

The integrative power of online collective action networks beyond protest. Exploring social media use in the process of institutionalization

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Abstract: In this article, we aim at expanding the event-based and protest-centered perspective that is typically adopted to study the nexus between social media and movements. To this aim, we propose a network-based approach to explore the changing role that these tools play during the dynamic unfolding of movement processes and, more particularly, over the course of their institutionalization. In the first part, we read the added value of social media as a function of the ‘integrative power’ of the networks they foster – a unique and evolving form of sociotechnical power that springs from the virtuous encounter between social media networking potential and social resources. In the second part, we investigate this form of power by focusing directly on online networks structure as well as on the type of communication and participation environments they host. We apply our proposed approach to the longitudinal exploration of the Twitter networks deployed in the period 2012-2014 during three annual editions of the transnational feminist campaign ‘Take Back The Tech!’ (TBTT). Results from our case study suggest that, over time, TBTT supporters do in fact make a differentiated use of social media affordances - progressively switching their communicative strategies to better sustain the campaign’s efforts inside and outside institutional venues. Thus, the exploration of the TBTT case provides evidence of the usefulness of the proposed approach to reflect on the different modes in which social media can be exploited in different mobilization stages and political terrains.

Keywords: social media, institutionalization, online collective action networks, integrative power, sociotechnicality, social network analysis

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An increasing number of studies that analyze social media adoption within contentious dynamics help us reach a more genuine understanding of how the diffusion and strategic use of these tools can affect the mobilization and organization of collective participation. However, so far the research focus has been on social media usage during pivotal protests (e.g., riots, demonstrations, occupations), which, although connected to broader political processes, often constitute rather short-term instances of contention. In this sense, we possess only a partial understanding of how social media use couples with the evolving nature of movement processes and with the heterogeneity of strategies collective actors can adopt to achieve their goals (Diani, 1992).

In this article, we expand the current event-based and protest-centered perspective by proposing a network approach to explore the changing role that social media can play during the dynamic unfolding of movement processes, particularly over the course of their institutionalization. Broadly speaking, movements' institutionalization consists of dynamics through which they 'traverse the official terrain of formal politics and engage with authoritative institutions such as the legislature, the judiciary, the state, and political parties to enhance their collective ability to achieve [their] goals' (Suh, 2011, p.443). As it entails a 'conflictual cooperation' (Giugni & Passy, 1998, pp.84-85) between different interests and strategies, institutionalization often takes the form of a long-term and multidimensional process (Bosi, 2016). Thus, in the course of this process, collective actors are required to adopt radically different strategies in comparison to when they 'stand outside and cast blame' on institutions (Martin, 1990 in Ferree & McClurg Mueller, 2004, p. 591) often adjusting their forms, claims and action repertoires to the rules and the procedures of the institutional sphere. While observers are split over the consequences of institutionalization, there is no specific reflection on how social media networking and communicative potentials intersect with it and thus mediate movements' chances of seizing increased political opportunities and resisting the 'co-optive and assimilative force of the state' (Bosi, 2016, p.343).

In the first part of the article we read the added value of social media for collective action dynamics as a function of the 'integrative power' of the networks they foster – a unique form of

sociotechnical power that springs from the virtuous encounter between social media networking potential and human needs, desires for social change and perceptions of technological affordances. Because of its sociotechnical nature, the integrative power of online networks can take different forms depending on how social media materiality intersects with the dynamic unfolding of movements and their changing strategies. In the second part, we investigate this form of power by focusing directly on online network structures as well as on the type of communication and participation environments they host. We argue that these two elements provide a useful entry point to capture the sociotechnical nature of online networks' integrative power but also to reflect on the different modes in which social media can be exploited in different mobilization stages (Della Porta & Mattoni, 2015) and political terrains (Suh, 2011).

We then apply our proposed approach to the exploration of Twitter networks deployed in the period 2012-2014 during three annual editions of the transnational feminist campaign 'Take Back The Tech!' (TBTT), which occurred in the context of its progressive institutionalization within the gender policy domain. After illustrating our case study and the results we derived from its exploration, we conclude by pulling the threads together and reflecting on the potentials and the limits of the proposed approach.

The integrative power of online collective action networks within and beyond protest

It is increasingly recognized that social media matter to collective action not simply by virtue of their pervasiveness but, rather, because they enable and actively intervene in shaping online networks that are intrinsic components of any current collective action system (Pavan, 2014).

Movement studies have long insisted on the fact that networks provide the baseline infrastructure for mobilizing as well as for coordinating activists and organizations (see e.g., Melucci, 1996 but also Diani, 2003; Diani & Bison, 2004). Hence, social media relevance lays precisely in their capacity of boosting the inherent relational nature of collective action through the provision of a ubiquitous technical infrastructure that sustains the rapid construction of 'personal, multiuser,

multitask and multithreaded communication networks' (Rainie & Wellman, 2012, p.7) that expand and enrich the relational milieu grounding collective efforts.

