Computing the Revolution: An Exploration of Computed Sociality and High-Risk Collective Action

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KEYWORDS

ABSTRACT

Over the past decade, social media has come to the fore of collective action discourse. Much of the research in this space has focused on the use of social media as a tool that, in some form or another, influences the diffusion of collective action related information and the recruitment of participants. This paper claims that "social media" is a term at risk of reification and "black-boxing" in the collective action lexicon unless researchers unpack the inner workings of the artifact. As such, this paper uses the theories of encoding, computed sociality, and McAdam's work on recruitment to social movements to analyze Twitter's "account suggestion" feature. Further, it argues that the fundamental design of this feature does not necessarily facilitate participation in high-risk collective action.

Introduction

At the turn of the decade, between 2009 and 2011, a series of protests and revolutions occurred in Egypt, Iran, Moldova, Tunisia, and the Ukraine. A flurry of exuberant news articles, blog posts, and television reports promoted the unprecedented role of social media in aiding what have become known as the "Twitter Revolutions." Unsurprisingly, the hype regarding social media's role has sparked an intense discourse and a new stream of interdisciplinary research centered on social media and collective action.

This discourse reached fever-pitch when Malcom Gladwell (2011) wrote in The New Yorker that the "revolution will not be tweeted." Further, Gladwell (2011) drew on the work of the noted social movement scholar Doug McAdam (1986) and stated that "The platforms of social media are built around weak ties. Twitter is a way of following (or being followed by) people you may never have met" and as a consequence does not inspire participation in revolutionary activity. This contention serves as the inspiration for this paper.

In using the term "built," Gladwell (2011), purposefully or not, implies that the actual design of social media platforms is to some degree deterministic of participant activity in high risk collective action. In other words, that the social environment of twitter is a highly mediated and constructed one. This opens an interesting line of inquiry into the role of platform architecture and whether the internal algorithms and processes of social media have the ability to shape collective action. In this paper, I intend to breach this topic. More specifically, I will argue that Twitter does,

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indeed, facilitate "weak-ties" by exploring the link between participation in "high-risk" collective action and the computed sociality created by Twitter's "account suggestion" function.

To do this, I have structured the essay as follows. In the next section, I will review the extant literature on social media and collective action in order to situate the discussion. I will also address the literature of personalization, as it is key to understanding the subsequent conceptual framework. I will then outline Alaimo and Kallinikos' (2016;2017) theories of encoding, computed sociality, and McAdam's (1986) model of participation in high-risk activism. Using these conceptual frameworks I will present a brief case study of Twitter's "account suggestion" function followed by a critical discussion. Finally, I will address limitations and further research.

Literature Review

The literature review focuses specifically on social media and collective action. Research that discusses technology, media, or the internet in relation to collective action have been excluded (Bellin, 2012; Bennett, 2003; Bimber et al., 2005) despite their contribution to the broader field of technology and collective action.

Social Media and Collective Action

Within the social media and collective action stream of research, it is commonplace to break the literature into two thematic factions: skeptics versus enthusiasts. This dichotomy is, perhaps, best exemplified by Joseph (2011) and his review of those who believe technology and social media are catalysts for good and positive change in collective action (Shirky, 2011) and those who believe the phenomenon is overblown (Gladwell, 2011; Morozov,

2011). This review, however, attempts to step outside of these themes and discover how the authors view the artifact itself. At a high level, artifacts are treated as a tool which, as distinguished by Gonzales-Bailon et al. (2011), effectuate the "dynamics of diffusion" or the "dynamics of recruitment."

