Spring 5-29-2015

Social Media and Social Transformation Movements: The Role of Affordances and Platforms

G Harindranath
University of London, g.harindranath@rhul.ac.uk

Edward Bernroider
Vienna University of Economics and Business, edward.bernroider@wu.ac.at

Sherif Kamel
The American University in Cairo, skamel@aucegypt.edu

Follow this and additional works at: http://aisel.aisnet.org/ecis2015_cr

SOCIAL MEDIA AND SOCIAL TRANSFORMATION MOVEMENTS: THE ROLE OF AFFORDANCES AND PLATFORMS

Completed Research Paper

G. Harindranath, Royal Holloway, University of London, UK, g.harindranath@rhul.ac.uk

Edward W. N. Bernroider, WU Vienna, Austria, edward.bernroider@wu.ac.at

Sherif H. Kamel, The American University in Cairo, Egypt, skamel@aucegypt.edu

Abstract

Social media (SM) have played a critical role in recent social transformation movements and yet information systems (IS) literature has only sparsely examined the role of particular SM platforms and their affordances that facilitate such collective action, and how such affordances are appropriated for decentralised forms of collaboration and cooperation. We draw on theories of affordances and collective action to identify a range of functional SM affordances, and related SM platforms, impacting online activism in the recent social transformation movements in Egypt, based on field interviews with a variety of movement participants. We identify nine perceived affordances of SM that were instrumental during the social transformation movements. When these affordances are appropriated by movement participants, they interact with and complement each other, thereby significantly impacting mobilization for social change. Our findings provide a more nuanced perspective on the role of SM in social transformation movements and have implications for both IS and collective action theories.

Keywords: Social media, Platforms, Perceived affordances, Collective action, Social transformation movements.

1 Introduction

Social media (SM) have been implicated as a significant enabler in many recent social transformation movements around the world (Lim, 2012; Agarwal et al., 2012; Olorunnisola and Martin, 2013), none more so than in Egypt where SM have been central to the protest movements leading up to the uprising in 2012 (Eltantawy and Wiest, 2011; Maghrabi and Salam, 2013). However existing studies on the role played by SM in such collective action are mostly based on anecdotal evidence and rhetorical arguments or tend to be technologically deterministic (Olorunnisola and Martin, 2013; Kamel, 2014). Theoretically informed and nuanced approaches are required to better understand the link between ICT and collective action (Earl and Kimport, 2011; Aday et al., 2010). We subscribe to Olson's (1965) definition of 'collective action' as the mobilization of people towards a common goal (Olson, 1965), and 'social transformation movements' as particular forms of collective action by informal networks of individuals, groups and/or organizations involved in socio-political conflict (Diani, 1992). By examining recent social transformation movements in Egypt, this paper aims to fill this gap in the literature by providing answers to the question of how SM platforms and their affordances contribute towards collective action in the context of social transformation movements.

The next section provides contextual background by detailing the recent political and social upheavals in Egypt. In doing so it also looks at how SM has influenced the scale and scope of these movements.

This is followed by a section presenting the two main theoretical influences on this study, i.e. the theory of affordances and theories of collective action. The paper then presents the research methods used to conduct the study. The fifth section presents the various SM platforms and their affordances that relate to collective action in the context of Egypt followed by a final section that presents the conclusions and implications.

2   Social Media and Egypt's Social Transformation Movements

Egypt has seen significant social and political upheavals during 2011-13 much of it involving some form of online and offline activism (Lim, 2012). Lack of democratic freedoms, economic decline, endemic corruption, lack of social and economic mobility for the vast majority of Egyptians all came to a head in early 2011 in Egypt when mass protests led to the fall of the then regime. The country has since seen numerous protest movements aimed at social transformation along with the rapid rise of SM as a powerful alternative to traditional media (Kamel, 2014; Eltantawy and Wiest, 2011; Maghrabi and Salam, 2013).

