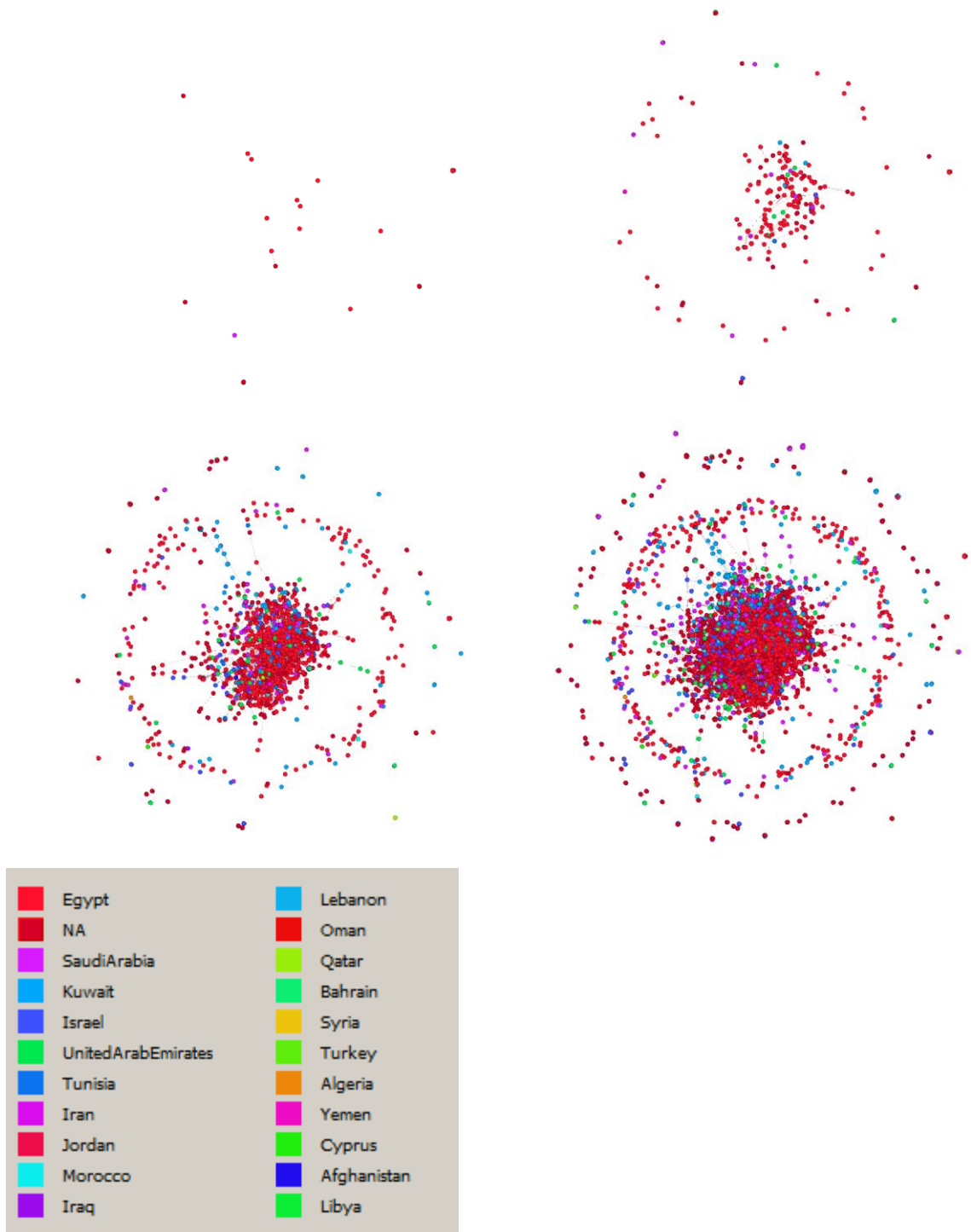


Figure 3. Spatial-information network about Egyptian revolution on January 25, 2011 with Twitter users in North Africa and the Middle East, time-lapse: 4AM, 8AM, 5PM, midnight, country key¹³¹.

¹³¹ NA: country of Twitter user is unknown, missing data from Twitter data collection process. In the web crawl, user locations in Arab countries were based on GPS location, profile information (where available), and city-specific time zone (e.g. “Africa/Cairo” for Egypt).

Table 4 shows the top 20 central users of the spatial-information network by day^{132 133} and Figure 4 lists core users by their duration as a central user. A group of users maintained centrality for much of the revolution but most users gained and lost centrality. Individuals played a key role in sharing spatial information in the early stage of the uprising and Twitter accounts associated with news organizations¹³⁴ gradually emerged as information sources.

¹³² Mohamed ElBaradei, Nobel Peace Laureate and former director of the International Atomic Energy Agency, and Ghonim became the focus of attention during the Egyptian revolution with many tweets @mentioning them. Both were included among the top 20 central users because they were prominent figures who generated many @mentions and not as a source for spatial information. Ghonim tweeted at the start of the revolution and after his release from jail but he was not a source for spatial information during his incarceration. Ghonim, with the username 'Ghonim,' acquired many followers on Feb 7 and Feb 8.

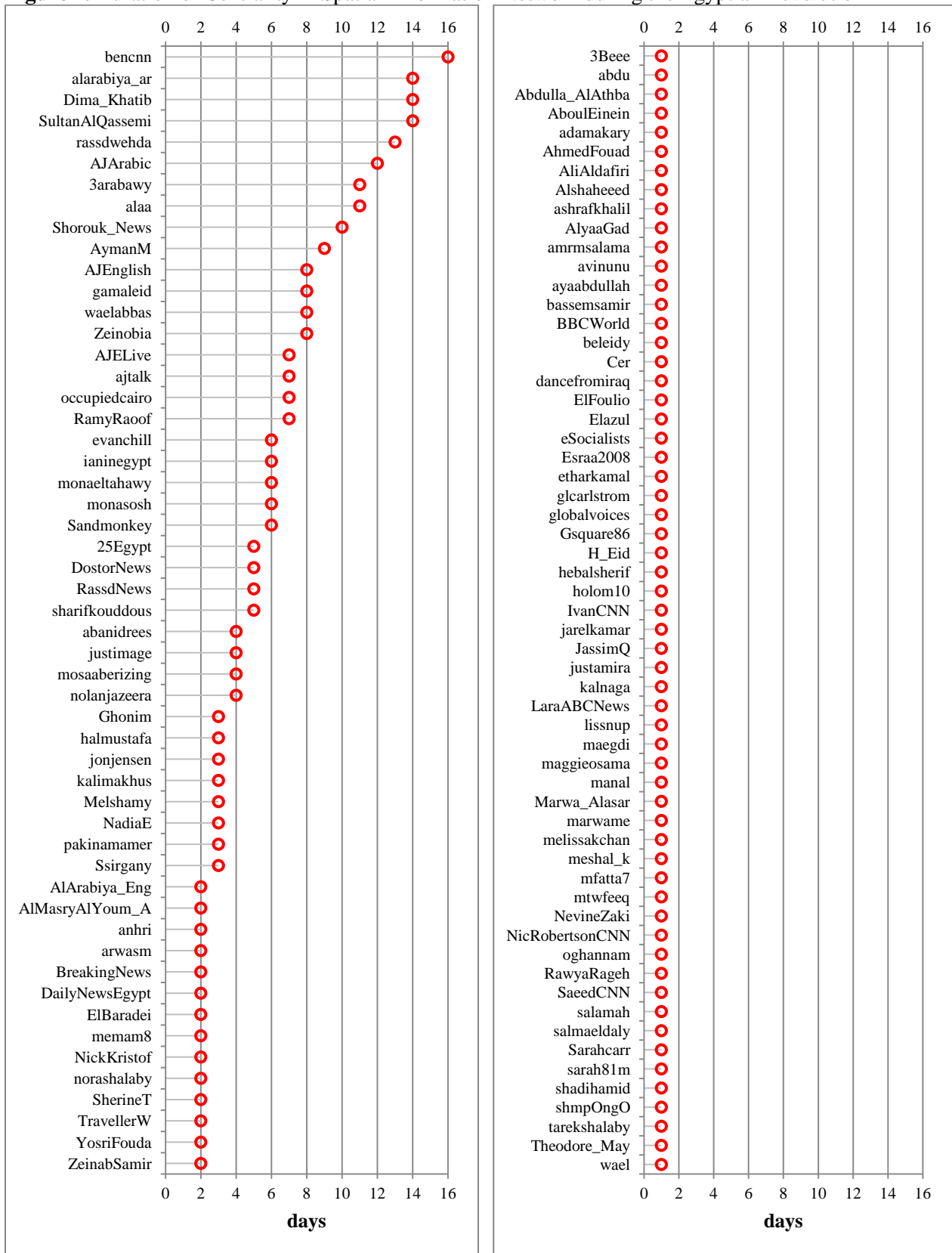
¹³³ Users may have been influential in commentary or the spread of other types of revolutionary information outside the spatial-information network.

¹³⁴ News organizations mentioned in spatial-information tweets: Al Jazeera, Al Arabiya, Al-Shorouk News, Al-Masry Al-Youm, Daily News Egypt, Dostor Daily News, Nile News, CNN, New York Times, ABC News, and BBC. Citizen news organization: Rassd News.

Table 4. Top 20 Users with Highest Eigenvector Centrality in Spatial-Information Network by Day

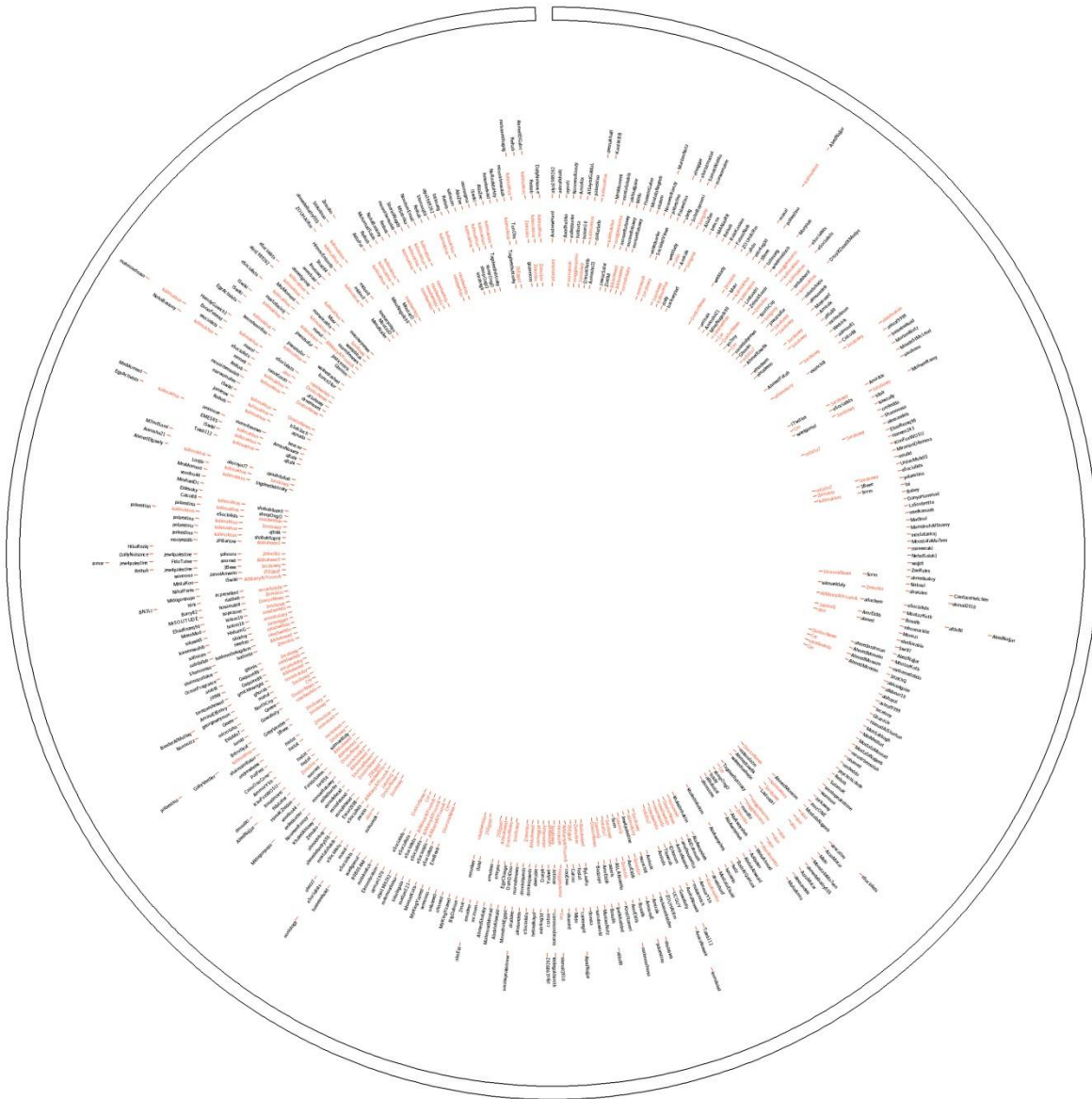
| Jan 25 | Jan 26 | Jan 27 | Jan 28 | Jan 29 | Jan 30 |
|---|--|---|---|--|--|
| 3arabawy DostorNews rassdwehda AlMasryAlYoum_A Zeinobia Cer alaa Alshaheed norashalaby 25Egypt kalimakhus mfatta7 adamakary maggieosama Ssrgany ianinegypt Shorouk_News monasosh JassimQ RamyRaof | gamaleid rassdwehda 25Egypt 3arabawy alaa Dima_Khatib abanidrees anhri Zeinobia kalimakhus wael bencnn shmpOngO halmustafa holom10 ayaabdullah AhmedFouad ianinegypt AJArabic eSocialists | salmaeldaly bencnn 3arabawy ianinegypt rassdwehda anhri Shorouk_News gamaleid alaa waelabbas kalimakhus SultanAIQassemi nolanjazeera Marwa_Alasar ElBaradei DostorNews DailyNewsEgypt 25Egypt abanidrees bassemsamir | SultanAIQassemi AJArabic alarabiya_ar ajtalk rassdwehda Dima_Khatib BreakingNews AJELive 25Egypt alaa bencnn AliAldafiri abanidrees 3Beee SherineT monaeltahawy AJEnglish evanchill halmustafa ElBaradei | SultanAIQassemi AJArabic ajtalk alaa BreakingNews rassdwehda alarabiya_ar Dima_Khatib AJEnglish ianinegypt AymanM RamyRaof justimage monaeltahawy AlArabiya_Eng 25Egypt bencnn Melshamy sharifkouddous jonjensen | AJArabic nolanjazeera SultanAIQassemi AymanM AJEnglish ajtalk Dima_Khatib waelabbas alaa RamyRaof bencnn AlArabiya_Eng rassdwehda AJELive justimage evanchill meshal_k sharifkouddous alarabiya_ar Melshamy |
| Jan 31 | Feb 1 | Feb 2 | Feb 3 | Feb 4 | Feb 5 |
| nolanjazeera alaa 3arabawy SultanAIQassemi RamyRaof AJArabic AJEnglish Dima_Khatib monasosh NicRobertsonCNN Sarahcarr manal rassdwehda justimage ajtalk beleidy avinunu AymanM dancefromiraq melissakchan | ajtalk AJArabic SultanAIQassemi Dima_Khatib nolanjazeera AJEnglish alarabiya_ar bencnn Sandmonkey Melshamy AymanM AJELive rassdwehda alaa glcarlstrom shadihamid abdu NickKristof LaraABCNews monaeltahawy | AJArabic RamyRaof 3arabawy Dima_Khatib waelabbas bencnn alarabiya_ar rassdwehda SultanAIQassemi gamaleid AJELive NickKristof Zeinobia ajtalk DailyNewsEgypt TravellerW evanchill occupiedcairo Gsqaure86 hebalsherif | waelabbas rassdwehda alarabiya_ar monasosh RamyRaof mosaaberizing Dima_Khatib AJArabic SultanAIQassemi BBCWorld occupiedcairo Zeinobia bencnn AJELive gamaleid Shorouk_News sharifkouddous kalnaga Sandmonkey | bencnn SultanAIQassemi AJArabic Sandmonkey alarabiya_ar ianinegypt mosaaberizing AJELive Zeinobia evanchill jonjensen Ssrgany monasosh Dima_Khatib AJEnglish sharifkouddous etharkamal rassdwehda RamyRaof NadiaE | alarabiya_ar AymanM 3arabawy bencnn rassdwehda Theodore_May Shorouk_News waelabbas Dima_Khatib SultanAIQassemi mosaaberizing AJArabic EIFoulio ianinegypt mtwfeeq abanidrees AJEnglish jonjensen IvanCNN gamaleid |
| Feb 6 | Feb 7 | Feb 8 | Feb 9 | Feb 10 | Feb 11 |
| NadiaE evanchill SultanAIQassemi Dima_Khatib arwasm tarekshalaby AymanM rassdwehda pakinamamer waelabbas alarabiya_ar monasosh justamira globalvoices Shorouk_News occupiedcairo AJEnglish lissnup bencnn sarah81m | Ghonim Shorouk_News alarabiya_ar Sandmonkey waelabbas bencnn sharifkouddous 3arabawy ZeinabSamir RassdNews AlyaaGad Esraa2008 monaeltahawy marwame AlMasryAlYoum_A alaa amrmsalama memam8 SultanAIQassemi occupiedcairo | Ghonim gamaleid RassdNews Shorouk_News 3arabawy alarabiya_ar bencnn ashrafkhalil AymanM salamah halmustafa pakinamamer Elazul monaeltahawy Sandmonkey DostorNews TravellerW ZeinabSamir occupiedcairo YosriFouda | 3arabawy AymanM bencnn RassdNews occupiedcairo Shorouk_News YosriFouda DostorNews NevineZaki alarabiya_ar Ssrgany Zeinobia gamaleid monasosh norashalaby monaeltahawy Dima_Khatib mosaaberizing pakinamamer oghannam | AJArabic RassdNews AymanM 3arabawy Shorouk_News alarabiya_ar SultanAIQassemi Zeinobia ajtalk SherineT bencnn Abdulla_AlAthba Dima_Khatib DostorNews Ghonim H_Eid maegdi AboulEinein Sandmonkey gamaleid | alarabiya_ar SultanAIQassemi jarelkamar NadiaE RassdNews AJArabic Shorouk_News waelabbas Dima_Khatib 3arabawy bencnn arwasm justimage occupiedcairo RwayaRageh evanchill alaa SaeedCNN memam8 Zeinobia |

Figure 4. Duration of Centrality in Spatial-Information Network during the Egyptian Revolution



Figures 5 and 6 show radial user sequences from multi-step retweet chains that indicate organization through influence exerted by information sources and coordination among core users that generated follower responses.

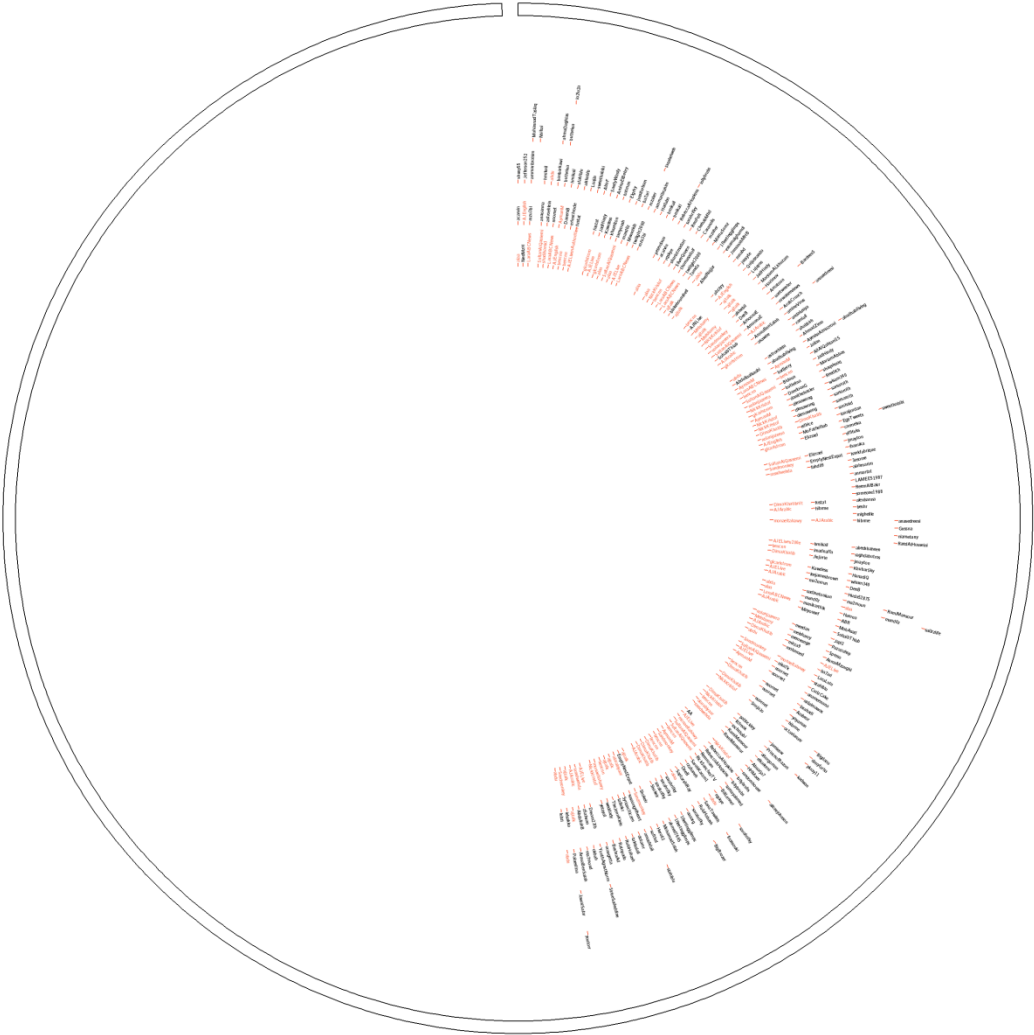
Figure 5. Selected User Sequences of Multi-Step Spatial-Information Chains on January 25, 2011^{135 136}



¹³⁵ Red: user is a central user in the spatial-information network for the specified date. Users in the center are first in the order of retweet occurrence.

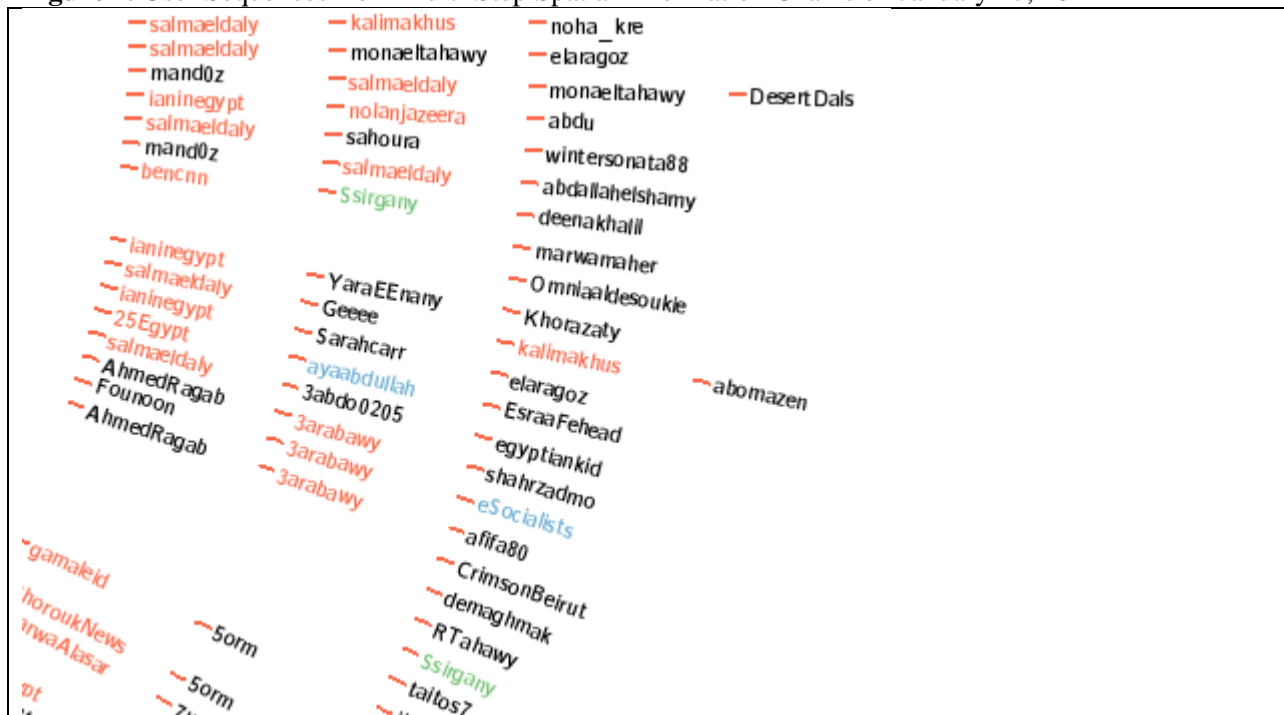
¹³⁶ The radial user retweet sequences unfold clockwise. In the right-half of the circle, followers associated with the same multi-step retweet sequence are listed below a full user sequence with a block containing blanks for the preceding users in the retweet chain that would have been repeated for other followers who shared the same message. In the left-half of the circle, associated disseminators for a retweet sequence are stacked upwards. The radial user sequences are not temporally ordered.

Figure 6. User Sequences of Multi-Step Spatial-Information Chains on February 1, 2011



In selected retweet sequences generated on Jan 25, central users (red) assumed different positions in information chains (see Figure 5). As the revolution progressed, central users tended to be in the first position of retweet sequences once information sources became recognized and roles were established. The number of retweet sequences decreased on Feb 1 during the information shutdown period (see Figure 6) and, in Figure 7, core users from yesterday (blue) and previous core users (green) disseminated from central users on Jan 27.

