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# Masses, Crowds, Communities, Movements: Collective Action in the Internet Age

This article investigates two questions: One, how might the very differently structured social collectives on the Internet – masses, crowds, communities and movements – be classified and distinguished? And two, what influence do the technological infrastructures in which they operate have on their formation, structure and activities? For this we differentiate between two main types of social collectives: non-organized collectives, which exhibit loosely-coupled collective behavior, and collective actors with a separate identity and strategic capability. Further, we examine the newness, or distinctive traits, of online-based collectives, which we identify as being the strong and hitherto non-existent interplay between the technological infrastructures that these collectives are embedded in and the social processes of coordination and institutionalization they must engage in in order to maintain their viability over time. Conventional patterns of social dynamics in the development and stabilization of collective action are now systematically intertwined with technology-induced processes of structuration.

***Keywords***: Internet, collective action, social movements, digital communities, networks, socio-technical change

## Introduction

From swarms and crowds to e-movements and e-communities, the Internet allows for new forms of collective behavior and action anywhere on the spectrum between individuals and organizations. For example, online technologies allow for the aggregate compilation of consumer preferences, the obtaining of feedback from online shoppers and the use of social media (e.g., Facebook) or file-sharing platforms (e.g., The Pirate Bay). Further collective phenomena include new forms of mobilizing and organizing political protests such as Occupy or Anonymous as well as open content and open source communities such as Wikipedia or Linux.

In all of these cases, online technologies seem to function as 'organizing agents' (Bennett & Segerberg 2012, p. 752) or at least as 'technological tools that fundamentally enhance connectivity among people' (Bimber, Flanagin & Stohl 2012, p. 3). In that context, research seeks to identify any novel or inherently different social formations and agents on the web, many of which are considered to have far-reaching leverage to take action and assert influence.

So far, this search has remained unsatisfactory for two main reasons. One is the lack of sociological studies that better correlate the different forms of web behavior and web actions to actor and action theory and that go beyond the focus on individual cases or the presentation of trendy terms. Generic and otherwise loosely defined terms such as 'swarm,' 'crowd' or 'network' are regularly used as a catch-all for any new social formation that is not a stable social entity (e.g., Gaggioli, Milani, Mazzoni & Riva 2013; Ritzer, Dean & Jurgenson 2012; Ritzer & Jurgenson 2010; Benkler 2006), which are fairly often accompanied by 'ephemeral and apparently "grass-roots democratic" conception[s] of collectivity' (Vehlken 2013: 112). Such notions contribute as little to an understanding of the vast range of collective activities on the web as does the similarly broad understanding of these phenomena as 'undefined (and generally large) network[s] of people' (Howe 2006; see also Hammon & Hippner 2012).

In addition, apart from a few exceptions (e.g., Van Dijck 2013), sociological studies often fail to offer conceptualizations of the specific ways in which technical infrastructures impact the emergence, structuring and orientation of the different variants of online-centered social formations. Indeed, many studies do not go beyond general reflections on the relations between digital technologies and society (e.g., Graham & Dutton 2014) or the rather broad statement that most social movements in recent times were 'born on the Internet, diffused by the Internet, and maintained [their] presence on the Internet' (Castells 2012, p. 168). While most of the literature points to the enabling character of the web (e.g., Bennett & Segerberg 2012; Bimber, Flanagin & Stohl 2005), the formative role of its technical infrastructures in the constitution, structuring and operation of web-based collectives and their behavior is generally not addressed.

The key issues to be discussed in this conceptual paper arise from these two deficits and are examined by posing the questions of (1) how collective formations on the web might be classified and differentiated based on actor- and action-based theory, and (2) what institutional role the technological infrastructures in which they operate play with regard to their development, structure and activity. In section 2, we begin with a short review of basic sociological representations of collective formations and distinguish

between two major variants: non-organized collectives and collective actors capable of intentional, strategic action. In sections 3 and 4, we apply this basic differentiation to our subject, distinguish between different types of online-based collective formations and discuss the significance of web infrastructures for their development, operation and stabilization. In section 5, we present what we believe to be the distinctly new feature of online-based collectives, namely the unprecedented intertwinement of the, still required, social processes for the constitution, coordination and institutionalization of a collective with the technical infrastructures of the Internet. In the online context, the classic social formation and organizational patterns of collective behavior or action mix systematically with discrete technological forms of structuration.

## Basic Types of Social Collectives

In the wide spectrum from individuals to organizations, all kinds of collective formations can be found. Whereas individual and corporate actors represent relatively clearly defined units, the various collectives, on which this study focuses, are considerably more heterogeneous. Such collectives may have very different coordination patterns and cannot be indiscriminately regarded as social actors with shared objectives, resources, action orientations and decision-making modes. In the following, we present what we believe to be the two basic types of social collectives, which apply to both the off- and the online context (Table 1).