During Egypt's social transformation movements, SM tools such as Facebook, YouTube and Twitter became very popular as the main, trusted media for accessing and exchanging information. These SM platforms served a variety of different purposes including the exchange of audio-visual content and the creation of discussion groups (Facebook), arranging the logistics during the protests such as notifying people of unsafe areas and planning meetings in real time (Twitter), and sharing of videos (YouTube) as the protests evolved (Shapiro, 2009). It has been estimated that over 5 million people took part in street protests in Egypt during 2011 aided by SM allowing them to organize and collaborate. Over 170,000 Egyptian protesters pledged on Facebook to attend marches in January 2012 (Fowler, 2011). Between end December 2010 and early March 2011 over 1 million Egyptians signed up to Facebook. Indeed SM has been shown to have played a key role in ramping up the scale of the Egyptian protest movements in terms of size, speed and reach through their capacity for rapid dissemination of information (Maghrabi and Salam, 2013). Table 1 below provides a sense of the dramatic rise in the use of key SM platforms in Egypt during the social transformation movements. However, there is hardly any work in information systems (IS) that addresses the SM affordances and related platforms that underlie the critical role played by such technologies in collective action in the particular context of a social transformation movement.

	2009	**2010**	**2011**	**2012**	**2013**
Internet Users[1]	22 Million	29 Million	36 Million	39 Million	46 Million
Facebook Users[2]	2.5 Million	4.1 Million	8.2 Million	10.4 Million	13.5 Million
Twitter Users[3]	50 Thousand	75 Thousand	200 Thousand	450 Thousand	650 Thousand
YouTube Users[4]	5.1 Million	7.4 Million	12.6 Million	18.7 Million	23.4 Million

Table 1. Rise in SM use in Egypt 2009-2013

(1) www.egyptictindicators.gov.eg, retrieved 28 November 2014
(2) www.idsc.gov.eg, retrieved 28 November 2014
(3) www.arabsocialmediareport.com, retrieved 21 June 2014
(4) www.socialbakers.com, retrieved 28 November 2014.

3 Theoretical Background: Collective Action and Technology Affordances

In this section we will explore the key theories underpinning this study, i.e. collective action and technology affordances.

3.1 Collective action and SM

Collective action theories explain why people mobilize towards a common goal (Olson, 1965; Ostrom, 1998). Collective action is seen variously as a deliberate and rational process (Lichbach, 1996), as the result of shared values driving people towards goal oriented action (Snow et al., 1986) or as dependent on financial and other resources (MacCarthy and Zald, 1979). However, the dramatic rise in the use of SM in society in general and social movements in particular has led to many of these assumptions being questioned (Bimber et al., 2005; Earl and Kimport, 2011).

SM can offer unique opportunities for creating and enhancing networks for social change (Lim, 2012) and new networked public spheres for political communication (Johannessen and Følstad, 2014). They can help disparate people and groups to spread ideas and persuade others on a scale previously unknown and at a speed previously impossible (Fogg, 2008; Krishna, 2003; Ostrom, 1999). Cogburn and Espinoza-Vasquez's (2011) study of the Obama campaign in the US shows how SM was used as a cost-effective way to build social capital by substantially reducing the resources needed to build a network. SM can also reduce the need for activists to be co-present unlike previous generations of social movements (Earl and Kimport, 2011). Unlike political campaigns and other forms of institutionalized movements, the lack of a unified, collective identity in dispersed, widespread unrest as seen in Egypt challenges the established view that collective action is always dependent on shared group identification (Wright, 2001; Stekelenburg and Klandermans, 2007). SM also offer more agile ways of transcending the inflexibilities often encountered by traditional forms of collective action (Meinzen-Dick et al., 2004). Furthermore the free rider dilemma characteristic of much of the collective action literature (Olson, 1965) becomes less significant in digital activism as the cost of participation is dramatically reduced (Bimber et al., 2005).

However much of the literature on the role of SM in recent uprisings have been characterized as technologically deterministic (Jones, 2011) or as irrelevant to the risky business of actual, physical mobilizing on the streets (Gladwell, 2010). The literature on SM use in political campaigning and movements has also not sufficiently unpacked the inter-linkages between the appropriation of particular SM platform capabilities and social processes. In short, there is a need for a more nuanced approach to understanding the underlying dynamics of SM use in the context of social transformation movements (Earl and Kimport, 2011). We therefore turn to the theory of affordances as an interpretive lens to examine the role played by SM in collective action.

3.2 The affordances of SM

The theory of affordances suggests that affordances are usage possibilities only realized in the interaction between an object and an agent (Hutchby, 2001). The relational character of affordances means that the concept can help overcome the limitations of both technologically deterministic and social-psychological theories (Majchrzak and Markus, 2013), and studying it requires us to examine both functional features and social processes (Zammutto et al., 2007).