Nearly every author within this narrow research stream focuses on the social media platform as a tool and the subsequent exploration of its instrumentation in the broader environment. The "tool" is discussed relative to its capacity for the diffusion of information and the recruitment of people to the cause. Howard et al. (2012) focus on user activity, noting that often social media activity spikes preceding an event which then plays a role in both its discourse and diffusing of ideas. Gonzales-Bailon et al. (2011) found, in contrast, that there is more activity after a protest and that there is not much evidence regarding recruitment or how social media disseminates calls for action. This exposes yet another divide in the broader literature and can be seen in numerous other papers (Hussain et al., 2012; Lim, 2012; Wolfsfeld, 2013; Zheng & Yu, 2016). Anderson (2011) may be the lone exception in that she disavows social media as a factor nearly all together. Segerberg and Bennett (2011), acknowledge the role of the artifact but only at face-value. Noticeably, most authors tend to "black box" the artifact itself and largely ignore the inner workings of the technological artifact. This runs the risk of reifying the term "social media" and ignoring how it actually operates.

Milan's work (2015a; 2015b) begins to correct this reification process by breaking away from the sociological and communications perspectives. She is, perhaps, the first to seriously consider the topic of social media platforms and collective action from a socio-technical perspective. The author argues that social media has a new role as "broker" in the construction of meaning for activists (Milan, 2015a). Further, she uses Gerlitz and Helmond (2013) to note that social media platforms "prompt a type of sociality based on predefined activities," (Milan, 2015b) a concept which will be detailed in later sections. Milan is important to this paper in that she sets the precedent for understanding social movements and collective action by acknowledging the social embeddedness of technology.

Personalization and the Evolving Economies

The concept of personalization is necessary to understand why Twitter designed the "account suggestions" function in a way that mediates sociality. It is helpful to step back from social media and first look at an example from a traditional medium, like television. An advertisement for the 2019 Super Bowl cost a record breaking average of $5.25 million for thirty seconds of television time (Huddleston, 2019). The reason being that the Super Bowl is a one time "platform" that aggregates the attention of a major portion of the global population. That attention is key to advertising success and is likened to a resource in what is deemed the "attention economy" (Davenport & Beck, 2002). What Super Bowl advertisers cannot do, however, is tailor their ads to specific individuals.

Social media, on the other hand, can. Social media has created an avenue through which attention can be aggregated and out of which the "Like Economy" has developed (Gerlitz & Helmond, 2013).

In the "Like Economy" the "social is of particular economic value, as user interactions are instantly transformed into comparable forms of data and presented to other users in a way that generates more traffic and engagement" (Gerlitz & Helmond, 2013). This transformation of user interaction into usable data to generate attention, known as filtering, is the crux of personalization. It provides users only with the information that is relevant or adds value to them and therefore enables a more targeted advertising avenue (Parker, Alstyne, & Choudary, 2016). Through personalization Twitter is better able to retain attention of the users by giving them a mediated experience and individualized content. Personalization also, to some extent, facilitates who users might interact with on the platform, central to this paper's argument. The next section begins an exploration of how this is done.

Encoding, Computed Sociality, and High-Risk Participation in Collective Action.

To explore the link between Twitter's processes and its potential ability to broker participation in high-risk collective action, the next section lays out encoding, computed sociality, and McAdam's model of high-risk participation in collective action as conceptual frameworks.

Encoding

Social media platforms are designed in such a way that user participation is channeled through predefined avenues (Alaimo & Kallinikos, 2017). In the case of Twitter, these avenues include liking, following, retweeting, and posting. The act of mediating user social participation into these channels is called encoding (Alaimo & Kallinikos, 2016; 2017). Such encoding forms the basis for the development of the assumption of user intentionality or user preferences, for example, a user tagging a certain item of clothing may imply an intentionality to buy (Alaimio & Kallinikos, 2017). Gerlitz and Helmod (2013) take such actions as "liking" on Facebook to have encoded "approval."

This process of engineering user participation produces a significant amount of data. As noted by Alaimo and Kallinikos (2017), it is important to distinguish between the types of data produced. When posting a comment on a photo, a user provides the platform with a set of unstructured data referred to as user generated content. The user generated content itself is not necessarily useful. The act of commenting, however, provides a linkage between two objects, the user and the photo, which renders the social computable (Alaimo & Kallinkos, 2016). Ultimately, the encoding process employed by social media, and the social data therein, is not about the social itself; rather it is about the data garnered through the act of being social (Alaimo & Kallinikos, 2016). The implication, therefore, is that social media creates an environment in which participants can

interact to facilitate the mediation of social data. In effect, the social data created only exists because of the artificial constraints under which the platform design allows it to be encoded.
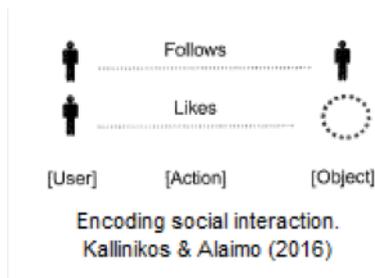