Figure 7. User Sequences from Multi-Step Spatial-Information Chains on January 27, 2011¹³⁷

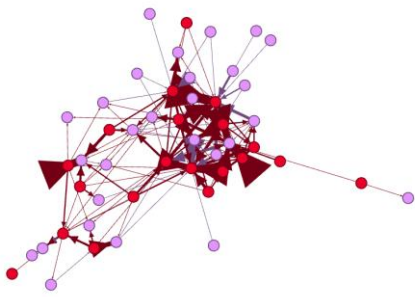
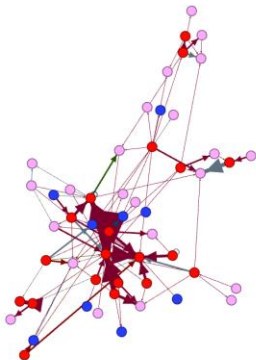
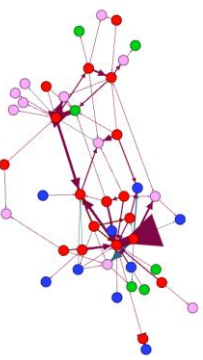
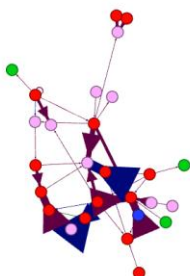
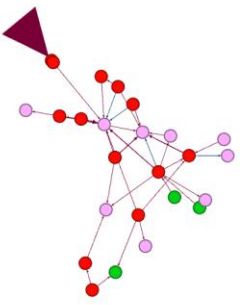
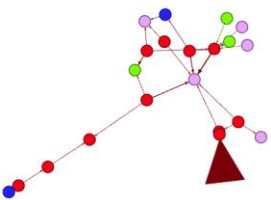


¹³⁷ Red: user is a central user of that day, blue: user is a core user from yesterday.

In Figure 7, core users ‘salmaeldaly,’ ‘ianinegypt,’ ‘bencnn,’ ‘25Egypt,’ and ‘3arabawy’ shared information and ‘Ssirgany,’ who was a core user yesterday, and core users from the previous revolutionary days, ‘ayaabdullah’ and ‘eSocialists,’ retweeted messages. Multi-step retweet chains generated from the combined influence of core users extended information reach. The presence of one core user in a message sequence typically generated retweet chains with two steps (three users) and information traveled farther with at least two central users who shared the same message and generated influence linkages.

The core networks in Table 5 and Table 6 show associations from direct retweeting and retweeting messages from central users through intermediaries. Table 5 contains figures of core networks from Jan 25 to Feb 3 and Table 6 shows the same networks from Jan 25-28 and Feb 2-3 with identified nodes and selected tweets for the associated information ties.

Table 5. Core User Retweet Networks, January 25-February 3, 2011^{138 139 140 141}

| Color Key: ■ core user, ■ core user yesterday, ■ core user from previous revolutionary days, ■ to-be-core user | |
|--|---|
| <p>Figure 1. Jan 25</p>  | <p>Figure 2. Jan 26</p>  |
| <p>Figure 3. Jan 27</p>  | <p>Figure 4. Jan 28</p>  |
| <p>Figure 5. Jan 29</p>  | <p>Figure 6. Jan 30</p>  |

¹³⁸ Node colors in figures: red: central user; blue: central user from yesterday; green: central user from all previous revolution days; pink: user will be a central user later during the revolution.

¹³⁹ Arrow size denotes the weight (number of messages) between two nodes (users). Arrows point to the user who retweeted the information from the source (direction of the information flow).

¹⁴⁰ Self-loops occur when Twitter users retweet messages that they have shared before that are relayed through followers.

¹⁴¹ Isolate core users not shown (only connected core users are shown).

Figure 7. Jan 31

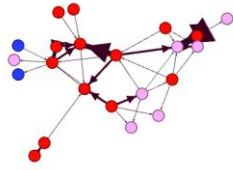


Figure 8. Feb 1

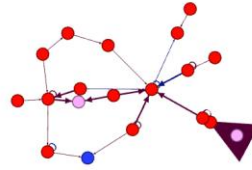


Figure 9. Feb 2

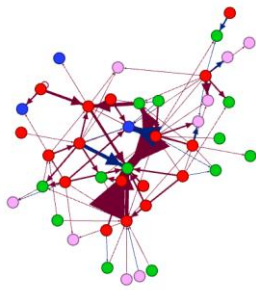
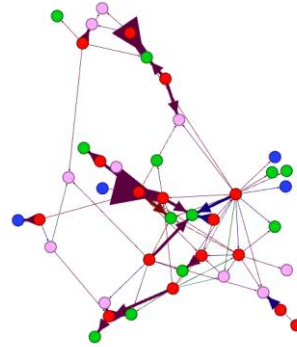


Figure 10. Feb 3



The Jan 25 network contains ties among core (red nodes) and to-be-core users (pink nodes) who retweeted messages from central users. Information flowed from core users to prior core users and to-be-core users and, as the revolution progressed, pink nodes disappeared and blue nodes (core users from the previous day) and green nodes (core users from all prior revolutionary days) were arranged around central users as exchanges with information sources continued before and after the acquisition of a central position in the network. On the second day of protests, core users from the previous day disseminated information from central users (*see Table 5: Figures 1 and 2*) and, on Jan 27, core users continued to be the source for messages disseminated by prior core users and users who later assumed central positions. The core network began to decrease on Jan 28 when the network was limited to users with access to Twitter during the information shutdown. On Feb 2, prior core users resumed disseminating from information sources once communication lines were restored and Mubarak supporters attacked protesters in Tahrir Square.

Table 6. Core User Retweet Networks with Users Labeled and Tweets, January 25-January 28, 2011 and February 2-3, 2011^{142 143 144 145 146}

| Color Key: ■ core user, ■ core user yesterday, ■ core user from previous revolutionary days, ■ to-be-core user | | |
|---|--|---|
| <p>Figure 1. Jan 25</p> | | <p>P1: NevineZaki P2: anhri P3: evanchill P4: Sarahcarr P5: Sandmonkey P6: hebalsherif P7: ashrafkhalil P8: wael P9: AhmedFouad P10: monaeltahawy P11: Gsquare86 P12: holom10 P13: bencnn P14: Esraa2008 P15: kalnaga P16: abdu P17: AJEnglish P18: salmaeldaly P19: 3Bee P20: ayaabdullah P21: ajtalk P22: AJArabic P23: Dima_Khatib P24: Ghonim P25: manal P26: eSocialists P27: shmpOngO P28: ZeinabSamir</p> |
| <p>R1: Shorouk_News R2: JassimQ R3: alaa R4: AlMasryAlYoum_A R5: Cer R6: monasosh R7: maggiosama</p> | <p>R8: mfatta7 R9: adamakary R10: RamyRaof R11: Ssirgany R12: ianinegypt R13: norashalaby R14: Alshaheed</p> | <p>R15: Zeinobia R16: 25Egypt R17: kalimakhus R18: DostorNews R19: rassdwehda R20: 3arabawy</p> |
| <p>alaa—manal ■ — ■ 'some estimates about 30 thousand demonstrators in Tahrir Square'</p> <p>3arabawy—kalimakhus ■ — ■ 'VIDEO Protest in Mansoura Mansoura demonstration' 'Push and pull between protesters and police in'</p> <p>3arabawy—maggiosama ■ — ■ 'GO GO #Egypt #Jan25 Cairo Tahrir Sq protesters The people want to overthrow the regime Go shabab!' 'Women in Alexandria r chanting against Mubarak from the balconies large Phtv against Inte ...' 'Go shabab! I descending demonstrations began in Aswan in front of the province'</p> <p>3arabawy—ZeinabSamir ■ — ■ 'Tear gas is being fired now at protesters in Sidi Gaber' 'The police is trying to convince the downtown cairo protesters to leave. But they r still there.'</p> <p>3arabawy—Zeinobia ■ — ■ 'There are dozens injured. The police is attacking brutally in Tahrir Sq.'</p> | | |

¹⁴² Node colors in figures: red: central user; blue: central user from yesterday; green: central user from all previous revolution days; pink: user will be a central user later during the revolution.

¹⁴³ Arrow size denotes the weight (number of messages) between two nodes (users). Arrows point to the user who retweeted the message from the source (direction of the information flow).

¹⁴⁴ Self-loops occur when Twitter users retweet messages that they have shared before that are relayed through followers.

¹⁴⁵ Most hashtags, links, and RT @mentions were removed for selected tweets shown. Removed hashtags included those that contained location terms (e.g., #Tahrir, #Cairo).

¹⁴⁶ The core user pairs are ordered in the direction of information dissemination. The users listed first tweeted the message before the second user in the pair. The second user retweeted the tweet either directly from the first core user or in later positions of the retweet chain.

3arabawy—alaa —

'Just received a call from in Tahrir Square. Tear gas and water cannons. Call broke after 10 secs ...'
'Go shabab! I descending demonstrations began in Aswan in front of the province'

AJArabic—kalimakhus —

'Aldzerhquat security begin to disperse demonstrators camped in Tahrir Square in Cairo'

kalimakhus—alaa —

'This is what I'm hoping for. Protests are still alive not only in but in several other c ...'
'continue to demonstrate in Tanta and design of the departure of Hosni Mubarak'

rassdwehda—ZeinabSamir —

'uncertain the demonstrations begin in Tanta in front of a building to maintain'
'Ismailia the uncertain sit at the Ismailia and Atalatana Stadium thousands .. Security throws bombs touch'
'Alexandria the young people clashed with security Asafra and break the security cordon him .. Security forced to retreat and withdrawal ...'
'Damanhur the clashes between demonstrators and security in front of the mosque and the numbers are increasing repentance ..'

rassdwehda—kalimakhus —

'uncertain Cairo Ahmed Abdel- Aziz Street Demonstrators merely twenty thousand'
'Suliman Saber Ali 2nd martyr in RT second deceased in the Suez demonstrations named Suleiman Saber on'
'urgent security forces on the island begin to disperse the demonstrators in Tahrir Square'

Sandmonkey—Ssirgany —

'we r in tahrir. At least 7 thousand. Tahrir is ours.'

shmpOngO—kalimakhus —

'Lastest photos of Tahrir Square protest'
'Men of Mahallah'
'Two martyrs in Suez killed by egypolice thugs V'

Zeinobia—kalimakhus —

'Suez intensive beating teams of people and I am now took refuge inside one of the houses'
'Protesters in Alexandria are being attacked violently'
'demonstrators in Alexandria Police Department encircling the first sand for half an hour . N'
'Mass arrests being made in streets around Tahrir'
'tear gas grenades are being fired now at Tahrir square'
'The death toll in Suez increased in to 7 civilians'

Zeinobia—abdu —

'Updated wamazing pic of Tahrir tonight Thousands protest in 'Day of Anger' via ...'
'the police of the island begin to disperse the demonstrators from Tahrir Square by force, tear gas and waterfalls cannons ...'
'From tahrir sq.'

Zeinobia—maggiosama —

'Left but protest peaceful and still going strong in tahrir'

Zeinobia—ZeinabSamir —

'Protesters occupying tahrir sq'

Figure 8. Jan 25-Jan 26, 2011 Shared Follower Bases of Central Users

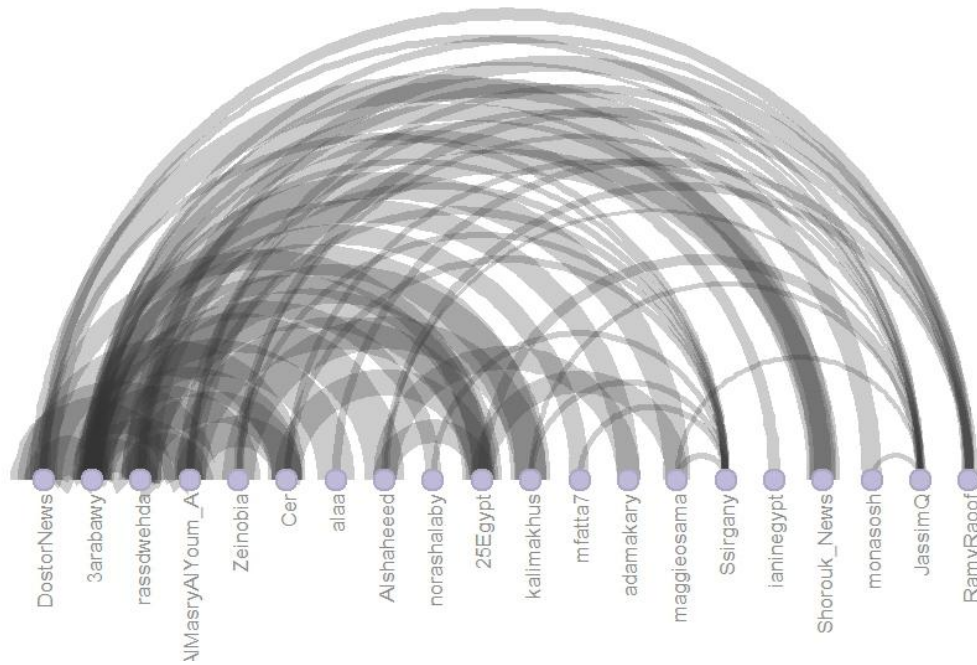
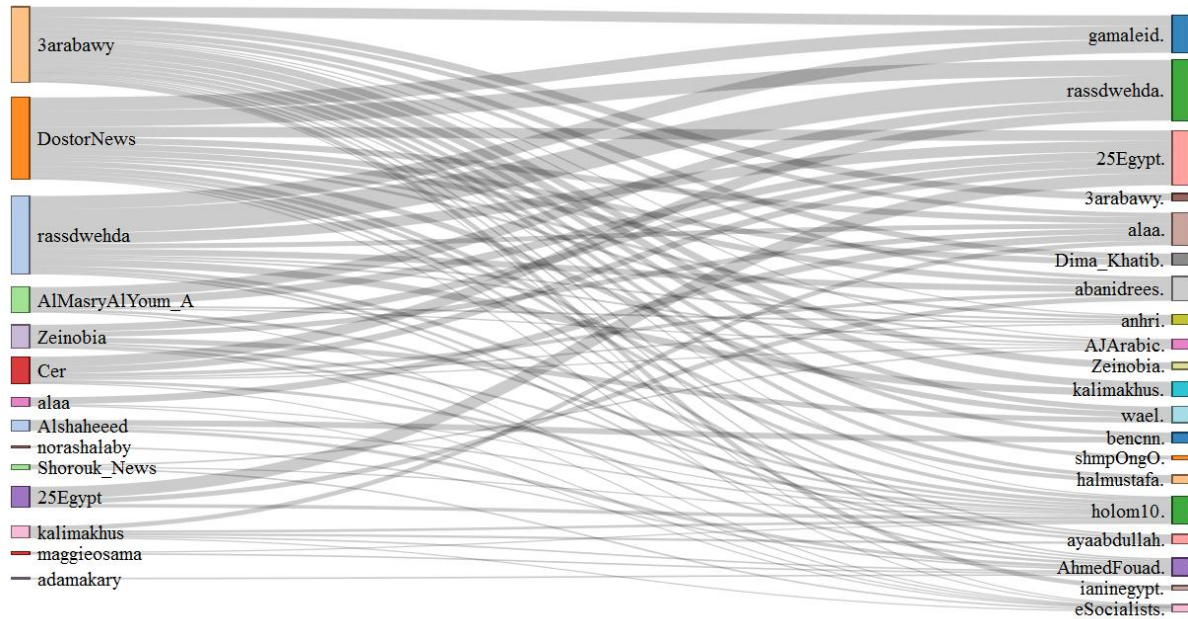
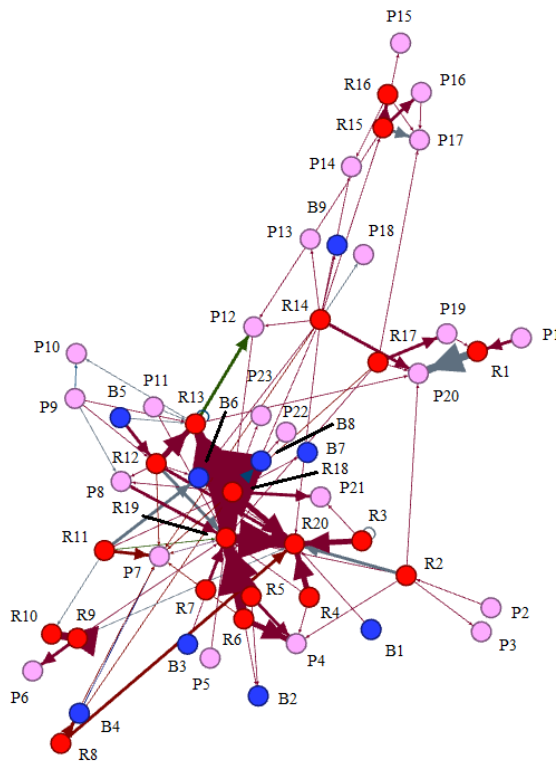


Figure 9. Shared information disseminators of central users on January 25, 2011

Table 6: Figure 2. Jan 26



- B1: Shorouk_News
- B2: JassimQ
- B3: AlMasryAlYoum_A
- B4: mfatta7
- B5: norashalaby
- B6: Cer
- B7: monasosh
- B8: Alshaheed
- B9: maggiosama

- P1: AJEnglish
- P2: ajtalk
- P3: 3Beee
- P4: AJArabic
- P5: salmaeldaly
- P6: Esraa2008
- P7: ZeinabSamir
- P8: manal
- P9: Gsquare86
- P10: evanchill
- P11: norashalaby
- P12: Sandmonkey
- P13: justimage
- P14: hebalsherif
- P15: marwame
- P16: shadihamid
- P17: ashrafkhalil
- P18: tarekshalaby
- P19: monaeltahawy
- P20: abdu
- P21: bassemsamir
- P22: arwasm
- P23: NevineZaki

- | | | |
|-----------------|-----------------|------------------|
| R1: Dima_Khatib | R8: AhmedFouad | R15: bencnn |
| R2: halmustafa | R9: ayaabdullah | R16: ianinegypt |
| R3: abanidrees | R10: holom10 | R17: Zeinobia |
| R4: AJArabic | R11: anhri | R18: gamaleid |
| R5: 25Egypt | R12: wael | R19: kalimakhus |
| R6: rassdwehda | R13: alaa | R20: eSocialists |
| R7: shmpOngO | R14: 3arabawy | |

3arabawy—kalimakhus ■ — ■ , **3arabawy—ZeinabSamir** ■ — ■
 'arrests in the ranks of the Muslim Brotherhood in Assiut and beaten with batons downtown Cairo'

Zeinobia—kalimakhus ■ — ■
 'Snipers and thugs are being spotted on 6th October bridge whose exists and entrance being closed'

Zeinobia—ZeinabSamir ■ — ■
 'A complete internet blockage in Suez'

bencnn—marwame ■ — ■
 'Major battle on al Gala st. in Cairo Egypt. Tear gas'

kalimakhus—alaa ■ — ■
 'Champions and Black!! fierce war of the streets in Suez bullets hit district of Ahmed Orabi and Alerb ...'

rassdwehda—kalimakhus ■ — ■
 'A victims of Suez Sheikh and sedate 70 years old, wounded B-12 shot, died on the effects'
 'Aaagel / Suez / suppression of demonstrators and Anfjarhm #Jan25'
 'confirmation of the security use of live bullets against demonstrators in Cairo now and the fall of the martyrs'

rassdwehda—JassimQ ■ — ■
 'Cairo hit by rubber bullets two thousand demonstrators next film Metro Downtown, and throwing tear bombs ...'

rassdwehda—ZeinabSamir ■ — ■
 'Protestors attack police in Suez following reports of citizen dying after police fired live b ...'
 'uncertain uninterrupted communication with our correspondents in each of the Suez "and" North Sinai "fully'

shmpOngO—kalimakhus ■ — ■
 'Suez City the Alarbaeiny police staion is comletely burnt'

wael—alaa ■ — ■
 'Aljazeera reports major clashes in the city of Suez use of live ammunition'

Figure 10. Jan 26-Jan 27, 2011 Shared Follower Bases of Central Users

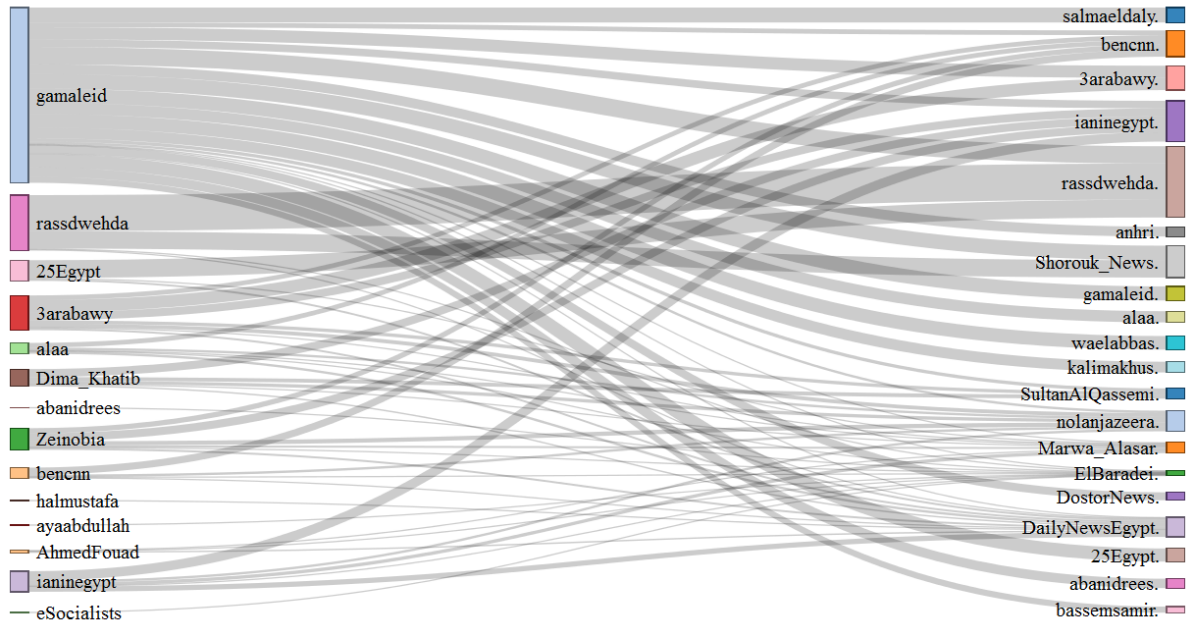
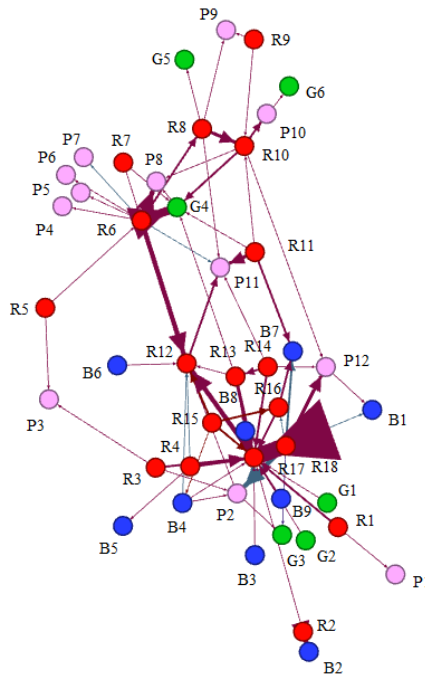


Table 6: Figure 3. Jan 27



B1: AhmedFouad
 B2: ayaabdullah
 B3: AJArabic
 B4: Zeinobia
 B5: holom10
 B6: wael
 B7: eSocialists
 B8: shmpOngO
 B9: halmustafa

G1: Cer
 G2: RamyRaof
 G3: maggiosama
 G4: Ssirgany
 G5: norashalaby
 G6: monasosh

P1: Gsquare86
 P2: ZeinabSamir
 P3: oghannam
 P4: hebalsherif
 P5: mosaaberizing
 P6: arwasm
 P7: ashrafkhalil
 P8: Sarahcarr
 P9: Sandmonkey
 P10: evanchill
 P11: abdu
 P12: monaeltahawy

R1: DostorNews
 R2: 25Egypt
 R3: rassdwehda
 R4: Shorouk_News
 R5: DailyNewsEgypt
 R6: ianinegypt
 R7: Marwa_Alasar
 R8: nolanjazeera
 R9: SultanAlQassem
 R10: bencnn
 R11: 3arabawy
 R12: alaa
 R13: gamaleid
 R14: anhri
 R15: ElBaradei
 R16: bassemsamir
 R17: kalimakhus
 R18: salmaeldaly

bencnn—Ssirgany ■ — ■
 'A diff scene from last year's warm welcome At Cairo airport lots of police not many supporters waiting for ElBa[radei] ...'