There have been several recent studies in IS exploring the affordances of SM but most are limited to particular tools. For instance, Mesgari and Faraj (2012) identified six categories of affordances in their study of Wikipedia - contribution, control, management, collaboration, self-presentation and broad-

casting – that they also associate with SM. Olapiriyakul and Widmeyer (2009) identified three meta categories of affordances of the social and business environment in Second Life: physical affordances that are designed into the platform allowing users to act in particular ways online, relational affordances that determine interactions amongst users, and transactional affordances that cover business exchanges in the virtual world. Mathiesen et al. (2013) catalogued a range of affordances derived from the literature on how social technology can improve a company's business process change projects, and these included participation, collective effort, transparency, independence, persistence, emergence, and connectivity.

A diverse list of more generic SM affordances, that can serve as a broad foundation for further research, have been suggested by O'Riordan et al. (2012) based on their study of the system features of Facebook, YouTube and Twitter. They identify two categories of linked affordances: social (social connectivity, social interactivity, profile management) and content (content discovery, content sharing and content aggregation). Social connectivity is all about linking individuals and groups, and can either be unidirectional as in Twitter and YouTube or reciprocal/bidirectional as in Facebook. Facebook facilitates more types of social interactions as opposed to YouTube or Twitter. Profile management is all about accessibility and managing one's identity. Content discovery happens via interactions, searches and aggregated content, and content sharing also happens via interactions. All three SM platforms facilitate discovery and sharing to varying degrees with Facebook offering the most variety. All three also offer facilities for aggregation. These six affordances not only capture the emergent use of SM for sharing, managing and discovering content but are also linked to each other. For instance finding and connecting to individuals requires the affordances of social interactivity, content discovery, content sharing, and content aggregation. In a similar vein, content aggregation is required for discovering and sharing content to one's network, which in turn requires the social interactivity affordance.

Jensen and Dyrby (2013) identify three broad categories of affordances (some intended, others acted out) based on their study of the role of Facebook in Danish general elections: facilitation of direct communication between political parties and voters, projection of an image of authenticity, and the creation of interaction and involvement with citizens. However, social transformation movements, which can be seen as a particular form of collective action, characterized by contested socio-political action (Aday et al., 2010) involving disparate, informal networks of individuals and groups (Diani, 1992) may present a more challenging and complex sphere for collection action and SM use. To our knowledge, no study in IS has so far attempted to use affordance theory as an interpretive lens to unpack the dynamics at play when SM are used in the context of such social transformation movements. Such an approach can help explore the perceived functional affordances of SM platforms that underpin the collaboration required for collective action, which forms the main objective of this paper.

4 Research Method

We conducted 18 semi-structured interviews lasting from 30-60 minutes with people from a diverse range of sectors and backgrounds, all involved in online and/or offline activities during the social transformation movements in Egypt during 2011-2013. The interviews, which were based on a purposive sampling approach, continued until we reached theoretical and data saturation (Guest et al., 2006), when new themes were no longer emerging. Table 2 below provides details of the interviews.

Our unit of analysis is the citizen and her use of SM in the context of collective action. As the focus of the study was on the use of SM it was deemed acceptable to interview individuals who clearly identified themselves as SM users. The use of respondents from urban Cairo is also deemed acceptable as the Egyptian movements, albeit widespread across the nation, were in the main centred on events in Greater Cairo, which saw the biggest rallies. Greater Cairo is also home to nearly 20 million people of a total Egyptian population of 81 million of which half live in urban areas; the majority of Egypt's

Internet users are also located in this region (Lim, 2012). However we should note that the focus on educated SM users in the Greater Cairo region can be seen as a limitation of our approach.

The open-ended questions were framed so as to capture in as much detail as possible the personal involvement of interviewees in the social transformation movements, and their perceived and acted out affordances of SM, for example: "For what purposes have you personally used SM?", "Why did you use SM?" and "Did you trust SM?" All the interview transcripts were coded and analysed using NVivo 10 software program (Bazeley and Jackson, 2013).

The data analysis consisted of three types of thematic coding (Strauss and Corbin, 1990). *Open coding* of the transcripts led to concepts or codes grouped in categories and sub-categories. *Axial coding* focused on the relationships between categories and sub-categories. For *selective coding* of the transcripts we used the idea of leveraged or acted out SM affordance as the core category and systematically related it to other categories. Triangulation was achieved through several iterations via Skype between the three authors. Through this process the final list of perceived affordances of SM in the context of social transformation movements in Egypt emerged from the data and was not pre-set by theory. However, consistent with the selective coding approach chosen by Sarker et al. (2000), we introduced affordance theory as a meta-framework to guide our understanding of SM use and included only the affordances which we identified as relevant based on the interaction with the data.

