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Social media in the 2011 Egyptian uprising[1]

Robert Brym, Melissa Godbout, Andreas Hoffbauer, Gabe Menard and Tony Huiquan Zhang

Abstract

This paper uses Gallup poll data to assess two narratives that have crystallized around the 2011 Egyptian uprising: (1) New electronic communications media constituted an important and independent cause of the protests in so far as they enhanced the capacity of demonstrators to extend protest networks, express outrage, organize events, and warn comrades of real-time threats. (2) Net of other factors, new electronic communications media played a relatively minor role in the uprising because they are low-cost, low-risk means of involvement that attract many sympathetic onlookers who are not prepared to engage in high-risk activism. Examining the independent effects of a host of factors associated with high-risk movement activism, the paper concludes that using some new electronic communications media was associated with being a demonstrator. However, grievances, structural availability, and network connections were more important than was the use of new electronic communications media in distinguishing demonstrators from sympathetic onlookers. Thus, although both narratives have some validity, they must both be qualified.

Keywords: Social media; social movements; high-risk activism; Egypt; Arab Spring; Middle East

Two stories of the Arab Spring

> Hosni Mubarak, Anwar Sadat, and Gamal Abdel Nasser are having tea in the afterlife. Mubarak asks Nasser, 'How did you end up here?' 'Poison', Nasser answers. Mubarak then turns to Sadat. 'What about you?' he asks. 'An assassin's bullet', Sadat says. Sadat and Nasser then turn to Mubarak. 'And you?' To which Mubarak replies, 'Facebook'.
> – A joke that made the rounds in Egypt just after the resignation of Mubarak on February 11, 2011

Brym, Godbout, Hoffbauer, Menard and Huiquan Zhang (Department of Sociology, University of Toronto) (Corresponding author email: rbrym@chass.utoronto.ca)
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> This is not an Internet revolution. It would have happened anyway. In the past, revolutions happened, too.
> –Wael Ghonim (2012), Internet activist and Head of Marketing, Google Middle East and North Africa

In 2009, only half the adults in the Middle East and North Africa supported the fundamental democratic freedoms of speech, assembly, and religion. In Egypt, the figure was 41 per cent (Andersen, Brym, and Araj 2011: 70). Just two years later, much of the region experienced a mass uprising against its authoritarian regimes that quickly came to be known as the Arab Spring.

For decades, researchers have known that if they want to understand who participates in social movements, they should examine the strong, pre-existing social ties that bind aggrieved individuals together. Unions, neighbourhood associations, churches, and other social organizations are commonly viewed as breeding grounds for protest, imbuing potential partisans of social change with a common identity, sense of purpose, and willingness to take risks for the collective good. When circumstances galvanize people to act collectively, members of such solidary collectivities are typically the first to act, according to the traditional view. A disproportionate number of movement leaders are recruited from pre-existing networks of like-minded individuals. Such people are also among the most dedicated and enduring members of social movements (McAdam 1988; Tarrow 2011; Tilly, Tilly, and Tilly 1975).

In the last few years, a different narrative concerning the social roots of participation in social movements has emerged both in the popular imagination and among scholars. As Barry Wellman and his students remark about the Arab Spring,

> social media such as Facebook played important roles in transforming organized groups and informal networks, establishing external linkages, developing a sense of modernity and community, and drawing global attention. (Zhuo, Wellman, and Yu 2011: 6)

Protesters in the Arab Spring had more or less quietly endured a host of deprivations (widespread poverty, high unemployment, slow economic growth, low upward mobility, deep corruption, and debilitating state repression) until early 2011 (in Tunisia, late 2010), at which time they took to the streets and demanded regime change. According to the new narrative, they were enabled in part by new means of communication that can be democratizing because of their low entry costs and unique capacity to turn users into information producers. They used Twitter, Facebook, YouTube and cell phone text messages to express outrage, organize protests, and warn comrades of real-time threats (for a popular rendition of this narrative, see Andersen 2011/2012).

The idea that social media influenced protest is consistent with research demonstrating that patterns of television broadcasting influenced the

geographical spread of sit-ins in the 1960s and black riots in the 1970s in the USA (Myers 2000; Andrews and Biggs 2006). Henry Farrell (2012: 39–40) has recently identified three mechanisms through which social media may be linked to political outcomes today: social media lower the costs of collective action, increase the propensity of similar individuals to form groups, and decrease the likelihood that people in authoritarian regimes will conceal their desire for a better social order.

While few observers dispute the new narrative as a description of events, many question its value as an explanation of the Arab Spring. Said differently, there is no question that, during the Arab Spring, social media helped some protesters expressively and organizationally. However, it is unclear just how important social media were in facilitating the uprising relative to other factors.

Some commentators assert that social media were instrumental or even decisive in allowing the Arab Spring to happen. According to Manuel Castells, social movements form only when hope and outrage are communicated to others on a large scale. Today, such emotions 'spread by contagion in a world networked by the wired Internet'. Thus, in Egypt in 2011, activists 'planned the protests on Facebook, coordinated them through Twitter, spread them by SMSs and webcast them to the world on YouTube' (Castells 2012: 2, 58). Philip Howard and Muzammil Hussain (2013) are even more forceful in their conclusions:

> Digital media had a causal role in the Arab Spring in the sense that they provided the very infrastructure that created deep communication ties and organizational capacity in groups of activists before the major protests took place and while street protests were being formalized. Indeed, it was because of these well-developed, digital networks that civic leaders so successfully activated such large numbers of people to protest.

Howard and Hussain dismiss 'traditional explanations', which privilege causal factors other than social media, on the grounds that they yield 'uncompelling explanations'.[2]

In contrast, others analysts offer more nuanced, less sanguine and in some cases downright incredulous assessments of the role of social media in facilitating social protest. A somewhat more skeptical account is that of Marc Lynch (2011: 302), who insists that

> while protesters effectively used social media in their struggles, it is surprisingly difficult to demonstrate rigorously that these new media directly caused any of the outcomes with which they have been associated.

Henry Farrell (2012: 45) concurs, adding that

> Facebook and other organizing tools played a significant role [in Egypt] – but only together with more traditional means of organizing. . . . We need

> better data to resolve controversies over whether the Internet is essential or inessential to explaining political changes in Egypt. . . .

As an example of the complexity of the connection between the use of social media and political outcomes, Farrell remarks that the lower costs of communication afforded by social media may increase the incidence of purely expressive action while having little effect on the incidence of high-risk action. Clay Shirky (2011: 30) agrees that 'social media have become coordinating tools for nearly all of the world's political movements' but notes that their role in mobilizing dissent in the short term is far less consequential than their long-term help in establishing a civil society in which democratic politics can flourish. Finally, Malcolm Gladwell (2010) echoes traditional social movements scholarship by claiming that strong social ties and political commitments normally bind social movement activists together. In contrast, he writes, the entry costs for using Twitter and Facebook are so low that they attract mainly users who are only loosely connected to one another by weak social ties and feeble commitment to a cause. According to Gladwell and others, such people may be sympathetic onlookers but are unlikely to become players in the high-stakes game of political protest in authoritarian regimes by, say, taking part in demonstrations (Gladwell 2010; cf. Barassi 2009; Esfandiari 2010; Morozov 2011; Schmitt 2003).

Most of the empirical research on the use of social media during the Arab Spring relies on usage data. Such data are of limited value in forming evidence-based generalizations about the relative significance of social media in making the uprising possible. For example, we know that in Egypt at the end of December 2010, about 22 per cent of the population enjoyed Internet access and more than 80 per cent owned cell phones. In January 2011, around 4.5 per cent of Egyptians were registered Facebook users, increasing to about 7.7 per cent by April 2011. In March, three-quarters of Egyptian Facebook users employed the Arabic interface. An average of approximately 131,000 Egyptians had active Twitter accounts between January and March 2011. Although amounting to just 0.15 per cent of Egypt's population, their number may have increased tenfold between January and March. The daily number of tweets originating in Egypt with the '#egypt' hashtag was roughly 18,000 between January 25 (the day the uprising began) and February 28 (Choudhary et al. 2012; Internet World Stats 2012; Lotan et al. 2011; Mourtada and Salem 2011a: 7, 11, 16, 17, 22; 2011b: 5; Murthy 2012: 15; Tufekci and Wilson 2012: 367).