In fact, some skeptical observers argue that online collective action networks are residual or even detrimental for collective efforts (see for example Diani, 2011; Morozov, 2009). Thus, the systematic exploration of digital spaces within and beyond the domain of politics has led to the identification of some typical structural features that distinguish online networks quite neatly from the interactional structures that are typically associated with social movement processes. First, online networks are sustained by ties that are more ephemeral than those laying underneath 'offline' movement networks (Barassi 2015). In addition, online networks tend to be very sparse and locally clustered (Mislove et al., 2007) as a consequence of their large scale but also of the tendency to connect with those already connected to neighbors (González-Bañón, Borge-Holthoefer & Moreno, 2013). Moreover, while pre-digital movements networks were far from being extraneous to the presence of leaders and prominent actors (Melucci, 1996; Diani, 2003), online structures are often shaped by severe structural asymmetries, as they are held together by few 'disproportionally connected nodes [that] keep the network small in terms of path length or average distance between any two nodes' (González-Bañón, Borge-Holthoefer & Moreno, 2013, p.954).

However, the actual investigation of online collective action networks is providing increasing evidence of the multifaceted role they can play in spite of their sparseness, looseness and centralization. This includes: the emergence of new mechanisms for the identification of leaders and frames formation (Tremayne, 2014); the redefinition of power dynamics (Bennett & Segerberg , 2014); the modification of individual recruitment and claims diffusion mechanisms (González-Bañón, et al., 2011; González-Bañón, Borge-Holthoefer & Moreno, 2013); the fluid evolution of roles played by single activists and organizations (Varol et al., 2014); and the organization of 'offline' protest events (Howard & Hussain, 2013).

In all their heterogeneity, these studies have clarified that the asset to collective dynamics is not the mere presence of vast and easily accessible digital networks. In fact, it is the conscious and

strategic effort made by social actors to shape and use these networks as spaces for political participation, as strategic communication venues to connect and remix heterogeneous competences, experiences and skills and, in this way, to broaden and accelerate the formation of new collective meanings, frames and action strategies to challenge the *status quo*. As Bennett and Segerberg eloquently put it, ‘the point of the analyses is not Twitter or any type of technology as such, but what people do with what the technology “affords” them and the structure this can create’ (2013, p. 9). Indeed, social media materiality (that is, the set of features and functions that are available to all users) is not conducive, per se, of collective action networks wherein actors ‘collaborate, mutually support their respective initiatives, and blend them in broader agendas’ (Diani, 2015, p.3). Only when social actors approach social media materiality with the explicit intention of enacting ‘shared interests and programs’ (Tilly & Tarrow, 2007, p.5), do online networks become loci of collective action.

Ultimately, it is the virtuous encounter between social media materiality and social actors’ desire for change that masters these tools’ networking potential and turns it an actual ‘integrative power’, i.e., the unique capacity of converting loose, sparse, clustered and centralized online networks into digital systems of transversal alliances binding a multiplicity of heterogeneous actors in spite of their differences and under shared and ever evolving frames. While traditionally studied ‘civic networks’ are also characterized by powerful integrative dynamics that allow them to ‘act on behalf of collective and public interests’ (Baldassarri and Diani, 2007, pp. 735-736), the integrative power of online collective action networks is neither purely technological nor purely social. Because it springs from a reciprocal leveraging of social media materiality and social resources, it is a sociotechnical form of power whose forms vary depending on technological developments but also, and perhaps to a larger extent, on how users perceive social media materiality and connect it to their projects. To be sure, different users perceive the same set of features and functions enabled by a certain technology as ‘affording distinct possibilities for action’ depending on their motivations, goals, expectations and levels of competence (Leonardi, 2012, p.37). Thus, different perceptions of

affordances, at one point in time or across time, translate into different modes of appropriating and exploiting social media.

However, online networks have been studied so far mainly with reference to pivotal protest and mobilization episodes – such as the massive demonstrations along Tunis streets and in Tahrir square, the Spanish and the American encampments in 2011 or those in Gezi Park in 2013. This focus on pivotal protest events has somewhat bounded our understanding of how online collective action networks exert their integrative power to specific, time-framed episodes of contention. In turn, this affects our capacity to understand the mutable role that social media can play in the long run ‘according to the state of the mobilization, the activities sustaining protest as well as the social actors who [are] using them’ (Della Porta & Mattoni, 2015, p.41). In fact, the actual investigation of online collective action networks is often carried out longitudinally (e.g., González-Baílón, Borge-Holthoefer and Moreno, 2013; Varol et al., 2014). However, only seldom have researchers considered the different ‘temporalities’ of movements (Mattoni & Treré 2014) so to fully grasp the long-term implications of the sociotechnical nature of online networks’ integrative power (for an exception focused on users, see Bastos & Mercea, 2016). Furthermore, the overall orientation to the study of social media within ‘unusual’ patterns of political behavior (Diani, 1992, p. 12) has left behind a systematic reflection on how these tools may become an asset to collective action dynamics above and beyond the adoption of public protests and, more particularly, during institutionalization processes, when movements engage in sustained relationships of ‘conflictual cooperation’ with institutional actors (Giugni & Passy, 1998, pp.84-85).