Figure 1: (Kallinikos & Alaimo, 2016)

Computed Sociality

In the real world, people do not commonly follow people around (without legal consequences, at any rate), nor do they "tag," "like," or "retweet" them. In this vein, the sociality of social media is inherently artificial and mediated. This mediated state is called "computed sociality" (Alaimo & Kallinikos, 2016; 2017). Social media, then, cannot be taken at face value and the underlying algorithms and data operations must be taken into account to overcome the illusion of neutrality (Gillespie, 2010).

Put differently, social media platforms are constantly constructing and reconstructing an algorithmic "scoring" of user similarity and popularity (Alaimo & Kallinikos, 2017). Such algorithms, though, are "wedded" to databases and are inherently meaningless without data (Gillespie, 2014). In the context of social media, those algorithms are wedded with social data that has been encoded through mediated human action (Alaimo & Kallinikos, 2016). As such, these algorithms are socio-technical in nature and without human initiation, they would simply be a circular logic lacking meaning. The algorithms, then, are only made meaningful when the offline sociality is "flattened" through an engineered process of encoding which ultimately creates a computed sociality (Alaimo & Kallinikos, 2017). Simply put, the user experience of social media is not necessarily a realistic expression of community and social life because it was designed in a way to facilitate the extraction of data, not in a way to facilitate realistic social situations.

McAdam's Model of Recruitment and Participation in High-Risk Activism

To complete the conceptual lens through which I will view the case analysis of Twitter, it is necessary to break away from social media and explore Doug McAdam's (1986) model of recruitment to high-risk activism. In his literature review, McAdam (1986, p. 65) makes the point that social movement literature tends to be split into two factions. The first is individualism, meaning the individual has some innate quality that makes him or her more susceptible to participation in movements. The second is structuralism, meaning, the structure of the institution or organization facilitates the participants' entry into social movements. Further, he notes that

the literature tends to focus on low risk activism (signing a petition), rather than high-risk activism (violent protests or revolutions) (McAdam, 1986, p. 68). This distinction and focus on the latter allowed him to narrow his research to single events and the factors of participation therein. McAdam (1986, p. 87) noted that most people in his study, both those who participated and those who withdrew, had a strong attitudinal affinity for the cause and, therefore, the factors of participation are not necessarily individualistic and are being mediated elsewhere. Ultimately, with data from 720 participants and 241 "no shows" from the 1964 Freedom Summer in Mississippi, USA, McAdam (1986, pp. 77-82) found that there were three key factors in participation. First, is those who had a larger number of organizational affiliations. Second, those who had higher level of prior civil rights activity. Finally, those who had stronger ties to other participants in the movement were more likely to participate noting that weak ties may be more effective as diffusion channels while strong ties "embody greater potential for influencing behavior" (McAdam, 1986, pg. 80).

Twitter Case Analysis

In this section, I will review Twitter's "account suggestion" to exemplify encoding, the creation of computed sociality, and the implications therein.

The Encoding and Personalization of Twitter's Account Suggestions

Definitionally, "following" on Twitter refers to the act of subscribing to another user's tweets, allowing the updates of the "followed" to appear on the home timeline ("Following FAQs," n.d.). The act of following, as Alaimo and Kallinikos (2017) suggest, is facilitated through predefined channels. In Twitter's case, users are able to follow by selecting the "follow button" on a user's tweet or profile page, via SMS, or QR code ("How to Follow," n.d.). These channels of participation, however, are incumbent on the fact that a user has found an account they want to follow. Users can, obviously, find accounts to follow in any number of ways (search, offline recommendation, back-links, etc.) but Twitter also has a function through which they suggest accounts a user may want to follow via a personalization algorithm.