ID	Sector	Gender	Role of interviewee	Interview Date	Type
1	Education/Politics	M	Economist/Party Official	13/8/2013	Phone
2	Education	F	Academic Administrator	19/8/2013	Skype
3	Politics	M	Politician	27/8/2013	Skype
4	Business/Consulting	F	Consultant	28/8/2013	Skype
5	Business/Printing	M	Small Business Manager	1/9/2013	Skype
6	Business/IT	M	Manager	3/9/2013	Skype
7	Education	M	Economist	4/9/2013	Skype
8	Business/IT	F	Company Director	6/9/2013	Skype
9	Business/Real Estate	M	Company Owner	8/9/2013	Face-to-face
10	Business/IT	M	Managing Director	12/9/2013	Face-to-face
11	Business/Marketing	M	Marketing Director	13/9/2013	Face-to-face
12	Education	M	Academic	21/9/2013	Face-to-face
13	Business/Finance	M	Entrepreneur	22/9/2013	Face-to-face
14	Business/Construction	M	Quantity Surveyor	3/10/2013	Phone
15	Business/Media	F	Entrepreneur	4/10/2013	Phone
16	Education/Business	F	Student	17/11/2013	Phone
17	Education/Law	M	Recent Graduate	20/11/2013	Phone
18	Education/Engineering	M	Student	20/11/2013	Phone

Table 2. Overview of Interviews

5 Research Findings

The analysis of the above interviews resulted in nine perceived affordances of SM for digital activism. We will now discuss how each of these affordances contributes towards collective action for social transformation supported by representative quotations with their respective interviewee IDs (please see Table 2 for interview IDs and further details).

5.1   Information validation

Our interviewees made clear that they used SM to verify and validate news broadcast on traditional media such as TV or printed in state-run newspapers, both of which were deemed untrustworthy. The politicised nature of Egypt's social transformation movements meant that citizens depended on SM to validate news available elsewhere. In many ways, SM became the primary source of news and information. Facebook helped to access details from contacts and movement participants in the thick of action, Twitter offered opportunities to verify news through several sources at once and in real time, YouTube provided vivid detail of events as they unfolded. The information validation affordance, which highlighted the importance of trust, was evident in a number of responses from interviewees. For instance:

"I think [TV] channels represent certain views...The only thing that balances this is the Internet because you would understand who is lying or omitting." (ID6)

"...actually I am always recommending, whenever I'm receiving any information, to really double check about the source: who is behind it and so on." (ID11)

5.2   Information supplementation

This affordance, closely linked to information validation, was particularly evident when movement participants looked for multiple views on the protests and related actions. For instance, they not only followed movement leaders and opinion makers they agreed with but also used SM to obtain a window into the thinking of those they were opposed to. Information supplementation therefore enabled a more holistic appreciation of viewpoints during the social movements:

"It [SM] makes things way easier for me definitely to be well informed, well exposed to different points of view, well exposed to different types of analysis of what is going on..." (ID7)

"...you wouldn't be used to views other than from your own that regularly unless you use SM. And that is quite an important difference in communicating over regular or real life versus SM communication because you get people who are completely different, who have completely different views than your own." (ID3)

5.3   Perpetual self-updating

SM afforded the possibility of becoming instantly aware when things went wrong during the movements, such as police brutality, tear gas and other types of violence. This perpetual self-updating affordance allowed movement participants to stay safe by finding information about safe areas and which areas to avoid. Respondents provided evidence of the crucial importance of this affordance in the following way:

"Twitter and FB are the prime sources of news. If I want to know if something is going "xyz right now" [...] I go to Twitter to find out what it is, not the news." (ID13)

"...demonstrators were sharing real time data on Twitter and Facebook about which routes were safe and which were dangerous..." (ID14)

5.4   Perpetual mass-updating

SM afforded movement participants the ability to update large masses of people both inside and outside of Egypt in real time as events unfolded. Fogg's (2008) assertions regarding the persuasive power of SM was evident here:

"SM was important to get the message out." (ID1)

"I mean the most important aspect of SM is that it gave a voice to the regular Egyptian. FB and Twitter...allowed people with a regular profile to have a huge following." (ID3)