This theoretical blind spot stems, on the one hand, from a general tendency to conceive the recourse to protest repertoires as a defining feature of social movements, although it has long been argued that it is not necessarily the case especially within movements oriented to personal and cultural change (Diani, 1992, p.12). On the other hand, this has to do also with the contested status of institutionalization processes in relation to social movement strategies. A first strand of reflection, mainly connected with resource mobilization and political process theories, understands

institutionalization as an inevitable step in movements' evolution, necessarily connected with negative transformations of collective action forms and contents (for a review, see Morgan, 2007). The process of institutionalization is thus seen as a co-optation within formal settings and procedures, leading to de-radicalization of claims and routinization of political strategies (Morgan, 2007, p.281) as well as to an irreparable fracture between 'insiders', adjusting to constraints, and 'outsiders', resisting co-optation and reacting by further radicalizing (Bosi, 2016, p.342). Equally negative viewed are processes of professionalization and bureaucratization, as they imply dispersal of the inherent horizontality and participatory features of movements, in favor of a restricted niche of interest groups and protest professionals (Rucht, 1996). Underneath all of these transformations are the challenges that derive from movements' inclusion in institutional arenas: the necessity to adhere and, therefore, adapt to organizational procedures crystallized within the institutions; the urgency of adopting internal labor and roles division to facilitate immediate and efficient responses to political stimuli; the increased scrutiny from institutional actors to which movements' are exposed (Morgan, 2007).

More recently, approaching institutionalization from the point of view of movement outcomes, some observers have depicted institutionalization as resulting from 'joint strategic choices by both the movement and the state' (Suh, 2011, p.443). Through their inclusion within institutional settings, collective actors are endowed with different possibilities to produce change: from 'incorporating' their claims in the institutional agenda, to 'transforming' the existing social and political system by altering the distribution of power within society, to 'democratizing' society by modifying the 'mutual rights and obligations between the state and their citizens' (Giugni, 1998, p.xii). Such radical transformations of movements' forms and claims may not simply be passively experienced, but intentionally pursued and they can prove highly beneficial. Examples include the electoral success of the Swedish neo-nazi movement (Peterson, 2016) or women's movements organizations in the US, which succeeded in creating 'concrete policy changes' but also 'altered the political opportunity structure' available to the movement itself (Banaszak, 2010, p.4, see also

Ferree & McLurg Mueller, 2004). Albeit connected, this second vision of institutionalization (depending on a more proactive view of movements as ‘reflexive actors’ that create new opportunities; Jiménez, 2007, p.149) does not underestimate the challenges that arise from playing in the terrain of formal politics. Whether the effects of voluntary inclusion within official arenas are more or less beneficial depends on both movements and institutions (Suh, 2011, p.446). In this sense, institutionalization is a non-linear and multidimensional process (Bosi, 2016), played out within complex and long-term processes of coalition building between collective and institutional actors (Brewster Stearns & Almeida, 2004), and open to a variety of empirical realizations and outcomes (Katzenstein, 1998).

In a context in which observers continue to split over the consequences of movements’ inclusion within institutions, and the nexus between social media and collective participation is approached mainly through an event-based and protest-centered perspective, some relevant aspects of the integrative power of online collective action networks remain largely unaddressed. Bringing together these two sets of concerns, the rest of this article addresses the following questions:

- How is the sociotechnical integrative power of online collective action networks played out in the long run over the dynamic unfolding of movements and their strategies?
- Does the shape of online collective action networks change depending on levels of movements’ inclusion within institutional arenas? Do they host different type of communication and participation processes?
- Ultimately, what forms does the integrative power of online collective action networks take when movements institutionalize?

Investigating integrative power

From an empirical perspective, the unique sociotechnical nature of online networks’ integrative power requires us to look at systems of digital interactions in a way that allows us to capture simultaneously its material and social aspects.

The material aspects of integrative power concern the unprecedented technology-enabled possibility to construct online networks and, therefore, can be addressed by looking at what types of networks emerge from social media usage. In general, network approaches to movements purport that looking at network structures, in particular focusing on their segmentation and centralization, is crucial to distinguishing between different types of mobilization (Diani, 2003, p.306). When it comes to online collective action, looking at the structure of networks becomes even more important for two reasons. First, the way in which an online network is structured affects its potential to diffuse claims and individually generated contents (González-Baílón, Borge-Holthoefer & Moreno, 2013), a key factor to the integration of different actors within collective endeavors. Second, it is crucial to examine whether the inherent networking potential of social media invariably translates into sparse, loose and centralized structures that simply ‘link’ individuals and organizations or if, as Bennett and Segerberg suggest comparing different ‘power signatures’ (2013, 2014), online structures can be molded to promote the integration of different actors depending on the type of mobilization at stake.