Twitter's account suggestion algorithm makes recommendations of accounts to follow based on a range of factors. First, and most straight forward, if you allow Twitter access to your contact lists (phone, e-mail, etc.) it will make one to one suggestions in the event that those contacts match another Twitter user ("About Twitter's Account Suggestions," n.d.). With your contact data Twitter's algorithms can go a step further. One user ("object 1") is now linked to another user ("object 2") via contact information and if "object 1" confirms this linkage to "object 2" by "following" then an association is encoded and social data produced (similar to the figure from Alaimo & Kallinikos (2016) featured above). If a user does not allow Twitter access to their contacts then Twitter employs a similar process across a number of other mediated contact points. These contact points include location, user tweets, other accounts a user follows,

tweets a user views, retweets, likes, or even third-party websites visited if they integrate Twitter content ("About Twitter's Account Suggestions," n.d.).

The Twitter platform has been specifically designed to allow multiple channels (the aforementioned tweets, likes, etc.) through which users create social data. Of course, this data is created in the back-end and not visible to the user (Gillespie, 2014). Ideally, the users are passively creating such social data rather than knowingly liking objects with the intent of skewing the algorithmic recommendations. This stylization and organization of user participation (Alaimo & Kallinikos, 2016), is Twitter's way of encoding user preferences and are the basis of the social data that is fed into their algorithm, which then provides personalized suggestions (see conceptualization, on right). To emphasize, the act of viewing a tweet, the act of liking that tweet, the act of following other accounts, or the act of visiting specific third party website are acts which have been facilitated by the organization of the Twitter platform to encode meaning. The byproducts (object linkages) become the basis of the social data that is used to personalize user account suggestions.
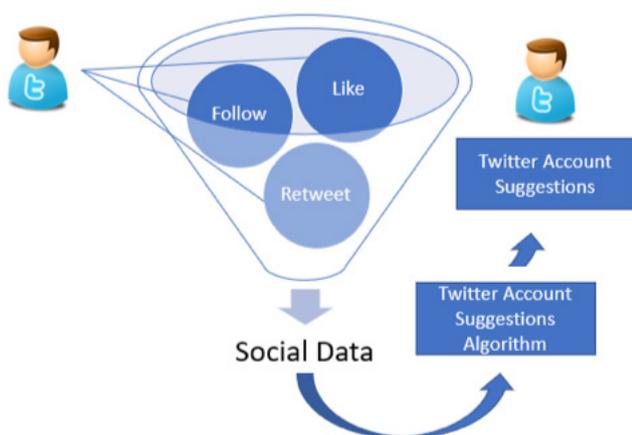

Figure 2: Encoding

A Computed Revolution?

The interpretations of Twitter's account suggestion processes on participation in high-risk collective action are numerous. Drawing from the first conclusion of McAdam's (1986) model, users that participate in high risk collective action tend to have a larger number of organizational affiliations to the movement in question. If a new Twitter user has an offline connection to just one member of a protest organization, for example, and elects to allow Twitter to use their contacts then by the logic defined above the user will be recommended to follow that user and possibly, by association, to follow more Twitter users affiliated with the organization. McAdam's (1986) second conclusion states that people who had prior involvement in high-risk collective action are more likely to be motivated to participate. A Twitter user with prior involvement may have multiple contacts, may visit third-party websites associated, or may already follow users engaged in the protest activity and thereby be recommended users who are also associated. However, a user with neither prior affiliations or a history of collective action may be less likely to be recommended users affiliated with a specific cause. In effect, it might be interpreted that Twitter's account suggestion enhances the possibility of participation for people who are already involved, but may have little to no effect on those who are not.