These figures say little beyond the fact that a numerically significant and quickly growing number of Egyptians used social media to communicate during the demonstrations that rocked the country in the first quarter of 2011. Beyond that, we have a tantalizing finding based on bit.ly data about the consumption of social media messages during the Arab Spring. Bit.ly is a

popular online service that allows users to shorten URLs from, say, 100 characters to 20 characters. Because Twitter allows a maximum of 140 characters per tweet, many users find bit.ly convenient when tweeting website links. Sean Aday and his colleagues used bit.ly data to determine the geographical location of people who clicked on shortened URLs relevant to the Arab Spring (Aday et al. 2012). For example, they culled bit.ly links from the popular '#jan25' hashtag and found that just 14 per cent of clicks on these links (out of a total of more than 5.4 million) originated in Egypt. Another 11 per cent came from locations elsewhere in the Middle East and North Africa. The remaining 75 per cent originated outside the region. Moreover, enormous spikes in the number of clicks on bit.ly links occurred during major political events and then dropped off quickly and precipitously. These findings suggest that 9 of 10 tweets relevant to the Egyptian uprising came from outside Egypt and that tweets were used mainly to disseminate information on especially significant events, such as Mubarak's departure from office (Aday et al. 2012: 11–13). From this point of view, Twitter acted more like a megaphone broadcasting information about the uprising to the outside world than an internal informational and organizing tool. This is not to say that Twitter's function as an internal informational and organizing tool was irrelevant, just that one should interpret its role with great caution.

The results of a rare survey of Egyptians over the age of 17 conducted in April 2011 (n = 1,200) also encourage us to interpret usage statistics carefully. Among other things, the poll explored Egyptians' primary information sources during the uprising that began on January 25th. When asked which news sources about the uprising they relied on most, 84 per cent of respondents said television, 6 per cent mentioned family and friends, 6 per cent cited Facebook, 2 per cent said Internet news sites, and 1 per cent mentioned radio and text-messaging. Fewer than 1 per cent cited newspapers, Twitter or email (International Republican Institute 2011a; 2011b). Traditional sources of information were far more important news sources than social media were.

In this article, we enrich our understanding of the role of social media relative to other factors facilitating participation in the Arab Spring by analysing data from a March–April 2011 Gallup poll of a representative sample of Egyptians over the age of 14. We first distinguish respondents who say they supported the overthrow of Hosni Mubarak and took part in the demonstrations of early 2011 ('demonstrators') from those who say they supported the overthrow of Mubarak but did not participate in the demonstrations ('sympathetic onlookers'). The narratives presented earlier are at odds over which group uses social media more. If the first, optimistic narrative is valid, demonstrators will have used social media more than sympathetic onlookers did, net of other factors. If the second, skeptical narrative is valid, sympathetic onlookers will have used social media more than demonstrators did, net of other factors. By identifying social factors associated with demonstrators and

sympathetic onlookers, we offer a unique empirical assessment of the validity of these contradictory expectations.

In the final analysis, we conclude that neither narrative fully captures the reality of the Arab Spring in Egypt. A variety of social-structural factors were more important than patterns of media usage were in distinguishing demonstrators from sympathetic onlookers. However, it would be wrong to dismiss patterns of media usage as independent influences on the likelihood of becoming a demonstrator. While demonstrators were not more inclined than sympathetic onlookers were to use Twitter and Facebook as protest news sources, they did differ from sympathetic onlookers in so far as they were more likely to trust non-traditional communications media as reliable news sources and were more likely to get news about the protests from text messages via cell phone. Patterns of media usage mattered, although not to the degree that some commentators imagine.

Hypotheses

Our aim is to assess the factors that distinguish high- and low-risk activists in the Egyptian uprising of 2011. Use of new communications media is one of those factors. Other factors mentioned in the social movements literature include intensity of grievances, structural availability, and ties to civic organizations in the larger society. Let us consider each of these factors in turn.

Grievances

Grievances or feelings of relative deprivation are often widespread. However, as important analysts argued in the 1970s, they are never sufficient to mobilize social movement recruits (McCarthy and Zald 1973; 1977). For instance, some people may express deep grievances against political institutions and little confidence in them but remain politically passive because they do not know that many other people feel the same way. Consequently, much social movement research in the 1970s focused on discovering social and political conditions that encourage people to translate grievances into social movement organization and action, while in the 1980s leading researchers began investigating the interaction processes that can allow people to interpret or frame grievances as actionable (Snow et al. 1986).

Sometimes lost in the search for preconditions and framing processes is the possibility that *severity* of grievances affects propensity to engage in collective action and intensity of activism, net of other causes. Yet some experiments, historical studies, and analyses of official statistics add weight to the view that severity of grievances has such effects (Chandra and Foster 2005; De La Ray

and Raju 1996; Grant and Brown 1995; Kent 1982; Korpi 1974). All else the same, people who are more aggrieved may be more inclined than are people who are less aggrieved to engage in activism, including high-risk activism such as participating in demonstrations despite police repression. Less aggrieved partisans may be more likely to restrict themselves to expressing sympathy with the movement's goals and thus helping to legitimize it. Our first hypothesis derives from these considerations:

H1: In the 2011 Egyptian uprising, anti-Mubarak demonstrators were more aggrieved than were sympathetic onlookers.

Structural availability

To translate grievances into organization and action, social movements must secure resources from potential partisans. These resources include legitimacy, money, and work. However, some movement partisans are in a position to contribute more resources than others are. Partisans in particular social locations may be able to supply more time and knowhow to a movement than partisans in other social locations can, and they may be less constrained to take risks (McAdam 1986; Tindall 2002; Wiltfang and McAdam 1991). For example, in Egypt in 2011, unmarried, relatively highly educated men residing in urban areas may have been in a better position than others were to engage in high-risk activism. Let us consider each of these factors in turn.

Women certainly contributed a great deal to the demonstrations in Tahrir Square and elsewhere in the country, but Egypt is still a society in which women's participation in public affairs is tightly circumscribed. Thus, in the 2012 parliamentary election, women won just 2 per cent of seats, a result that places Egypt 138th among the 150 countries on which data on gender representation in parliaments is available ('Women in National Parliaments' 2012).

Marital ties also constrain participation in high-risk activism in so far as family responsibilities are likely to decrease the amount of time and energy one can invest in political activities and increase one's caution about taking actions that might endanger the welfare of one's family (McAdam 1986: 70).

In 2011, demonstrations and clashes occurred mainly in major population centres like Cairo and Alexandria, and smaller cities like Suez and al-Mansoura. They took place to a much lesser extent in rural areas, which lack both large concentrations of potential partisans and high-profile protest targets (on the relatively scant and small-scale rural protests, see, for example, Abdel-Razzak 2011; Voice of America 2011). The historical association between urbanity and participating in demonstrations is well known (Lipsky 1968; Tilly 1964). Therefore, we expect urbanity was associated with participation in demonstrations in Egypt in 2011.

Higher education often provides intellectual resources that increase the likelihood of high-risk activism, including knowledge of the advantages of democracy over other types of political systems and the history of successful democratic movements, which can inspire activism.

These generalizations lead to our second hypothesis:

> H2: In the 2011 Egyptian uprising, anti-Mubarak demonstrators were more likely than sympathetic onlookers were to be unmarried, relatively highly educated, urbanized men.

Organizational ties

Social relationships or network ties form the backbone of all social movements (Killian 1984; Snow et al. 1986; Diani 2004; Viterna 2006). The effects of network ties are evident with respect to recruitment, continuity of involvement, and participation in high-risk activities.

People who are strongly connected to social organizations and social movement activists are more likely to become movement recruits than are people who are weakly connected to organizations and activists (McAdam and Paulsen 1993: 655; Oliver 1984). We witness this effect because individuals who are closely tied to organizations and movement activists are likely to have a stake in their network's fate and find it hard not to participate in a movement when many people they know are involved (Fireman and Gamson 1979; Klandermans 1997; Marwell and Oliver 1993; Staggenborg 2008: 31).