To capture instead the social aspects of integrative power, which have to do with how users exploit social media features and affordances, the focus should shift from the structural features of online networks to the type of communication and participation processes they host. One first aspect in this regard is how users choose to exploit social media affordances to engage with others. This element can be addressed by looking specifically at the ‘content’ of online network ties, which, ultimately, allows us to grasp how online integration practically occurs. On a platform like Twitter, for example, a prominent use of mentions and replies would suggest a greater tendency towards interaction and dialogue between users; alternatively, use of tweets containing only hashtags and no handles would point to an informational use of the platform to contribute contents to the discussion; while, finally, a predominance of retweets would suggest a trend towards retransmitting contents produced by others (Barash & Golder, 2011). It is also relevant to investigate with whom users decide to engage, as this element can give us an indication on whether the online integration

processes is guided by ‘potential leaders’ (Diani, 2003, p.306) as well as on who these leaders may be. Indeed, as shown by Bennett and Segerberg (2013, 2014), it makes a great deal of political difference if online networks are dominated by formal organizations (like Wikipedia and Google during the protest against the intellectual property law in the US Congress) or rather assume the form of ‘networks of networks’ where no clear leader can be identified (as in the case of Occupy Wall Street).

Looking at network structures at a single point in time may sketch a portrait of collective dynamics that is rather general in comparison to that conveyed by the study ‘information cascades’, ‘diffusion processes’ or ‘roles evolution’ (see e.g, Gonzáles-Bañon, Borge-Holthoefer and Moreno, 2013; Varol et al., 2014, Bastos and Mercea, 2016). But by comparing different points in time this integrative power approach helps us identify broader long-term trends that, in turn, may open the way for more detailed analysis of single temporalities. Moreover, thinking in terms of network structures, ties and centralities can aid identification of trends both within and beyond public protest dynamics. When it comes to institutionalization processes in particular, looking at if and how online network structures change would help us explore and disaggregating effects (e.g., Bosi, 2016). By starting from the macro-structural features of networks it is possible to explore whether the progressive inclusion of movements within institutional settings generates a ‘conversational fracture’ within the movement or, conversely, if the integrative power of online collective action networks is used to resist and counteract this trend by keeping ‘insiders’ and ‘outsider’ together. Also, examining the ways that relational contents generate online network structures can help us see the extent to which institutionalization processes foster a change of communication strategies adopted by the movement, which may be an online counterpart to the often emphasized change in offline action repertoires (e.g., Morgan, 2007). Finally, reflecting on how actors’ centrality in the network may vary provides a starting point to exploring whether offline professionalization is mirrored in the online space (e.g., Rucht, 1996) or if, conversely, online conversations remain multipolar and distributed.

Case study, data and methods

In the digital age, beside persistent challenges to gender equality, there is also a pressing need to recognize and fight old and new gender-based abuses perpetrated dynamically across the online/offline boundary (UNGA, 2006, para.155). In response to this situation, the Association for Progressive Communications, with its Women's Right Programme (APC WRP), launched in 2006 the campaign 'Take Back The Tech!' (TBTT) to reclaim ICTs to end all forms of gender-based violence. TBTT runs officially every year from November 25 to December 10 (the so-called '16 days of activism against gender-based violence' [VAW]). Over these 16 days TBTT promotes a set of 'daily activities' to foster genuinely gender-aware and gender-empowering uses of ICTs.¹ As part of these activities, the campaign includes (since 2011) a yearly Tweetathon with the hashtag #takebackthetech, which has rapidly become one of its most prominent tools to mobilize support, spread awareness and publicize its actions.

Outside the '16 days' time-frame, the campaign pursues its aims by engaging systematically with other stakeholders in the gender domain. Coalitions and collaborations are built first of all with other civil society organizations all over the globe, like Women's Net in South Africa and the transnational network of JASS – Just Associates (Women's Net, 2016; JASS, 2016). However, TBTT's representatives are also very active in reaching out to institutional actors by participating in relevant supranational political processes. Examples in this regard are TBTT's involvement in the United Nations Internet Governance Forum (IGF), the main multi-stakeholder venue to discuss how internet should be managed and developed, where the campaign lobbies governments and the private sector to take an active stand in securing a safe and gender-aware online space; but also within the Commission on the Status of Women (CSW), the main global intergovernmental body aimed at promoting gender equality and the empowerment of women, where TBTT representatives operate to prioritize the nexus between ICTs and VAW as a critical issue for women's rights.