3arabawy—eSocialists ■ — ■
 'Employees of the National Bank of sit on the Nile Corniche in front of the bank to delay the bank in exchange premium #EgyWorkers'

3arabawy—Ssirgany ■ — ■
 'Protests now in Giza #Jan25 The demonstration is growing and cut cliques Canal Street on the way to the street of the pyramid'

3arabawy—alaa ■ — ■
 'Sinai Bedouins use RPG against police in Sinai. Welcome to the revolution.'

ianinegypt—Ssirgany ■ — ■
 'Rocks fill the air. Protesters charging. Suez. Reports of live rounds being used. #jan25'
 'Rumors protesters are trying to torch a police station in Suez. On my way to investigate. #jan25 #egypt'

Zeinobia—ZeinabSamir ■ — ■
 'Just like #Sidibouzid the city of Suez is suffering from basic commodities shortage'

25Egypt—kalimakhus ■ — ■
 'Network Monitoring | flamboyant images from inside the Suez #jan25'

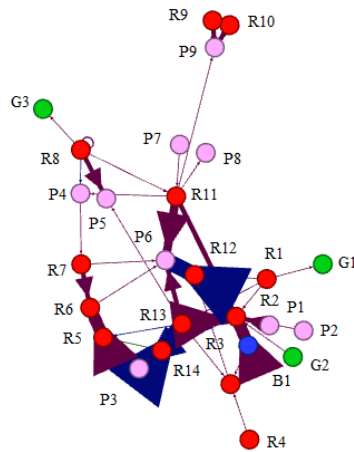
kalimakhus—alaa ■ — ■
 '#Jan25 #Egypt Witnesses: the death of two demonstrators shot in the Suez .. and tense situation in the city'

rassdwehda—kalimakhus ■ — ■
 'Aaagel uncertain || | start of angry demonstrations in Assiut province, calling for reform'

rassdwehda—ZeinabSamir ■ — ■
 'Urgent | uncertain nn hundreds of demonstrators in Hassanein structure Street in Nasr City shouting nn ... people want to overthrow the regime ...'

shmpOngO—kalimakhus ■ — ■
 'Voices of ambulances and fire brigade across the Suez # jan25'
 'Suez is on fire again eye witness says #jan25'

Table 6: Figure 4. Jan 28



- R1: bencnn
- R2: monaeltahawy
- R3: 3Beee
- R4: halmustafa
- R5: evanchill
- R6: AJEnglish
- R7: SherineT
- R8: AJArabic
- R9: ajtalk
- R10: AliAldafiri
- R11: alaa
- R12: Dima_Khatib
- R13: SultanAlQassemi
- R14: ElBaradei

- B1: salmaeldaly

- G1: Ssirgany
- G2: RamyRaooof
- G3: holom10

- P1: Sandmonkey
- P2: beleidy
- P3: shadihamid
- P4: manal
- P5: AboulEinein
- P6: abdu
- P7: ElBaradei
- P8: Sarahcarr
- P9: Melshamy

alaa—manal ■ — ■
 'Abdel Fattah Fayed Jazeera correspondent: a security team to protect the Egyptian Museum by protesters #jan25 #Egypt #aljazeera'

alaa—monaeltahawy ■ — ■
 'say rubber bullets already being used against protesters in cairo'

alaa—Sarahcarr ■ — ■
 'roughly 350 muslim brotherhood members arrested in cairo including key leader Issam El Eryan. #Jan25'

rassdwehda—JassimQ ■ — ■¹⁴⁷
 '#Jan25 #Egypt Now raise slogans Down, down Hosni Mubarak in Tahrir Square'

SultanAlQassemi—monaeltahawy ■ — ■
 'Al Jaz reporter in #Suez: Protests in Martyrs St'
 'Al Jazeera: Massive crowds in Luxor carrying signs similar to ones seen across Egypt #Jan25'

SultanAlQassemi—abdu ■ — ■
 'BREAKING Al Arabiya: 410 injured today in Cairo'

bencnn—monaeltahawy ■ — ■
 'Massive cloud of tear gas at Zamalek end of 6October Bridge..into Nile. Protesters continue to chant "Down ...'

evanchill—AJEnglish ■ — ■
 'Military has just arrived in Alexandria and has flashes thumbs up to the protesters. #jan25'

¹⁴⁷ The two users were connected in a component that was separate from the main core network (not shown).

Figure 11. Jan 28-Jan 29, 2011 Shared Follower Bases of Central Users

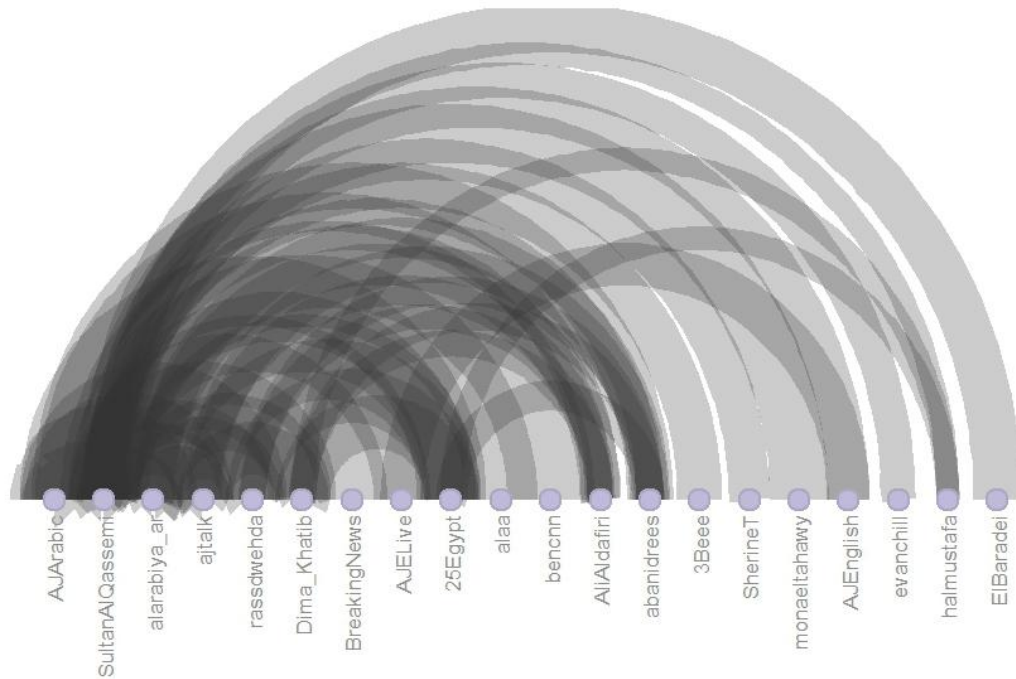
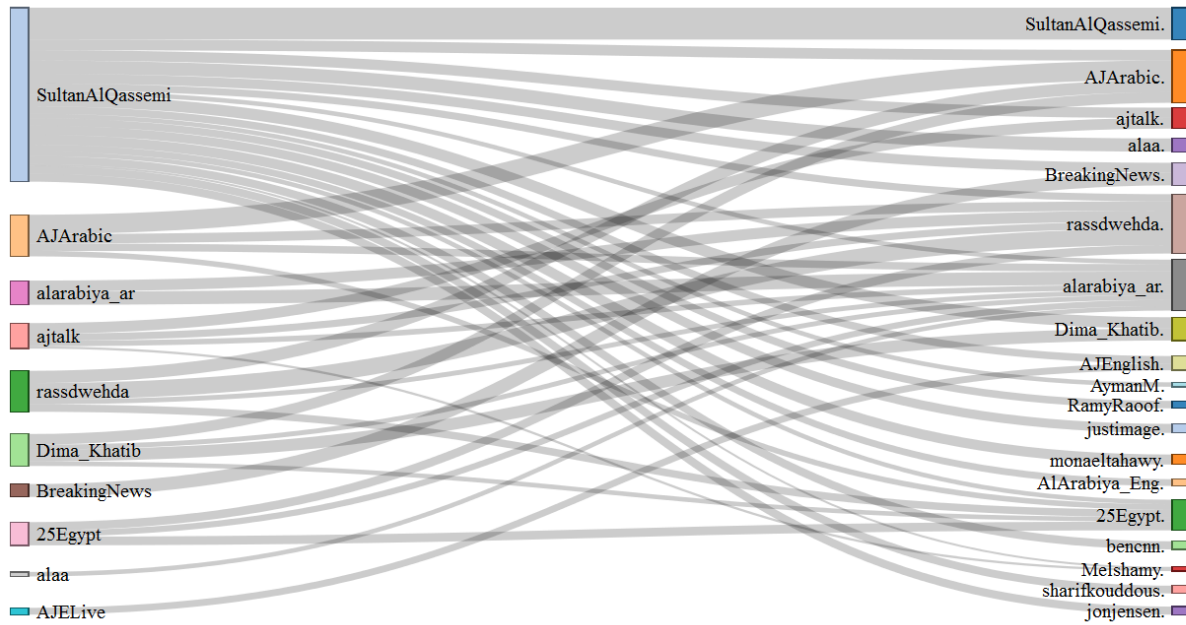
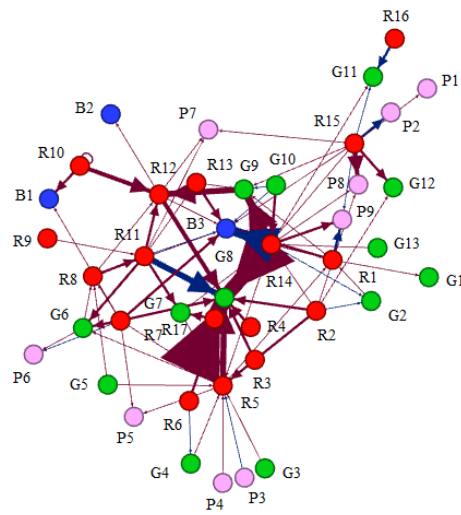


Figure 12. Shared information disseminators of central users on January 28, 2011

Table 6: Figure 5. Feb 2



- B1: AJEnglish
- B2: Sandmonkey
- B3: abdu

- G1: holom10
- G2: salmaeldaly
- G3: justimage
- G4: monasosh
- G5: beleidy
- G6: Sarahcarr
- G7: ianinegypt
- G8: Ssirgany
- G9: maggiosama
- G10: norashalaby
- G11: eSocialists
- G12: JassimQ
- G13: Shorouk_News

- P1: mtwfeeq
- P2: sarah81m
- P3: Ghonim
- P4: H_Eid
- P5: lissnup
- P6: arwasm
- P7: ashrafkhalil
- P8: AboulEinein
- P9: ZeinabSamir

- | | | |
|-------------------|---------------------|-------------------|
| R1: Zeinobia | R7: evanchill | R13: Dima_Khatib |
| R2: Gsquare86 | R8: hebalsherif | R14: 3arabawy |
| R3: NickKristof | R9: SultanAlQassemi | R15: RamyRaouf |
| R4: rassdwehda | R10: AJELive | R16: AJArabic |
| R5: occupiedcairo | R11: bencnn | R17: BreakingNews |
| R6: gamaleid | R12: TravellerW | |

bencnn—Ssirgany ■ — ■
 'State TV showing urgent banner warning everyone in Tahrir square to evacuate immediately. (or else?) #Jan25 #Egypt'

monasosh—occupiedcairo ■ — ■
 'Thugs surrounding our car not allowing us to pass wt medical supplies #Jan25'

3arabawy—maggiosama ■ — ■
 '#Egypt #DownWithMubarak In Tahrir Square No army in sight. They're watching us too #Jan25'

3arabawy—abdu ■ — ■
 'In Tahrir Square No army in sight. They're watching us too #Jan25'

3arabawy—Ssirgany ■ — ■
 'Plainclothes thugs (police) are on horses now'
 'Photos of the protests in Tanta via @maboulazm #Jan25 ...'
 '100 thugs marching in Hurghada'
 'army officer weeps after protesters were attacked by Mubarak's thugs today in Tahrir ...'

3arabawy—ZeinabSamir ■ — ■
 'The protesters claim the Egyptian people to break the curfew and go to Tahrir Square and join #Jan25 #fb'

3arabawy—Zeinobia ■ — ■
 'Tens of thousands r marching now in Alexandria heading towards Abu Qeer chanting against Mubara[k] ...'

gamaleid—Ssirgany ■ — ■
 'Mtzaheroa Tahrir Square, blocking entrances and outlets Alimdan, with their bodies, and Astalon anger and strength #jan25'

occupiedcairo—Sarahcarr ■ — ■
 'Thugs being moving back from accross Qasr el Nil bridge. Pushed back by anti gov. protestors #jan25'

AJArabic—abdu ■ — ■
 'Carr operations provided between the protesters and the protesters in Tahrir Square Mhajminhm #jan25 #Egypt #aljazeera'

justimage—occupiedcairo ■ — ■
 'Protesters are still at Tahrir by the thousands. Last night was the coldest night yet'

Zeinobia—maggiosama ■ — ■
 'HELP MEDICAL NEEDED We need doctors in Tahrir Square #Jan25 #Egypt RT @Zeinobia We need ...'

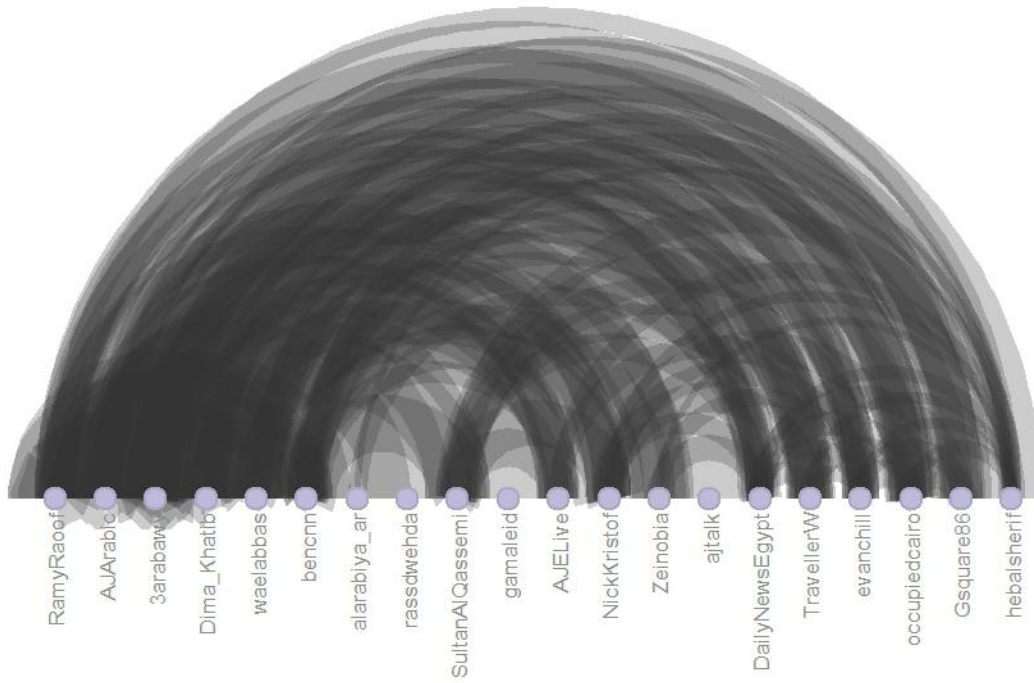
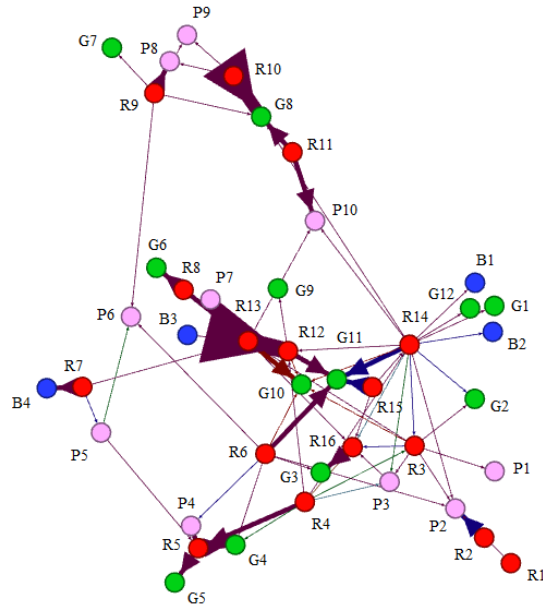


Figure 13. Shared information disseminators of central users on February 2, 2011

Table 6: Figure 6. Feb 3



- B1: 3arabawy
- B2: hebalsherif
- B3: evanchill
- B4: TravellerW

- G1: Marwa_Alasar
- G2: 3Beee
- G3: abdu
- G4: maggi eosama
- G5: kalimakhus
- G6: BreakingNews
- G7: JassimQ
- G8: AhmedFouad
- G9: Sarahcarr
- G10: monaeltahawy
- G11: Ssirgany
- G12: holom10

- P1: AboulEinein
- P2: ashrafkhalil
- P3: alaa
- P4: lissnup
- P5: pakinamamer
- P6: NevineZaki
- P7: IvanCNN
- P8: ZeinabSamir
- P9: AhmedFouad
- P10: H_Eid

- R1: kalnaga
- R7: AJEnglish
- R12: occupiedcairo
- R2: sharifkouddous
- R8: BBCWorld
- R13: bencnn
- R3: RamyRaof
- R9: rassdwehda
- R14: monasosh
- R4: Sandmonkey
- R10: alarabiya_ar
- R15: mosaaberizing
- R5: Zeinobia
- R11: AJArabic
- R16: Dima_Khatib
- R6: alaa

Zeinobia—maggi eosama ■ — ■
 'Guys in Al Tahrir beware they are opening the metro so the thugs would come from it'

Zeinobia—kalimakhus ■ — ■
 'The thugs are going soon to storm the protesters at Al Tahrir'
 'Dogs now in Tahrir Square #jan25 #tahrir'

rassdwehda—ZeinabSamir ■ — ■
 'Thousands flocked to Tahrir Square ... to support the demonstrators Liberation and numbers of thugs less and less #Tahrir #M ...'

alarabiya_ar—ZeinabSamir ■ — ■
 'Chase media of criminals and thugs supporters of Mubarak in Cairo streets and hotels #alarabiya #egypt #cairo #j ...'

waelabbas—abdu ■ — ■
 'BBC reporter in Cairo was handcuffed and blindfolded'

evanchill—bencnn ■ — ■
 'Anti govt supporters are advancing from here'

occupiedcairo—Ssirgany ■ — ■
 'nadeem center for victims of torture surrounded by thugs'

occupiedcairo—Sarahcarr ■ — ■
 'Reports that army is trying to stop thugs entering Video Cairo building #jan25'

bencnn—monaeltahawy ■ — ■, **bencnn—H_Eid** ■ — ■
 'Witness in #Tahrir says pro-democracy people being shot at from rooftops'

monasosh—occupiedcairo ■ — ■
 'A protester shared wt us the horrors of having ppl die right next 2 u. He said let them know we r not h ...'

RamyRaof—monaeltahawy ■ — ■
 'we just knew that a demonstrator just died from live bullet shot by the NDP thugs here in Tahrir Square. ...'

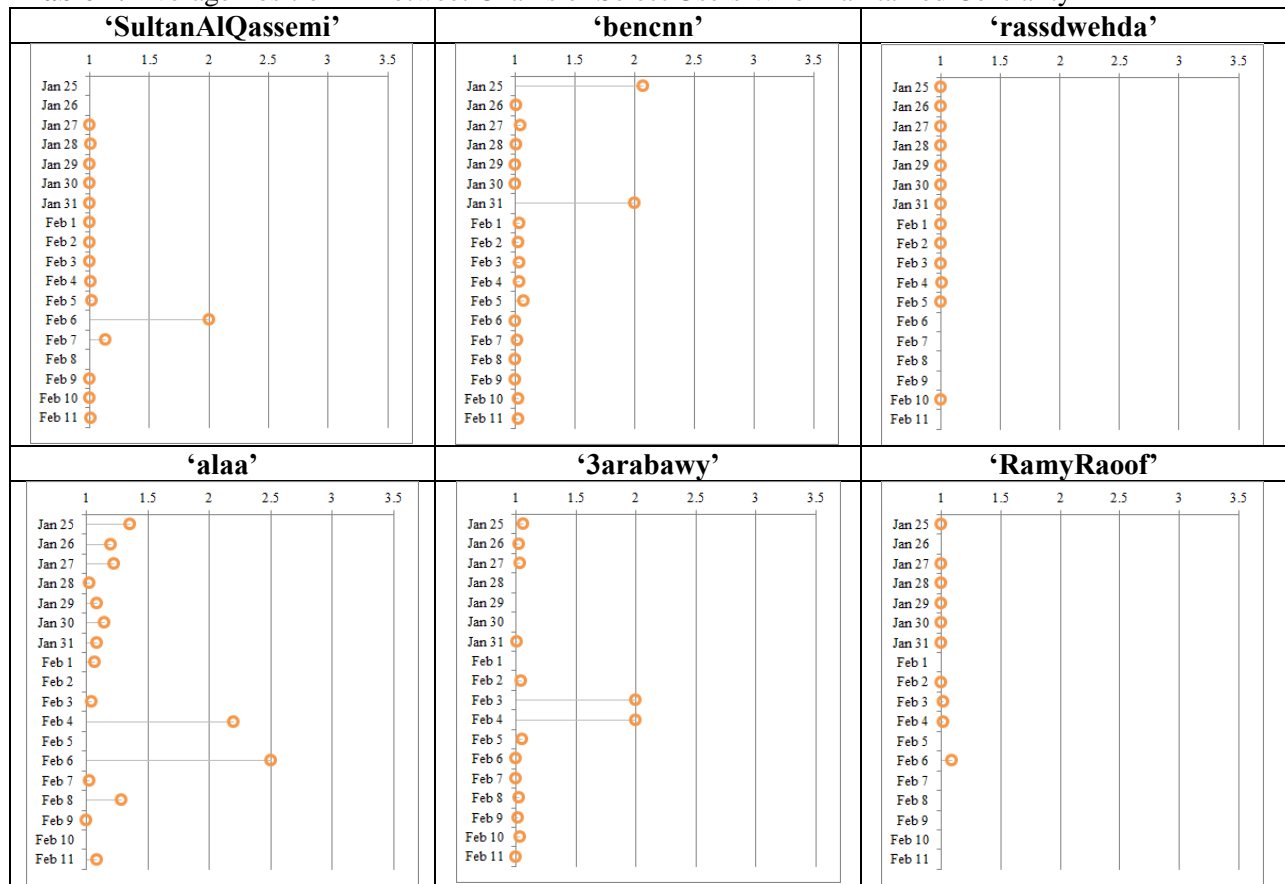
Zeinobia—lissnup ■ — ■
 'Here are two of our martyrs in Al Tahrir we need other names and photos ...'

alaa—monaeltahawy ■ — ■
 'The battle of the bridge is won'

Consistent Core and Core Coordination

A group of users continued to exert influence among followers who responded to emerging information about revolutionary situations. Table 7 shows the daily average positions of users in retweet sequences for selected users ‘SultanAlQassemi,’ ‘bencnn,’ ‘rassdwehda,’ ‘alaa,’ ‘3arabawy,’ and ‘RamyRaooof’ who maintained centrality as information sources in the spatial-information network.

Table 7. Average Position in Retweet Chains of Select Users Who Maintained Centrality^{148 149}



Centrality in Spatial-Information Network: ‘SultanAlQassemi’ (Jan 27-28, Jan 30-Feb 7, Feb 10-11); ‘bencnn’ (Jan 26-Feb 11); ‘rassdwehda’ (Jan 25-Feb 6); ‘alaa’ (Jan 25-Feb 1, Feb 3, Feb 7, Feb 11); ‘3arabawy’ (Jan 25-27, Jan 31, Feb 2, Feb 5, Feb 7-11); ‘RamyRaooof’ (Jan 25, Jan 29-31, Feb 2-4)

¹⁴⁸ When users occupied a central position in the information network, their average position value for retweet chains tended to be low. However, a low average position value does not always indicate that the user occupied a central position on a given day (their tweets may not have been widely tweeted).

¹⁴⁹ Some users lost access to Twitter during the information shutdown period (indicated by missing data points in retweet position figures).

Twitter user ‘bencnn,’ a CNN reporter, had the longest duration as a central user and ‘SultanAlQassemi’ also consistently held a central position (in the core retweet network on Jan 27 (R9), Jan 28 (R13), and Feb 2 (R9)). Selected tweets for ‘rassdwehda’ showed that the user was a key information source for core users, such as ‘kalimakhus’ (Jan 25-27), ‘JassimQ’ (Jan 26, Jan 28), and ‘ZeinabSamir’ (Jan 25-26, Jan 29, Feb 3). The selected messages from ‘3arabawy’ were retweeted by core users ‘kalimakhus’ (Jan 25-26), ‘maggieosama’ (Jan 25, Feb 2), ‘ZeinabSamir’ (Jan 25-26, Feb 2), ‘Zeinobia’ (Jan 25, Feb 2), ‘alaa’ (Jan 25, Jan 27), ‘eSocialists’ (Jan 27), ‘Ssirgany’ (Jan 27, Feb 2), and ‘abdu’ (Feb 2). ‘Alaa’ (in the core graphs on Jan 25 (R3), Jan 26 (R13), Jan 27 (R12), Jan 28 (R11), and Feb 3 (R6)) disseminated messages from other core users and the average position in retweet sequences varied as the user engaged in communicative activity as a disseminator. The selected tweets show the user as an information source and disseminator with the following core information ties: ‘alaa’—‘manal’ (Jan 25, Jan 28), ‘3arabawy’—‘alaa’ (Jan 25, Jan 27), ‘kalimakhus’—‘alaa’ (Jan 25-27), ‘wael’—‘alaa’ (Jan 26-27), ‘alaa’—‘monaeltahawy’ (Jan 28, Feb 3), and ‘alaa’—‘Sarahcarr’ (Jan 28).

During the first two days of the revolution, users ‘25Egypt,’ ‘rassdwehda,’ ‘alaa,’ ‘3arabawy,’ ‘ianinegypt,’ ‘Zeinobia,’ and ‘kalimakhus’ continued to occupy central positions in the spatial-information network. On Jan 25, ‘3arabawy’ (R20), ‘rassdwehda’ (R19) and ‘Zeinobia’ (R15) assumed central positions in the core network and, the next day, ‘gamaleid’ (R18) and ‘rassdwehda’ (R6) acquired many of the followers of the most central users on Jan 25 (*see Figure 11*). The composition of the core began to stabilize in the first phase of the revolution and users ‘25Egypt,’ ‘rassdwehda,’ ‘ianinegypt,’ ‘bencnn,’ ‘3arabawy,’ ‘alaa,’ ‘gamaleid,’ ‘anhri,’ and ‘kalimakhus’ continued to direct the attention of users on Jan 26 and Jan 27. ‘DostorNews’ and ‘Shorouk_News’ were central users on the first day of the revolution and regained on Jan 27. Users ‘bencnn,’ ‘alaa,’ ‘SultanAlQassemi,’ and ‘ElBaradei’ maintained a central position from Jan 27 to Jan 28 while ‘Halmustafa,’ ‘AJArabic,’ and ‘Dima_Khatib’ were core users on Jan 26 and Jan 28. Arrangements of core users continued when ‘RamyRaof,’ ‘Zeinobia,’ ‘rassdwehda,’ ‘AJArabic,’ ‘occupiedcairo,’ ‘bencnn,’ and ‘Dima_Khatib’ were central in the information network on Feb 2 and Feb 3 during conflicts in Tahrir Square. Previous core users ‘monasosh’ and ‘alaa’ also regained centrality on Feb 3. Prior information

exchanges continued to structure the network as users resumed central positions and ‘core’—‘previous core’ pairs formed from continued information dissemination among prominent actors.