Membership in *civic* associations is an especially important mobilization channel in social movement activism because members of civic associations share an interest in activism and this shared interest tends to form the basis of their social relationship. Consequently, if a member of a civic association seeks to recruit another member to a social movement, a relatively high probability exists that the other member will agree because refusal will threaten the basis of their relationship (Lim 2008: 973–4). That is probably a major reason why, as one commentator remarked on the elections that immediately followed the 2011 uprising in Egypt,

> the social network of the mosques, where the masses worship five times a day and the Muslim Brotherhood's welfare, education, and assistance network, *dawa*, supports the needs of the poor, is what really decided the elections in Egypt. (Yadlin 2012: 14)

People with previous experience in a social movement or civic association who join a new movement are also more likely to continue their involvement in it than are people who join a new movement but lack a previous history of movement or civic association membership (Diani 1995; Norris, Walgrave, and

Van Aelst 2005). A history of movement or civic association membership socializes people into the norms and practices associated with movement activism; previous involvement predicts future behaviour (Wiltfang and McAdam 1991).

Finally, strong ties to activists and previous membership in organizations, particularly political organizations, increase the likelihood of participation in high-risk movement activities, which are costlier than low-risk activities are in so far as they can result in higher levels of social disapproval, arrest or even death (McAdam 1986; Wiltfang and McAdam 1991). We thus arrive at our third hypothesis:

> H3: In the 2011 Egyptian uprising, anti-Mubarak demonstrators were more likely than were sympathetic onlookers to have ties to civic associations in the larger society.

Protest news sources

Some analysts argue that Internet-based social media such as Facebook and Twitter, and text messaging via cell phone, are transforming how social movement organizations and participants engage in contentious politics (Bennett 2005; Castells 2009: 302; Cottle 2008: 860; Dahlberg and Siapera 2007; della Porta 2005). In their view, traditional media outlets are governed by selection biases that place disproportionate value on messages congruent with the dominant culture and news accounts based on the viewpoints of powerful elites. Moreover, traditional media outlets are not easily and routinely accessible to dissident groups because of financial barriers (Gans 2004; Hilgartner and Bosk 1988; Schudson 1989; Tuchman 1978). In authoritarian political systems, such as those of Egypt before the overthrow of Mubarak, substantial government control of the mass media through ownership, censorship, and other forms of influence exacerbated the problem. Even a popular call-in television show on a subject as apparently innocuous as dream interpretation could be abruptly pulled off the air by the government in 2003 because of its occasional political undertones (Mittermaier 2010: 31–4, 196). In contrast, the Internet and text messaging provide dissidents with inexpensive media through which they can share grievances and ideologies, build networks, train members, announce protest sites, raise money, and warn of impending danger. These new forms of communication also greatly increase the speed of communication and broaden its reach to international audiences (Bennett, Breunig, and Givens 2008; Tarrow 2011: 137).

While the widespread diffusion of new communications media benefits movement activists, it may also enable weakly committed people to opt into social movements at low cost and with little risk – and to drop out just as easily

(Bennett, Breunig and Givens 2008: 270; della Porta 2005; Papacharissi 2010). However, few empirical studies examine the influence of new communications media on political participation and activism, so we know little about the degree to which Facebook, Twitter, and text-messaging mobilize high-risk activists, low-risk sympathizers, or both (Rohlinger and Brown 2009; Nah, Veenstra and Shah 2006). While we acknowledge this ambiguity, our fourth hypothesis expresses skepticism:

> H4: In the 2011 Egyptian uprising, new communications media influenced sympathetic onlookers more than they influenced demonstrators.

Methods and measures

Sample

To examine the role of social media and other factors in the Egyptian uprising of 2011, we analyse a sample of Egyptians (n = 1,005) from the Gallup World Poll, conducted between 25 March and 2 April, 2011. This was the eighth nationwide Gallup survey conducted in Egypt since 2005 as part of its World Poll, which asks a set of core questions in 155 countries and specialized questions in certain regions to monitor the opinions, aspirations, and behaviour of respondents. The survey covers of range of topics including law and order, food and shelter, job creation, migration, financial well-being, personal health, and civic engagement. The sample is probability-based and nationally representative of the entire civilian, non-institutionalized population of Egypt over the age of 14, except in areas that were inaccessible or scarcely populated or where the safety of interviewers was threatened. Gallup's regional director of survey research put the dataset through a rigorous quality assurance process to ensure consistency by interviewer and region and to check for validity, logical consistency and time trends. The maximum margin of error for the entire sample is 3.5 per cent and the design effect is a relatively low 1.28. Interviews were conducted face-to-face in Arabic. They lasted for approximately one hour each. The survey was in the field two months after the uprising began on 25 January, providing reliable data on time-sensitive questions. The exact wording of some questions employed in our analysis is given below. The wording of other questions to which we refer in this paper is available from the authors on request.

Possible interpretivist objections

Interpretivist sociologists correctly note that survey instruments which employ conceptual categories unfamiliar to respondents are likely to produce dubious

results (David 2010). The problem is especially likely to arise when researchers come from one culture and respondents from another. Might our analysis be affected by this difficulty?

Gallup is an American organization, but it established the Gallup Center for Muslim Studies in Washington DC in 2006 and the Abu Dhabi Gallup Center in 2010 to focus on the Middle East and North Africa. When it conducted the survey on which we base our analysis, the Abu Dhabi Gallup Center was staffed by specialists in the study of the region who were fluent in Arabic and other regional languages and intimately familiar with the area's cultures, history, and current events. Its director was born in Egypt. Therefore, on its face, there is no reason to believe that the personnel responsible for designing Abu Dhabi Gallup Center survey instruments were culturally biased in a way that would produce dubious results.

In general, concrete survey questions ('In what year were you born?') are less likely to elicit culturally-based misunderstandings than are abstract questions ('How important is it for Egypt to become a democracy?'). Fortunately, the questions on which we base our analysis are all concrete. (We quote key questions later.) Moreover, even if we had based part of our analysis on questions dealing with political abstractions such as 'democracy', it is unclear whether respondents would have misunderstood them. Thus, as one researcher found using 2006–07 data from the Arab Barometer Surveys, Algerians, Jordanians, Kuwaitis, Moroccans, Palestinians and Yemenis 'demonstrate an understanding of democracy that is largely consistent with widely held perceptions and evaluations of democracy elsewhere in the world' (Braizat 2010: 136).

It is also possible that Egypt's authoritarian political tradition influenced the validity of survey responses. This phenomenon has been observed in other settings, such as Russia in the early 1990s, when it was routinely found that a quarter or even 40 per cent of respondents responded 'don't know' or the like to politically sensitive questions. According to some researchers, when a large proportion of respondents answer survey questions in this manner, it may simply reflect widespread ignorance, ambivalence or apathy. In that case, the proportions of positive and negative opinions are still likely to be valid. However, in settings with a recent tradition of authoritarianism, a high proportion of 'don't knows' might mean that respondents are afraid to state their real opinion. In that case, the proportions of positive and negative responses are likely invalid since an unknown proportion of the 'don't knows' actually hold positive or negative opinions (Brym and Degtyarev 1993; Carnaghan 1996). For the survey questions on which we base our analysis, the percentage of respondents who refused to answer or replied 'don't know' was small – usually around 1 or 2 per cent and for a couple of variables, as high as 6 or 7 per cent. These results suggest we can safely ignore the possibility that the Egyptian situation paralleled that in Russia in the early 1990s, at least for the questions that interest us.[3]

Variables and analyses

We examine the independent and joint effects of four sets of factors that may distinguish demonstrators from sympathetic onlookers.

We constructed our binary dependent variable from two survey questions:

(1) 'Overall, did you support or not support the protestors who called for former President Mubarak's resignation?' (support/not support/don't know/refused).
(2) 'Did you, personally, participate in any protests in the time right before former President Mubarak resigned?' (participated/did not participate/don't know/refused).

Forty of the 1,005 respondents replied 'don't know' to, or refused to answer, one or both of these questions. Of the remaining 965 respondents, 110 said they supported and participated in the protests. They are the 'demonstrators' in our analysis (coded 1). Another 702 respondents said they supported but did not participate in the protests. They are the 'sympathetic onlookers' in our analysis (coded 0). Supporters of the Mubarak regime (n = 153) are not included in our analysis.[4]

Next, we cross-tabulated the dependent variable against 30 independent variables selected for the theoretical reasons given earlier. The independent variables fell into one of four groups: (1) Grievance variables measure material deprivation and the extent to which respondents experience alienation from national institutions. (2) Structural availability variables tap the social locations of respondents and their availability for protest. (3) Organizational tie variables indicate the strength of social ties between respondents and civil society. (4) Protest news source variables signify the extent to which respondents trust various sources of news about the protests. These sources include pro-government, independent, and anti-government communications media, both traditional (newspapers, television) and new (Facebook, Twitter, text messaging via cell phone).