5.5 Self-reportage

Movement participants often used YouTube to upload videos of police brutality and the extent of protests across the country, and Twitter to offer constant, real time reports of participants' views. This affordance allowed for a multiplicity of voices as opposed to the sanitised and often undifferentiated views expressed by traditional, state held media. Indeed SM platforms such as Twitter, YouTube and Facebook became alternative news channels of self-produced news and analysis, trusted due to their authenticity and, in many cases, their verifiability so much so that for a few days the then regime even cut off the Internet:

"When the government cut off the Internet, people went on the street and they started using their mobile to capture data..." (ID6)

"...I use blogging to express my detailed analytical views on the events that are taking place." (ID3)

5.6 Monitoring and Influencing

SM allowed movement leaders and participants alike to engage with, encourage and influence others to join the movement. The monitoring and influencing affordance was significant in many cases:

"Mobilize all this number...they would have had no chance without SM to get this number in the street, on the same day, for the same cause. Zero chance. There is no probability without SM to impact with no financial aid, without the blessing of the government, without the legitimate official channels. Without SM it's impossible." (ID5)

"...It [SM] definitely helped in mobilizing people and, even going to the streets...to getting disciplined about certain things." (ID4)

5.7 Self-organization

SM platforms like Twitter and Facebook played a critical role in the organisation of protests throughout the country. SM facilitated inexpensive methods to self-organise at a scale and speed previously impossible. Much of the planning and organisation during Egypt's social transformation movements took place on SM platforms:

"I think what SM did is that it was a tool that helped organizing people beyond that ability of the state control. If you look at January 25th, the dates and how it was all organized: where the marches would start, what are the parts of the march, what are the chants that people say, should not say [...] this type of organization is a key to any social movement." (ID7)

"*...people were using all sorts of SM tools to basically spread the word, organize protests.*" (ID6)

5.8 Interactive communication

SM's abiding feature of instantly interactive communication served to build momentum throughout the protest movements. The widespread exchange of ideas facilitated by multiple platforms, widely available through the country, meant that more and more Egyptians were exchanging their views and sharing perspectives on the political events, thereby further adding to the pressure to take sides and to mobilize for social change. The interactive communication affordance was a key route to participation in the movements:

"[Facebook] in its core is a communication tool that took communications between people to a new level. [...] It allowed people to interact on a much more profound level than regular." (ID3)

"...it allowed people to express themselves freely and openly." (ID3)

"It was only through SM that I realized that I'm only one of many people that are really annoyed by the regime." (ID5)

5.9   Self-presentation

This affordance was the vehicle for movement participants to project their personal views on the ongoing events and establish a virtual, politicised identity during the movements. Taking sides by expressing political opinion was one way of presenting one's identity and views:

"I was surrounded by very young, extremely talented people who were using technology and SM to express themselves." (ID6).

"They were using [YouTube] as a platform for expressing themselves." (ID6).

5.10   SM affordances and platforms

Table 3 below summarises the perceived affordances and maps them against more general categories of SM affordances derived from the literature. For instance, O'Riordan et al's (2012) 'content discovery' affordance finds resonance in our affordances of 'information validation', 'information supplementation' and 'perpetual self-updating'. 'Perpetual mass-updating' and 'self-reportage' relates to their class of 'content sharing' affordance, while 'self-presentation' finds echoes in their 'profile management' class of affordance.

Affordances from this study	Total instances	Related affordances from literature
Information Validation	14	Content Discovery (O'Riordan et al., 2012) Authenticity (Jensen and Dyrby, 2013) Transparency (Mathiesen et al., 2013)
Information Supplementation	38	Content Discovery (O'Riordan et al., 2012)
Perpetual Self-updating	44	Content Discovery (O'Riordan et al., 2012)
Perpetual Mass-updating	27	Content Sharing (O'Riordan et al., 2012) Direct Communication (Jensen and Dyrby, 2013) Content Contribution, Broadcasting (Mesgari and Faraj, 2012) Participation (Mathiesen et al., 2013)
Self-reportage	19	Content Sharing (O'Riordan et al., 2012) Content Contribution (Mesgari and Faraj, 2012)
Monitoring and Influencing	15	Promotion of Political Messages, Call to Action (Jensen and Dyrby, 2013)
Self-organization	14	Management (Mesgari and Faraj, 2012) Collective Effort (Mathiesen et al., 2013)
Interactive Communication	28	Social Connectivity, Social Interactivity (O'Riordan et al., 2012) Interaction, Involvement (Jensen and Dyrby, 2013) Collaboration (Mesgari and Faraj, 2012) Relational (Olapiriyakul and Widmeyer, 2009) Persistence (Mathiesen et al., 2013)
Self-presentation	18	Profile Management (O'Riordan et al., 2012) Personality (Jensen and Dyrby, 2013) Self-presentation (Mesgari and Faraj, 2012)