The regularity with which TBTT is run, together with the centrality occupied by the online space of action within its action repertoire and its effort to engage with both institutional and non-institutional actors, make this campaign a suitable case study to begin exploring how the integrative power of online collective action networks is exerted over time vis-à-vis the dynamic unfolding of movements' strategies. The TBTT campaign has paralleled its constant use of social media as tools for participation with a fluid interplay with civil society organizations and institutions. This was the case also for the period 2012-2014, during which, for the purposes of this study, three different editions of the TBTT Tweetathon were mapped. In 2012, TBTT's representatives participated in the annual meeting of the IGF. In that same year, the other main commitment of the campaign consisted in realizing a series of workshops and panels during the 12th Association for Women's Rights in Development (AWID) Forum, one of the largest civil society events in the gender domain where women's and feminist movements meet amongst themselves and with other collective initiatives in the fields of human rights, environment, and social justice (AWID, 2016). In 2013, participation in the IGF was accompanied by a direct involvement of TBTT in the 57th session of the CSW, and in 2014 TBTT remained active both within the IGF and the CSW contexts, lobbying governments to maintain attention on ICTs and on women's access to them.

While the AWID Forum is a very relevant event in the gender domain, it is non-institutional. The IGF is an official venue, but with no mandate to produce binding policy outcomes, with no particular commitment to gender-related issues, and it is characterized by rather loose criteria for participation (IGF, 2016). Conversely, the CSW is a fully intergovernmental body specialized on gender-related issues, with rather restricted access criteria, formalized participation procedures and producing highly influential outcomes for gender politics. Hence, although in the period 2012-2014 the campaign never operated within a purely informal political terrain, its digital activities over the '16 days of activism', the Tweetathon above all, have been carried out in the context of a progressive institutionalization strategy that unfolded along three main stages: *mild institutionalization*, in 2012, with TBTT working across the boundary between institutional and

non-institutional spheres; *inclusion*, in 2013, with TBTT concentrating mainly on institutional venues and, in particular, on CSW; and *consolidation*, in 2014, with TBTT replicating the pattern of the previous year and having to find ways to capitalize the effects of their inclusion by stabilizing their relationship with institutional actors.

Although we identify these three stages as distinct for analytical purposes, TBTT institutionalization path has been neither linear nor incremental. Most notably, even if the campaign did not actively participate in the CSW sessions, it nonetheless took into systematic consideration institutional political dynamics in the gender domain (especially at the supranational level). In the same way, when TBTT oriented its strategy towards a neater engagement within the institutional sphere, it never stopped collaborating with other civil society actors. Moreover, after entering the CSW arena, TBTT faced different working conditions and challenges. In 2013, during the ‘inclusion’ phase, the campaign worked side-by-side with governments to address the priority theme ‘Elimination and prevention of all forms of violence against women and girls’, a core issue for TBTT. Under that banner, a broad coalition between institutions and civil society actors, amongst which TBTT and its parent organization APC, managed to achieve a final document that also included an explicit reference to the nexus between VAW and ICTs (CSW 2013, p.13). The overall working environment of the following CSW session, instead, appeared rather different. As the priority theme shifted to the ‘Challenges and achievements in the implementation of the Millennium Development Goals for women and girls’, the campaign’s claim of the relevance of women’s access to ICTs were in fact included into the agreed conclusions. However, negotiations unfolded in a rather conflictual way, splitting governments and civil society sectors amongst and within themselves over the connection between women’s and human rights. In this context, TBTT activists described their participation to the 58th CSW session as an attempt to resist a ‘pushback’ in the overall discussion, to ‘defend’ previous achievements, without much progression in the advancement of women’s rights (GenderIt, 2014).

Mapping the Take Back The Tech! Tweetathon

For the purposes of this exploratory study, we mapped three different editions of the annual TBTT Tweetathon – a prominent part of the campaign activities during its official period of deployment (November 25th - December 10th). To trace the three TBTT online networks, we used the NodeXL Network Server, an affiliate software to NodeXL, a free and open network visualization and analysis package for Excel (Smith et al., 2010).² The NodeXL Network Server allows scheduling a ‘Twitter Search’, an automated crawl of tweets containing a specific keyword. For every search it performs, the software gathers tweets and accounts containing the queried keyword and produces a network designed around tweets’ authors and users they mention, retweet or reply to. We programmed the NodeXL Network Server to search for the keyword *takebackthetech* on Twitter every 15 minutes between November 25th and December 10th every year from 2012 to 2014. By combining subsequent files, we obtained three distinct relational datasets (one for every Tweetathon edition we monitored) that represent in the form of a network the overall direct communication flow generated around the TBTT campaign.