We then conducted Chi-square tests on cross-tabulations of the dependent variable against each of the 30 independent variables. This procedure allowed as to identify 18 independent variables that were statistically significant at the 0.05 level or lower.

Finally, we entered all statistically significant independent variables into logistic regression equations that enabled us to measure their independent and joint effects in classifying respondents as demonstrators or sympathetic onlookers. We created four models, the first of which examines the effect of grievances alone. We then added blocs of variables successively: one that adds the effects of structural availability, one that adds the effects of structural availability and organizational ties, and one that adds the effects of structural availability, organizational ties, and protest news sources. To deal with the

problem of missing data, we used multiple imputation and compared our results with those obtained using the original data (Allison 2002).

Results

Bivariate associations

Table I contains cross-tabulations for the 18 statistically significant independent variables we identified. At the bottom of Table I, we list the 12 non-significant variables.[5]

Grievance variables include respondents' assessments of material deprivation, including whether there were times in the past year when they did not have enough money to buy food or provide shelter for themselves or their families. Grievance variables also include measures of confidence in national institutions because grievances are likely to undermine confidence in such institutions; research suggests that low confidence in institutions increases individuals' propensity to engage in protest activities (Kaase 1999). National institutions include the government, the judiciary, the military, financial bodies (because many important financial institutions are government-controlled), and religious organizations. Although Egypt does not have an established religion, al-Azhar University in Cairo has close ties to the government, trains government-appointed imams, and is charged with the task of providing authoritative, officially-sanctioned interpretations of the holy writ for Sunni Muslims. (Characteristically, in 1996, President Mubarak appointed the Grand Mufti of Egypt, Muhammad Sayyid Tantawy, to the positions of Grand Sheikh of al-Azhar University and Grand Imam of al-Azhar Mosque, jobs he retained until his death in 2010.)

Those who believe that high levels of material deprivation push people to more intense forms of involvement in political protest will find no supporting evidence for their belief in Table I. Demonstrators and sympathetic onlookers were no different in terms of lacking money for food and shelter. Nor were demonstrators more likely than sympathetic onlookers were to lack confidence in the military, which was a widely respected institution in Egypt and one that played a largely protective role during the 2011 uprising, guarding national antiquities to prevent looting and sometimes separating repressive police forces from demonstrators. Demonstrators were, however, significantly more likely than sympathetic onlookers were to lack confidence in the national government, the judiciary, financial institutions, and religious institutions. For example, only about a quarter of sympathetic onlookers lacked confidence in the national government, compared to about half the demonstrators. In so far as grievances produce lack of confidence in dominant political institutions, we thus find evidence of their caustic effect in our data.

Table I: *Anti-Mubarak demonstrators and sympathetic onlookers by significant predictors*

		Onlookers (per cent)	Demonstrators (per cent)
Grievances			
Confidence in judiciary	Yes	86.0	70.4
$\chi^2 = 16.839$	No	14.0	29.6
$p < 0.001$	Total	100.0	100.0
	n	679	108
Confidence in national government	Yes	73.0	49.1
$\chi^2 = 25.604$	No	27.0	50.9
$p < 0.001$	Total	100.0	100.0
	n	664	110
Confidence in financial institutions	Yes	80.9	66.0
$\chi^2 = 11.791$	No	19.1	34.0
$p = 0.001$	Total	100.0	100.0
	n	644	103
Confidence in religious institutions	Yes	95.8	81.7
$\chi^2 = 33.231$	No	4.2	18.3
$p < 0.001$	Total	100.0	100.0
	n	697	109
Structural availability			
Gender	Male	51.0	73.6
$\chi^2 = 19.626$	Female	49.0	26.4
$p < 0.001$	Total	100	100
	n	702	110
Education	<9 yrs	43.7	22.7
$\chi^2 = 18.568$	9–15 yrs	44.4	57.3
$p < 0.001$	>15 yrs	11.8	20
	Total	100.0	100.0
	n	702	110
Marital status	Single	23.6	37.3
$\chi^2 = 20.779$	Married	65.1	59.1
$p < 0.001$	Separated	0	0.9
	Divorced	2.3	0.9
	Widowed	9.0	1.8
	Total	100.0	100.0
	n	702	110
Urban/rural	Rural	27.5	17.3
$\chi^2 = 12.600$	Village, town	26.5	19.1
$p < 0.01$	Big city	30.3	39.1
	Suburb	15.7	24.5
	Total	100.0	100.0
	n	702	110
Organizational ties			
Donated money	Yes	12.4	35.8
$\chi^2 = 38.883$	No	87.6	64.2
$p < 0.001$	Total	100.0	100.0
	n	691	109
Volunteered time	Yes	3.6	29.4
$\chi^2 = 94.595$	No	96.4	70.6
$p < 0.001$	Total	100.0	100.0
	n	693	109
News sources (traditional)			
Egyptian TV	Yes	79.8	67.3
$\chi^2 = 8.716$	No	20.1	32.7
$p < 0.01$	Total	100.0	100.0
	n	698	110

Table I: *Continued*

		Onlookers (per cent)	Demonstrators (per cent)
al-Jazeera	Yes	64.0	77.3
$\chi^2 = 7.398$	No	36.0	22.7
$p = 0.007$	Total	100.0	100.0
	n	698	110
State newspapers	Yes	14.6	22.7
$\chi^2 = 4.770$	No	85.4	77.3
$p < 0.01$	Total	100.0	100.0
	n	693	110
Opposition newspapers	Yes	10.4	26.4
$\chi^2 = 21.892$	No	89.6	73.6
$p < 0.001$	Total	100.0	100.0
	n	691	110
News sources (new)			
Text messages	Yes	9.7	27.3
$\chi^2 = 27.782$	No	90.3	72.7
$p < 0.001$	Total	100.0	100.0
	n	694	110
News websites	Yes	5.8	21.8
$\chi^2 = 33.403$	No	94.2	78.2
$p < 0.001$	Total	100.0	100.0
	n	694	110
Facebook/Twitter	Yes	7.0	19.0
$\chi^2 = 17.289$	No	93.0	81.0
$p < 0.001$	Total	100.0	100.0
	n	694	110
Trust in new communications media	Yes	37.5	62.4
$\chi^2 = 22.182$	No	52.7	32.7
$p < 0.001$	Total	100.0	100.0
	n	582	101

Notes: Non-significant predictors (at $p \geq 0.05$) are as follows:
* Grievances: have enough money for food, have enough money for shelter, confidence in military, afraid to express views openly, honesty of elections.
* Structural availability: age, type of work, household income quintile.
* News sources: al-Arabiya (a popular, moderate, pro-American satellite television channel funded by the Saudi government), al-Hurra (an unpopular, US-government run satellite station), BBC Arabic TV, Egyptian satellite TV (a heterogeneous category: largely privately owned, but some with government involvement; includes Misr 25, the station of the Muslim Brotherhood).

As predicted, four structural availability variables were associated with being a demonstrator. Men were 23 percentage points more numerous among demonstrators than they were among sympathetic onlookers. The corresponding figure was 13 percentage points for single people and 9 percentage points for residents of big cities, including their suburbs. More years of education also inclined people to become demonstrators, although the effect was evident at an unexpectedly low level of education: 9+ years. In fact, the effect of education was 5 percentage points stronger for people with 9–15 years of education than it was for people with more than 15 years of education. Age, type of work, and household income quintile were not significantly associated with being a demonstrator versus a sympathetic onlooker.[6] Taken together, however, these

results are in line with existing research on the types of individuals who tend to be structurally available to engage in protest.