Table 3. Affordances from interviews mapped against related affordances from the literature

Our 'interactive communication' affordance links to O'Riordan's (2012) categories of 'social connectivity' and 'interactivity'. Jensen and Dyrby's (2013) 'authenticity' links to our 'information valida-

tion', their 'direct communication' links to our 'perpetual mass-updating' affordance, and their 'promotion of political messages' and 'call to action' affordances link to our affordance category of 'monitoring and influencing'. Although the affordances for 'collective effort' (Mathiesen et al., 2013) and 'management' (Mesgari and Faraj, 2012) are from contexts entirely distinct from that of this paper, these two affordances offer glimpses of what we term 'self-organization' affordance, which is a critical component of collective action.

As Table 3 suggests, our categories of affordances offer better granularity in the context of collective action for social change. For instance, what is termed content discovery in the literature is shown to have many layers in the context of social transformation movements; in our study we see this broad category becoming more meaningful as affordances for information validation, supplementation, and perpetual self-updating. Similarly what the literature often terms content sharing can be seen to be appropriated in different ways in our context, such as perpetual mass-updating and self-reportage.

Our results show that in the context of social transformation movements, digital mobilization is dependent mainly on two new kinds of affordances, i.e. the monitoring and influencing affordance and the self-organisation affordance. SM seem to offer particularly effective ways of influencing opinions, creating shared understanding and a common goal even among large masses of people who may not know each other or have no co-presence whatsoever. This challenges traditional collective action theory's assumption of the need for a unified, central identity that was lacking in much of Egypt's social transformation movements. We have shown that SM affords collective action possibilities through the appropriation of particular affordances that then, importantly, link with other affordances to enable the movement to spread. For instance, interactive communication arouses interest in the movement beyond mere information supplementation and validation. Perpetual mass updating and self-reportage offers possibilities for sharing discovered information and self-analysed news reports with large masses of people. Self-presentation allows for setting out one's identity and views. Monitoring and influencing as well as self-organisation offers the path to politicised influence, effective logistics and organisation while perpetual self-updating offers safety and security from potential violence through instantaneous messaging. All of this implies that the cost of collective action is significantly reduced, and this in turn also reduces the importance of free riding, which often poses problems in more traditional forms of collective action.

Our results also indicate that different SM platforms are seen as platforms of choice for particular kinds of activities. Table 4 below shows the three platforms that had the majority of followers in the context of the Egyptian movements: Twitter (with 18 mentions in interviews as 'useful'), YouTube and Facebook (with 17 mentions in interviews). Twitter was the preferred platform for instant information, Facebook was the platform of choice for richer interactions and YouTube became the trusted alternative to television. For instance, various interviewees pointed out that Facebook was an essential tool for organising the uprising (e.g., ID14/Self-organizing) and may have even triggered the uprising by spreading deep felt frustration among citizens (e.g., ID13/Self-reportage, Monitoring and Influencing). It was confirmed as a good platform to socialize (e.g., ID3/Interactive Communication), engage in richer and longer conversations (e.g., ID17/Interactive Communication, Information Supplementation), and to vent people's frustration (e.g., ID4/Monitoring and Influencing).

Twitter was seen as the fastest way to get breaking news (e.g., ID3/Perpetual Self-updating), to 'pull' views and 'push' opinions (e.g., ID9/Perpetual Self-updating, Perpetual Mass-updating, Self-reportage) and was even considered more trustworthy than websites as it enables the user to follow experts (e.g., ID16/Information Validation).

Interviewees felt that YouTube offered a trusted source for verifiable news unlike traditional media such as TV that was highly censored (e.g., ID17/Information Validation). Some would use YouTube to verify details relating to ongoing events during the movements when these were mentioned on Twitter (e.g., ID2/Information Supplementation). Here we can see how one platform might drive movement participants to also use another for aspects of verifiability and trust.

Web 2.0 Platform	Total instances in interviews where platform was seen as useful
Twitter	18
YouTube	17
Facebook	17

Table 4. Most popular SM platforms according to interviewees

Platforms such as blogs, Google+, LinkedIn, Storify, Yammer, WhatsApp did not have the same level of popularity with only a handful of people citing them as useful.