*Table 1. Non-organized collectives & collective actors*

| | **Non-organized collectives**<br>*e.g. masses, swarms, crowds* | **Collective actors**<br>*e.g. movements, communities* |
|---|---|---|
| **Resources for action** | Situational aggregation of individual resources | Collective resources contingent on the contributions of the participants |
| **Mode of decision-making** | No collective decision-making capacity | Strategic decisions dependent on the preferences of the participants |
| **Capacity for action** | No independent capability for intentional and strategic action | Capable of intentional and strategic action |
| **Activity pattern** | Collective behavior as aggregate of individual actions | Collective action on the basis of consensus, negotiation, voting |

The first type consists of *non-organized collectives*, whose main attribute is the aggregation of similar decisions and behaviors of individuals. These collectives have no organized and action-guiding core, but have shared perceptions, approaches to consumption or ways of perceiving of problems, which may consolidate into a mass behavior. This phenomenon was identified as early as the end of the 1930s by Herbert Blumer (1939, p. 187), who maintained that: 'The form of mass behavior, paradoxically, is laid down by individual lines of activity and not by concerted action.' Blumer also pointed out (ibid.) that such a mass behavior can have far-reaching social effects: 'A political party

may be disorganized or a commercial institution wrecked by such shifts in interest and taste.' However, such effects cannot be attributed to, as emphasized by Fritz W. Scharpf (1997, p. 54), deliberate or intentional decision-making of a collective actor but result from the similarly oriented behavioral decisions of individual actors: 'The aggregate effect is then a result of individual choices, but it is not itself an object of anyone's purposeful choice.' In other words: non-organized collectives do not act as one entity. Rather than constituting a rational and reflective entity of actors that makes deliberate decisions, they are characterized by spontaneous and volatile forms of *collective behavior*.

Such amorphous and rather random social constellations may then consolidate into social movements or communities who do have deliberately shared objectives, rules and identity attributes as well as more or less informal patterns of organization—in which case they represent *collective actors* capable of intentional, strategic action, the second type of social collective. Over time, most formations emerging from collective behavior develop a separate group identity, stabilize through institutionalization processes that allow for the reproduction of group structures, become differentiated internally between activists and hangers-on, and develop corresponding power asymmetries—which together gradually renders them capable of developing and implementing strategies and of mobilizing across a wide range of situations (Marwell & Oliver 1993; Eder 1993, p. 42–62).

Collective actors are characterized as having forms of organization that are specific yet nevertheless significantly different from formal forms of organization, as identified by Dieter Rucht (1994, p. 70–98) with regard to social movements and by Leonhard Dobusch and Sigrid Quack (2011) with regard to communities. Neither social movements nor communities 'are "non-organized", as they are based on implicit and explicit rules, their members share a conscious feeling of togetherness, and they form regularly around formal organizational units. However, in contrast to formal organizations, membership to a community is acquired [...] through certain practices, decisions are made without reference to a binding legal framework, and there is no "shadow of hierarchy"' (ibid., p. 177, our translation). Dobusch and Quack (2011) as well as Berdou (2011) have termed this organizational pattern of collective actors as 'organized informality,' in contrast to the formal organizing in organizations. It is only when this organized informality becomes established that the respective formations become capable of developing and implementing strategies beyond the individual level and to move into the ranks of *collectively acting* social actors.

## Masses, Crowds, Publics – Types of Collective Behavior on the Web

Many of the recent forms of more or less spontaneously arising collectivity (e.g., masses, crowds, mobs) are in principle no new phenomena for sociology. One of the first, and still inspiring, taxonomies of *collective behavior* was developed by the aforementioned Herbert Blumer (1939). He differentiates between three types of such behavior, each of which may transition into more stable forms of *collective action*.

The unorganized *mass* may be described, along certain criteria, as an aggregate of reciprocally anonymous individuals (Scharpf 1997, p. 53f.); yet, as these do not consciously interact with one another, they do not give rise to concerted behavioral dispositions. Comprised of the users of socio-technical infrastructures, recipients of mass media offers, voters and consumers, the unorganized mass may have, as a sum of individual choices, considerable influence on economic, political or technological developments; however, this influence it not collectively intended or deliberately staged. 'Mass behavior, even though a congeries of individual lines of action, may become of momentous significance. If these lines converge, the influence of the mass may be enormous' (Blumer 1939, p. 187). The resounding success of Google as the preferred search engine, or of Facebook as the most popular social networking service, the rapidly growing recognition of the free encyclopedia Wikipedia, or the economic threat to media industries due to large-scale file-sharing—these are results of cumulative but not consciously coordinated individual choices. As such, these constitute genuine mass phenomena that operate without an organizing or orienting core.