We now turn to indicators of respondents' ties to social organizations in the larger society. Respondents were asked, 'Have you done any of the following in the past month?' and were presented with a list of actions, including 'volunteered your time to an organization' and 'donated money to a charity'. Response options were yes/no/don't know/refused. The biggest difference between demonstrators and sympathetic onlookers concerns those who volunteered their time. Demonstrators were more than 8 times more likely than sympathetic onlookers were to report volunteering (29.4 per cent versus 3.6 per cent). Demonstrators were also nearly three times more likely to have donated money to a charity in the past 12 months (35.8 per cent versus 12.4 per cent). While time spent volunteering is a widely accepted and commonly used measure of civic association (Andersen, Curtis, and Grabb 2006: 381), contributing money to a charity is arguably a weaker measure. Taken together, however, the reported percentages support the view, noted earlier, that prior involvement with civic associations increases the likelihood of participation in high-risk movement activities.

Finally, let us consider the role of protest news sources in distinguishing demonstrators from sympathetic onlookers. Respondents were asked, 'Did you rely on the following sources to get your news on the nationwide protests, or not?' They were presented with a list of new sources and response options yes/no/don't know/refused. We divided these sources into two types: traditional (newspapers and television) and new (text messaging, news websites, and Facebook/Twitter). In addition, respondents were presented with the following question: 'Sometimes people use technology such as cell phone cameras, video recorders, and Web sites to post pictures, stories, and videos of news events. Do you trust these sources of news to be more accurate, less accurate, or about as accurate as traditional news media?' Response options included more accurate/less accurate/about as accurate/don't know/refused. We included this variable among new sources of protest information.

Four traditional news sources distinguish demonstrators from sympathetic onlookers. Sympathetic onlookers favoured state-controlled or state-influenced Egyptian terrestrial (non-satellite) television as a source of information about the protests by a 13 per cent margin over demonstrators. Demonstrators favoured opposition newspapers by a 16 per cent margin. They also favoured al-Jazeera by an 8 per cent margin. Al-Jazeera is the gadfly satellite channel operating out of Doha, Qatar. Since 1996, it has been 'eviscerating the legitimacy of the Arab status quo and helping to build a radically new pluralist political culture' (Lynch 2005: 36). Somewhat surprisingly, demonstrators also favoured state-run newspapers by a margin of 8 per cent. We surmise that they were so inclined because they were more politically

engaged and therefore more interested than sympathetic onlookers were in learning the official view of the protests.

What was this view? Hamdy and Gomaa (2012) conducted a content analysis covering the period 25 January–12 February, 2011, of four Egyptian newspapers over which the government exercised strong influence (al-Ahram, al-Akhbar, al-Messa and al-Jomhoriya). They found that these newspapers framed the protests as a conspiracy against the Egyptian state. Specifically, they

> portrayed the protestors as disruptive forces and depicted them as unemployed thugs, foreign conspirators, and delinquent and violent youth who did not have the national good at heart. These newspapers used this frame to dehumanize the movement and humanize the state instead. It was also used extensively to malign the democratic movement as a malicious, chaotic scheme. (Hamdy and Gomaa 2012: 198)

New media sources of information were favoured by demonstrators more than by sympathetic onlookers – by a nearly 18 per cent margin for text messages, 16 per cent for news websites, and 12 per cent for Facebook/Twitter. Trust in new communications media was fully 25 percentage points higher for demonstrators than for sympathetic onlookers. Government-influenced newspapers focused on the illegitimacy of the conflict and its dire economic consequences. In contrast, a sample of 800 social media posts over the period January 25–February 12, 2011, emphasized the suffering and rage motivating people to rebel. Social media stressed dictatorship, government corruption, injustice, and oppression as the causes of the uprising (Hamdy and Gomaa 2012: 199, 200, 203).[7]

Television was the number one news source about the protests for both demonstrators and sympathetic onlookers; about 70 per cent of all respondents in our sample relied on television, compared to about an eighth who relied on newspapers and one-eleventh who relied on new communications media. Thus, although patterns of media usage differed between demonstrators and sympathetic onlookers, it seems that new media played a lesser role than traditional media did in spreading the news about the nationwide protests. A survey of demonstrators in Tahrir Square corroborates the secondary role played by social media in political mobilization. In the field from 24 February to 27 February, 2011, and based on a snowball sample of 1,050 demonstrators, the survey found that nearly half the respondents first heard about the Tahrir Square demonstrations through face-to-face communication and another 13 per cent heard by telephone. Some 28 per cent heard through Facebook (Tufekci and Wilson 2012: 367, 370).

Logistic regression results

We next ran logistic regressions models predicting the odds of demonstrating against Mubarak as opposed to being a sympathetic onlooker. Only variables

that were statistically significant in our bivariate analysis were entered into the models. We created four models, distinguished by shading in Table II. We first analysed the effect of grievance variables; then grievance and structural availability variables; then grievance, structural availability, and organizational variables; and finally, grievance, structural availability, organizational, and protest news source variables. To avoid possible sample bias caused by deleting cases that are missing data on the variables that are of interest to us, we used multiple imputation of missing data, pooling estimates for 5 imputed data sets. Table II shows the result.

The columns headed 'Exp(B)' shows the odds ratio for each predictor – the increased odds of being a demonstrator as opposed to a sympathetic onlooker for a unit change in each predictor, net of other predictors. In the fourth model, volunteering one's time to a civic association turns out to be the single most influential predictor. It increases the odds of being a demonstrator by 4.568, all else the same. Holding other predictors constant, donating money to such an association was the third most influential predictor, with an odds ratio of 2.366. As a group, however, variables relating to organizational ties were the most important influences on whether one became a demonstrator as opposed to a sympathetic onlooker.

As a group, three structural availability factors – gender, urbanity and, to a lesser degree, marital status – were next in importance, with odds ratios ranging from 1.650 (for marital status) to 2.916 (for gender).

Again as a group, protest news source predictors followed in importance. Relying on text messaging via cell phone as a protest news source, and trusting the reliability of new communications media in general, yielded odds ratios of 1.901 and 1.965, respectively.

Finally, holding other predictors constant, the odds of being an anti-Mubarak demonstrator as opposed to a sympathetic onlooker were 1.896 times higher for those whose grievances were manifested in distrust of the national government than for those who did not distrust the national government.

By comparing the Nagelkerke R^2 analog for successive models, we can gauge each model's goodness-of-fit against the null model with no independent variables. The Nagelkerke R^2 has a maximum value of 1.0 and is usually lower than the ordinary least squares R^2. We see that the Nagelkerke R^2 more than doubles (from 0.05 to 0.124) as we move from the model containing only the grievance variable to a model containing grievance and structural availability variables. It nearly doubles again (to 0.240) when civic involvement variables are added. However, it increases only marginally (to 0.265) when protest news source predictors are added.

We found no interactions among the statistically significant variables in the fourth model and no multicollinearity problems. We ran a regression model including all predictors in Table I to see whether any non-significant predictors became significant in the multivariate model. We found none that did.

Table II: *Logistic regression predicting demonstrating against Mubarak (n = 1,005 using multiple imputation)*

	Model 1			Model 2			Model 3			Model 4		
	B	s.e.	Exp(B)	B	s.e.	Exp(B)	B	s.e.	Exp(B)	B	s.e.	Exp(B)
Predictors												
Grievances												
Confidence nat'l gov't (no)	1.050[a]	0.208	2.857	0.878[a]	0.216	2.407	0.672[b]	0.230	1.958	0.640[b]	0.234	1.896
Structural availability												
Gender (male)				1.059[a]	0.235	2.884	1.063[a]	0.248	2.895	1.070[a]	0.251	2.916
Marital status (single)				0.368[d]	0.225	1.445	0.570[c]	0.240	1.768	0.501[c]	0.245	1.650
Urbanity (big city/suburbs)				0.686[b]	0.218	1.985	0.986[a]	0.238	2.679	0.742[b]	0.249	2.099
Organizational ties												
Donated money (yes)							0.850[b]	0.302	2.339	0.861[b]	0.307	2.366
Donate time (yes)							1.754[a]	0.348	5.776	1.519[a]	0.357	4.568
Protest news sources												
Protest text messages (yes)										0.643[b]	0.277	1.901
Trust new media (yes)										0.676[b]	0.237	1.965
Constant	–2.499[a]	0.142		–3.519[a]	0.254		–4.134[a]	0.303		–4.391[a]	0.332	
–2 Log likelihood		668.708			630.067			565.965			551.771	
Nagelkerke R^2		0.050			0.124			0.240			0.265	

Notes:
[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.
[d] $p = 0.102$.
This table reports binary logit coefficients (B) from five pooled imputed data sets, along with standards errors (s.e.) and odds ratios (Exp[B]).