6   Conclusion and Implications

Despite the widely held view that SM played a significant role in recent social transformation movements in the Arab world in general and Egypt in particular, there is little work in IS that examines the underlying dynamics at play vis-à-vis SM platforms and the particular affordances that are appropriated from them by citizen activists. In this paper we examined a variety of SM affordances, their interlinkages and the way they contributed to the social transformation movements in Egypt. To do this we linked affordance theory with collective action literature to offer a more nuanced picture of the role played by SM in the uprising in Egypt.

Our main contribution in this study is to IS literature by categorising the affordances of SM that are appropriated for decentralised forms of collaboration in the context of social transformation movements. We have also shown how this appropriation can vary depending on the type of SM platform used. Although the affordances identified in our study map well against existing classifications in the IS literature and can therefore be seen as relevant to other collective action contexts, we have also highlighted that our categories are more nuanced and offer much better granularity, and as such could form the basis for further IS research on SM and collective action.

We have shown that in the context of collective action such as social transformation movements, the nine SM affordances when appropriated by citizens can have a significant impact on mobilization for social change, and that this in turn challenges traditional views of collective action that emphasise the need for a unified, central identity for mobilisation to take place. Our study has shown that SM affords opportunities for the rapid spread of ideas at significantly reduced personal cost thereby also offering the possibility of overcoming free riding, yet another central assumption of traditional collective action theory. However, what we have been unable to study is the potential for SM to be used by regime sympathisers to deliberately undermine collective action through misleading communications. This could be an interesting avenue for future research. Future studies could also involve a broader group of respondents covering both urban and rural areas, including users with various levels of education.

Although our focus in this paper has been very much on the affordances of SM that are appropriated in the context of social transformation, we realise that there may be contextual factors and other conditions that constrain this appropriation. Also, we have not elaborated on whether there might be relational aspects between our affordances such that the appropriation of one affordance requires another to be appropriated first. Indeed these aspects as well as the conditions in which SM affordances may be appropriated form the focus of one of our ongoing studies. Our study also found evidence of the importance of trust in using SM for social transformation movements. However, although citizens seem to trust SM more than traditional media, they are also discriminating in the way they use various SM platforms. This aspect is also worthy of future research.

References

Aday, S., H. Farrell, M. Lynch, J. Sides, J. Kelly and E. Zuckerman (2010). Blogs and Bullets: New Media in Contentious Politics. *Peaceworks Paper No. 65.* United States Institute of Peace.

Agarwal, N., M. Lim and R. Wigand (2012). "Raising and Rising Voices in Social Media". *Business & Information Systems Engineering* 4 (3), 113-126.

Bazeley, P. and K. Jackson (2013). *Qualitative data analysis with NVivo,* London: Sage Publications Limited.

Bimber, B., A. J. Flanagin and C. Stohl (2005). "Reconceptualizing collective action in the contemporary media environment". *Communication Theory* 15 (4), 365-388.

Cogburn, D. L. and F. K. Espinoza-Vasquez (2011). "From networked nominee to networked nation: Examining the impact of Web 2.0 and social media on political participation and civic engagement in the 2008 Obama campaign". *Journal of Political Marketing* 10 (1-2), 189-213.

Diani, M. (1992). "The concept of social movement". *The Sociological Review* 40 (1), 1-25.

Earl, J. and K. Kimport (2011). *Digitally enabled social change: Activism in the internet age,* London: MIT Press.

Eltantawy, N. and J. B. Wiest (2011). "Social Media in the Egyptian Revolution: Reconsidering Resource Mobilization Theory". *International Journal of Communication* 5 (18), 1207–1224.

Fogg, B. J. (2008). "Mass interpersonal persuasion: an early view of a new phenomenon". *Persuasive Technology, Lecture Notes in Computer Science*, 23-34.

Fowler, G. A. (2011). "Facebook sees Egypt usage spike". *Wall Street Journal.*

Gladwell, M. (2010). "Small Change: Why the Revolution Will Not be Tweeted". *New Yorker,* October 4.

Guest, G., A. Bunce and L. Johnson (2006). "How many interviews are enough? An experiment with data saturation and variability". *Field methods* 18 (1), 59-82.

Hutchby, I. (2001). "Technologies, texts and affordances". *Sociology* 35 (2), 441-456.

Jensen, T. B. and S. Dyrby (2013). "Exploring Affordances Of Facebook As A Social Media Platform In Political Campaigning". In *ECIS 2013 Proceedings*, Utrecht, Netherlands,

Johannessen, M. R. and A. Følstad (2014). "Political Social Media sites as Public Sphere: A Case Study of the Norwegian Labour Party". *Communications of the Association for Information Systems* 34 (56), 1067-1096.