Figure 8 shows furcated flows of shared followers among central users (ranked from top by highest centrality on both sides of the graph) from Jan 25 to Jan 26. The flow lines represent followers who tweeted from a core user for one day and tweeted from the same core user or another core user the next day. The thickness of the line indicates the volume of followers between a pair of users who occupied central positions on two different days. A user can be represented in different lines if the user tweeted from multiple core users. Central users drew upon disseminators of core users from the previous day and retained followers. A dominant flow pattern emerged when a core user’s disseminator base was a major source of followers for other central users the next day. The follower flow graphs indicated focused attention on information sources and the graphs for Jan 26 to Jan 27 with ‘galameid’ and Jan 28 to Jan 29 with ‘SultanAlQassemi’ show the users as a key source of follower flows after acquiring a large number of disseminators on a single day (*see Figures 10 and 11 and Figures 11 and 12*). ‘Gamaleid’ was in the most central position in the core network on Jan 26 and followers of that user shared information from other core users the next day. ‘SultanAlQassemi’ gained a large following by occupying the most central position in the core network when the major communication shutdown began on Jan 28 and the followers mobilized around other users the next day (those who still had access to Twitter).

Users with centrality in the core network had a high following from attention directed to their messages by other influential users. The concentration of followers around the most central core users was reflected by shared follower bases of core users on Jan 28 in Figure 12. The lines for figure of the shared follower bases represent co-occurring users who followed more than one core user and the thickness of the line indicates the volume of the total co-occurring users between a pair of core users on a given day. A follower can be represented in different lines if the user retweeted from multiple core users. ‘3arabawy’ (R14) was in a central position in the core network on Feb 2 and had a large shared follower base with other core user during clashes in Tahrir Square (*see Figure 13*). Shared follower bases reflected the distribution or concentration on information sources and the difference in following of central users for Jan 25 and Feb 2 reflected increased coordination when focus was on a specific area in Egypt. Figure 9 shows the smaller shared follower bases of

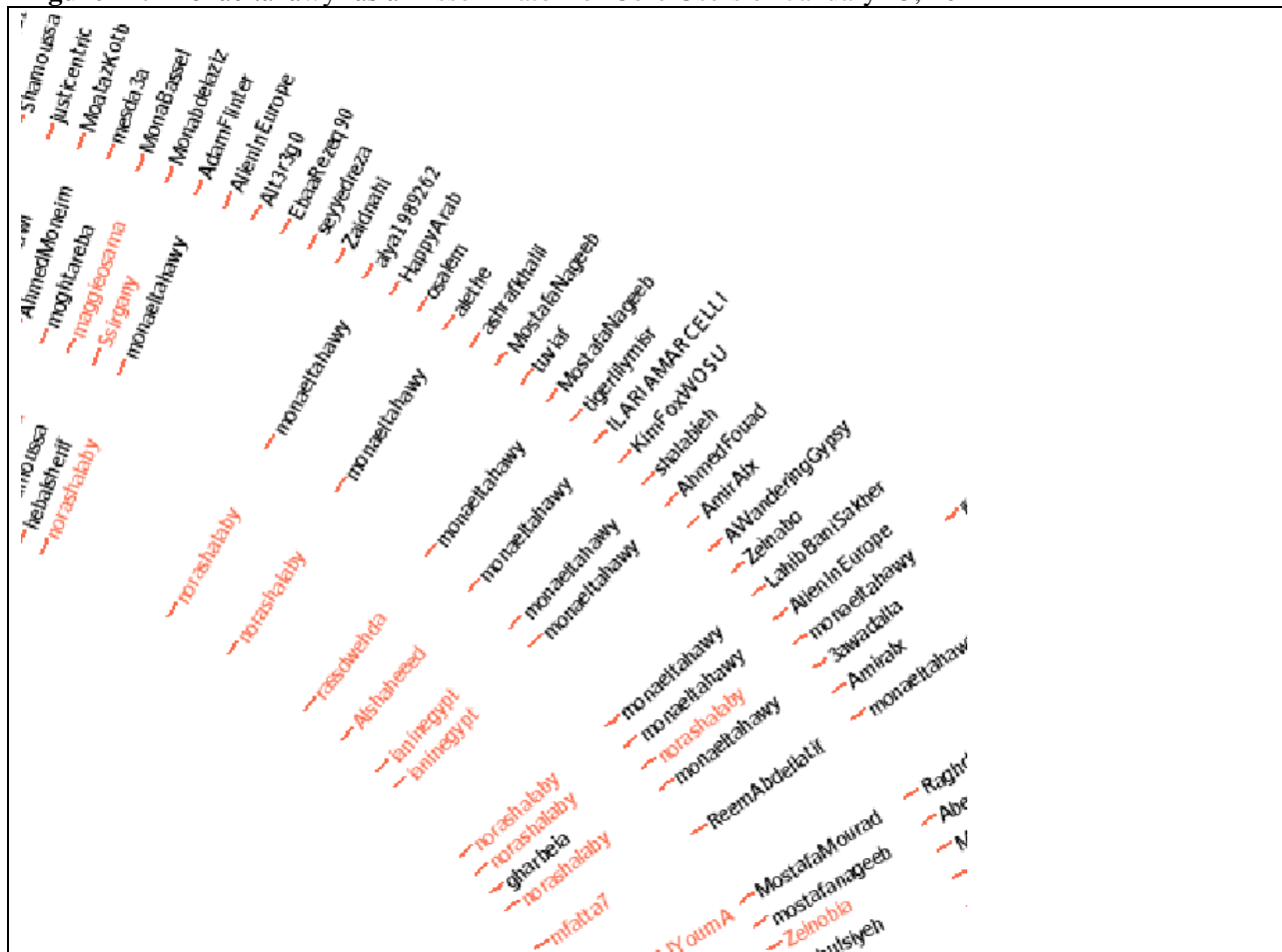
core users on the first day of the revolution when Egyptians mobilized across the country and communication roles were not established. A large shared following among central users formed from ‘core’—‘core’ information exchanges during clashes in Tahrir Square that increased coordinated information dissemination.

Associational Influence

In the first two days of the revolution, many to-be-core users were embedded around core users as disseminators in the core networks before gaining centrality the next day: ‘Dima_Khatib’ (P23, R1), ‘AJArabic’ (P22, R4), ‘holom10’ (P12, R10), ‘anhri’ (P2, R11), ‘wael’ (P8, R12), ‘shmpOngO’ (P27, R7), ‘AhmedFouad’ (P9, R8), ‘ayaabdullah’ (P20, R9), ‘bencnn’ (P13, R15), and ‘eSocialists’ (P26, R20). The same transition in roles occurred for ‘bassemsamir’ (P21, R16) and ‘salmaeldaly’ (P5, R18) who gained centrality on Jan 27 after disseminating from core users the previous day. Users ‘monaeltahawy’ (P12, R2) and ‘evanchill’ (P10, R5) were disseminators on Jan 27 before becoming a core user on Jan 28 when the information shutdown began.

The interactions with core users affected gains in centrality in the spatial-information network and the effects of associational influence was demonstrated by the activity of ‘monaeltahawy’ who was in the core networks on Jan 25 (P10), Jan 26 (P21), and Jan 27 (P13) before becoming core on Jan 28 (R2). Figure 14 shows ‘monaeltahawy’ on the first day of the revolution as a disseminator for ‘norashalaby,’ ‘rassdwehda,’ ‘Alshaheed,’ ‘ianinegypt,’ and ‘mfatta7’ with an average position value that indicated a secondary role in information dissemination on Jan 25 (*see Figure 15*). Position values for ‘monaeltahawy’ decreased from gaining centrality in the spatial-information network on Jan 28-29, Feb 1, and Feb 7-9.

Figure 14. ‘monaeltahawy’ as a Disseminator for Core Users on January 25, 2011



norashalaby—monaeltahawy—AdamFlinter
 '#Egypt police throw rocks @ #Jan25 protesters in #Cairo Fucking throwing rocks at us ...'

norashalaby—monaeltahawy—alya1989262
 'Look at those people coming! Yalla #Egypt! Tahrir #Jan25 #Cairo'

norashalaby—monaeltahawy—alethe
 'Never seen anything like it Tahrir (downtown #Cairo) overrun by protesters #Jan25'

rassdwehda—monaeltahawy—MostafaNageeb
 'Riot police in front of #Egyptian Museum RNN| N monitoring security in front of the Egyptian Museum # Jan25'

Alshaheed—monaeltahawy—ILARIAMARCELLI
 'Ramses Square march and next 2 AlGalaa bridge is gaining pace. Hundreds if not thousands marching there ...'

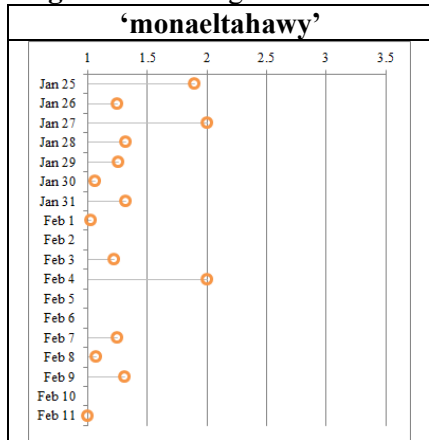
ianinegypt—monaeltahawy—shalabieh
 'Police continue to retreat and regroup #jan25 #egypt (In #Cairo)'

norashalaby—monaeltahawy—LahibBaniSakher
 'Occupying 26th July st. Of to attaba after #Cairo #jan25'

norashalaby—monaeltahawy—AlienInEurope
 'Protesters trying to break police line in tahrir (downtown #Cairo) #Jan25 #Egypt'

gharbaia—norashalaby—monaeltahawy—ifaterry
 'Police on every street entrance in Garden City'

Figure 15. Average Position in Retweet Chains of ‘monaeltahawy’

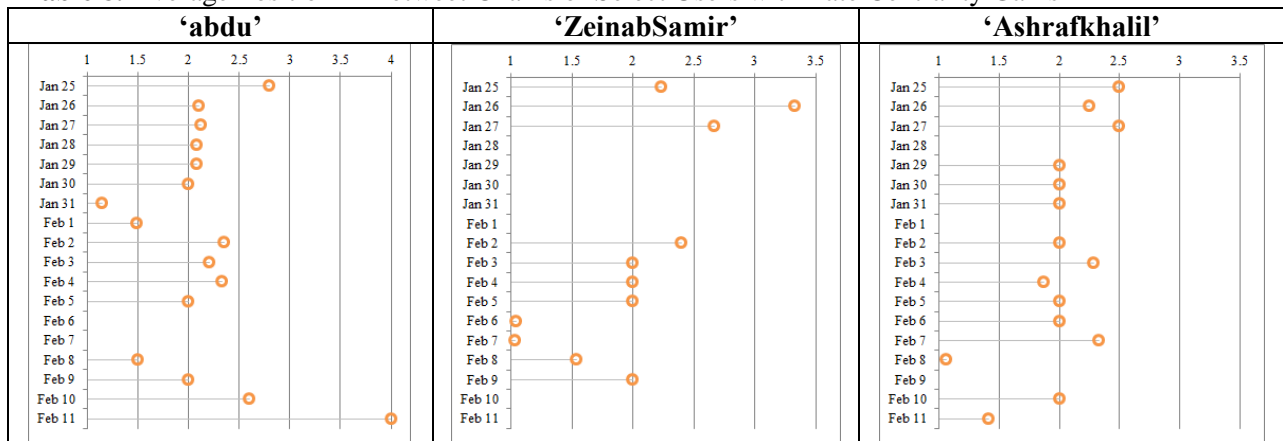


Centrality in the Spatial-Information Network: Jan 28-29, Feb 1, Feb 7-9

The selected information ties for ‘monaeltahawy’ show reoccurring associations to influential users in the core network as new information was shared: ‘alaa’—‘monaeltahawy’ (Jan 28, Feb 3), ‘SultanAlQassemi’—‘monaeltahawy’ (Jan 28), ‘bencnn’—‘monaeltahawy’ (Jan 28, Feb 3), ‘monasosh’—‘monaeltahawy’ (Feb 3), and ‘RamyRaof’—‘monaeltahawy’ (Feb 3).

While certain users gained centrality early in the revolution, others acquired a central position when information demand lessened during periods of conflict abeyance. Table 8 shows the daily average positions of users in retweet sequences for ‘abdu,’ ‘ZeinabSamir,’ and ‘ashrafkhalil’ who gained centrality after extended activity as a disseminator.

Table 8. Average Position in Retweet Chains of Select Users with Late Centrality Gains



Centrality in the Spatial-Information Network: ‘abdu’ (Feb 1); ‘ZeinabSamir’ (Feb 7-8); ‘Ashrafkhalil’ (Feb 8)

'Abdu' gained centrality on Feb 1, 'ZeinabSamir' on Feb 7-8, and 'Ashrafkhalil' became a core user on Feb 8. In the core network graphs, 'Ashrafkhalil' was associated with core users on Jan 25 (P7), Jan 26 (P17), Jan 27 (P7), Feb 2 (P7), and Feb 3 (P2). 'Abdu' was a disseminator for core users on Jan 25 (P16), Jan 26 (P20), Jan 27 (P11), and Jan 28 (P6) before becoming a central user on Feb 1. The selected tweets in the core network figures show that 'abdu' retweeted from 'Zeinobia' (Jan 25), 'SultanAlQassemi' (Jan 28), '3arabawy' (Feb 2), 'AJArabic' (Feb 2), and 'waelabbas' (Feb 3). Figure 16 shows 'Zeinabsamir' as a disseminator for 'Zeinobia,' '3arabawy,' 'Cer,' 'maggieosama,' 'DostorNews,' 'rassdwehda,' 'AlMasryAlYoum_A,' and 'monasosh' on the first day of the revolution when the user had an average position value greater than 2.

‘ZeinabSamir’ was inactive during the information shutdown period but resumed disseminating information on Feb 2 and the selected spatial information tweets showed reoccurring follower ties to ‘3arabawy’ (Jan 25-26, Feb 2), ‘rassdwehda’ (Jan 25-27, Feb 3), ‘Zeinobia’ (Jan 25-27), and ‘alarabiya_ar’ (Feb 3) (while in the core networks on Jan 25 (P28), Jan 26 (P7), Jan 27 (P2), Feb 2 (P9), and Feb 3 (P8)). Table 9 shows core information ties that occurred on at least two days of the revolution before ‘abdu,’ ‘ZeinabSamir,’ and ‘ashrafkhalil’ became central users. Reoccurring ties to key information sources indicated the establishment of a role system and continuity in arrangements of actors in the secondary tier of information spread among actors communicating about revolutionary events.

Table 9. Core User Retweet Associations that Occurred on More Than One Revolutionary Day^{150 151}

| ‘abdu’ core-core pair | Jan25 | Jan26 | Jan27 | Jan28 | Jan29 | Jan30 | Jan31 | Feb1 | Feb2 | Feb3 |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|
| Zeinobia—abdu | X | X | | | | | | | X | |
| alaa—abdu | | X | X | X | X | | X | | | X |
| Dima_Khatib—abdu | | X | | X | X | X | | C | X | X |
| 3arabawy—abdu | | X | X | | | | | | X | |
| nolanjazeera—abdu | | | X | | | | | C | | |
| SultanAlQassemi—abdu | | | | X | X | | | | | |
| SherineT—abdu | | | | X | | | | | | |
| AJArabic—abdu | | | | | X | | | C | | |
| ajtalk—abdu | | | | | X | | | C | | |
| AymanM—abdu | | | | | X | | | C | | |
| RamyRaof—abdu | | | | | X | X | | | X | |
| ‘ZeinabSamir’ core-core pair | Jan25 | Jan26 | Jan27 | Jan28 | Jan29 | Jan30 | Jan31 | Feb1 | Feb2 | Feb3 |
| 3arabawy—ZeinabSamir | X | X | | | | | | | X | |
| rassdwehda—ZeinabSamir | X | X | X | | | | | | | X |
| Zeinobia—ZeinabSamir | X | X | X | | | | | | X | |
| DostorNews—ZeinabSamir | X | | | | | | | | | |
| monasosh—ZeinabSamir | X | | | | | | | | | |
| gamaleid—ZeinabSamir | | X | | | | | | | | |
| ZeinabSamir—alaa | | | X | | | | | | | |
| ‘ashrafkhalil’ core-core pair | Jan25 | Jan26 | Jan27 | Jan28 | Jan29 | Jan30 | Jan31 | Feb1 | Feb2 | Feb3 |
| bencnn—ashrafkhalil | | X | | | | X | | | X | |
| ianinegypt—ashrafkhalil | | X | X | | | | | | | |
| alaa—ashrafkhalil | | | | | X | | | | | X |
| RamyRaof—ashrafkhalil | | | | | X | | | | X | X |

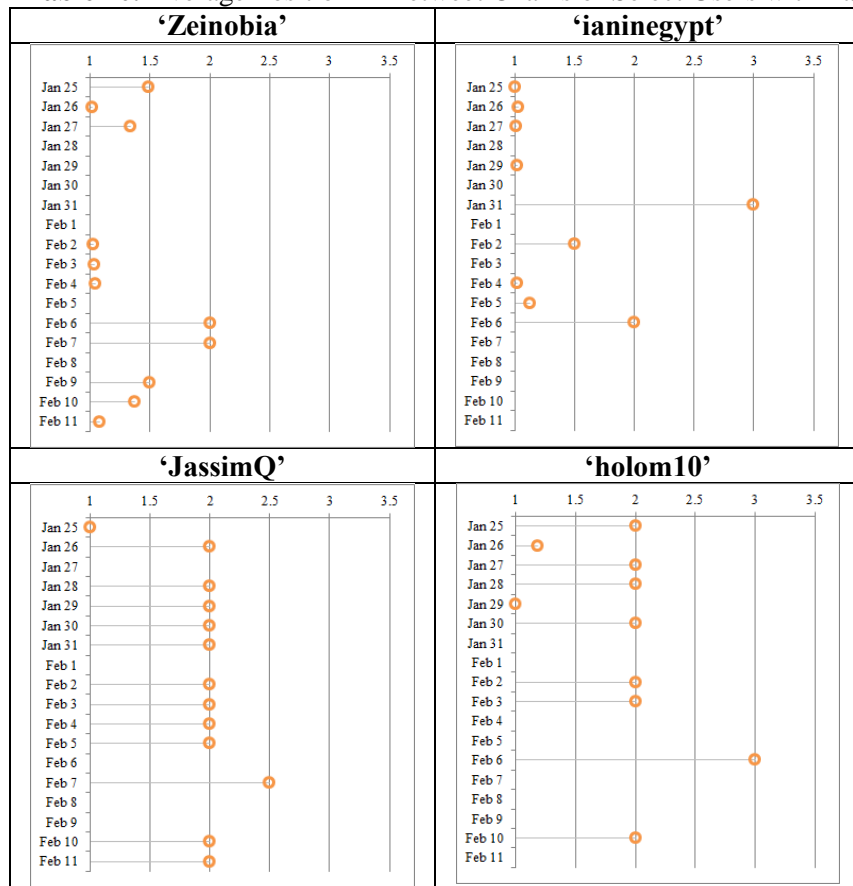
¹⁵⁰ C – The information exchange occurred when the user occupied a central position in the spatial-information network.

¹⁵¹ The interactions among pairs of core users continued during the revolution. The table only shows associations from Jan 25 to Feb 3.

Influence Retention

While a group of core users maintained central positions, most core users lost centrality and transitioned into a disseminator role. The effects of prior roles continued to structure secondary levels of communicative organization as revolutionary situations changed. Table 10 shows the daily average positions of users in retweet sequences for selected central users ‘Zeinobia,’ ‘Ianinegypt,’ ‘JassimQ,’ and ‘holom10’ who occupied central positions in the information network early in the revolution and retained influence while being active as a disseminator.

Table 10. Average Position in Retweet Chains of Select Users with Early Centrality Gains



Centrality in the Spatial-Information Network: ‘Zeinobia’ (Jan 25-26, Feb 2-4, Feb 9-10); ‘ianinegypt’ (Jan 25-27, Jan 29, Feb 4-5); ‘JassimQ’ (Jan 25); ‘holom10’ (Jan 26)

‘Zeinobia’ was an information source at the start of the revolution, during clashes in Tahrir Square, and the last stage of the uprising. In the core network, ‘Zeinobia’, was a core user on Jan 25 (R15) and Jan 26

(R17), continued to associate with central actors on Jan 27 (B4). Selected tweets indicated associations generated from activity during key revolutionary periods: ‘3arabawy’—‘Zeinobia’ (Jan 25, Feb 2), ‘Zeinobia’—‘kalimakhus’ (Jan 25-26, Feb 3), ‘Zeinobia’—‘abdu’ (Jan 25), ‘Zeinobia’—‘maggieosama’ (Jan 25, Feb 2-3), ‘Zeinobia’—‘ZeinabSamir’ (Jan 25-27), and ‘Zeinobia’—‘lissnup’ (Feb 3). ‘Ianinegypt’ was a central user in the first three days of the revolution (Jan 25 (R12), Jan 26 (R16), and Jan 27 (R6)) and became a disseminator on Feb 2 (G7) before regaining centrality after conflict abeyance. While ‘Zeinobia’ and ‘ianinegypt’ gained and lost centrality during the revolution, core users ‘JassimQ’ and ‘holom10’ were central on Jan 25 and Jan 26 respectively and stayed in secondary positions as information disseminators. ‘JassimQ’ continued to be active as a disseminator on Feb 2 (G12) and Feb 3 (G7) as seen in selected tweets shown for Jan 26 and Jan 28. ‘Holom10,’ a to-be-core user on Jan 25 (P12), transitioned into a central position on Jan 26 (R10) and remained active as a disseminator in the core network (on Jan 28 (G3), Feb 2 (G1), and Feb 3 (G1)).

The users retained influence among their followers after transitioning to disseminator roles and Table 11 shows figures with ‘Zeinobia,’ ‘ianinegypt,’ ‘JassimQ,’ and ‘holom10’ exerting influence while disseminating messages from core users. Core coordination among users with prior centrality also affected arrangements of users by eliciting follower responses in different user sequences. The figures in Table 13 show ‘core’—‘previous core’—‘core’—‘non-core’ sequences with ‘25Egypt’—‘JassimQ’—‘non-core’ and ‘rassdwehda’—‘JassimQ’—‘non-core’ on Jan 26 and ‘AymanM’—‘Zeinobia’—‘alaa’—‘non-core’ on Feb 6. The ‘core’—‘yesterday core’—‘non-core’ sequence with ‘bencnn’—‘ianinegypt’—‘non-core’ generated several follower responses on Feb 2 and core coordination was demonstrated with ‘waelabbas’—‘holom10’—‘non-core’ on Feb 3. The communicative activity of different types of actors maintained lines of influence in changing arrangements in response to mobilization around emerging information.

Joint communicative activity continued until the revolution ended and Egyptians reported on responses to Mubarak's resignation:

'Great guy going round in pointing to each person individually telling them with a smile enta 7 or you are free. Beautiful spirit'

'Tanks outside prez palace turn their barrels away from crowd. Cheer goes up. One soldier climbs out of tank'

'At the Zamalek Marriott the front desk pic of Mubarak is already gone'

CONCLUSION

This chapter addresses the lack of research on organization in protest networks based on actor-to-actor interactions that generate changing communication networks. Centralization in spatial-information networks reflected the establishment of a role structure with interchangeable actors who assumed positions of information generation and dissemination. Recognition gained from message generation and dissemination continued to influence subsequent arrangements of users as information sharing continued. Relations formed among actors with a shared perspective of coordinated political action:

I wish I was in the streets of Cairo today with my Egyptian friends. I'll be in their networks instead. Solidarity ...'

I've come to know so many awesome Egyptians on twitter!!! Especially since #jan25 You ppl are awesome!!!

The communicative actions of different users kept Egyptians informed in networks that the Mubarak government attempted to prevent from forming by disrupting information lines:

'God bless Twitter for the beautiful coverage. AlJazeera'

'People have routed power from the street lights and are charging their cell phones in Tahrir #Egypt'

'Internet is a gift from God for all of "Egyptians". They shut it down and We were just "Gyptians" #Tahrir #Jan25'

Egyptians recognized the prominence of communication technologies used during the revolution:

'Now, i really BELIEVE it. The #Revolution will NOT be Televised It will be live on #Twitter #Jan25 #Egypt'

'People in Tahrir are well aware of the power of facebook and twitter. Multiple signs with both sites. #jan25 #egypt'

'RT @Ghonim: I said 1year ago that Internet will change the political scene in #Egypt and some friends made fun of me :) #Jan25'

'A revolution organized by facebook, spread by twitter and organized by a guy working for Google. #jan25 #ILOVEOURREVOLUTION'

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CHAPTER 3

HUMOR IN DISSENT: RIDICULE IN THE EGYPTIAN REVOLUTION

"Egyptians most potent weapon, is their amazing sense of humor" #Jan25 #Tahrir'
– Nour_han, Egyptian Twitter user on February 4, 2011

"An experience leaves a trace in the mind" – unknown

Chapter three examines humor during the Egyptian revolution through a joke that was spread on Twitter among actors in North Africa and the Middle East before the collapse of the Mubarak regime. Cohesion from coordinated communicative action during the uprising enabled affective solidarity through shared laughter to emerge. Individuals who joked about Mubarak were part of a group of users who shared spatial information during the revolution and humor tweets were disseminated among users with prior information exchange ties. Participation in the joking episode influenced subsequent behavior in the form of responsiveness to variant jokes used to ridicule other political targets. The joking experience became part of the collective memory and the associated hashtag was integrated into the political-cultural context of the Arab Spring as a protest artifact.