Table III: *Final logistic regression model (n = 729 using original data, outliers deleted)*

	B	s.e.	Exp(B)
Predictors			
Grievances			
Confidence nat'l gov't (no)	1.290[a]	0.333	3.634
Structural availability			
Gender (male)	1.884[a]	0.406	6.578
Marital status (single)	0.447[c]	0.351	1.564
Urbanity (big city/suburbs)	1.810[a]	0.438	6.108
Organizational ties			
Donated money (yes)	1.628[a]	0.412	5.094
Donated time (yes)	2.488[a]	0.471	12.037
Protest news sources			
Protest text messages (yes)	0.708[b]	0.356	2.030
Trust new media (yes)	1.506[a]	0.352	4.509
Constant	–7.400[a]	0.723	
–2 Log likelihood		267.632	
Nagelkerke R^2		0.510	

Notes:
[a] $p < 0.001$.
[b] $p < 0.05$.
[c] $p = 0.202$.
This table reports binomial logit coefficients (B) from the original data set with 28 outlying cases deleted, along with standard errors (s.e.) and odds ratios (Exp[B]).

We did find non-constant error variance. We elected to deal with this problem by deleting the 28 cases in the original data for which studentized residuals were greater than 2.0. Because our multiple imputation suggested that missing data were randomly distributed in the sample (we found only small, non-substantive differences when we ran the fourth model using (1) original data and (2) pooled, imputed data) we used original data for the final model. The results are arrayed in Table III. The fit of the final model is greatly improved over that of the fourth model in Table II, and the value of the Nagelkerke R^2 more nearly doubles to 0.510. The effect of each independent variable is for the most part much stronger than in the fourth model of Table II, although it is only slightly stronger for using text messages as a protest news source, and marital status is no longer statistically significant at $p < 0.05$. Overall, the results in Table III do not suggest that the findings reported earlier need to be modified substantially.

We acknowledge one problem that our data cannot help us solve – that of endogeneity. It is possible that, at least for some demonstrators, using social media resulted from attending demonstrations rather than causing them to attend demonstrations. Conceivably, attending a demonstration might encourage some people to 'follow' certain Twitter users or 'like' certain Facebook pages in order to receive news about future demonstrations. More likely, causality was reciprocal: the use of social media facilitated participation in demonstrations while demonstrations increased the use of social media. A longitudinal survey or at least a lagged measure of social media usage in a

cross-sectional survey could provide insight into this issue. Unfortunately, its resolution will have to wait until better data are available. Meanwhile, we concede that our analysis is suggestive, not definitive.

Conclusion

In April 2009, President Barack Obama gave a speech in Istanbul praising Turkey's 'strong, vibrant, secular democracy' and, in effect, calling for the diffusion of the Turkish model throughout the Middle East and North Africa (Obama 2009b). In Cairo two months later, he stated that

> government of the people and by the people sets a single standard for all who hold power: you must maintain your power through consent, not coercion; you must respect the rights of minorities, and participate with a spirit of tolerance and compromise; you must place the interests of your people and the legitimate workings of the political process above your party. (Obama 2009a)

About a year-and-a-half later, some American news commentators cited Obama's stirring Middle East speeches as inspiration for the Arab Spring. Many of these same commentators argued that American technological innovations – Facebook and Twitter in particular – encouraged Egyptians, Tunisians, Libyans, and others to translate Obama's inspiring words into action and overthrow their oppressive regimes.

As our analysis demonstrates, such commentary probably says more about the triumphalist biases of the mass media in the USA than about the actual sources of protest in Egypt in 2011. It certainly masks the significance of factors that students of social movements have long identified as leading to protest – the diffusion of grievances, the structural availability of protesters, and especially the embeddedness of protesters in pre-existing networks of civic associations. Such factors were more important than Twitter, Facebook, news websites, and text messaging were in determining whether one was an anti-Mubarak demonstrator or merely a sympathetic onlooker in Egypt in the first quarter of 2011. As our logistic regression analysis shows, only new-media factors related to (1) the use of text messaging for news about the protests and (2) trust in such media were statistically significant in predicting whether one was a demonstrator or a sympathetic onlooker. They increased the Nagelkerke R^2 analog only modestly.

Our analysis thus supports our first, second, and third hypotheses. In the 2011 Egyptian uprising, anti-Mubarak demonstrators were more aggrieved than were sympathetic onlookers, more likely to be unmarried and urbanized men,[8] and more likely to have ties to civic associations in the larger society. On the other hand, we are obliged to reject our fourth hypothesis. New

communications media were not more widely used and trusted by sympathetic onlookers than by demonstrators. On the contrary, demonstrators were more likely than were sympathetic onlookers to trust new communications media and to use text messaging via cell phones to get news about the protests. New communications media played a significant role in the 2011 Egyptian uprising, providing a mechanism for the spread of shared grievances and the growth of networks that were difficult for the government to control (Lim 2012: 244). However, on the evidence we have analysed, social media were not one of the uprising's major causes.

(Date accepted: October 2013)

Notes

1. We are grateful to the Abu Dhabi Gallup Center for access to data from the March 2011 Gallup World Poll. The interpretations offered here are exclusively those of the authors. We thank Robert Andersen, Charles Kurzman, Sidney Tarrow, Barry Wellman, and Marisa Young for helpful comments on a draft. The advice of *BJS* Editor Katherine Stovel and four anonymous reviewers also helped to improve this paper. We wrote it as a class project for the graduate seminar in social movements (SOC6012H), Department of Sociology, University of Toronto. Please address correspondence to Robert Brym, Department of Sociology, University of Toronto, 725 Spadina Avenue, Toronto M5S 2J4, Canada (rbrym@chass.utoronto.ca).

2. Howard and Hussain refer (2013) only to 'traditional analysis' by Middle East Studies specialists (they cite Gause 2011), not social movements scholars. Their fuzzy-set model does not work well for Egypt, arguably the most important player in the Arab Spring. It works best for Jordan, hardly the beacon of protest in 2011. We quote from the Kindle version of their book at locations 1998 and 2012. The fuzzy-set model is at location 1916. Corresponding page numbers for the print edition are not given.

3. The percentage of refusals and 'don't knows' ranged from 12.9 per cent to 20.5 per cent for questions asking respondents about their political affiliations but we do not employ these questions in our analysis.

4. Although not the focus of our analysis, we conducted Chi-square tests on differences between supporters and opponents of the anti-Mubarak demonstrations. Using $p < 0.05$ as the cut off between significant and non-significant differences, we found that supporters were significantly more likely than opponents were to be relatively highly educated, male, employed in a professional occupation, and to reside in urban and suburban areas. Opponents were significantly more likely than supporters were to be less well educated, female, employed in agricultural and other primary occupations, and to reside in rural areas. Supporters were significantly more likely than opponents were to get news about the protests from non-Egyptian satellite television stations, including al-Jazeera (Qatar), al-Hurra (USA), al Arabiya (Saudi Arabia) and BBC Arabic (UK). They were significantly less likely to get such news from Egyptian television. Although supporters were significantly more likely than opponents were to have Internet access at home, there was no significant difference between the two categories of respondents in their propensity to get news about the protests from text messages or news websites. By only the tiniest margin ($p = 0.049$) is it possible to say that supporters were more

likely than opponents were to get protest news from Facebook or Twitter.

5. A table with coefficients and standard errors for the non-significant variables is available from the authors on request.

6. Some analysts claim that religion and religiosity play important roles in motivating Muslims to engage in protest activities (Wickham 2002; Bayat 1998; al-Sayyid-Marsot 1984). We found no evidence to support these assertions. The percentage of Muslims (92 per cent of Egypt's population) and Christians (the remaining 8 per cent) was similar among demonstrators and sympathetic onlookers, as was the percentage of respondents who claimed that religion was important in their daily life (96.2 per cent of our sample). These variables are not included in Table I because they lack theoretical relevance in the context of our study.

7. The sample consisted of posts from the 'We are all Khaled Saed' Facebook group (sometimes credited with instigating the uprising in Egypt), tweets posted on hashtag '#Thawra#25jan' (*thawra* is Arabic for revolution) and blog posts on popular Egyptian political blogs.