McAdam's (1986) final conclusion, that strong ties to participants are the greatest indicator of participation in high-risk collective action, begs the question of whether or not Twitter facilitates strong ties between users. Users connected to other users via email or phone contacts might be considered strong ties, though, that in itself is questionable as there are numerous reasons to have an individual's contact information. Beyond that, however, it appears as though Twitter facilitates weak-ties and the reasons are two-fold. First, Twitter has created a computed sociality. As such, the social interactions of a user are very much unlike their actions in the offline world. Liking a tweet from an activist is a far-cry from attending a rally or even having an interest in the social movement. Yet, such an action is encouraged by the very design of the platform and then used to create personalized account suggestions. Second, even if a user follows an activist, has an interest in the cause, and the algorithm recommends other members of that cause; such connections are not two-way. When a user follows another user, it is a unilateral action and the "followed" user does not necessarily follow back or communicate directly with the user ("How to follow," n.d.). In that sense, Twitter's account suggestion feature facilitates weak ties.

Based on the reporting above, I might be inclined to suggest that Twitter does not facilitate strong-ties between users and thereby does not, by design, encourage participation in high-risk activism excepting cases where users have prior strong-ties offline. Further, it could be argued that it does, by design, facilitate weak-ties which, according to McAdam (1986), may be more effective for diffusion. Not many would argue that Twitter's strength is in its ability to diffuse information. This reasoning is also in line with the argumentation made by Gladwell (2011), that social media creates weak-ties and, aware of the underlying technology of Twitter or not, he may have been on to something when he said that "the revolution will not be Tweeted."

Summary, Limitations, and Future Research

In this paper, I have introduced what I consider a soft spot in the literature of social media and collective action, the artifact. I have attempted to introduce the underlying processes of encoding and its subsequent computed sociality into the understanding of participation in high-risk activism. Based on this, the argument is made that Twitter is not necessarily designed to facilitate such participation.

This paper, by necessity, is constrained by word limit and can only focus on a single feature within the platform and ecosystem. Additionally, the arguments presented are based on the linking of conceptual frameworks rather than empirical testing. I am, therefore, careful to acknowledge that this essay does not make claims of proof or causality nor claims of

extending theory. Further, this paper is constrained in that there are other threads of social computing that could expound upon this understanding, such as aggregation/commensuration. The paper does, however, attempt to bring awareness to this research stream that the artifact itself is largely missing. Additionally, within popular culture there is the possibility of the reification of social media as a black boxed savant for collective action; this paper attempts to combat that line of thinking.

References

About Twitter's account suggestions. (n.d.). Retrieved March 28, 2019, from https://help.twitter.com/en/using-twitter/account-suggestions

Alaimo, Christina, & Kallinikos, J. (2016). Encoding the Everyday: The Infrastructural Apparatus of Social Data. In C. Sugimoto, H. Ekbia, & M. Mattioli, Big data is not a monolith (pp. 77–90). Boston, Mass: MIT Press.

Alaimo, Cristina, & Kallinikos, J. (2017). Computing the everyday: Social media as data platforms. The Information Society, 33(4), 175–191. https://doi.org/10.1080/01972243.2017.1318327

Anderson, L. (2011). Demystifying the Arab Spring: Parsing the Differences Between Tunisia, Egypt, and Libya. Foreign Affairs; New York, 90(3), 2–7.

Bellin, E. (2012). Reconsidering the Robustness of Authoritarianism in the Middle East: Lessons from the Arab Spring. Comparative Politics, 44(2), 127–149. Retrieved from JSTOR.

Bennett, W. (2003). Communicating Global Activism. Information, Communication & Society, 6(2), 143–168. https://doi.org/10.1080/1369118032000093860a

Bimber, B., Flanagin, A. J., & Stohl, C. (2005). Reconceptualizing Collective Action in the Contemporary Media Environment. Communication Theory, 15(4), 365–388. https://doi.org/10.1111/j.1468-2885.2005.tb00340.x

Davenport, T. H., & Beck, J. C. (2002). Attention Economy: Understanding the New Currency of Business (New Ed edition). Boston, Mass: Harvard Business Review Press.