INTRODUCTION

Theoretical work on emotions in social protest (Goodwin et al. 2001; Jasper 2011, 1998) has identified a wide range of basic emotions experienced and expressed in protest. However, less scholarly attention has been given to other forms of affective solidarities that emerge in political action, such as emotions experienced from humor and derision directed toward political targets. Researchers have documented how ridicule is used against female protesters as a form of soft repression (Ferree 2004; Benski 2011) but empirical research on the use of humor in protest against the state and the dissemination of subversive humor in networks of opposition speech (Johnston 2004) has been limited. The spread of political ideas on social media has been a topic of interest for researchers studying the reproduction of messages or movement frames (Romero et al. 2011; Barash and Kelly 2012; Meraz and Papacharissi 2013), but extant social movement research maintains a dominant focus on framing and information diffusion research, with an exclusive focus on the passing of political hashtags, does not incorporate underlying emotional experiences involved in political communication. Discussions of humor's emergence and use during political struggle have not addressed humor dynamics in terms of affective dimensions in interpersonal communication among actors collectively discussing political figures. In addition, the continuation of humor through causally connected joking episodes has been overlooked in assessments of humor in social situations: "While many scholars have analyzed humor in group life, relatively few have focused on the strands that tie joking incidents together" (Fine and De Soucey 2005: 17).

Humor is often used as an indirect form of dissent under systems where direct criticism of government is repressed. Dark humor was pervasive in authoritarian regimes such as Adolf Hitler's Germany, Italy under Benito Mussolini's rule, and the Soviet Union where jokes were told about the communist system and the ruling power (Davies 2007; Lif 1979; Pariser 1978). Jokes are an indicator of system instability and regime collapses are preceded by an abundance of satire (Kishtainy 2009; Davies 2007). In social protest, humor is characterized as a "weapon of the weak" (t Hart 2007) that serves different functions. Jokes that attack authority figures undermine the legitimacy of existing establishments. Humor also generates solidarity that bonds a population by defining group membership, among those who are in on the political joke as active jokers or laughing listeners. In the movement that deposed Slobodan Milosevic in Yugoslavia, tactical humor

repertoires were instrumental in reconnecting the public, drawing citizens into the opposition, and countering state attempts at social control (York 2001; Sorensen 2008).

Humor's embeddedness in Egyptian society has long been seen as a destabilizing threat to rulers who were afraid of jokes spreading through the population. Both Gamal Nasser and Hosni Mubarak used intelligence agents to monitor political jokes told about them in public (Khalil 2012; El Amrani 2011) and Nasser at times responded to humor by altering his policies¹⁵². Humor has served as a "true expression of the masses" in the Arab World by providing a means of communicating dissent against rulers (Kishtainy 2009; Shehata 1992; Badarneh 2011). Humor is not always generated from conscious preparation; it can emerge spontaneously from social interaction (Fominaya 2007) when members of subordinated groups imagine a situation of reversed power dominance (Scott 1990) and express subversion according to an engrained tradition of joking. During the Egyptian revolution, collective laughter experienced through social media generated unity with the spread of political jokes that incorporated cultural knowledge and protest news in collaborative discourse that enabled humor to resonate with the masses. The diffusion of humor highlighted the micro-foundations of dissent and the withdrawal legitimacy from authorities (Dupont and Passy 2011) when exposure to revolutionary communication enabled the adaptation of political humor into the opposition culture of the Arab Spring.

During the Egyptian revolution, Egypt became the focus of the region with much of the world paying close attention to the developments in Cairo, a geo-political center of influence in North Africa and the Middle East (MENA). After prolonged contestations with state forces and Mubarak supporters, protesters occupied Tahrir Square and Mubarak was due to give a televised address on Feb 10 at 8PM. Mubarak did not appear on television until two hours later and, while the public waited for him, Twitter users started a joke hashtag, #ReasonsMubarakIsLate, to generate humorous explanations for his tardiness (*see Table 1*).

¹⁵² "Story of a man going to Alexandria: A conductor asked the man why he was going there? He replied that he had heard that there was rice in a shop there. After a short while, the conductor stopped the bus so the man could get off. "But this isn't Alexandria! This is Tanta," he protested (100 miles south of Alexandria). "Yes, but that is where the queue begins!" The joke supposedly so upset Nasser that he could not sleep that night. The next morning, he ordered the minister of supplies to obtain rice from whatever source was available. This joke was more effective than all the articles published on the shortage" (Kishtainy 2009: 62).

Table 1. #ReasonsMubarakIsLate Jokes about Hosni Mubarak on February 10, 2011

'He's trying to Google Map Saudi Arabia but forgot he shut down the internet. #ReasonsMubarakIsLate'
'#reasonsmubarakislate enjoying torturing us by suspense'
'#reasonsmubarakislate all his crew members left him so he is trying to adjust the speech camera alone'
'#ReasonsMubarakIsLate waiting for the gas prices to go down for his jet.'
'Asking Ben Ali if he can bunk with him. #ReasonsMubarakIsLate'
'#ReasonsMubarakIsLate Diarrhea'

Jokes with U.S. popular culture references:

'he decided to take the blue pill and ignore it all #ReasonsMubarakIsLate'
'#ReasonsMubarakIsLate busy playing angry birds.'
'Meeting with Ghonim to say "Wael I am your father" #ReasonsMubarakIsLate'
'Trying to walk like an Egyptian but failing #reasonsmubarakislate'
'#ReasonsMubarakIsLate he thinks he is starring in a M.Night.Shamalyan movie!'
'Crying to Dr. Phil. #ReasonsMubarakIsLate'
'Singing to "I will survive" in the shower #ReasonsMubarakIsLate'
'#ReasonsMubarakIsLate watching part three of the Godfather.'

Twitter users commented about the Mubarak jokes with positive reactions:

'Oh man, check out #ReasonsMubarakIsLate. Classic Egyptian humor. #jan25 #egypt'

'#reasonsmubarakislate is quite entertaining.'

The jokes spread among MENA Twitter users (in Afghanistan, Algeria, Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, and United Arab Emirates) and the hashtag quickly became a Twitter trend topic that was tweeted around the world^{153 154} (see *Figure 1 and Table 2*).

¹⁵³ The hashtag was among the Arab Spring hashtags with a high burstiness measure (Kleinberg 2002).

¹⁵⁴ Hashtags that are widely tweeted are recognized as a Twitter trend on the social media site.

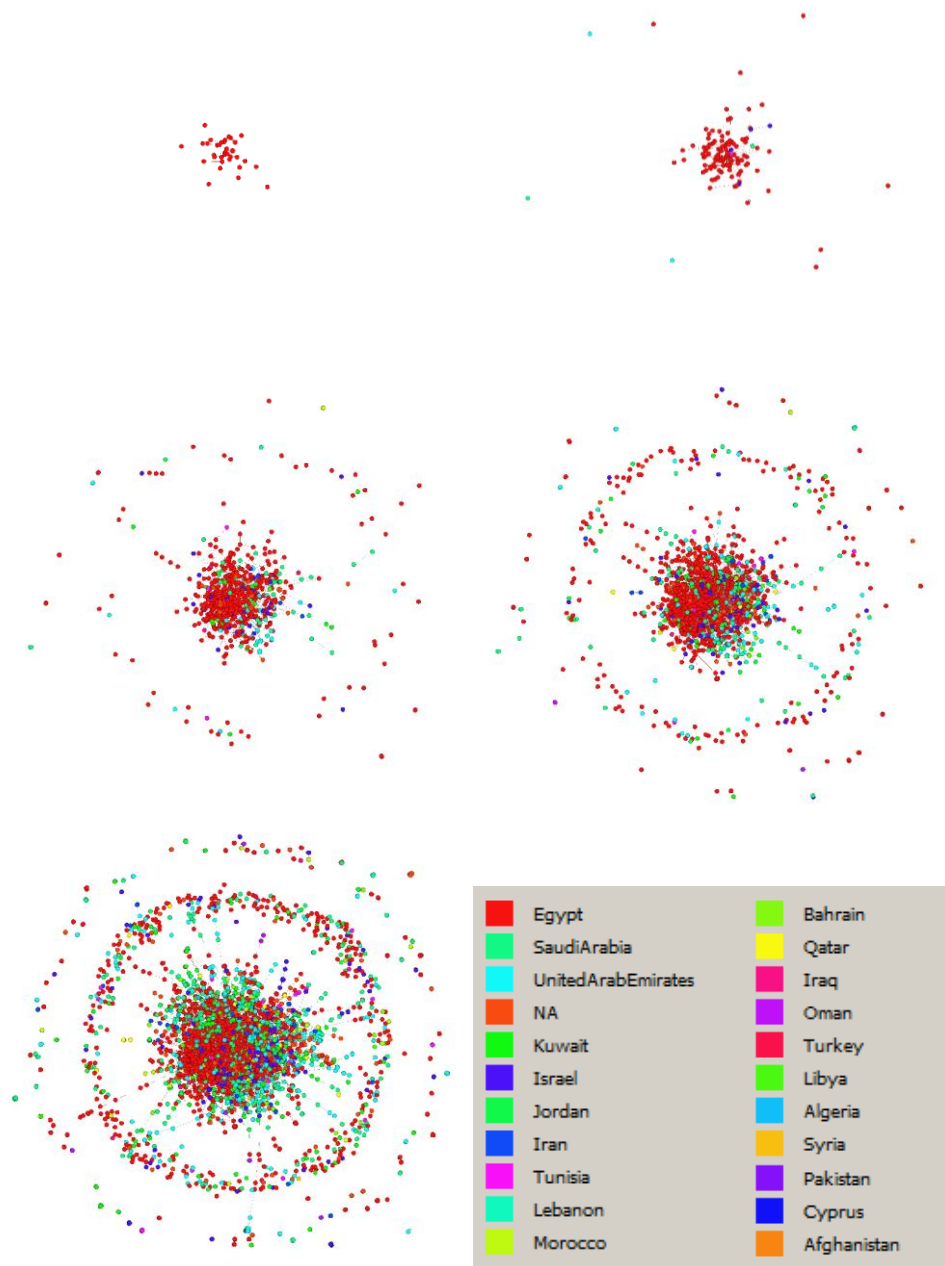


Figure 1. Spread of #ReasonsMubarakIsLate among Twitter users in North Africa and the Middle East on February 10, 2011. Joke tweets started at approximately 8PM, figures show time-lapse at 6min, 15min, 30min, 1hour, 2 hour, country key.

Table 2. Tweets about Twitter Trend Emergence for #ReasonsMubarakIsLate on February 10, 2011

| User | Time | Tweet |
|--------------|--------|---|
| 'EslamSalem' | 8:15PM | 'RT @anragab: Mubarak is waiting for the hashtag to trend #ReasonsMubarakIsLate' ¹⁵⁵ |
| 'EngMAF' | 8:19PM | 'RT @OfficialKhalidH: LMAO this trending topic #ReasonsMubarakIsLate is killin me.' |
| 'AbouMarwan' | 8:36PM | '#ReasonsMubarakIsLate is trending worldwide' |
| 'clickie' | 8:42PM | 'YES YES YES #ReasonsMubarakIsLate is now a twitter WORLDWIDE TREND!!! :D #jan25' |

During the two-hour wait period, Mubarak became an object of widespread ridicule and, although he refused to step down in his address, Vice President Omar Suleiman announced Mubarak's resignation the next day, ending the revolution. Twitter users generated 15 variations of the joke during the Arab Spring that were directed at other political figures, including Muammar Gaddafi (#ReasonsGaddafiIsLate), Bashar Assad (#ReasonsAssadIsLate), the Crown Prince of Saudi Arabia (#ReasonsCrownPrinceIsLate), and Barack Obama (#ReasonsObamaIsLate) (see Table 3) (see Appendix C for selected variant joke tweets).

Table 3. Other Political Targets of Twitter Jokes during the Arab Spring

| Political Target | Position | Country |
|------------------------------------|--|---------------|
| Omar Suleiman | Vice President, Chief of Intelligence | Egypt |
| The army | Military | Egypt |
| Barack Obama | President | United States |
| Saif al-Islam Gaddafi | Son of Muammar Gaddafi | Libya |
| Muammar Gaddafi | President | Libya |
| Bashar Assad | President | Syria |
| General government official | NA | NA |
| Ahmed Shafik | Last Prime Minister appointed by Mubarak (on Jan 29, 2011), former Air Force commander | Egypt |
| Salman bin Abdulaziz Al Saud | Crown Prince | Saudi Arabia |
| Ali Salman | Secretary General of Al Wefaq | Bahrain |
| Egyptian constitutional referendum | NA | Egypt |
| Bouthaina Shaaban | Adviser and spokesperson of Bashar Assad | Syria |
| Amr Hamzawy | Secular liberal elected to Parliament | Egypt |
| Essam Sharaf | Prime Minister (starting March 2011) | Egypt |
| Mohamed Hussein Tantawi | Defense Minister and Chairman of Supreme Council of Armed Forces | Egypt |

Humor and Affective Solidarity

Humor affects cognitive processes (Martin 2007) and joking that incorporates political criticism attempts to generate changes in situation or entity appraisals. In political communication, ridicule is a type of aggressive humor that serves as a means to alter the balance of power (Ruch 2008) with wordplay that

¹⁵⁵ Twitter user 'EslamSalem' retweeted a tweet from 'anragab' about the hashtag #ReasonsMubarakIsLate becoming a Twitter trend topic.

promotes status denigration. Humor is a mechanism through which protest ideas diffuse and encourages defiance by generating receptiveness to subversive ideas through positive emotion elicitation. Jokes can spread across groups and recycled jokes can be found in different countries with shared environments or social circumstances (Davies 2008). Jokes carried into other contexts can serve as the basis for group formation when micro-social orders of positive experiences generate cohesion and affective attributions to the social unit (Lawler et al. 2008).

The communication of humor establishes group boundaries by increasing or reducing social distance in group regulation (Cooper 2008) and participation in jokes creates solidarity through affective bonds. In addition to the act of joking, merely being in on a joke is enough to generate a basic psychological sense of group membership and affiliation from adopting a positive stance to it. Exposure to political humor and the affective solidarities formed from participation in subversive humor function as interaction rituals. Interaction rituals combine processes of emotion sharing, situational behavior, and changes in cognition among individuals with joint focus (Collins 2004). Individuals who are aware of each other's focus gain Emotional Energy from collective effervescence when participants are involved in the rhythm and mood of the interaction through emotional entrainment. The emotions expressed on Twitter were causally connected in chains of jokes where a user's expression became the emotional object of another user and formed affective connections through positive feelings from joint communicative activity. Interaction rituals generate a sense of group membership that can be activated at a later time when participants want to repeat the experience (Collins 2004). When political humor is collectively experienced, bonds are formed from joyous resistance and the emotions carried away by individuals enable interactions to be activated later.

Jokes that disseminate on Twitter have the property of resonance, the degree to which a message generates a response (Koopmans 2005). While research has identified resonance salience in different diffusion patterns of political hashtags (Barash and Kelly 2012), extant work has not examined preceding factors that enable the spread of humorous messages. Resonance involving elicited reactions of laughter or joking behavior is influenced by previous interactions that generate a sense of group membership or familiarity, in the case of dyadic relations:

joking is embedded; it occurs within the context of an on-going relationship. As a general rule, joking does not occur between strangers. While jocular pleasantries may be directed to strangers, for a joking culture to be established an on-going relationship is necessary (Fine and De Soucey 2005: 2-3).

In online communities, participation in joking may not always require prior social relations but conditions from earlier exchanges can facilitate the emergence of humor experiences.

I posit that information-exchange ties among Twitter users who followed and communicated about revolutionary events served as conduits for the spread of political humor. Prior information exchange on social media during the uprising enabled collaborative joking to emerge and facilitated the dissemination of Mubarak jokes. I predicted that the humor hashtag would spread among users with spatial-information ties before the joke episode as exchanges of important protest information would serve as pathways by which jokes spread. While different types of revolutionary information were shared, spatial information is considered a key information type and the exchange of messages about protest locations is a more specific indicator about an information tie among the actors who followed events on the ground (and did not just exchange commentary about the revolution). The ties indicate actors' awareness of revolutionary developments through involvement in information sharing that generate shared cognitive conditions for humor to emerge:

Humor does not simply exist isolated from other interaction. A group's joking culture is often retrospective, grounded on those experiences that participants have shared or of which they are aware (Fine and De Soucey 2005: 17).

The joking experience would also affect subsequent behavior when the affiliative properties of laughter serve as the basis of collective action and Mubarak joke participants would be involved in generating variant jokes. The experience of exuberance from joking with Twitter users around the world would create an inclination to participate in the collective derision of other political figures with scheduled public commitments.

DATA AND APPROACH

I used a dataset of 11,100 tweets that contained the hashtag #ReasonsMubarakIsLate generated by 2,612 MENA Twitter users and 1,427 variant joke tweets about other political figures generated by 497 users during the Arab Spring. Network ties were gathered from egocentric data of references to other users through @mentioned and retweets. The data was compared with information exchanges in 206,103 spatial-information tweets about Egyptian protests by 17,329 MENA Twitter users. Spatial information is defined as information about geographic locations or activity in areas that is utilized to generate a shared perspective of situations

involving coordinated action. I examined ties in the spatial-information network that occurred prior to the joking episodes to assess if the humor hashtags spread among users with pre-existing information exchanges based on levels of network overlap among joke participants and @mentioned users. In the absence of a follower list and detailed information regarding exposure to tweets, it is only possible to determine the presence of an information tie through retweet or @mention indicators. I analyzed the co-occurrence of users who participated in the Mubarak joke episode and variant jokes to assess the carry-over effect from the first humor event: shared laughter created cohesion and responsiveness to similar jokes used to ridicule other political targets.

HUMOR ON TWITTER

Figure 1 shows the spread of the joke hashtag initiated by Egyptians who clustered first in the network and generated responses from other MENA users. Most participants were drawn from a key group of active Twitter users: 79.4% (2,074 users) of the 2,612 users who tweeted about the #ReasonsMubarakIsLate hashtag (referred to as Mubarak joke participants) and 53.9% (268 users) of the 497 users who tweeted variant joke hashtags (referred to as variant joke users) about other political targets had tweeted spatial information about Egyptian protests before the associated humor episode. Approximately half of the 2,612 Mubarak joke participants (1,256 users) and 65.59% of the variant joke users (326 users) were Egyptians.

Among the 1,530 users @mentioned in the Mubarak joke episode that involved 2,612 users, 1,437 users (93.92%) were previously @mentioned by a Mubarak joke participant in the spatial-information network, indicating their involvement in the discussion of Egyptian protest developments prior to the joking episode. Among the 1,437 users, 221 @mentioned users (15.4%) had reciprocated information exchanges with Mubarak joke participants. For Mubarak joke participants, 448 users (17.2%) had a previous information tie with another Mubarak joke participant and among the 2,612 Mubarak joke participants, 148 users (5.7%) had prior reciprocal spatial-information exchanges with each other. For the variant joke users, 101 variant joke users (20.3%) @mentioned other variant joke users and among the 101 variant joke users, 25 users (5%) had a reciprocated tie (when users retweeted messages from each other or directed messages to each other). Of the 225 @mentioned users in the variant joke tweets, 103 users @mentioned (45.8%) had a previous @mention

from variant joke users in the spatial information dataset and 38 @mentioned users (16.9%) had a reciprocated tie with another variant joke user in the spatial-information network.

Some prior information exchanges served as pathways for the joke to spread. In the Mubarak joke dataset, 390 ties between Mubarak joke participants and @mentioned users were in the spatial-information network with the direction preserved and 22 ties had the direction of the message reversed (the user reciprocated a previous spatial-information exchange during the joking episode). In the variant joke dataset, 19 ties between variant joke participants and the @mentioned users had the direction preserved and 8 ties in the spatial-information network were reversed.

Network closure among users involved in the Mubarak joke and variant joke episodes indicated that humor emerged from a group of users with familiarity from previous information exchanges of important revolutionary information. Prior interactions facilitated the spread of subversive humor involving joint focus on a political figure. For actors without a documented tie, it is possible that the users received information as a follower but did not direct a message until the joke episode and it is also likely that users exchanged other types of revolutionary information that was not spatially-related.

Joking During the Arab Spring

The intra-state propagation of jokes that mocked Mubarak as an illegitimate ruler without public support had indirect political effects by changing perceptions of other heads of state. Variant hashtags that were adapted into other contexts in smaller joking bursts demonstrated humor's ability to spread defiance against other political figures. Figure 2 shows the causal effect of subversive humor in the diagram of user flows between different jokes used to ridicule political targets (each node labeled with a political figure represents a joke hashtag).

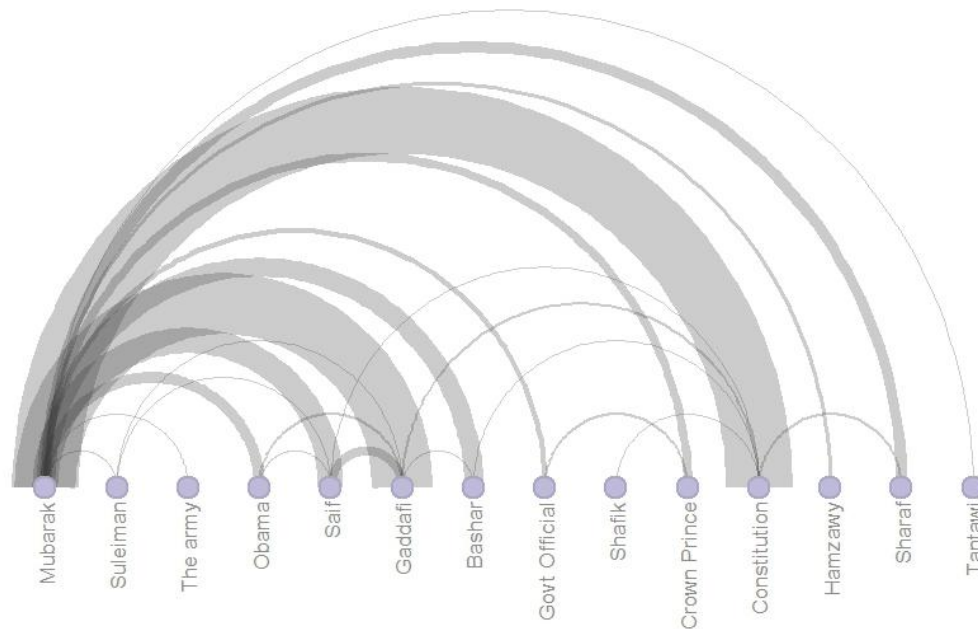


Figure 2. Co-occurring Twitter Users in Jokes about Political Targets, Ordered by Date of Humor Hashtag Appearance during the Arab Spring

The lines represent co-occurring users who tweeted more than one joke hashtag and the thickness of the line indicates the volume of the total co-occurring users between a pair of joke hashtags about different political figures. A user can be represented in different lines if the user tweeted about multiple political targets. 145 Mubarak joke users participated in variant joking episodes about other political figures. A larger proportion of Mubarak joke participants joked about Muammar Gaddafi, Saif Gaddafi, and Bashar Assad and indicated levels of perceived government instability in countries that experienced greater unrest during the Arab Spring.

The variant jokes emerged from interactions among actors with awareness of the Mubarak joking episode and familiarity with the joking culture generated from the incident. Variant joke sequences were started by suggestions from Mubarak joke participants and non-participants of the Mubarak joking episode and the interaction sequence between the two types of users continued after initial joking activity by Mubarak joke participants that successively drew reactions from individuals in their networks. For example, the start of

joking about Saif Gaddafi involved an interaction process that started from a suggestion by a non-participant of the Mubarak joking episode who was aware of the type of humor that was used against Mubarak¹⁵⁶:

| Twitter User | Tweet |
|--------------|---|
| 'eneflavia' | '@marwame another #reasonswhygaddafisonislate ? :D a little egyptian humor' |
| 'marwame' | '@zsoltsander and @eneflavia are asking: is it time for a #WhyGaddafiIsLate, but it's his son who's late' |
| 'niametany' | '#ReasonsGaddafiIsLate waiting for his female bodyguards to finish their makeup ? #Libya #Feb17 #BenGhazi #Tripoli' |
| 'zeinati' | '#ReasonsSaifIsLate his father forgot to give him his allowance #Libya' |

The early reactions from Mubarak joke participants generated joke interaction chains by activating responses from actors who were familiar with the humor used in with the variant joke hashtag. The joke was used in the post-revolutionary period to criticize the political process involving the delayed Egyptian constitutional referendum¹⁵⁷:

| Twitter User | Tweet |
|--------------|---|
| 'Sarahngb' | 'should we #reasonsegyrefislate ?' |
| 'Anoutsider' | '@Sarahngb now would be a good time for #WhyEgyRefsLate :)' |

The humor repertoire was adapted into opposition speech and the joke hashtag became integrated into the protest culture of the Arab Spring as a protest artifact (Johnson 2009). The joking experience remained in the collective memory of actors who expressed fondness for the Mubarak hashtag and desire to repeat the experience:

I miss the #ReasonsWhyMubarakIsLate hash-tag :(
 #RevolutionLingo "#WhyMubarakIsLate"
 I really hope Assad is late, so we can start a #ReasonsWhyAssadIsLate hashtag. #ReasonsMubarakIsLate'

¹⁵⁶ Twitter user 'eneflavia' (non-participant of the Mubarak joke according to the dataset) suggested starting a joke about Saif Gaddafi, directing the message to user 'marwame' with an @mention (@marwame) and a smiling emoticon. 'Marwame' (Mubarak joke participant) responded by notifying others that 'zsoltsander' and 'eneflavia' are suggesting the start of a joke humor hashtag for Gaddafi, indicating that Muammar Gaddafi's son is the one who is late. 'Niametany' (Mubarak joke participant) initiated the first joke with the hashtag #ReasonsGaddafiIsLate about Muammar Gaddafi. 'Zeinati' (Mubarak joke participant) made a joke about Saif that continued the joke interaction chain about Saif Gaddafi.

¹⁵⁷ Twitter user 'Sarahngb' (Mubarak joke participant) suggested starting to joke about the delayed referendum for the Egyptian constitutional amendment with the hashtag #reasonsegyrefislate. 'Anoutsider' (Mubarak joke participant) responds to 'Sarahngb,' with an @mention (@Sarahngb) agreeing to the appropriateness of joking with a modified hashtag of #WhyEgyRefsLate and a smiling emoticon.

Humor can reactivate group identification based on affective experience, as demonstrated by the continued effects of political humor that was adapted during the Arab Spring¹⁵⁸ and the mobilizing capacity of joking through humor dynamics that departed from planned, strategic uses of comicality in protest.