Thus, online networks traced in this way are structured by different types of ties, depending on the interactions established by users on Twitter by making use of the platform’s main options for connecting:

- Mentions: when user A tweets a message that includes the keyword *takebackthetech* and thus explicitly refers to one or more other users, her tweet is translated into a tie going from user A to each and every user she mentions in her message. For example, if @GenderITorg tweets ‘Take Back The Tech! Campaign @SayNO_UNiTE — <http://t.co/MGyezctg> #VAW #16days #takebackthetech #fem2 #p2’, this mention translates into a tie going from GenderITorg to SayNO_UNiTE;
- Retweets: when user A retransmits a tweet authored by user B and that includes the keyword *takebackthetech*, her tweet translates into a tie going from user A to B. For example, if @GenderITorg retransmits a tweet originally authored by @takebackthetech with ‘RT

@takebackthetech: Wondering how to get the brilliant banners for the #takebackthetech campaign on how violence silences? Right here: <http://t.co/9yZpjUQp>, her action translates into a tie going from GenderITorg to takebackthetech;

- Replies to: when user A answers directly to a message sent by user B and thus uses the keyword *takebackthetech*, her tweet translates into a tie going from user A to B. For example, if @GenderITorg replies directly to a tweet sent by @shahanasiddiqui with '@shahanasiddiqui introduces Praggya, the govt portal for violence against women <http://t.co/9yZpjUQp> #TakeBackTheTech #digitalworld12', her reply translates into a tie from GenderITorg to shahanasiddiqui;
- Tweets: when user A tweets some content that includes the keyword *takebackthetech* yet without mentioning explicitly or replying to other users, her tweet translates into a 'self-loop', i.e., a tie going from user A to user A. For example, if @GenderITorg tweets 'Women can defeat VAW by reclaiming technology – so #takebackthetech!', her tweet translates into a tie going from GenderITorg to GenderITorg.

We chose not to trace ties among users based on the following/followed relationship.

Indeed, this specific relationship on Twitter represents only a 'potential' communicative interaction as users receive but do not necessarily process the tweets authored by handles they follow.

Conversely, mentions, replies, retweets and tweets point to actual 'communicative acts': the first three correspond to different types of direct interactions between users; the latter to information spreading acts primarily aimed at putting contents in circulation.

Results

Material Aspects of Integrative Power

As we proposed above, the material aspects of the integrative power of online collective action networks can be captured looking at the structure of exchanges that are put in place by users. Two dimensions have been suggested as particularly relevant in this regard: first, network segmentation,

which relates to the extent to which communication and exchanges amongst users flow more or less easily; and, second, network centralization, which points to the extent to which networks tend to revolve around a handful of prominent actors thus affecting the way in which a movement operate (Diani, 2003, p.306).

Traditionally, segmentation is addressed starting from nodes reachability, which reflects the distance that separates members of a network (Diani, 2003, p.306). However, as outlined above, distance between nodes within online networks is typically low as a consequence of the presence of few hyper-connected nodes. For this reason, it is important to look at network segmentation from different angles. In particular, here we look also at the percentage of nodes with no ties to the rest of the network and at what we call ‘network inclusivity’, which is the percentage of nodes that are included in the network main component (i.e., the larger subset of nodes that are connected, hence reachable, either directly or indirectly, Wasserman & Faust, 1994, p.109). While the former measure provides an indication on the missed opportunities for integration (an isolated node does not tweet to or provoke the reaction of any other user), the latter points to the extent to which these opportunities are actually seized.

As Table 1 shows, over time the average distance between nodes remains constant and rather low, as hundreds of participants stay only ‘three steps away’ one from the other. Furthermore, as shown by density values (i.e. the proportion of ties that are activates on the total number of possible ties), the Tweetathon network is invariantly sparse with minimal, non-significant variations over time. Although sparse, the network seems to be characterized by low levels of segmentation – but this characteristic does not relate clearly to the progressive institutionalization of TBTT in the gender domain. Indeed, already during the phase we labeled of ‘mild institutionalization’ (when TBTT distributes its efforts between the construction of collaborations with other relevant civil society actors during the AWID Forum and its lobbying activity within the IGF) the online network shows only 5% of isolates and around 90% of campaigners linked in the network main component. As the campaign proceeds towards its ‘inclusion’ within institutions in the gender domain in 2013,

maintaining its effort in the IGF but engaging also in the CSW and thus succeeding to affect its final recommendation, isolates halve and the Tweetathon network becomes even more inclusive, as 97% of campaigners are involved in the principal component. Finally, while TBTT institutionalization ‘consolidates’ in 2014 and the campaign faces a more difficult phase of negotiation over women’s rights, fragmentation slightly rises, although remaining somehow lower than in 2014.