Following FAQs. (n.d.). Retrieved March 28, 2019, from https://help.twitter.com/en/using-twitter/following-faqs

Gerlitz, C., & Helmond, A. (2013). The like economy: Social buttons and the data-intensive web. New Media & Society. https://doi.org/10.1177/1461444812472322

Gillespie, T. (2010). The politics of 'platforms.' New Media & Society, 12(3), 347–364. https://doi.org/10.1177/1461444809342738

Gillespie, T. (2014). The Relevance of Algorithms. In T. Gillespie, P. J. Boczkowski, & K. A. Foot (Eds.), Media Technologies: Essays on Communication, Materiality, and Society (pp. 167–194). https://doi.org/10.7551/mitpress/9780262525374.003.0009

Gladwell, M. (2011). Small Change. The New Yorker. Retrieved from https://www.newyorker.com/magazine/2010/10/04/small-change-malcolm-gladwell

González-Bailón, S., Borge-Holthoefer, J., Rivero, A., & Moreno, Y. (2011). The Dynamics of Protest Recruitment through an Online Network. Scientific Reports, 1, 197. https://doi.org/10.1038/srep00197

How to follow people on Twitter. (n.d.). Retrieved March 28, 2019, from https://help.twitter.com/en/using-twitter/how-to-follow-someone-on-twitter

Howard, P. N., & Parks, M. R. (2012). Social Media and Political Change: Capacity, Constraint, and Consequence. Journal of Communication, 62(2), 359–362. https://doi.org/10.1111/j.1460-2466.2012.01626.x

Huddleston, T. (2019, January 30). How much it costs to air a commercial during Super Bowl LIII. Retrieved from https://www.cnbc.com/2019/01/30/how-much-it-costs-to-air-a-commercial-during-super-bowl-liii.html

Hussain, M. M., & Howard, P. N. (2012). Opening Closed Regimes. In E. Anduiza, M. J. Jensen, & L. Jorba (Eds.), Digital Media and Political Engagement Worldwide (pp. 200–220). https://doi.org/10.1017/CBO9781139108881.011

Joseph, S. (2011). Social Media, Human Rights and Political Change. Boston College International & Comparative Law Review, 35, 145.

Lim, M. (2012). Clicks, Cabs, and Coffee Houses: Social Media and Oppositional Movements in Egypt, 2004–2011. Journal of Communication, 62(2), 231–248. https://doi.org/10.1111/j.1460-2466.2012.01628.x

McAdam, D. (1986). Recruitment to High-Risk Activism: The Case of Freedom Summer. American Journal of Sociology, 92(1), 64–90. https://doi.org/10.1086/228463

Milan, S. (2015a). From social movements to cloud protesting: the evolution of collective identity. Information, Communication & Society, 18(8), 887–900. https://doi.org/10.1080/1369118X.2015.1043135

Milan, S. (2015b). When Algorithms Shape Collective Action: Social Media and the Dynamics of Cloud Protesting. Social Media + Society, 1(2), 205630511562248. https://doi.org/10.1177/2056305115622481

Morozov, E. (2011). The Net Delusion: The Dark Side of Internet Freedom (1st ed.). New York: Public Affairs.

Parker, G. G., Alstyne, M. W. V., & Choudary, S. P. (2016). Platform Revolution: How Networked Markets Are Transforming the Economy - and How to Make Them Work for You (1 edition). New York: W. W. Norton & Company.

Segerberg, A., & Bennett, W. L. (2011). Social Media and the Organization of Collective Action: Using Twitter to Explore the Ecologies of Two Climate Change Protests. The Communication Review, 14(3), 197–215. https://doi.org/10.1080/10714421.2011.597250

Shirky, C. (2011). The Political Power of Social Media: Technology, the Public Sphere, and Political Change. Foreign Affairs, 90(1), 28–41. Retrieved from JSTOR.

Wolfsfeld, G., Segev, E., & Sheafer, T. (2013). Social Media and the Arab Spring: Politics Comes First. The International Journal of Press/Politics, 18(2), 115–137. https://doi.org/10.1177/1940161212471716

Zheng, Y., & Yu, A. (2016). Affordances of social media in collective action: the case of Free Lunch for Children in China. Information Systems Journal, 26(3), 289–313. https://doi.org/10.1111/isj.12096