8. Education dropped out of the equation.

Bibliography

Abdel-Razzak, Mehsen 2011 'Protesters Demand Water, Security in Egypt's Rural Areas', Al-Monitor 1 August. http://www.al-monitor.com/pulse/politics/2012/07/ongoing-protests-and-road-blocks.html (Retrieved 12 April 2013).

Aday, Sean, Farrell, Henry, Lynch, Marc, Sides, John and Freelon, Deen 2012 'New Media and Conflict after the Arab Spring', *Washington DC: United States Institute of Peace*, http://www.usip.org/files/resources/PW80.pdf (Retrieved 8 April 2013).

Allison, Paul David 2002 *Missing Data*, London: Sage.

al-Sayyid-Marsot, Afaf Lutfi 1984 'Religion or Opposition? Urban Protest Movements in Egypt', *International Journal of Middle East Studies* 16: 541–52.

Andersen, Kurt 2011/12 'The Protester', *Time* December 26/January 2: 54–89.

Andersen, Robert, Brym, Robert and Araj, Bader 2011 'Citizen Inclusion in the Greater Middle East' in Dalia Mogahed (ed.) *The Abu Dhabi Gallup Forum: Research, Dialogue and Solutions*, Abu Dhabi: Gallup. http://www.gallup.com/se/ms/153866/Abu-Dhabi-Gallup-Forum-Key-Findings-Muslim-West-Relations.aspx?utm_source=email-a-friend&utm_medium=email&utm_campaign=sharing&utm_content=titlelink (Retrieved 30 April, 2012).

Andersen, Robert, Curtis, James and Grabb, Edward 2006 'Trends in Civic Association Activity in Four Democracies: The Special Case of Women in the United States', *American Sociological Review* 71: 376–400.

Andrews, Kenneth T. and Biggs, Michael 2006 'The Dynamics of Protest Diffusion: Movements Organizations, Social Networks, and News Media in the 1960s Sit-Ins', *American Sociological Review* 71: 752–77.

Barassi, Veronica 2009 'Mediating Political Action: Internet-related Beliefs and Frustrations amongst International Solidarity Campaigns in Britain', *Digithum: The Humanities in the Digital Era* 11: 20–24.

Bayat, Asef 1998 'Revolution Without Movement, Movement without Revolution: Comparing Islamic Activism in Iran and Egypt', *Comparative Studies in Society and History* 40: 136–69.

Bennett, Lance W. 2005 'Social Movements beyond Borders: Organization, Communication, and Political Capacity in Two Eras of Transnational Activism' in Donatella della Porta and Sidney Tarrow (eds) *Transnational Protest and Global Activism*, Boulder CO: Rowman & Littlefield.

Bennett, Lance W., Breunig, Christian and Givens, Terri 2008 'Communication and Political Mobilization: Digital Media and the

Organization of Anti-Iraq War Demonstrations in the US', *Political Communication* 25: 269–89.

Braizat, Fares 2010 'What Arabs Think', *Journal of Democracy* 21(4): 131–8.

Brym, Robert and Degtyarev, Andrei 1993 'Antisemitism in Moscow: Results of an October 1992 Survey', *Slavic Review* 52: 1–12.

Carnaghan, Ellen 1996 'Alienation, Apathy, or Ambivalence? "Don't Knows" and Democracy in Russia', *Slavic Review* 55: 325–63.

Castells, Manuel 2009 *Communication Power*, New York: Oxford University Press.

Castells, Manuel 2012 *Networks of Outrage and Hope: Social Movements in the Internet Age*, Cambridge UK: Polity.

Chandra, Siddharth and Williams Foster, Angela 2005 'The "Revolution of Rising Expectations", Relative Deprivation, and the Urban Social Disorders of the 1960s: Evidence from State-Level Data', *Social Science History* 29: 299–332.

Choudhary, Alok, Hendrix, William, Lee, Kathy, Palsetia, Diana and Liao, Wei-Leng 2012 'Social Media Evolution of the Egyptian Revolution', *Communications of the ACM* 56(5): 74–80.

Cottle, Simon 2008 'Reporting Demonstrations: The Changing Media Politics of Dissent', *Media, Culture & Society* 30: 853–72.

Dahlberg, Lincoln and Siapera, Eugenia 2007 *Radical Democracy and the Internet*, Houndmills, Basingstoke UK: Palgrave.

David, Matthew 2010 'Editor's Introduction: Methods of Interpretive Sociology', Vol. 1 in Matthew David (ed.) *Methods of Interpretive Sociology*, 4 vols, London: Sage.

De La Ray, Cheryl and Raju, Patricia 1996 'Group Relative Deprivation: Cognitive versus Affective Components and Protest Orientation among Indian South Africans', *Journal of Social Psychology* 136: 579–88.

della Porta, Donatella 2005 'Multiple Belongings, Flexible Identities and the Construction of "Another Politics": Between the European Social Forum and the Local Social Fora', in Donatella della Porta and Sidney Tarrow (eds) *Transnational Protest and Global Activism*, Boulder CO: Rowman & Littlefield.

Diani, Mario 1995 *Green Networks: A Structural Analysis of the Italian Environmental Movement*, Edinburgh: Edinburgh University Press.

Diani, Mario 2004 'Networks and Participation', in *Blackwell Companion to Social Movements*, David Snow, Sarah Soule and Hanspeter Kriesi (eds) Malden MA: Blackwell.

Esfandiari, Golnaz 2010 'Misreading Tehran: The Twitter Devolution', *Foreign Policy* June 7. http://www.foreignpolicy.com/articles/2010/06/07/the_twitter_revolution_that_wasnt (Retrieved 30 April, 2012).

Farrell, Henry 2012 'The Consequences of the Internet for Politics', *Annual Review of Political Science* 15: 35–52.

Fireman, Bruce and Gamson, William 1979 'Utilitarian Logic in the Resource Mobilization Perspective' in Mayer Zald and John McCarthy (eds) *The Dynamics of Social Movements*, Cambridge MA: Winthrop.

Gans, Herbert 2004 *Deciding What's News: A Study of CBS Evening News, NBC Nightly News, Newsweek, and Time*, New York: Pantheon Books.

Gause III, F. Gregory 2011 'Why Middle East Studies Missed the Arab Spring: The Myth of Authoritarian Stability', *Foreign Affairs* 90(4): 81–90.

Ghonim, Wael 2012 'Charlie Rose Talks to Wael Ghonim', *Bloomberg Businessweek* 16 February. http://www.businessweek.com/articles/2012-02-16/charlie-rose-talks-to-wael-ghonim (Retrieved 8 April, 2013).

Gladwell, Malcolm 2010 'Small Change: Why the Revolution will not be Tweeted', *New Yorker* October 4. http://www.newyorker.com/reporting/2010/10/04/101004fa_fact_gladwell (Retrieved 30 April, 2012).

Grant, Peter R. and Brown, Rupert. 1995 'From Ethnocentrism to Collective Protest: Responses to Relative Deprivation and Threats to Social Identity', *Social Psychology Quarterly* 58: 195–212.

Hamdy, Naila and Gomaa, Ehab H. 2012 'Framing the Egyptian Uprising in Arabic Language Newspapers and Social Media', *Journal of Communication* 62: 195–211.

Hilgartner, Stephen and Bosk, Charles L. 1988 'The Rise and Fall of Social Problems: A Public Arenas Model', *American Journal of Sociology* 94: 53–78.

Howard, Philip N. and Hussain, Muzammil M. 2013 *Democracy's Fourth Wave? Digital Media and the Arab Spring*, New York: Oxford University Press.

International Republican Institute 2011a 'Egyptian Public Opinion Survey, April 14 – April 27, 2011', http://www.iri.org/sites/default/files/2011%20June%205%20Survey%20of%20Egyptian%20Public%20Opinion,%20April%2014-27,%202011_0.pdf (Retrieved 30 April, 2012).

International Republican Institute 2011b 'IRI Egypt Index', http://www.iri.org/sites/default/files/2011%20June%205%20IRI%20Egypt%20Index,%20Apr%2014-27,%202011.pdf (Retrieved 30 April, 2012).

Internet World Stats 2012 'Internet User Statistics in Africa 2011 – Q1', http://www.internetworldstats.com/stats1.htm (Retrieved 15 June 2011).