The *crowd*, somewhat more delineated, does not have any pronounced coordination structures either; however, it differs from the mass through elementary forms of collectively-oriented behavior. This unfolds alongside nameable and often emotionally charged events, generating a temporary attention-grabbing field of tension without consolidating into a more solid form just yet. Disparate and self-reinforcing clusters of attention of a great number of individual onliners, such as the multitudinous 'likes' made to an entry, 'clicktivism' in political campaigns, or waves of emotionally charged outrage on the social web —these are all crowd phenomena par excellence. They differ from the mass insofar as they display rudimentary features of event-related collective behavior, prior to its adopting a more permanent and organized social form.

Blumer also distinguishes masses and crowds from the *public*, which he defines as a partial issue public, whose participants engage actively in discussions on a given topic and who exchange about their different ideas or suggested solutions: '[...] it comes into existence not as a result of design, but as a natural response to a certain kind of situation' (Blumer 1939, p. 189). In this respect, the spontaneously emerging yet rather ephemeral public differs from stabilized groups, which are not only characterized by organizational or cultural core structures such as communities or social movements but also by the ability to substantially co-determine the agenda-setting in situational public spheres. Temporary and barely regulated discussions about virally crystallized or medially introduced topics on Twitter, social networking platforms or the general blogosphere—these are publics in the sense of partial issue publics.

All three of these variants of collective behavior are characterized by their volatility and spontaneity as well as the absence of distinct coordination and identity structures that go beyond a given moment. They are characterized by a *situational formation of the collective*, which generally dissipates after the event as rapidly as it appeared.

### *The Foundations of Collective Behavior: Infrastructures of the Collective*

These classic distinctions of collective behavior allow to trace out and differentiate between non-organized web-based social formations more precisely than the very fuzzy

analytical references to 'fluid social networks' that currently prevail (e.g., Bennett & Segerberg 2012, p. 748). Yet, Blumer's set of distinctions fails to address two aspects that are of particular relevance in our context: First, the constitutive meaning of infrastructures for the creation, orientation and cross-situational reproducibility of collective behavior more generally, and second, the technological foundations that encourage and structure collective behavior more specifically. For Blumer, collective behavior develops unconditionally and spontaneously in largely unmediated and context-free situations.

By contrast, we hold that the outlined forms of collective behavior originate and evolve not, as it appears, without any conditions, but rather in the presence of social and technical infrastructures that allow for the emergence of similarly oriented individual actions and the resulting collective behavior and that coordinate, guide, monitor and, to a certain degree, control those collective activities. We describe these *infrastructures of the collective* as institutional arrangements that enable the convergence of a collective in the first place, yet that also organize the circulation of information, ideas and people.

Viewed from this angle, new forms of collective behavior result directly from the selective and individualized appropriation of already existing technological possibilities and infrastructures by their users. The many variants of non-organized collective behavior in the Internet are strongly based on the there offered digital services and technical infrastructures, in particular the highly frequented social networking platforms:

- First, web infrastructures have *enabling characteristics*. The different web platforms expand the options for the procurement of information, facilitate the mutual observation of the behavior of other individuals, increase the interactivity and speed of collective forms of communication and exchange, and allow to communicate and take votes independently of location. All this facilitates the situational formation of non-organized collectives and expands their sphere of activity.
- Second, web infrastructures also develop *coordinating and regulatory characteristics*. The fixed and reproducible applications, functions, terms and conditions of their platforms not only contribute to the social structuring of non-organized collectives and collective behavior but also to their gradual stabilization. These structuring and coordination services, essentially provided by any web-based platform, are generally not developed by the user collectives (Van Dijck 2013).
- Third, web infrastructures are generating fundamentally new means of *social control*. Namely, they allow to observe, evaluate and judge (be it to sanction or to disapprove) motion profiles and preferences of individuals and non-organized collectives much more accurately and effectively than was previously possible. This control can be exercised not only by the private operators of the platforms but also by government intelligence agencies, who, as is now confirmed, perform a near-total surveillance of user activities (Fuchs, Boersma, Albrechtslund & Sandoval 2012; Kirkpatrick 2008: 150f.).

Empowerment, coordination and control—these are the ambivalent effects of the technological infrastructures of the web and its platforms on the formation and movement of non-organized collectives. Not only do they, as mentioned in the introduction, provide 'technological tools that fundamentally enhance connectivity among people'

(Bimber et al. 2012, p. 3), but they also have behavior-structuring effects and generate new means for the observation and evaluation of collective behavior. In that sense, the technological infrastructures can be likened to social laws, regulations, standards or values, that, as institutions that enable as well as structure and control individual and collective behavior, cannot easily be ignored or overridden (Dolata 2013, p. 33–36; Werle 2011; Katzenbach 2013; Lessig 1999).