Egyptian Revolutionary Humor

In addition to the affective bonds generated from laughter, tension reduction was another psychological effect of humor (Martin 2007) for Egyptians who joked to cope with the strain of revolutionary protest¹⁵⁹. The Mubarak joke emerged during a time of uncertainty concerning the outcome of the protests and joking provided emotional release from anxiety experienced during the uprising. The Egyptian tradition of humor that enabled revolutionary actors to turn political tension into entertaining disparagement was an important feature of opposition:

'Is there no political event that goes by without Egyptians making it seem funny? #Amndawla #reasonsmubarakislate #theguy ...'

'Pray for #Egypt and its beautiful people and culture and history!!! Even their revolutions r wit a sense of humor!!'

'There is nothing funny about tyranny, but we should win the title of "Funniest Revolution in History" :D. #jan25'

'Egyptians are hilarious even in stressful times:D #Jan25 #Egypt #Tahrir'

Comedic appraisals that transformed serious revolutionary circumstances into causes for mirth reflected the interactive nature of resistance. Twitter accounts that impersonated Mubarak incorporated knowledge about protest developments, such as attempts to suppress protests and curfews that were ignored by demonstrators, to mock the political figure (*see Table 4*).

¹⁵⁸ Jokes that co-mentioned political figures by drawing comparisons with Mubarak or Ben Ali, the deposed Tunisian leader, undermined their legitimacy by implying a similar fate desired by citizens. Egyptian jokes associated the revolution with other MENA countries and political figures: "Bahraini demonstrators are requesting a support group of 900,000 Egyptians. They want to have a million-man march, but their population is only 100,000" (Rushdy and Soueif 2011: 289-290). "Breaking news: On hearing that Mubarak, if ousted, may run for office in Tunisia, Tunisians are organising demonstrations demanding ex-president Ben Ali's immediate return" (Rushdy and Soueif 2011: 288). "Oxford dictionary: Mubarak (v.), to stick very effectively one thing to another, usually a throne or seat of power. As in, I will Mubarak you to that Senate Chair and you will never be removed. Ghaddafi (adj.), to be completely and utterly insane. Don't go ghaddafi on me, man, I know you have a brain" (Rushdy and Soueif 2011: 288).

¹⁵⁹ Humor was used as a form of emotion regulation during the revolution: "Amid all the fear and danger, the fantastic thing about this revolution was that people carried it out with a determined sense of humor" (Ghaly 2011: 152). "I hid behind the truck and there was a young man sitting next to me. In the middle of bouts of shooting, he was trying to joke with me to relieve the tension. He asked me: "Does Hosni Mubarak have two wives? Because if he does, it must be really difficult. Revolution on the streets and two women at home to handle!" I couldn't believe it. There was live ammunition fire, we had seen many killed in the past hours, yet he was smiling and trying to make light of the situation" (Ghaffar 2011: 55).

Table 4. Selected Humor Tweets from Hosni Mubarak Impersonator Twitter Accounts

'I highly recommend all citizens end their protests and stay at home and tremble with fear. #Egypt #jan25 #Mubarak #Mobarak'

'No one is going to listen to a bald man who wears glasses! You need a full head of hair to run this country! #jan25 #Egypt #Mubarak'

'I have heard the will of the people and will begin a gradual transfer of power to democracy. The transfer will take two decades. #Egypt'

'Riot Police never fired tear gas at protesters - the canisters were filled with Glade, protesters just got emotional. #Egypt #Jan25'

'Don't you people understand what a curfew is? Get to bed! #Egypt'

'There are over 100 people dead over the 6 days of protests. Stop rioting and let me rule in peace! #egypt #jan25'

'People of #Egypt, internet will come back soon. Cable guy says he'll be here between 1 and 5 p.m. on Thursday.'

'People of #Egypt, the police who beat you senseless Friday are back on the street. Please don't make them beat you again, or else.'

'Why aren't the people more grateful? #Egypt #Mubarak #jan25 #ElBaradei #Mobarak'

'The people of #Egypt need me. Sort of like how a tumor needs a host body. #Mubarak #jan25'

'Just got off the phone with the leaders of North Korea, Myanmar and Saudi Arabia. Evidently I'm quite popular internationally #Egypt #jan25'

'I love #Egypt and its people. I will not leave office for less than 10 billion. #Mubarak #jan25'

'Remember how I fooled you in my last speech? That will be nothing compared to what I am about to do today. #Egypt #Jan25'

'Why is the media saying I'm resigning?!?!? #Egypt #Mubarak #jan25'

CONCLUSION

This chapter evaluated affective and relational properties in the transmission of humor messages and the continuation of joking episodes that have not been addressed in humor research, social movement research, and information diffusion research. Joking on Twitter demonstrated the multiple functions and effects of Egyptian humor on actors during the revolution and the Arab Spring. Prior information exchange during the Egyptian revolution facilitated the spread of a political joke that emerged from a key group of Twitter users and generated collective action on a global scale. Humorous public discourse served as a mechanism of group formation as bonds generated from humorous dialogue continued to influence political behavior when laughter was a basis for opposition.

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CHAPTER 4

UNINSTALLING DICTATORS

*“when dictatorship is a fact, revolution becomes a right” - Victor Hugo #jan25 #egypt'
– mflakah, Egyptian Twitter user on January 27, 2011*

*#jan25 #ILOVEOURREVOLUTION a revolution isn't just replacing 1 person or a government. Its
replacing a mentality of a nation' – SamIDAouD, Egyptian Twitter user on February 8, 2011*

Chapter four concludes the work on the Egyptian revolution by detailing cognitive changes among participants and observers of revolutions. Twitter communication reflected the effects of revolutionary events on the minds of actors in the North Africa and the Middle East region that involved the emergence of hope for alternative arrangements indicated by the spread of tweets that reflected the desires of the masses. During the last stage of the Egyptian revolution, Twitter users shared a tweet that used a computer processing metaphor to reference the progress of removing Hosni Mubarak from power. After the revolution, the tweet was adapted for other political figures and countries recognized as possible targets and sites for opposition. Variations of the tweet correctly identified countries within and outside of MENA as locations for protests or political change, demonstrating the predictive power of post-revolutionary communication generated by individuals who imagined collective futures.

Before the 1979 Iranian revolution, the exiled Ayatollah Ruhollah Khomeini spread his revolutionary messages¹⁶⁰ through cassette tapes distributed among the Iranians who listened, thought about revolution, and rose up against Mohammad Reza Shah Pahlavi. The implementation of cassette tapes for the spread of subversive ideas departed from the typical use of the communication device but its transmission through institutional and human conduits exposed revolutionary and religious ideas to actors who unified for collective action. Criticism that overlooked the importance of social media in political protest focused on its frequent use in everyday communication that consist of weak ties and the lack of adherence to traditional means of organizing social movements in the United States (Gladwell 2010). While past revolutions occurred without social media, modern revolutions incorporate them as a tool that facilitates protest and the use of a platform to disseminate information that enabled the masses to quickly end an entrenched regime highlights the need for actors to have a communication medium to share opposition speech and to engage in coordinated action, whether it is through leaflets, cassette tapes, or social media¹⁶¹.

Revolutionary communication that unites subordinated populations also prompts government responses that prevent the spread of subversive ideas. The Egyptian government shut down communication lines to prevent protesters from utilizing social media as an effective instrument for protest and Egyptians reported about the governments of Syria, Libya, and China blocking social media sites and information about the revolution:

#China blocks the word #Egypt from its Twitter-like service, Sina. That's 50mil users blocked from news of #JAN25' (Jan 29)

Facebook #Feb17 pages blocked in #Libya PLEASE RT OR REPLY WITH PROXIES¹⁶² (Feb 2)

'one more success to #jan25, facebook unblocked in #syria! #egypt' (Feb 8)

While prior modes of communication limited the exposure of subversive ideas to select audiences, the process of connecting actors with revolutionary messages on social media now occurs on a global level.

¹⁶⁰ An excerpt of Khomeini's message on cassette tape: "We have no objective other than saving the oppressed from their oppressors," said Khomeini. "All that made me accept the leadership of the community is almighty God's instruction that the clergy should not remain silent in the face of greed and the crushing hunger of the downtrodden" (January 2008: 34).

¹⁶¹ "Khomeini exerted tremendous power in Iran, even from exile. One night he ordered everyone in the nation to go to their rooftops at 9:00 P.M. and shout "Allah-o-Akbar" (God is great) for ten minutes. By 8:50 all neighborhood lights had been shut off. Residents clambered onto their roofs. Some were following Khomeini's order. Others were simply curious. At 9:00, as commanded, the voices began to sound from the rooftops. Allah-o-Akbar! Allah-o-Akbar! The cries, observed Hakakian, "rose as if every person's throat had been clutched" (January 2008: 36).

¹⁶² A Facebook page devoted to the planned day of Libyan protests on February 17, 2011 was blocked during the Egyptian revolution.

During the Arab Spring, demonstrations were reported in Algeria, Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Saudi Arabia, Syria, and Yemen (*see Appendix D1 for Arab Spring protest dates by country*). Zine el-Abidine Ben Ali (Tunisia), Hosni Mubarak (Egypt), Muammar al-Gaddafi (Libya), and Ali Abdullah Saleh (Yemen) were removed from power and governments responded to political unrest with monetary provisions and harsh suppression to prevent regime collapses. Twitter users in North Africa and the Middle East (MENA) used hashtags for designated protest dates that were similar to the #Jan25 hashtag used for the Egyptian revolution: #Feb3 (Yemen), #Feb12 (Algeria), #Feb14 (Bahrain), #Feb17 (Libya), #Feb18 (Oman), #Feb20 (Morocco), #Feb25 (Iraq), #Mar11 (Saudi Arabia), #Mar15 (Palestine and Syria), #Mar24 (Jordan), and #Lebanon (Lynch 2012).

Social media communication reflected the effects of political events and cognitive changes associated with the spread of dissent in the region: “there is always a social quality to an event. An event requires not only the existence of two contending categories of agents (those who uphold a given order and those who challenge it), but also a third set of participants – those who observe” (Beissinger 2002: 15). Egyptians recognized the effects of the Tunisian revolution while engaging in protests that followed precedence:

'Thanks #Tunisia #sidibuzid for inspiring #Egypt to wake up and do its own revolution #Jan25' (Jan 25)

'+100 certainly Tunisia inspired #revolutionary hope for people across the world.' (Jan 27)

The Egyptian protests, in turn, influenced observers in other MENA countries:

'Egyptians shook the entire region... Tunisians started the move. #Egypt #Algeria #Tunis #Yemen #Jan25' (Feb 3)

'Given our country's geopolitical history, it's not surprising that #Egypt lies at the centre of political unfoldings in the region #jan25' (Feb 9)

The increased use of social media sites to engage in or monitor political activity during the Arab Spring (Mourtada and Salem 2011) was apparent to Twitter users:

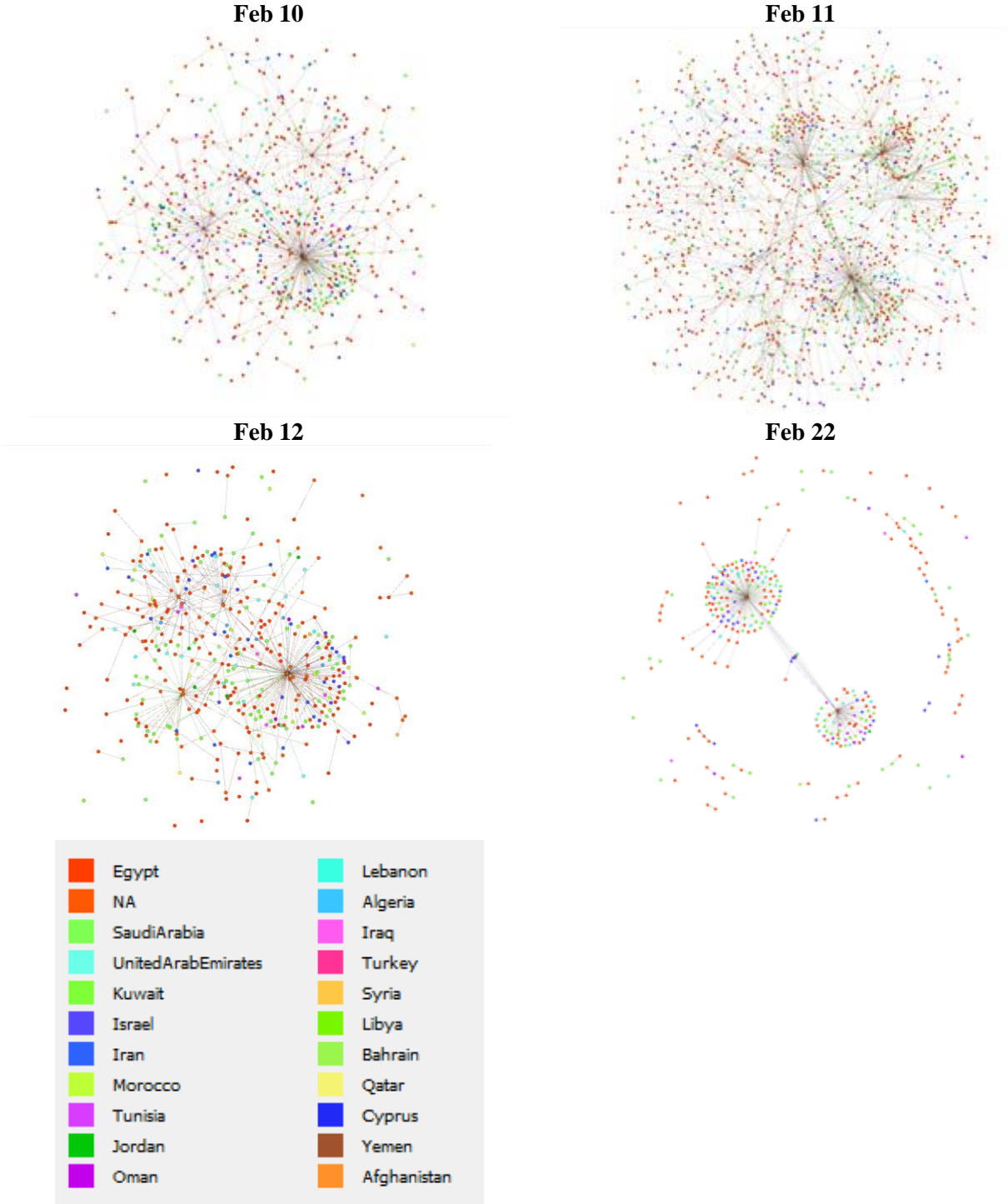
'guys have u noticed alot of egyptians joined twitter after this #jan25' (Feb 4, Egypt)

'half my computer screen is twitter and the other half is facebook,, both following #egypt #jan25 #demandaljazeera' (Feb 4, Oman)

Revolutionary messages generated during the Egyptian revolution persisted during the Arab Spring when they were adapted to communicate political ideas in the post-revolutionary period.

A freedom loading tweet shared on Feb 4 visualized the revolution's progress using a computer processing metaphor to describe the struggle to acquire freedom. The tweet compared the revolution to

Figure 1. Spread of Uninstalling Dictator Tweets, February 10-12, 2011 and February 22, 2011



Protest observers contributed to the dissemination of revolutionary ideas and the same idea was conveyed in a tweet with a list of political figures to be removed from power:

Twitter User

'CharlaTown_Ma' (Morocco)

Tweet

'RT @reda: Ben Ali #Mubarak Bouteflika Khadafi Assad Abdallah II --A qui le tour ? #egypt #25jan #Sidibouzi¹⁶⁴

Messages that reflected public awareness of governments likely to experience opposition were associated with changing minds that involved dreams of alternative arrangements necessary for the mobilization of actors for revolutionary protest.

Revolution of the Mind

The process of dismantling dominating arrangements involves the destruction and reconstruction of modes of thought and transformations at the individual level entail changes in self-perception and conceptualizations of collective futures. During the Egyptian revolution, gains in agency among Egyptians indicated a departure from the long-term stasis experienced under Mubarak's rule¹⁶⁵:

'If nothing else, #Jan25 has succeeded to kill the apathy that has infested my country, my peers & myself. That in itself is a worthy feat.' (Jan 26)

'In revolutions, humans are reborn! #Tahrir #Jan25' (Feb 6)

'Just finished a meeting. People are more active and voicing their opinion. Another positive effect of #jan25' (Feb 7)

In addition to discontent, realization of the possibility for change serves as necessary impetus for revolutionary action that requires "the basic belief and hope in the future that one needs in order to rebel, especially collectively, against present conditions, even the most intolerable" (Bourdieu 1998: 82). Egyptians expressed optimism about anticipated changes with the removal of Mubarak from power:

'I still have hope. I still believe that our future is much better! #Egypt' (Feb 2)

'There's something about right now n today. I can feel hope. I can feel departure of a dictator. #Egypt' (Feb 5)

¹⁶⁴ Twitter user 'CharlaTown_Ma' retweeted a message from 'reda' that included a check list of political figures to remove from power. 'A qui le tour?' in French means 'Whose turn is it?'

¹⁶⁵ "I watched something, very slowly, transform. The street-side vendor suddenly had an Egyptian flag; the taxi driver had an opinion; the young man on the street was no longer scared to say there was something he didn't like; the tree trunks were painted red, white and black; the youth, once skulking, were now handing out flyers, forming political parties and collectives, chanting, discussing, planning, hoping, for those better lives. For every emotion, every thought, every idea, now, there was an audience, and on the same street corners that were once host to dejection, possibility was being born. I watched, in the days of the Egyptians uprising and the months that followed, human emotion finding an outlet, and in tandem discovering its source" (El Rashidi 2013: 64).

Dreams motivate revolutionary action (Stites 1989) and actors were united¹⁶⁶ by “an alternative set of visions about what constitutes a just society, a legitimate political order and politics’ ends, a dignified life” (Aron 2006: 447). Peaceful assembly in Tahrir Square demonstrated the possibility for a different Egyptian society¹⁶⁷:

'Tahrir is never seen so many Egyptians from all walks of life interact like that. I've seen a different free smile ...'

'#tahrir square is an egyptian utopia... the love and warmth is beyond belief... i love my people and am so proud to be one of them'

'Tahrir Square is a prototype of what Egypt wants to be, go there and see Egypt in the future #Jan25 Egypt'

'Where can our people learn democracy, civil rights, humanity? They're already practicing it in #Tahrir Sq. send your kids to learn #jan25'

'#Tahrir turned into a small country: field hospitals,dental clinics,dealers,radio,security, JAIL &wedding of two protesters #jan25'

All around me are different ideologies with a common dream—a beautiful mixture of people, forming a respectful community, one that I always dreamt of and never through I would live to see. ... I have found in Tahrir Square all that I was looking for, all that I have wished for Egypt to become (Tawfik 2011: 69).

Actors with shared concerns about the social order expressed the changes they wish to see:

'Sat in a circle discussing the future with 20 people I've never met before and wouldn't have outsid[e] ...'

'It seems every time you walk past a group of people they're debating possible political systems for the future #Jan25 #Egypt'¹⁶⁸

'#EgyptianDream That people from all over the world come here to study and do research at our Universities like they did before !'

'Fair and honest elections with the national ID #EgyptionDream'

'#Egypt 's economic foundation is based on justice, in a manner preventing exploitation & narrowing gap between incomes #Constitution #Jan25'

Social media platforms enabled regional solidarity to be communicated by observers who supported protesters during their struggle:

'Tips coming out of #Tunisia: Spray paint police trucks' windshields so they can't see/drive. Wash tear gas victims' faces ...' (Jan 26)

'#Mosques in #Qatar , #Syria and all around the #MiddleEast are dedecating their #Friday prayers to #Egypt . #jan25 #Cairo #Tahrir #Mubarak' (Feb 4)

The cohesion experienced with actors in other countries created desires for revolutionary change beyond Egypt:

¹⁶⁶ A protester at a mosque during the Egyptian revolution before the start of demonstrations: “There was a wonderful sense of belonging. The cultural barrier is often broken during prayer, but this time it was different. This time, there was a sense of unity in a cause. We may not eat the same food or speak the same language, but we were all there praying for a better future” (Hussein 2011: 160).

¹⁶⁷ “It was incredible how Tahrir Square became a new, free Egyptian city. It became a stage on which we could all practice freedom of speech; it was a space that brought together all aspects and levels of Egyptian society” (Nadi 2011: 187).

¹⁶⁸ “But Tahrir was not all fun and festivity. The space was also infused with serious politics ... fiery speeches were delivered denouncing the regime, and animated discussions about Egypt’s political future resounded in the night air” (Shokr 2012: 43).

'It is so amazing to feel the solidarity between the whole Arab nation # Lebanon# Egypt.. hopefully #Lebanon will have it ...' (Jan 29)

Ben Wedeman, a CNN reporter who covered the Egyptian revolution on Twitter, provided an account of an Egyptian who mistakenly identified him as a Syrian and wished for revolution in Syria:

'Protester thought I was from #Syria, said "hopefully the same thing will happen there." #egypt #jan25 #tahrir' (Feb 4)

Revolutionary events altered the perceptions of observers who existed under similar socio-political conditions:

'We all almost lost hope in our Arab world. #Tunisia & #Egypt proved it's not true. #Jan25 #BetterFuture' (Jan 28, United Arab Emirates)

'The Ouster of Mubarak & his regime is not just an #Egyptian demand but that of ALL #Arabs See this #Jan25 #REVOLUTION thru We r countin on u' (Jan 31, Iraq)

Protest developments and news of a deposed political figure prompted bolder statements from Egyptians for regime changes:

'Glory to the arabs revolutions we need to DESTROY all these dictators! #Tunisia #Egypt #Jordan #Yemen #Lybia #Iraq #Algeria .. FREEDOM!' (Feb 6)

'Swelled with pride and still sayin Next!! #arabdictators #oppression #torture #theft #corruption' (Feb 11)

'The new record stands at 18 days for hounding out an entrenched dictatorship. Who is the Middle East is next? #egypt # ...' (Feb 11)

Observers in the region assessed their situation¹⁶⁹ after the Egyptian uprising and expressed the same desires for their futures:

'Imagine future without Assad #whensyriaisfree #syria'

'F past generations were poor & unaware, what's our excuse 2 future generations 4 not perusing #freedom, rights & a gr8 nation? #SAUDIMATALEB'

'yesterday protests in #iraq left iraqi people more united, more aware, future looks brighter than it appeared yesterday #Feb25'

'Long live Iranian ppl with dignity and free from their bloody dictators #alarabiya #Iran #teheran #protest #Ahmedinejad'

'It's time for them to leave, my people been suffering enough. It's time for change and better future. #Bahrain'

'Freedom, education, health system, a better future for the new generation and equal rights RT @SL0wZE: what do #Libyans really wish for ?'

'u cannot prevent me from dreaming 4 a better life 4 my kids in future where they can feel safe in #Egypt #KhaledSaid'

'Intellectual & constructive discussions today more than before on Twitter and in Jordan, in general. Hopeful for a better future. #ReformJO'

¹⁶⁹ A Saudi Arabian observer during the Arab Spring: "I was back in a hotel room in Cairo with full-onset revolution jealousy and depression. It was March 2011. The beautiful Egyptians had toppled the State Security Police, taking pictures, exchanging security files, crying in police stations and dancing on desks. It was intoxicating to watch. Their revolution was in such an optimistic phase at the time. Meanwhile, I was preparing to go back to Saudi. The much-anticipated Saudi 'Day of Rage' was a few days away" (Al Ahmad 2013: 162).

'2011- free #Arabworld - and God willing a new rise to the #Arabyouth to liberally indulge to a future in their OWN country.'

During the Arab Spring, solidarity was expressed as actors attempted to generate change through political action:

'The strength of your people is making all your brothers in #Egypt proud... Stay strong #Libya #Feb17'

'Dear people of Iran. May the example of Egypt awaken us. May they give us the courage to stand up and take back our nation. #protest #sog'

'Reading all the tweets from #Syria #Yemen #Libya #Egypt it's boiling everywhere!! Friday, once again.. bad day for tyrants #feb17'

'Dear God, in the next days, please bring peace upon our people in #Iraq #Tunisia #Lebanon #Egypt #Jan25 Please protect ...'

'Do not forget #Libya #Feb17 They need our help! Lets not forget that many other Arabs are still Tyrants like #Mubarak Free ...'

Sympathy was felt for those facing repression, condemnation was directed at political figures in response to state violence, and deaths generated pain among observers^{170 171}:

'Wael Ghonim: Bashar AlAssad is a war criminal. My heart and prayers with all of our people in #Syria'

'Bashar El-Asad is a disgusting humanbeing. Your people are being killed and you're joking around??? #syria'

'Listening to an adult man from #Libya crying his heart out on AlJazeera broke my heart. What have you done to your people #Gaddafi?'

'Please pray for #AzZawiya, #Zintan & #Misrata! Our people, our sisters & brothers there are being massacred as I typ[e] ...'

'Oh #Bahrain I'm praying for you and your people!!:('

Widespread discontent among subordinated populations who rejected authoritarian political systems¹⁷²

directed the Arab Spring protests:

'message to #arabdictators It may take a year, it may take 10 years, but the precedent is set : your next. #freemiddleeast'

'Your worst day living in a democracy is better than your best day living under a dictator. #Jan25 #Egypt'

¹⁷⁰ During the Libyan uprising, a Libyan observer felt pain from watching his country from abroad: “‘What are these feelings, this blend of joy and sadness, delight and despair, dancing and silence, to bear my cross on my shoulders as I stride down a road of pain. From there to Tripoli nothing remains of this homeland but news broadcasts and newspaper headlines.’ This is what I wrote on the evening of 21 February, the day of sadness, the day the cross of tears was lowered across my back, the day I learnt that my three friends had sacrificed their lives for freedom” (Mesrati 2013: 84).

¹⁷¹ “‘It was a painful moment, and I lived it like all the other moments, sent messages on Twitter like I always did. That inner voice was drawing me closer to these young men ... While we were experiencing the pain of these moments, and on the same day that the funerals of four other victims of Thursday’s violence were being held, our hearts still bruised and tender” (Aldairy 2013: 143).

¹⁷² “‘The meaning of the square gradually took shape in my mind. Prior to today, Pearl Square had been no more than a busy roundabout constantly choking with circling cars, but now it had become a place of defiance. We had come here to challenge the regime’s own gridlock, the congestion caused by corruption, preferential treatment, violence, tyranny, the absence of citizens’ rights and the prevalence of artificially propagated loyalist parties. Tens of thousands of disgusted citizens had come to assemble and chant and give voice to their anger” (Aldairy 2013: 136).