Jones, J. (2011). "Social media and social movements". *International Socialism: A Quarterly Journal of Socialist Theory* No. 130.

Kamel, S. H. (2014). "Egypt's Ongoing Uprising and the Role of Social Media: Is there Development?". *Information Technology for Development* 20 (1), 78-91.

Krishna, A. (2003). Understanding, Measuring and Utilizing Social Capital: Clarifying Concepts and Presenting a Field Application from India. *CAPRi Working Paper 28.*

Lichbach, M. I. (1996). *The cooperator's dilemma,* Ann Arbor: University of Michigan Press.

Lim, M. (2012). "Clicks, cabs and coffee houses: social media and oppositional movements in Egypt, 2004-2011". *Journal of Communication* 62 (2), 231-248.

MacCarthy, M. N. and J. D. Zald (1979). *The dynamics of social movements,* Cambridge: Winthrop.

Maghrabi, R. and A. Salam (2013). Social Media and Citizen Social Movement Process for Political Change: The Case of 2011 Egyptian Revolution. *Proceedings of 34th International Conference on Information Systems (ICIS).* Milan.

Majchrzak, A. and M. L. Markus (2013). Technology affordances and constraints theory (of MIS). (Kessler, E. H. Ed.) *Encyclopaedia of Management Theory*. Sage Publications, Thousand Oaks, CA.

Mathiesen, P., W. Bandara and J. Watson (2013). The affordances of social technology: a BPM perspective. *34th ICIS Proceedings.* Milan.

Meinzen-Dick, R., M. Di Gregorio and N. McCarthy (2004). "Methods for studying collective action in rural development". *CAPRi working paper 33.*

Mesgari, M. and S. Faraj (2012). "Technology Affordances: The Case of Wikipedia". In *Proceedings of the Eighteenth Americas Conference on Information Systems (AMCIS)*, Seattle, US, 1-10.

O'Riordan, S., J. Feller and T. Nagle (2012). Exploring the Affordances of Social Network Sites: An Analysis of three Networks. *Proceedings of the European Conference on Information Systems (ECIS)*. Barcelona, Spain.

Olapiriyakul, K. and G. Widmeyer (2009). Affordances of Virtual World Commerce: Instrument Development and Validation. *Proceedings of the Fifteenth Americas Conference on Information Systems (AMCIS)*. San Francisco, California.

Olorunnisola, A. A. and B. L. Martin (2013). "Influences of media on social movements: Problematizing hyperbolic inferences about impacts". *Telematics and Informatics* 30 (3), 275-288.

Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups,* Cambridge, MA: Harvard University Press.

Ostrom, E. (1998). "A behavioral approach to the Rational Choice Theory of Collective Action". *American Political Science Review* 92 (1), 1-22.

Ostrom, E. (1999). Social capital: A fad or a fundamental concept. In P. Dasgupta and I. Serageldin (Eds.). *Social Capital: A Multifaceted Perspective*. The World Bank, Washington, DC.

Sarker, S., F. Lau and S. Sahay (2000). "Using an adapted grounded theory approach for inductive theory building about virtual team development". *ACM SiGMIS Database* 32 (1), 38-56.

Shapiro, S. M. (2009). "Can social networking turn disaffected young Egyptians into a force for democratic change?". *New York Times Magazine*, 34-39.

Snow, D. A., E. B. J. Rochford, S. K. Worden and R. D. Benford (1986). "Frame alignment processes, micromobilisation and movement participation". *American Sociological Review* 51 (4), 464-481.

Stekelenburg, J. and B. Klandermans (2007). Individuals in movements: A social psychology of contention. In B. Klandermans & C. Roggeband (Eds.). *The Handbook of Social Movements Across Disciplines* Kluwer, New York.

Strauss, A. and J. Corbin (1990). *Basics of Qualitative Research,* Newbury Park: Sage.

Wright, S. C. (2001). Strategic collective action: social psychology and social change. In R. Brown & S. Gaertner (Eds.). *Blackwell Handbook of Social Psychology. Vol.4: Intergroup Processes*. Blackwell Press, Oxford.

Zammutto, R. F., T. L. Griffith, A. Majchrzak, D. J. Dougherty and S. Faraj (2007). "Information technology and the changing fabric of organization". *Organisation Science* 18 (5), 749-762.