Kaase, Max 1999 'Interpersonal Trust, Political Trust and Non-Institutionalized Political Participation in Western Europe', *West European Politics* 22(3): 1–21.

Kent, Stephen A. 1982 'Relative Deprivation and Resource Mobilization: A Study of Early Quakers', *British Journal of Sociology* 33: 529–44.

Killian, Lewis M. 1984 'Organization, Rationality and Spontaneity in the Civil Rights Movement', *American Sociological Review* 49: 770–83.

Klandermans, Bert 1997 *The Social Psychology of Protest*, Oxford: Blackwell.

Korpi, Walter 1974 'Conflict, Power and Relative Deprivation', *American Political Science Review* 68: 1569–78.

Lim, Chaeyoon 2008 'Social Networks and Political Participation: How Do Networks Matter?' *Social Forces* 87: 961–82.

Lim, Merlyna 2012 'Clicks, Cabs, and Coffee Houses: Social Media and Opposition Movements in Egypt, 2004–2011', *Journal of Communication* 62: 231–48.

Lipsky, Michael 1968 'Protest as a Resource', *American Political Science Review* 62: 1144–58.

Lotan, Gilad, Graeff, Erhardt, Ananny, Mike, Gaffney, Devin, Pearce, Ian and Boyd, Danah 2011 'The Revolutions Were Tweeted: Information Flows During the 2011 Tunisian and Egyptian Revolutions', *International Journal of Communication* 5: 1375–405.

Lynch, Marc 2005 'Watching al-Jazeera', *The Wilson Quarterly* 29(3): 36–45.

Lynch, Marc 2011 'After Egypt: The Limits and Promise of Online Challenges to the Authoritarian Arab State', *Perspectives on Politics* 9: 301–10.

Marwell, Gerald and Oliver, Pamela 1993 *The Critical Mass in Collective Action: A Micro-Social Theory*, New York: Cambridge University Press.

McAdam, Doug 1986 'Recruitment to High-Risk Activism: The Case of Freedom Summer.' *American Journal of Sociology* 92: 64–90.

McAdam, Doug 1988 *Freedom Summer*, New York: Oxford University Press.

McAdam, Doug and Paulsen, Ronnelle 1993 'Specifying the Relationship Between Social Ties and Activism', *American Journal of Sociology* 99: 640–67.

McCarthy, John and Zald, Mayer 1973 *The Trend of Social Movements in America: Professionalization and Resource Mobilization*, Morristown NJ: General Learning.

McCarthy, John and Zald, Mayer 1977 'Resource Mobilization and Social Movements: A Partial Theory', *American Journal of Sociology* 82: 1212–41.

Mittermaier, Amira 2010 *Dreams that Matter: Egyptian Landscapes of the Imagination*, Berkeley CA: University of California Press.

Morozov, Evgeny 2011 *The Net Delusion: The Dark Side of Internet Freedom*, New York: Public Affairs.

Mourtada, Racha and Salem, Fadi 2011a 'Civil Movements: The Impact of Facebook

and Twitter', *Arab Social Media Report* 1(2). http://www.dsg.ae/portals/0/ASMR2.pdf (Retrieved 30 April, 2012).

Mourtada, Racha and Salem, Fadi 2011b 'Facebook Usage: Factors and Analysis', *Arab Social Media Report* 1(1). http://unpan1.un.org/intradoc/groups/public/documents/dsg/unpan044212.pdf (Retrieved 30 April, 2012).

Murthy, Dhiraj 2012 'Social Media and Activism: Exploring Twitter's Role in the Arab Spring', Paper presented at the annual meetings of the Eastern Sociological Society (New York).

Myers, Daniel J. 2000 'The Diffusion of Collective Violence: Infectiousness, Susceptibility, and Mass Media Networks', *American Journal of Sociology* 106: 173–208.

Nah, Seungahn, Veenstra, Aaron and Shah, Dhavan 2006 'The Internet and Anti-war Activism: A Case Study of Information, Expression, and Action', *Journal of Computer-Mediated Communication* 12: 230–47.

Norris, Pippa, Walgrave, Stefan and Van Aelst, Peter 2005 'Who Demonstrates? Antistate Rebels, Conventional Participants, or Everyone?', *Comparative Politics* 37: 189–205.

Obama, Barack 2009a 'President Obama's Remarks in Turkey', *New York Times* 6 April. http://www.nytimes.com/2009/04/06/us/politics/06obama-text.html?_r=1&pagewanted=all (Retrieved 30 April, 2012).

Obama, Barack 2009b 'Text: Obama's Speech in Cairo', *New York Times* 4 June. http://www.nytimes.com/2009/06/04/us/politics/04obama.text.html?pagewanted=all (Retrieved 30 April, 2012).

Oliver, Pamela 1984 'If You Don't Do It, Nobody Else Will: Active and Token Contributions to Local Collective Action', *American Sociological Review* 49: 601–10.

Papacharissi, Zizi 2010 *A Private Sphere: Democracy in a Digital Age*, Malden MA: Polity Press.

Rohlinger, Deana A. and Brown, Jordan 2009 'Democracy, Action, and the Internet after 9/11', *American Behavioral Scientist* 53: 133–50.

Schmitt, Mark 2003 'Dean's Penguin, or Technology and the Nature of Political Interaction', *The Decembrist* http://markschmitt.typepad.com/decembrist/2003/12/deans_pengun_or.html (Retrieved 10 April, 2013).

Schudson, Michael 1989 'The Sociology of News Production', *Media, Culture and Society* 1: 263–82.

Shirky, Clay 2011 'The Political Power of Social Media', *Foreign Affairs* 90(1): 28–41.

Snow, David A., Rochford, E. Burke, Jr., Worden, Steven K. and Benford, Robert D. 1986 'Frame Alignment Processes, Micromobilization, and Movement Participation', *American Sociological Review* 51: 464–81.

Staggenborg, Suzanne 2008 *Social Movements*, 3rd Canadian ed., Toronto: Oxford University Press.

Tarrow, Sidney 2011 *Power in Movement: Social Movements and Contentious Politics*, 3rd ed., Cambridge: Cambridge University Press.

Tindall, David B. 2002 'Social Networks, Identification and Participation in an Environmental Movement: Low-medium Cost Activism Within the British Columbia Wilderness Preservation Movement', *Canadian Review of Sociology and Anthropology* 39: 413–52.

Tilly, Charles 1964 *The Vendée*, Cambridge MA: Harvard University Press.

Tilly, Charles, Tilly, Louise and Tilly, Richard 1975 *The Rebellious Century, 1830–1930*, Cambridge MA: Harvard University Press.

Tuchman, Gaye 1978 *Making News: A Study in the Construction of Reality*, New York: Free Press.

Tufekci, Zeynep and Wilson, Christopher 2012 'Social Media and the Decision to Participate in Political Protest: Observations from Tahrir Square', *Journal of Communication* 62: 363–79.

Viterna, Jocelyn 2006 'Pulled, Pushed, and Persuaded: Explaining Women's Mobilization into the Salvadoran Guerrilla Army', *American Journal of Sociology* 112: 1–45.

Voice of America 2011 'Rural Egyptians Face Same Issues as Urban Protesters', http://www.youtube.com/watch?v=ME14D0s0lRE (Retrieved 12 April, 2013).

Wickham, Carrie Rosefsky 2002 *Mobilizing Islam: Religion, Activism, and Political Change in Egypt*, New York: Columbia University Press.

Wiltfang, Gregory and McAdam, Doug. 1991 'The Costs and Risks of Social Activism: A Study of Sanctuary Movement Activism', *Social Forces* 69: 987–1010.

'Women in National Parliaments' 2012 http://www.ipu.org/wmn-e/classif.htm (Retrieved 30 April, 2012).

Yadlin, Amos 2012 'The Arab Uprising One Year On', in Yoel Guzansky and Mark A. Heller (eds) *One Year of the Arab Spring: Global and Regional Implications*, Tel Aviv: Institute for National Security, University of Tel Aviv. http://www.inss.org.il/upload/%28FILE%291330948414.pdf (Retrieved 30 April, 2012).

Zhuo, Xiaolin, Wellman, Barry and Yu, Justine 2011 'Egypt: The First Internet Revolt?' *Peace Magazine* 27(3): 6–9. http://peacemagazine.org/archive/v27n3p06.htm (Retrieved 30 April, 2012).