'May God grant victory to the righteous people of the world and humiliate all dictators #Libya #bahrain #feb14 #lulu'

'When The Arab's dictators will understand that we r humans,with rights, not animals they own n their back yards
#Bahrain #Arab #Saudi #Libya'

'the dictatorships failed in uniting #arabs , but the revolutions succeeded. #bahrain #yemen #libya #egypt #jan25
#feb14'

In conclusion, communication that reflected the desires, opinions, and accounts of revolutionaries affected observers and expressions of revolutionary ideas indicated political events to come among populations unified in their opposition and dreams. The Arab Spring protests and continued conflict in the MENA region demonstrate that past, present, and future political struggles have been and will continue to be collectively experienced. During their revolution, Egyptians recognized social media's role in facilitating resistance and generating international unity:

'The twitter lesson is that there are many countries, governments, but we are one as a people throughout this world.
#jan25'

'One thing's certain about events in #egypt - if nothing else, it's a "social media revolution" - case study in how SM is changing the world!'

'The revolution will indeed be tweeted #jan25 #egypt'

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CHAPTER 5

CONCLUDING REMARKS

There is a false impression that researchers have the freedom to construct studies without inconveniences when in reality research is bound by the constraints of the data, extant methodological approaches, and existing knowledge. These difficulties are often not readily apparent to those who do not conduct work in the subject areas and, as was the case for me, the discoveries were associated with the realization that revolution and revolutionary minds are far more complex than what I expected when I first began the work. During this intellectual journey, challenges arose while attempting to understand what had not been examined before and developing ways of utilizing the data in the absence of established approaches. First attempts at addressing a new research area can result in initial work that is foundational, but rough. Therefore, underdeveloped intellectual work necessitates the inclusion of concluding comments that identifies directions for future development.

The work in the preceding chapters does not adhere to perspectives of a specific academic discipline and considerations of broad-based approaches included dilemmas associated with studies that span multiple disciplinary boundaries, such as the need to conform to existing theoretical traditions in an academic area:

This may be uncomfortable for those readers who respect such boundaries and believe that only work thoroughly grounded in the theory of a particular discipline deserves to be taken seriously. ... If belonging to a discipline is one requirement of academic respectability, being proficient in theory is another. The two requirements are usually seen as going together: belonging to a discipline means being familiar with its theoretical foundations and making them part of one's self-identity.

... Discipline boundaries are akin to political boundaries ... while in some ways they matter, there is nothing inevitable about them and they may in fact blind us to alternative ways of understanding reality (Vervoorn 1998: xiv-xv).

Additional time and effort are required to acquire a background of related areas necessary to do integrative work; the decision to exercise caution in formulating theory stemmed from awareness that generating theories about revolutionary minds would require a deeper understanding of psychology (it is not helpful to produce incorrect theories just for the sake of creating theory). Yet, members of the field of Sociology are expected to create generalizable theories or frameworks and what is regarded as a satisfactory treatment of the topic in this volume would include discussion points oriented toward developing a perspective that can be extended to different cases.

This work presented an approach for understanding changing revolutionary minds that reflects adaptation to situations and transformation of behavior during political struggle. A composite picture of revolution can be gained through the analysis of converging elements of subjective experience that convey

social contexts that influence consciousness and action. Internal responses are related to changes in the external world and causal effects are inferred based on linguistic changes in political communication that also reveal perceptions gained through information about revolutionary experiences.

A direction to be taken in the examination of streams of political consciousness involves looking beyond the many details of the political case to assess cognitions that link subordinated individuals and enable the cooperation of actors from different social backgrounds. A broader perspective of revolutionary thought can incorporate patterns of changing mental states about shared purposes and meanings among actors who reflect on their collective existence. Antecedent conditions and events influence the emergence of certain cognitions in a progression of thought where salience is dependent on previous states of minds that transform according to what is perceived as possible. This nexus among ideas is generated when seemingly small events or incidences accentuate the sources of human misery and prompts actions that evolve into larger political currents. During the Egyptian revolution, an expansion of cognitions involved linked thoughts of death, freedom, group solidarity, and utopia that were influenced by transitions to different phases of the uprising. Deaths incited demands for freedom and thoughts of freedom were associated with dreams of alternative arrangements for an oppressed population with prosocial aims in political opposition. This process can serve as a starting point in the construction of a frame of reference for other cases of revolt.

Lastly, the pursuit of time-intensive projects and efforts to encompass a wide perspective of revolution entailed difficulties. A narrowed focus that limits the scope of inquiry would make research more manageable, but in selecting such an approach, one would need to consider whether breaking down complex social phenomena into different components to be studied independently would fully reflect the multifaceted topic of study.

These are points to be considered in the future development of the work.

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APPENDIX A1

TWITTER DATA AND USER FIGURES BY COUNTRY

Figure 1a. Protest Tweet Counts by Country

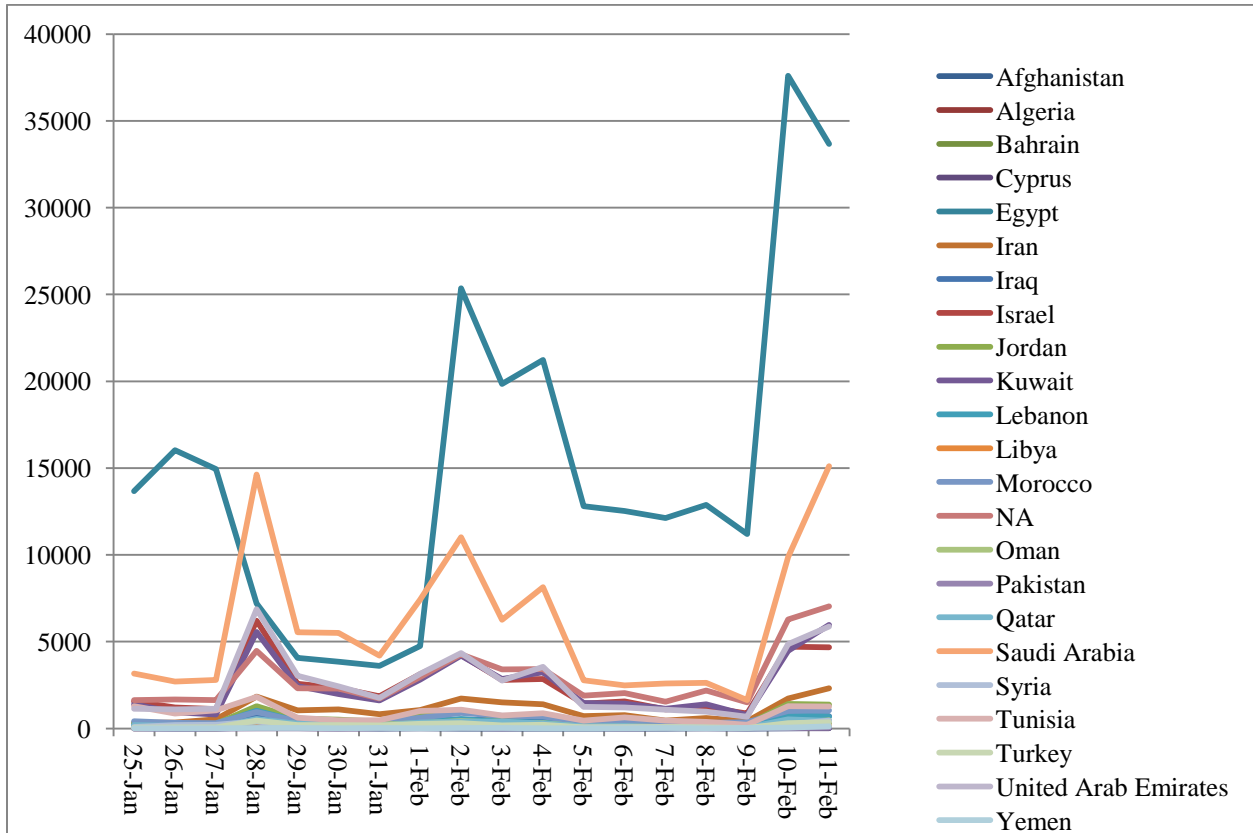


Figure 1b. Percentage of Protest Tweets by Country

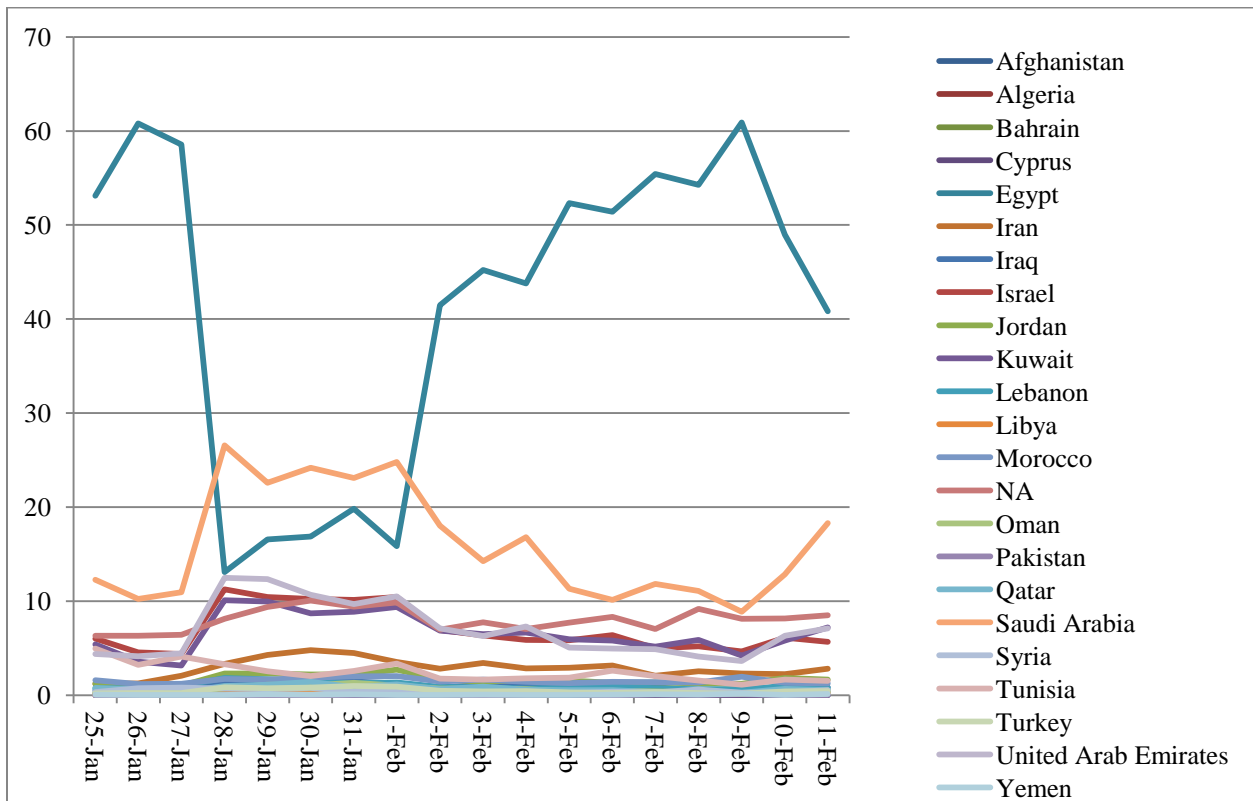


Figure 2a. Unique Twitter Users Who Retweeted Protest Tweets by Country

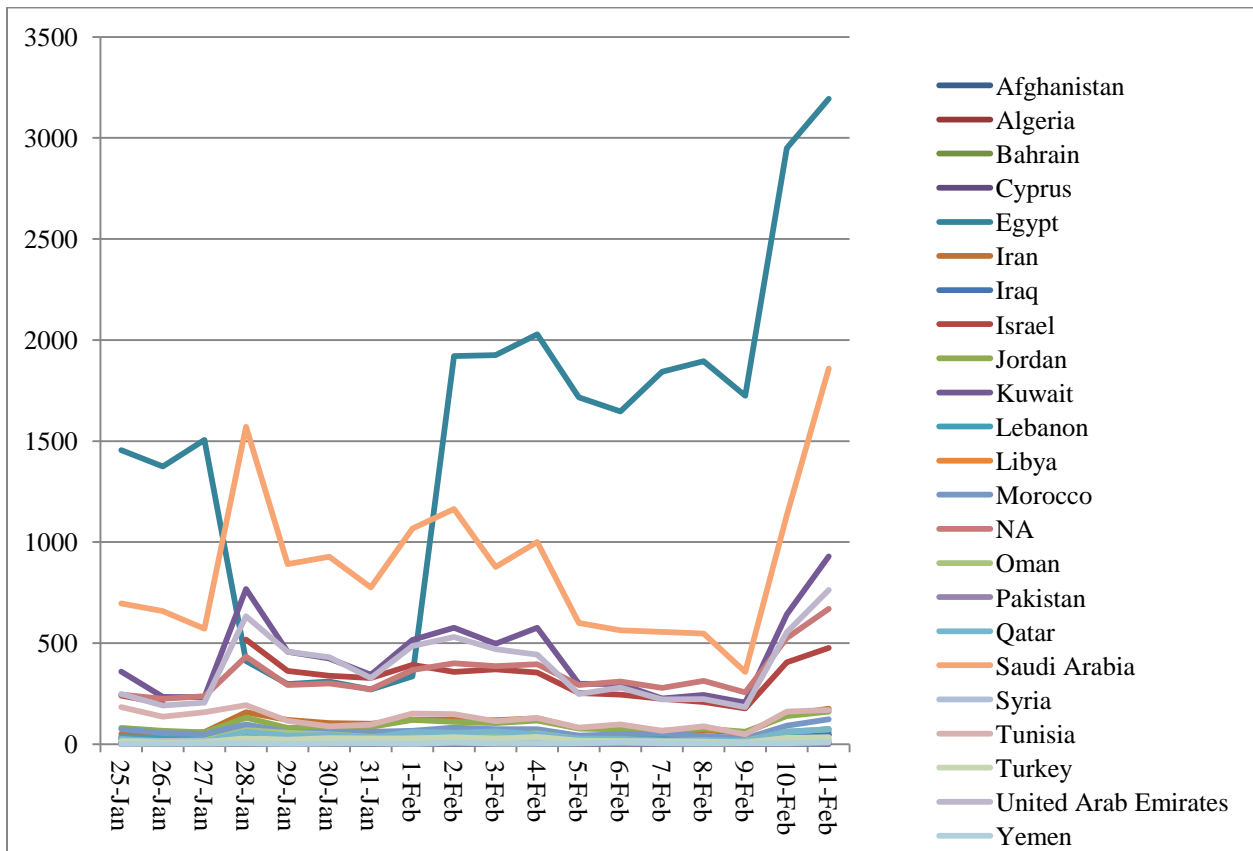
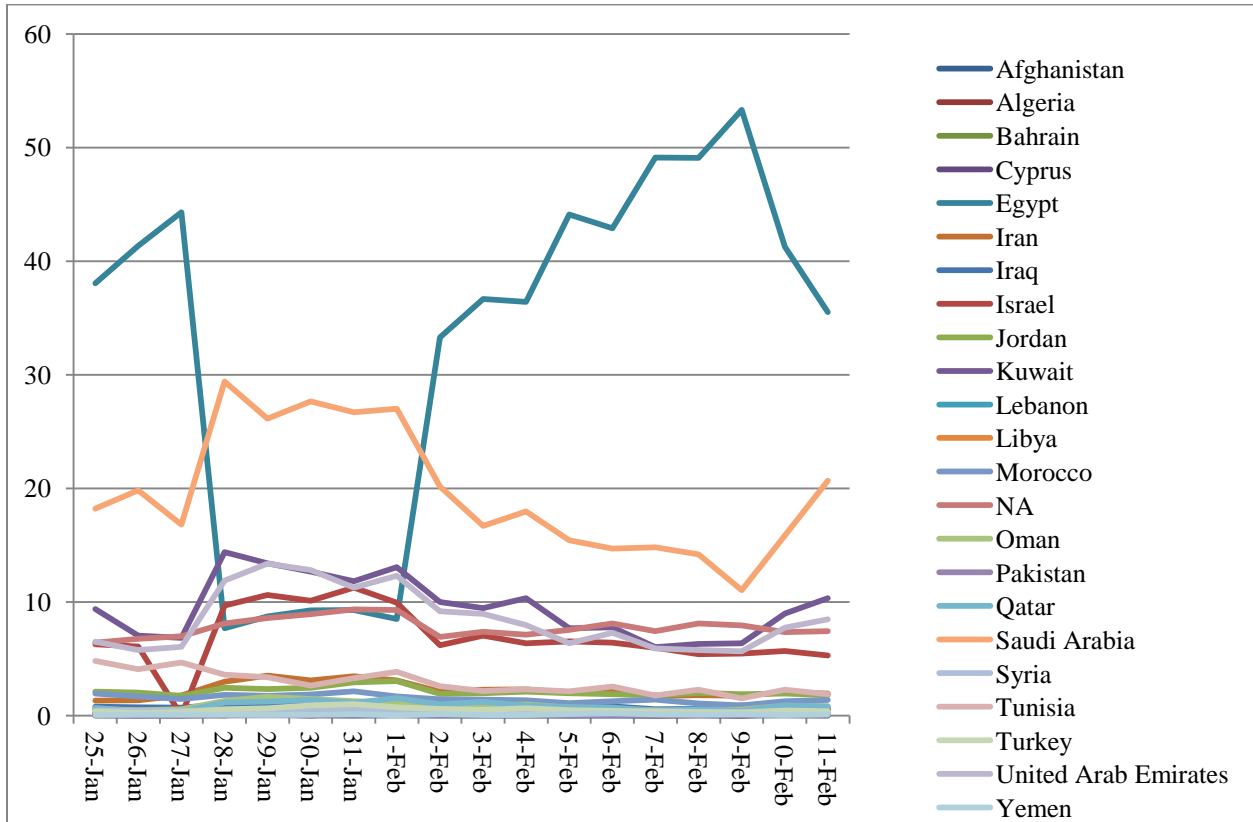


Figure 2b. Percentage of Unique Twitter Users Who Retweeted Protest Tweets by Country



APPENDIX A2

NEWS REPORTS ABOUT SOCIAL MEDIA USE DURING ARAB SPRING PROTESTS

News reports about the use of Facebook or Twitter before and during protests in Tunisia, Egypt, Syria, Bahrain, Libya, Algeria, Jordan, Iraq, Morocco, Oman, Saudi Arabia, and Yemen:

BAHRIAN: Reuters, 2011. "Protesters, police clash in Bahrain on "Day of Rage." ArabianBusiness.com (Dubai, United Arab Emirates), Monday, February 14.

TUNISIA: "Albawaba.com: Demonstrations spread to new Tunisian cities." Al Bawaba (Jordan), Monday, December 27, 2010.

EGYPT: "Egypt opposition calls for 2nd day of demos." AlArabiya.net (Dubai, United Arab Emirates), Tuesday, January 25, 2011; "Egypt to face its first Tunisian-inspired protests." AlArabiya.net (Dubai, United Arab Emirates), Sunday, January 23, 2011

SYRIA: "Media battles grip the Syrian online sphere." AlArabiya.net (Dubai, United Arab Emirates), Monday, March 21, 2011

LIBYA: "Libya arrests Arab "network" for destabilizing state." AlArabiya.net (Dubai, United Arab Emirates), Saturday, February 19, 2011

ALGERIA: "Thousands defy Algeria ban order." Gulf News (Dubai, United Arab Emirates), Sunday, February 13, 2011

JORDAN: "Jordan protesters vow to press on despite attack." AlArabiya.net (Dubai, United Arab Emirates), Thursday, March 24, 2011

IRAQ: "Ten die in Iraq as protests sweep across region." Daily Star, The (Beirut, Lebanon), Saturday, February 26, 2011

MOROCCO: "Kuwait Times: Thousands demand change in Morocco." Kuwait Times (Kuwait), Monday, February 21, 2011

OMAN: "Army clears roadblocks in Oman, arrests activists." Gulf News (Dubai, United Arab Emirates), March 30, 2011

SAUDI ARABIA: "Kuwait Times: Saudi Arabia warns it won't tolerate demos." Kuwait Times (Kuwait), Sunday, March 6, 2011

YEMEN: "Students organize further protests online." Yemen Times (Sanaa, Yemen), Monday, February 7, 2011; "Yemen security forces kill protester." Tehran Times (Iran), Sunday, February 20, 2011

APPENDIX A3

ARAB SPRING PROTEST HASHTAGS¹⁷³

| | | | | | |
|------------------|----------------------------|-------------------|-----------------------|--------------------|-----------------------|
| #11feb | #baradie | #egypt | #freesyria | #jasminerevolution | #mubarksonsandco |
| #11march | #bashar | #egyptarmy | #friday | #jasminerevolt | #mubarakfamily |
| #12fev | #basharspeech | #egyptpolice | #fuckmubarak | #jasminerevolution | #mushtarak |
| #14feb | #benali | #egypt | #fuckthearmy | #jeddahhelp | #muslimbrot |
| #15mar | #benghaz | #egypte | #gaadafi | #kaddafi | #muslimbrother |
| #15march | #benghazi | #egyptfacebook | #gadaffi | #kadhafi | #muslimbrotherhood |
| #17feb | #betteregypt | #egyptian | #gadafi | #latakia | #muslimbrothers |
| #18feb | #binali | #egyptianarmy | #gadaficrimes | #latakia | #newdostor2011 |
| #19mar | #blamethegovt | #egyptianinsomnia | #gaddaf | #lattak | #newegypt |
| #20feb | #bouazizi | #egyptians | #gaddaffi | #lattakia | #nomoremubark |
| #20fev | #bymubarak | #egyrevost | #gaddafi | #libia | #obamagaddaffi |
| #24mar | #cairo | #egystudents | #gaddaficr | #liby | #omarsuleiman |
| #25april | #censorship | #egyworkers | #gaddaficri | #libya | #oneegypt |
| #25avril | #constitution | #elbaradei | #gaddaficrime | #libyan | #operationtunisia |
| #25ja | #constitutionaldeclaration | #elbaradie | #gaddaficrimes | #libyans | #opsafe |
| #25jan | #corruption | #elbardei | #gaddafis | #libyas | #opsyria |
| #26march | #damascus | #elshattafa | #gaddafispeech | #libye | #optunisia |
| #28jan | #damascus | #essamsharaf | #gaddafo | #lybia | #ournoblerevolution |
| #30april | #dara | #exposethearmy | #gaddfi | #lybie | #peaceful |
| #6april | #daraa | #feb1 | #gadhaifi | #mar1 | #peaceinegypt |
| #9apr | #daraa | #feb10 | #gamal | #mar11 | #prayforbahrain |
| #9april | #dc | #feb11 | #gamalmubarak | #mar15 | #prayforjeddah |
| #a7a | #defamemubarak | #feb12 | #geeksoftherevolution | #mar19 | #prayforlibya |
| #aassad | #demo | #feb14 | #gegypt | #mar21 | #protest |
| #activism | #demo2011 | #feb17 | #genesharptaughtme | #mar24 | #protesters |
| #after11march | #democracy | #feb18 | #ghadaffi | #mar6 | #protests |
| #aleppo | #demonstration | #feb2 | #ghadafi | #march1 | #qaddafi |
| #alexandria | #dera | #feb20 | #ghadafi | #march13 | #qadhafi |
| #alimohsen | #deraa | #feb23sa | #ghaddefi | #march15 | #reasonsmubarakislat |
| #amman | #dignityfriday | #feb25 | #ghannouchi | #march19 | #reasonsmubarakislate |
| #amndawla | #dokki | #feb4 | #ghonim | #march24 | #reasonsmubarakislate |
| #amneldawla | #dosotor2011 | #feb5 | #goodegypt | #march26 | #referendum |
| #apr13 | #dost | #freedom | #hama | #march6 | #reformjo |
| #apr8 | #dosto2011 | #free | #helpmisrata | #maroc | #refomjo |
| #april08 | #dostoor | #freeabdelkhalek | #homs | #martyrs | #revolt |
| #april25 | #dostoor2011 | #freeahmad | #hosnimubarak | #masry | #revolu |
| #april8 | #dostor | #freealkhawaja | #hudaidah | #may1 | #revolucion |
| #arab | #dostor2 | #freemr | #humanrights | #may15 | #revolut |
| #arabdream | #dostor2010 | #freemrshalakany | #iamarab | #military | #revolution |
| #arabicday | #dostor2011 | #freeayman | #iamtahrir | #misrata | #revolution101 |
| #arabrevolution | #dostor2012 | #freedom | #idibouزيد | #misurata | #revolution2011 |
| #arabrevolutions | #dostour | #freedomforlibya | #ifsalehleft | #mobarak | #revolutionaries |
| #arabspring | #dostour2011 | #freedom | #ikhwan | #morocco | #revolutionlingo |
| #armedforces | #dostror2011 | #freeegypt | #irannext | #motheregypt | #revolutions |
| #army | #drupal | #freeman | #iranuprising | #moubarak | #revoulution |
| #armybrutality | #dz12fev | #freeghonim | #iraq | #mubafuck | #saifelislam |
| #asad | #dz2011 | #freekareem | #ja25 | #mubarak | #saifqaddafi |
| #assad | #egarmy | #freemahmood | #jan | #mubarakinjail | #saleh |
| #aymannour | #egipto | #freemaikel | #jan14 | #mubarakisdown | #salehquote |
| #b4jan25 | #egpt | #freemanubrabo | #jan15 | #mubarakplaylist | #sana |
| #bahrain | #egypt | #freeradwan | #jan2 | #mubarakquotes | #sanaa |
| #bahraini | #egypt | #freeragia | #jan25 | #mubarakresigned | #sarabia |
| #bahrein | #egy | #freerawdan | #jan25elbaradei | #mubaraks | #saudi |
| #banias | #egy25 | #freesafty | #jan26 | #mubarakspeech | #saudiarabia |
| #banyas | #egyamry | #freesamar | #jan28 | #mubaraspeech | #saudis |
| #banyias | #egyarmy | #freeshalakany | #jan2d | #mubarek | #scaredegypt |
| #baradei | #egyelections | #freeslim | #jasmin | #mubark | #sdidibouزيد |

¹⁷³ Not all Arab Spring protest hashtags were in the Egyptian revolution Twitter dataset. Many emerged after the Egyptian revolution (the list was originally constructed for Arab Spring Twitter data).