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Besides remaining generally ‘nonsegmented’ (Diani 2003, p.310), the Tweetathon network remains also rather centralized. This feature is typically grasped by looking at the disproportion between the highest and the average number of ties in which nodes in the network are involved, which are measured respectively through maximum and mean degree (Wasserman & Faust, 1994, p.173). In fact, the high centralization of the network is not surprising, if we consider that the TBTT Tweetathon is part of a planned campaign effort (see Bennett & Segerberg, 2013, 2014). Thus, across the whole period examined and regardless of the stage along the process of institutionalization, the most prominent position is held by the Twitter official account of the campaign (@takebackthetech), which steadily guides and fuels the process of online integration. Conversely, other campaigners engage on average only in few local interactions. In this sense, they maintain a low, and yet constant, ‘level of investment in the building of the network as a whole’³ (Diani, 2003 p.310) while renewing their commitment to the collective effort by engaging mainly with the campaign handle.

Nonetheless, a closer look at in-degree centralization indexes suggests that, as the institutionalization process unfolds, the campaign handle is not the sole point of reference that campaigners share. Indegree centralization captures the extent to which network ties tend to flow towards a handful of prominent actors (Wasserman & Faust 1994, p.176). As values in Table 1 show, while every edition of the Tweetathon remains highly centralized around the TBTT’s handle,

after TBTT ‘inclusion’ in the institutional sphere, indegree centralization diminishes, suggesting that users direct their ties towards a greater variety of actors and, hence, that the campaigning efforts becomes more horizontal and participatory. Conversely, when TBTT institutionalization consolidates in 2014, the Tweetathon network reaches its centralization peak and the TBTT handle becomes more prominent than ever.⁴ Perhaps as a consequences of the difficult phase of negotiation, campaigners seem to reinforce their identification with the campaign, addressing it more systematically, favoring its leadership function and thus supporting its role of ‘insider’.

Social Aspects of Integrative Power

One first dimension of the social aspects of online networks’ integrative power, we argued, relates to how users decide to engage with others by choosing between different networking affordances and thus imbuing the network with different relational contents. As a way to explore this dimension, we compare the ‘average daily relevance’ of the different networking affordances offered by Twitter – i.e., tweets, mentions, replies to and retweets.⁵ Higher daily relevance rates would suggest that some modes of using social media prevail over others and thus a different way to integrate within the online collective effort.

Table 2 illustrates variations of the average daily relevance of tweets, mentions, replies to and retweets. As the table shows, direct replies to other users always constitute a residual form of interaction, as they account on average only between 3 to 4 per cent of total ties in the network. A more defined pattern seems to emerge from results referred to the other three types of relations. The more the campaign proceeds towards a fuller institutionalization, the less tweets become relevant (their average relevance halves during the observation period) relative to other uses of the platform. In this sense, the strategic contribution and circulation of contents becomes over time less important than the construction of interactions amongst users. However, as the process of TBTT institutionalization unfolds, direct interactions amongst users via mention are substituted by retweets. Thus, increasing levels of institutionalization seem to favor the establishment of

instrumental ties that, instead of generating new inputs and contributions, serve the purpose of retransmitting the contents authored by ‘insiders’ – in particular those of the campaign handle. Particularly in 2014, when TBTT decides to strengthen its engagement within a formal terrain of negotiation, retweets account on average for 68 per cent of overall ties established everyday amongst campaigners.

insert table 2 about here

Examining who are the actors that campaigners decide to engage with provides a necessary addition to see how modes of pursuing integration vary. Table 3 summarizes the results of the study of nodes’ indegree (i.e., the number of mentions, replies and tweets they receive), which is a good proxy to determine actors’ prominence in relational contexts (Wasserman & Faust, 1994, p. 174). For each Tweetathon edition, we first identified most central nodes and, subsequently, classified them into different groups.⁶ Looking at the number of most central nodes and at the average indegree of each group, we then explored levels of inclusiveness and heterogeneity of this ‘network core’.

Our results suggest the presence of significant but non-linear changes. As TBTT progresses from a ‘mild institutionalization’ to the stage of ‘inclusion’, the Tweetathon network core enlarges and ends up including, alongside the official campaign handle, a greater variety of actors. This, in turn, indicates that campaigners distribute their attention more widely, interacting with a greater number of activists, journalists and also civil society online platforms and new media organizations. Moreover, during the ‘inclusion’ phase, institutional accounts become more central (in particular, those of UN Women, the United Nations agency for gender issues, and of Say NO UNITE, the UN Secretary-General’s promoted campaign against VAW). This element suggests the progressive recognition and, ultimately, acceptance of the relevance of institutional actors for achieving the campaign’s goals. Sharply in contrast with this situation, which recalls a ‘collective effervescence’

moment (Diani 1992), the consolidation of TBTT institutionalization process leads to a marked resizing and homogenization of the network core, which in 2014 is composed almost exclusively of formal organizations and by the institutional actors that have become its partners in the policy arena.