#seif
#shabablibya
#sidbouzid
#sidbiouzid
#sidibo
#sidibouzid
#sidiboizid
#sidiboouzid
#sidibou
#sidibouaziz
#sidibousid
#sidibouz
#sidibouzed
#sidibouzi
#sidibouzib
#sidibouzid
#sidibouzidhttp
#sidibuzid
#siege
#siibouzid
#siria
#sirte
#sirya
#sisibouzid
#sisidouzid
#slimamamou
#solidarity
#songsonghaddafisitunes
#songsthatareonmubaraksitunes
#staysaleh
#suleiman
#syria
#syrian
#syrianrevolution
#syrianrevolutionists
#syrians
#syrie
#tahr
#tahreer
#tahrir
#tahrirsquare
#tahrirtaughtme
#theguybehindomarsuleiman
#thrir
#torture
#tripoli
#tunesie
#tunesien
#tuniisia
#tunis
#tunisa
#tunisi
#tunisia
#tunisian
#tunisians
#tunsians
#wael
#waelghoneim
#waelghonim
#yemen
#yemen
#yemeni

APPENDIX B

EGYPTIAN REVOLUTION LOCATION TERMS USED IN TWITTER DATA

| Egyptian Cities | Cairo Locations |
|------------------------|-----------------------------|
| Alexandria | Abdin |
| Arish | Abu Zaabal |
| Aswan | Al Azhar |
| Asyut | Arkadia |
| Banha | Bridge |
| Beni Suef | Comiche Al-Nil |
| Cairo | Dar El Hekma |
| Damanhour | Dokki |
| Damietta | Egyptian museum |
| Faiyum | Heliopolis |
| Gharbia | I-Istiqama |
| Giza | Interior Ministry |
| Helwan | Israeli embassy |
| Hurghada | Kasr Al-Nil |
| Ismailia | Lawyers Syndicate |
| Kafr El-Dawwar | Ministry of Health |
| Kafr El-Sheikh | Mohandeseen |
| Luxor | Mosque |
| Maadi | Mugamma |
| Mahalla | Mustafa |
| Mahalla El-Kubra | N.D.P. |
| Mansura | October 6 Bridge |
| Minya | Palace |
| Port Said | Parliament |
| Qalyoubia | Press Syndicate |
| Qina | Pyramid |
| Sharm El-Sheikh | Ramses Street |
| Shubra El-Kheima | Tahrir |
| Sidi Bishr | Tomb of the Unknown Soldier |
| Sinai | United States embassy |
| Sohag | Zamalek |
| Suez | |
| Tanta | |
| Zagazig | |

APPENDIX C

SELECTED JOKE TWEETS

Table 1. Selected Variant Joke Tweets

'#ReasonsGaddafiIsLate waiting for his female bodyguards to finish their makeup ? #Libya #Feb17 #BenGhazi #Tripoli'

'#reasonsgaddafiislate he's still trying to convince the UN to let him pitch a tent in front of headquarter ...'
'#WhyGadafiIsLate he lost his umbrella'

'#ReasonsObamaisLate He's scolding his campaign chief after learning what CHANGE really means'
'Checking through the history books to see if anyone has won 2 Nobel Peace Prizes #whyobamaislate'
'He is practicing "Let me be clear" over and over in front of the mirror. #whyobamaislate'
'#whyobamaislate he hurt his head hitting the debt ceiling'

'#ReasonsTheArmyIsLate playing "Rock,Paper,Scissors" to see who'll get to be interim president ..'

'#ReasonsSaifIsLate his father forgot to give him his allowance #Libya'
'#reasonswhysaifislate his nigerian driver got lost'
'#reasonswhysaifislate : he thinks he owns the place'
'#reasonswhysaifislate he is combing his poodle #libya #feb17'

'#reasonswhysharifislate stuck in cairo traffic! And we all know how long that can take!'

'#whybasharislate He can't find a bullet-proof vest to fit him. #Syria'

'#reasonsCrownPrinceisLate his so kind that his not done greeting everyone in the studio'

Table 2. Additional Egyptian Revolution Jokes Shared on Twitter

New valentines day e-cards say "I love you more than egyptians hate mubarak" LOL #jan25'

URGENT ... washington is sending a high level scientific delegation to examine the super glue used by mubarak #egypt #jan25'

'Cuz Egyptians' sense of humor has no end:Sources say: Mubarak is fed up and wants to leave but can't because of the curfew! #Jan25'

Mubarak said he will be running for presidency in Tunisia and millions of Tunisians are calling for Bin Ali to return #Jan25'

'The best joke of the day is an actual quote from #Mubarak: "If I resign, Egypt will descend into chaos." #Egypt #irony'

'Antique dictator for sale. Anyone interested? #jan25 #egypt'

'#mubarak's new movie, out this fall "how to lose a country is [in] 17 days" ! #jan25 #egypt'

'Hosni #Mubarak pissed off at the protesters. They are forcing him to actually have to do some work.'

LOL : Another joke I got via SMS: "Dear Arab people: What happens in #Egypt stays in Egypt. Sincerely, Arab dictators"

APPENDIX D1

TIMELINE OF ARAB SPRING PROTESTS, DECEMBER 17, 2010-JUNE 11, 2011^{174 175 176}

| Date | Tunisia | Egypt | Yemen | Bahrain | Libya | Syria | Algeria | Jordan | Oman | Iran | Iraq | Morocco | Saudi Arabia | Lebanon | Kuwait | Mauritania |
|--------|---------|-------|-------|-------------------|-------|-------|---------|--------|------|------|------|---------|--------------|-------------------|--------|------------|
| Dec 17 | X, SI | | | | | | | | | | | | | | | |
| Dec 18 | X | | | | | | | | | | | | | | | |
| Dec 19 | X | | | | | | | | | | | | | | | |
| Dec 20 | X | | | | | | | | | | | | | | | |
| Dec 21 | X | | | | | | | | | | | | | | | |
| Dec 22 | X, S | | | | | | | | | | | | | | | |
| Dec 23 | X | | | | | | | | | | | | | | | |
| Dec 24 | X | | | | | | | | | | | | | | | |
| Dec 25 | X | | | | | | | | | | | | | | | |
| Dec 26 | X | | | | | | | | | | | | | | | |
| Dec 27 | X | | | | | | | | | | | | | | | |
| Dec 28 | X | | | | | | | | | | | | | | | |
| Dec 29 | X | | | | | | | | | | | | | | | |
| Dec 30 | X | | | | | | | | | | | | | | | |
| Dec 31 | X | | | | | | | | | | | | | | | |
| Jan 01 | | | | | | | | | | | | | | | | |
| Jan 02 | | | | | | | | | | | | | | | | |
| Jan 03 | X | | | | | | | | | | | | | | | |
| Jan 04 | X | | | | | | | | | | | | | | | |
| Jan 05 | X | | | | | | | | | | | | | | | |
| Jan 06 | X | | | | | | X | | | | | | | | | |
| Jan 07 | X | | | | | | X | | | | | | | | | |
| Jan 08 | X | | | | | | | | | | | | | | | |
| Jan 09 | X | | | | | | | | | | | | | | | |
| Jan 10 | X | | | | | | | | | | | | | | | |
| Jan 11 | X | | | | | | | | | | | | | | | |
| Jan 12 | X | | | | | | X, SI | | | | | | | | | |
| Jan 13 | X | | | | X | | X, SI | | | | | | | | | |
| Jan 14 | X | | | | X | | | X | | | | | | | | |
| Jan 15 | | | | | | | | | | | | | | | | |
| Jan 16 | | X | X | | | | X, SI | X | | | | | | XS ¹⁷⁷ | | |
| Jan 17 | X | X, SI | X | XS ¹⁷⁸ | | | SI | | X | | | | | | | SI |
| Jan 18 | X | SI | X | | | | | | X | | | | | | | |
| Jan 19 | X | | X, SI | XS ¹⁷⁹ | | | | | | | | SI | | | | |
| Jan 20 | | | X | | | | | | | | | | | | | |
| Jan 21 | X | | | | | | | X | | | | ASI | SI | | | |
| Jan 22 | X | | | | | | | | | | | | | | | |

¹⁷⁴ Table Key: X: Protests reported, XS: Solidarity protests for demonstrations in another MENA country, G: Government crackdown, SI: Self-immolation, ASI: Attempted self-immolation, XL: Labor strike, S: Suicide during protests

¹⁷⁵ Event dates collected from English language news reports (missing data due to lack of event news coverage in English)

¹⁷⁶ Protests continued beyond June 11, 2011 (cutoff date for data collection).

¹⁷⁷ Tunisia solidarity protests

¹⁷⁸ Tunisia solidarity protests

¹⁷⁹ Tunisia solidarity protests

| Date | Tunisia | Egypt | Yemen | Bahrain | Libya | Syria | Algeria | Jordan | Oman | Iran | Iraq | Morocco | Saudi Arabia | Lebanon | Kuwait | Mauritania |
|--------|---------|-------|-------|---------|-------|-------|---------|-------------------|------|------|------|-------------------------|--------------|---------|--------|------------|
| Jan 23 | X | | X | | | | | | | | | | | | | |
| Jan 24 | | | | | | ASI | | | | | | | | X | | |
| Jan 25 | X | X | | | | | | | | | | | | X | | |
| Jan 26 | X | X | | | | | | | | | | | | X | | |
| Jan 27 | X | X | X | | | | | | | | | | | | | |
| Jan 28 | X | X | | | | | | X | | | | | X | | | |
| Jan 29 | | X | | | | | | XS ¹⁸⁰ | | | | | | | | |
| Jan 30 | | X | | | | | | | | | | XS ¹⁸¹ | | X | | |
| Jan 31 | | X | | | | | | | | | | XS ¹⁸² , ASI | | | | |
| Feb 01 | | X | | | | | | XS | | | XS | XS ¹⁸³ , SI | | | | |
| Feb 02 | | X | X | | | | | X | | | | SI | | | | |
| Feb 03 | | X | X | | | | | | | | | | | X | | |
| Feb 04 | X | X | | | | | | | | | | | | | | |
| Feb 05 | X | X | | | | | | | | | | | | | | |
| Feb 06 | | X | | | | | | | | | | | | | | |
| Feb 07 | | X | | | | | | | | | | | | | | |
| Feb 08 | | X | | | | | | | | | | | | | | |
| Feb 09 | | X | | | | | | | | | | | | | | |
| Feb 10 | | X | X | | | | | | | | | SI | | | | |
| Feb 11 | | X | | X | | | | | | | | SI | | | | |
| Feb 12 | | | | | | | X | | | | | | | | | |
| Feb 13 | | | X | | | | | | | | | | | | | |
| Feb 14 | | | X | X | | | | | | X | | | | | | |
| Feb 15 | | | | X | X | | | | | | | | | | | |
| Feb 16 | | | X | X | X | | | | | | | | | | | |
| Feb 17 | | | X | X | X | | | X | | | | | | | | |
| Feb 18 | | | X | X | | | | X | | X | | | | | X | |
| Feb 19 | X | | | X | | | X | | | | | | | | | |
| Feb 20 | X | | | X | X | | | | | | | X | | | | |
| Feb 21 | | | | X | | | | | | | | X, SI | | X | | |
| Feb 22 | | | | X | | | | X | | | | | | | | |
| Feb 23 | | | X | X | | | | | | | | | | | | |
| Feb 24 | | | | | | | | | | X | X | | | | | |
| Feb 25 | | | X | X | X | | | X | | | | | | X | | SI |
| Feb 26 | | | | X | X | | | | X | | | | | | | |
| Feb 27 | | | | X | X | | | | X | | | | | | | |
| Feb 28 | | | | X | | | | | X | | | | | | | |
| Mar 01 | | | X | X | | | | | X | | | | | | | |
| Mar 02 | | | | X | | | | | X | | | | | | | |
| Mar 03 | | | | X | | | | | | | X | | | | | |
| Mar 04 | | | | X | | | | X | X | | | | X | | | |
| Mar 05 | | | | X | X | | | | X | | | | | | | |
| Mar 06 | | | | X | | | | | X, L | | | | | | | |
| Mar 07 | | | | X | X | | | | | | | | | | | |
| Mar 08 | | X | X | X | X | | | | X | | | | | | X | |
| Mar 09 | | | X | X | | | X | | X | | | | | | | |

¹⁸⁰ Egypt solidarity protests

¹⁸¹ Egypt solidarity protests

¹⁸² Egypt solidarity protests

¹⁸³ Egypt solidarity protests

| Date | Tunisia | Egypt | Yemen | Bahrain | Libya | Syria | Algeria | Jordan | Oman | Iran | Iraq | Morocco | Saudi Arabia | Lebanon | Kuwait | Mauritania |
|--------|---------|-------|-------|---------|-------|-------|---------|--------|------|------|-------------------|---------|--------------|---------|--------|------------|
| Mar 10 | | X | | X | X | | | | X | | | | X | | | |
| Mar 11 | | X | X | X | | | | X | | | | | X | | X | |
| Mar 12 | | | X | X | X | | | | | | | | | | | |
| Mar 13 | | | | X | | | | | X | X, G | | | | | | |
| Mar 14 | | | | X | | | | | | | | | | | | |
| Mar 15 | | | | X | | X | | | X | | | | | | | |
| Mar 16 | | | | X | | X | | | X | | | | | X | | |
| Mar 17 | | | | X | | | | | | | XS ¹⁸⁴ | | | | | |
| Mar 18 | | | X | | | X | | X | | | | | | | | |
| Mar 19 | | | | | | X | | X | | | | | | | | |
| Mar 20 | | | | | | X | | | X | | | X | | | | |
| Mar 21 | | | | | | X | | | | | | | | | | |
| Mar 22 | | | | X | | X | | | X | | | | | | | |
| Mar 23 | | | | | | X | | | | | | | | | | |
| Mar 24 | | | | | | X | | X | X | | | | | | | |
| Mar 25 | | X | X | X | | X | | X | | | | | | | | |
| Mar 26 | | | | | | X | | | | | | | | | | |
| Mar 27 | | | | | | X | | | X | | | | | | | |
| Mar 28 | | | X | | | X | | | | | | | | | | |
| Mar 29 | | | | | | X | | | X, G | | | | | | | |
| Mar 30 | | | | | | X | | | | | | | | | | |
| Mar 31 | | | | | | | | | | | | | | | | |
| Apr 01 | | | X | | | X | | X | X | | | | | | | |
| Apr 02 | | | | | | | | | X | | | | | | | |
| Apr 03 | | | | | | X | | | | | | | | | | |
| Apr 04 | | | X | | | | | | | | | | | | | |
| Apr 05 | | | X | | | | | | | | | | | | | |
| Apr 06 | | | | | | | | | X | | | | | | | |
| Apr 07 | | | | | | | | X | | | | | | | | |
| Apr 08 | | X | | | | X | | X | | | | | | | | |
| Apr 09 | | X, G | | | | X | | | | | | | | | | |
| Apr 10 | | | X | | | X | | | | | | | | | | |
| Apr 11 | | X | | | | | | | | | | | | | | |
| Apr 12 | | | | | | X | | | | | | | | | | |
| Apr 13 | | | X | | | X | | | | | | | | | | |
| Apr 14 | | | | | | | | | | | | | | | | |
| Apr 15 | | | | | | X | | X | | | | | | | | |
| Apr 16 | | | | | | | | | | | | | | | | |
| Apr 17 | | | X | | | X | | | | | | | | | | |
| Apr 18 | | X | | | | X | | | | X | | | | | | |
| Apr 19 | | | | | | | | | | | | | | | | |
| Apr 20 | | | X | | | | | | | | | | | | | |
| Apr 21 | | | | | | | | | | | | | | | | |
| Apr 22 | | | X | X | | X | | | X | | | | | | | |
| Apr 23 | | | | | | | | | | | | | | | | |
| Apr 24 | | | | | | X | | | | | | | | | | |
| Apr 25 | | | | | | X | | | | | | | | | | |
| Apr 26 | | X | | | | | | | | | | | | | | |
| Apr 27 | | | X | | | | | | | | | | | | | |

¹⁸⁴ Bahrain solidarity protests

| Date | Tunisia | Egypt | Yemen | Bahrain | Libya | Syria | Algeria | Jordan | Oman | Iran | Iraq | Morocco | Saudi Arabia | Lebanon | Kuwait | Mauritania |
|--------|---------|-------|-------|---------|-------|-------|---------|--------|------|------|------|---------|--------------|---------|--------|------------|
| Apr 28 | | | X | | | | | | | | | | | | | |
| Apr 29 | | | | | | X | | | | | | | | | | |
| Apr 30 | | | | | | X | | | | | | | | | | |
| May 01 | | | | | | | | | | | | X | | | | |
| May 02 | | | | | | G | | | X | | | | | | | |
| May 03 | | | | | | | | | | | | | | | | |
| May 04 | | | | | | | | | | | | | | | | |
| May 05 | | | | | | | | | | | | | | | | |
| May 06 | | | | | | | | | X | | | | | | | |
| May 07 | | | | | | | | | | | | | | | | |
| May 08 | | | | | | | | | | | | | | | | |
| May 09 | | | | | | | | | | | | | | | | |
| May 10 | | | | | | | | | | | | | | | | |
| May 11 | | | | | | | | | | | | | | | | |
| May 12 | | | | | | | | | | | | | | | | |
| May 13 | | | | | | X | | | | | | | | | | |
| May 14 | | | | | | | | | | | | | | | | |
| May 15 | | | | | | | | | | | | | | | | |
| May 16 | | | | | | | | | | | | | | | | |
| May 17 | | | | | | | | | | | | | | | | |
| May 18 | | | | | | | | | | | | | | | | |
| May 19 | | | | | | | | | | | | | | | | |
| May 20 | | | | | | X | | | | | | | | | | |
| May 21 | | | | | | | | | | | | | | | | |
| May 22 | | | | | | | | | | | | | | | | |
| May 23 | | | | | | | | | | | | | | | | |
| May 24 | | | | | | | | | | | | | | | | |
| May 25 | | | | | | | | | | | | | | | | |
| May 26 | | | | | | | | | | | | | | | | |
| May 27 | | | | | | | | | | | | | | | | |
| May 28 | | | | | | | | | | | | | | | | |
| May 29 | | | | | | | | | | | | | | | | |
| May 30 | | | | | | | | | | | | | | | | |
| May 31 | | | | | | | | | | | | | | | | |
| Jun 01 | | | | | | | | | | | | | | | | |
| Jun 02 | | | | | | | | | | | | | | | | |
| Jun 03 | | | | | | | | | | | | | | | | |
| Jun 04 | | | | | | | | | | | | | | | | |
| Jun 05 | | | | | | | | | | | | | | | | |
| Jun 06 | | | | | | | | | | | | | | | | |
| Jun 07 | | | | | | | | | | | | | | | | |
| Jun 08 | | | | | | | | | | | | | | | | |
| Jun 09 | | | | | | | | | | | | | | | | |
| Jun 10 | | | | | | | | | | | | | | | | |
| Jun 11 | | | | X | | | | | | | | | | | | |

APPENDIX D2

UNINSTALLING DICTATOR TWEETS¹⁸⁵

EGYPT UNSUCCESSFUL:

'Uninstalling dictator ... 99% complete ██████████ Error 404 Freedom not Found'
'Uninstalling dictator ... 99% complete ██████████ -ERROR- Please insert CD-Rom'
"Suleiman" and try again #Egypt'

EGYPT SUCCESSFUL:

'Uninstalling dictator ... ██████████ 100% complete'
'Uninstalling dictator ... ██████████ 100% complete #jan25'
'Uninstalling Dictator COMPLETE - Now Installing: New Egypt: ██████████'
'Uninstalling Mubarak Complete. Now Installing Egypt v2.0: ██████████ #JAN25'
'█████████ Uninstalling Government...Completed!! ██████████ Uninstalling
Mubarak...Completed!! ██████████ Installing Egy ...'
'Uninstalling dictator ... ██████████ 100 % done ...restarting Egypt... #jan25'
'Uninstalling dictator COMPLETE 100% ██████████ ||||| Installing : Egypt 2.0:
█████████ 10% #Egypt #jan25'
'Uninstalled dictator ... 100% complete ██████████ Please load democracy program #Feb11 #jan25 #egypt #revolution
#Mubarak'
'Uninstalling Mubarak: 100% Complete! ██████████ #egypt #jan25 #tahrir #mubarak'

LIBYA:

'Uninstalling dictatorship in #Libya ██████████ 10% Do not cancel until operation is completed!'
'Uninstalling dictatorship in #Libya ██████████ 30% Do not cancel until operation is completed!'
'Uninstalling dictatorship in #Libya ██████████ 40% Do not cancel until operation is completed!'
'Uninstalling dictatorship in #Libya ██████████ 50% Do not cancel until operation is completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 60% System will auto reboot when completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 70% System will auto reboot when completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 80% System will auto reboot when completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 90% System will auto reboot when completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 99% System will auto reboot when completed! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling dictatorship in #Libya ██████████ 100% Operating System is now totally replaced! ALLAH_O_AKBAR!
ALLAH_O_AKBAR! ALLAH_O_AKBAR!'
'Uninstalling Dictator #Libya Edition: ██████████ 95%'
'Uninstalling #Gaddafi ██████████ 99% #Libya #Feb17'
'Uninstalling tyrant of #Libya ██████████ 20% Please God, let the people win!'
'Uninstalling dictator - #TUNISIA ██████████ : done#EGYPT ██████████ :
done#LIBYA ██████████ ...'
'Bloody uninstalling Gadafi in progress ██████████ ... 90 % complete. #libya #kadhafi'
'Uninstalling dictator in progress - Libya ██████████ #libya #feb17'

¹⁸⁵ @mentions removed from tweets.

YEMEN:

'Uninstalling dictator in progress - Yemen ██████████',
#Yemen Uninstalling Dictator in progress... ██████████ 82.9% [Almost there ya Shabab. Keep pushing!]'
'Uninstalling dictator - #TUNISIA ██████████ : done #EGYPT ██████████ : done #ALGERIA
and #Yemen ██████████ : in progress'

SYRIA:

██████████ : 100% done EGYPT : ██████████ : 100% done tunisia Uninstalling dictator of syria... 90% complete'

BAHRAIN:

'Uninstalling monarchy in progress - BAHRAIN ██████████',
'UNINSTALLING DICTATORS: #TUNISIA ██████████ : 100% done - #EGYPT ██████████ : 100% - #Bahrain ██████████ 75%
- #IRAN ██████████ 75% - #A ...'

ALGERIA:

'Uninstalling dictator in progress - ALGERIA ██████████ : 5% - #Algeria #Feb12 #Revolution
#ArabProtest'
'Uninstalling dictator in progress ██████████ #Algeria #Feb12'
'Uninstalling dictator - #TUNISIA ██████████ : done#EGYPT ██████████ : done#ALGERIA
██████████ : ...'

IRAN:

'Uninstalling dictator in progress - Futuring Egypt- lent to IRAN- Starting to reboot ██████████ #Iran
#IranElection #22Bahman'
'Uninstalling dictator in progress IRAN ██████████ 20% #Iran #IranElection #Egypt #25Bahman #Feb14'
'Uninstalling dictators:#TUNISIA... ██████████ 100% done#EGYPT... ██████████ 100%
done#IRAN... ██████████ ...'
'Uninstalling dictator in progress - IRAN ██████████ #Iran #IranElection #22Bahman #25Bahman
#Feb14'
'UNINSTALLING DICTATORS: #TUNISIA ██████████ : 100% done - #EGYPT ██████████ : 100% - #Bahrain ██████████ 75%
- #IRAN ██████████ 75% - #A ...'

MOROCCO:

'Uninstalling Dictators: YEMEN ██████████ in progress -LIBYA ██████████ in progress -MOROCCO ██████████ : Plugin
needed'
'ERROR Uninstalling Dictators FAILED! ... PLEASE RESTART! ██████████ #egypt #jan25 #tahrir
#Ksa #morocco #masr'

AFRICAN COUNTRIES:

'Uninstalling Arab dictators in progress next:..... ██████████ Tunisia ██████████ Egypt ██████████ Yemen ██████████ Algeria ██████████ Syria ██████████ Sudan ██████████'
RT @eadvocate: RT @nnenna #IvoryCoast. Uninstalling Laurent Gbagbo: ██████████
COMPLETE 100%. "Begin Reconstruction now": Yes. # ...'
'Coast ██████████ % Complete. #Tunisia #Egypt Ivory #Coast. ... '
'Uninstalling African dictators in progress next:..... ██████████ Tunisia ██████████ Egypt ██████████ Côte
d'Ivoire ██████████ Algeria ██████████ Zimbabwe ██████████ Sudan ██████████
'Uninstalling African dictators in progress next:..... ██████████ Tunisia ██████████ Egypt ██████████ Côte d'Ivoire,Algeria,Zimbabwe,Sudan ██████████

CHINA:

'Uninstalling dictator - #TUNISIA : done #EGYPT : done #ALGERIA ██████████: in progress #China
██████████: 0% not started'
'Uninstall dictator #TUNISIA ██████████:done #EGYPT ██████████:done #LIBYA ██████████: in progress
#CHINA ██████████:Error #Ukraine ██████████:Insert CD'

ITALY:

'Uninstalling #Berlusconi ... 10% complete ██████████ - IN PROGRESS #italy
#dictators ...'

UKRAINE:

'Uninstall dictator #TUNISIA ██████████:done #EGYPT ██████████:done #LIBYA ██████████: in progress
#CHINA ██████████:Error #Ukraine ██████████:Insert CD'

GENERAL:

'Now uninstalling rest of dictators of the world: ██████████ #Algeria #Syria #Yemen #Sudan
#Iran # ...'
'Uninstalling dictator in progress - THE WORLD : ██████████ #Algeria #Algerie #Egypt #Jan25
#Libya'
'Uninstalling Middle East dictators in progress... ██████████ 99.99% complete #Tunisia
#Egypt #LIBYA #J ...'
'Uninstalling dictators down to 20% ██████████ 20% #egypt #jan25 #tahrir
#mubarak'