insert table 3 about here

Discussion and Conclusions

Combined together, the longitudinal explorations of the structures as well as of the communication dynamics enclosed in the TBTT Tweetathon networks convey a more nuanced portrait of how social media have been exploited vis-à-vis the different strategies adopted by TBTT in the mutating conditions in which it operated. Over time, social media use during the Tweetathon invariably results in the creation of nonsegmented, centralized networks. Indeed, at every point in time, the online network approaches a ‘star’ (Diani, 2003), in which integration occurs mainly by engaging with the official account of the initiative. While this pattern distinguishes this type of collective effort from the more horizontal and often disconnected ‘networks of networks’ that characterizes spontaneous protests like Occupy! (see Bennett and Segerberg 2013), it is typical of more structured participatory efforts – whether these are pursued online, as in the case of the Robin Hood Tax campaign examined by Bennett and Segerberg, or offline, as Diani (2003) notes with respect to the environmental movement in Italy and the UK and the women’s movement in Canada. In this sense, TBTT supporters exploit social media affordances to renew and reinforce their engagement with the campaign, sustaining its efforts outside and inside institutional venues, and creating under all conditions but, in particular when the level of conflict increases, a digital network of support and legitimization.

However, the modes in which this ‘structural support’ is translated into practice change over time thus impacting levels of verticality but, most notably, the ways in which integration around the

campaign handle occurs. In 2012, when TBTT operates mainly outside the crucial venue of the CSW, social media are used to engage with the campaign and other civil society actors as well as to fuel the discussion with new content through a mixed use of Twitter's networking affordances. As the campaign institutionalization process unfolds, and the collaboration with governments bears some fruit in 2013, the vertical structure of conversation is molded to expand its integrative power. In this phase, campaigners exploit social media to directly interact with and mobilize other users, privileging the construction of interpersonal and inter-organizational alliances via mentions and retweets to consolidate and expand the collective dimension of the campaign. Thus, in this phase, institutional actors become increasingly central and their contribution to the achievement of TBTT's goals is acknowledged and, ultimately, accepted. Finally, over the 'consolidation' phase, while the institutionalization process becomes more challenging and multi-actor collaboration assumes a more conflictual connotation, the online network simplifies. While it remains non-segmented, it becomes even more centralized around a core formed almost exclusively of civil society organizations connected to the campaign and central institutions in the gender domain, and is sustained mainly by actions of content broadcasting. To some extent, this trend seems to reproduce processes of 'de-radicalization' and 'professionalization' feared by negative readings of institutionalization. In fact, the change of communication strategy towards less interactional modes of networking as well as the narrowing and the homogenization of the online network core are not passively suffered but purposely enacted in order to amplify the voice of the campaign and to solicit institutional actors to maintain an active and constructive role in relation to the defense of women's rights.

This article has brought an explicitly sociotechnical perspective to bear on the social media practices of social movements through the concept of 'integrative power'. The empirical study is exploratory and therefore, necessarily somewhat partial. Further research could extend this kind of analysis by looking also at contents that flow along networks ties in order to examine how movements' claims modify over time and, in particular over institutionalization phases (Peterson,

2016; Morgan, 2007). In the same way, an even more nuanced understanding of the social side of the ‘integrative power’ can spur from considering how users creatively appropriate social media affordances, for example adopting a ‘via’ marker instead of the conventional retweet procedure (Meraz & Papacharissi, 2013). However, taken together and compared across time, network structures, ‘conventional’ relational contents and actors’ centralities seem to provide a useful entry point to assess more genuinely the meaning of social media participatory practices in conjunction with the different ‘temporalities’ of movements as well as with the fluid evolution of movement strategic choices, which, within and across single temporalities, entwine with how social media are exploited and can become an asset to collective endeavors.

Ultimately, by delineating and empirically illustrating the integrative power of online collective action networks at work, we have demonstrated the importance of two elements. Firstly, the sociotechnical tradition directs us to consider both material and social aspects of technologically mediated communication practices. While this article is focused on Twitter, any form of networked communication structure may be amenable to this style of analysis. Secondly, we have stressed the way in which integrative power unfolds over time. In this case it has been possible to connect the ways in which integrative power is practiced to long-observed processes of institutionalization in the domain of global civil society.

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Endnotes

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- ¹ An archive on daily actions is available on the campaign website <http://www.takebackthetech.net>
- ² The software is available in a free version at <https://nodexl.codeplex.com/>. Recently, the NodeXL Network Server has been substituted by the NodeXL Graph Server importer, see <https://graphserverimporter.codeplex.com/>.
- ³ We obtain the same results also by excluding the campaign handle from the network.
- ⁴ Over the 'consolidation' stage, the TBTT account reaches a centrality of 479 whereas the mean value is set at two.
- ⁵ We computed this variable as the mean of the daily percentage of ties with a specific content on the total number of ties for every campaign day.

⁶ Most central nodes are defined as those showing an indegree score higher than the sum between the mean indegree score and one standard deviation. Nodes were classified manually starting from information available on their websites or on their Twitter profile.