What is the reach of the structuring and coordination functions of web-based technical infrastructures? Is it possible for non-organized collectives to move beyond the mere aggregation of individual action and become collectively capable of action without having organizing core structures or social structuring activities of their own, in other words, through the behavior-structuring features of communication technology platforms alone? The works by W. Lance Bennett, Alexandra Segerberg and Bruce Bimber (Bennett, Segerberg & Walker 2014; Bennett & Segerberg 2012; Bimber et al. 2012) and related case studies (e.g., Anduiza, Cristancho & Sabucedo 2014) suggest just that. Building on Mancur Olson's (1965) *logic of collective action*, which emphasizes the constitutive role of incentive setting and coordinating organizations for the formation of collective action, these researchers hold that the traditional role of formal organizations can now occasionally be assumed by 'digital media as organizing agents,' which they refer to as *logic of connective action*: 'Connective action networks are typically far more individualized and technologically organized sets of processes that result in action without the requirement of collective identity framing or the levels of organizational resources required to respond effectively to opportunities' (Bennett & Segerberg 2012, p. 750).

Although this matches closely with our understanding of non-organized collective behavior, the argument is problematic for two reasons. First, the generally available technical infrastructures on which the majority of individual action and collective behavior on the Internet are based do not come from out of nowhere. Instead, these highly complex, costly and labor-intensive technologies are designed, offered, operated and maintained by a few leading companies. The four currently dominant Internet companies—Google, Facebook, Amazon and Apple—are increasingly those who provide and develop the foundations of the web infrastructure. Typically, one or a few market-dominating companies control the central platforms that are frequented by individual web users and by many of the online-based collective formations. Apple and Google control the market for mobile devices, Google the search engine market and Internet advertising, Amazon online trading, Apple the distribution of digital media content, and Facebook social networking (Haucap & Heimeshoff 2014). These dominant Internet corporations are thereby regulatory actors who, by determining the socio-technical framework for the movement of individual users, shape the online experience of these users and co-structure their collective behavior and action. They channel collective behavior by means of social rules that are inscribed in the technology, and that often go clearly beyond mere technical requirements. They provide incentives for certain behaviors and promote specific forms of communication while making others more difficult (Van Dijck 2013; Gerlitz 2013).

Thus, the technology itself only appears to execute, or implement, the coordination and structuring functions that enable collective behavior on the Internet. The real protago-

nists are above all the leading Internet companies, as these lay the foundations on which non-organized collective behavior on the web can unfold and become more stable. In this way, mediated through the technical infrastructures which they themselves provide as well as the 'terms of service' of their platforms, they become the main influencing factors of the formation and movement of social collectives on the web and are assuming social structuring functions. For example, a shutting down of Facebook would have immediate and significant repercussions on all institutionalized forms of social communication, which are shaped and structured by the technical features of this particular social networking platform. As José Van Dijck (2013, p. 37) rightly states, 'all kinds of sociality are currently moving from public to corporate space,' with a few companies acting as gatekeepers, defining the structures, rules and regulations the users have to follow as well as capturing and exploiting the data they provide—and they do so without any substantial democratic, i.e. public or political, participation and control.

Second, empirical evidence indicates that, on the Internet, the transition from non-organized and volatile collectives to action-capable collective actors is likewise regularly accompanied by distinct *social* formation and differentiation processes and the emergence of more stable forms of organization and coordination. In particular the examples provided by Bennett and Segerberg (2012, p. 752) of *connective action*—open source software communities, Wikipedia or WikiLeaks—are not characterized, as they suggest, by technically mediated and otherwise largely unorganized structures, but are based upon distinct social features that we referred to in section 2 as organized informality.

## E-Communities and E-Movements – Variants of Collective Action on the Web

The trend toward patterns of informal organization as a collective matures becomes evident when looking at more stable social formations such as *communities of interest* and *social movements*. They too have existed before the Internet and have been an object of study in the social sciences for a long time.

A concept of community that goes beyond kinship or locally anchored classic communities was first introduced in 1955 by George Hillery. In the subsequent decades, the term *communities of interest* was coined to refer to groups of people who are consciously and deliberately connected by shared views of reality or specific objectives rather than any geographical or friendship ties (Adler 1992). Such communities of interest are neither based on any explicit hierarchical order, as exists with organizations, nor do they have a formal membership structure or binding rules of conduct. Nevertheless, as they mature, they generally begin to exhibit certain institutional characteristics, such as conventions, values, standards and knowledge structures, that shape the behavior of their members, mark the boundaries of the community, and foster a certain identity. Moreover, with time, specific coordination patterns and hierarchies emerge that stabilize the joint action (Cross 2013; Knorr Cetina 1999).

The Internet is a perfect playing field for communities of interest in that the new web-based communication tools allow for coordination and collaboration independently of location. This too explains the emergence of numerous and diverse variants of online

communities especially in the open source and open content domains. Among these are: *epistemic communities*, which Haas (1992) describes as a network of professionals with recognized expertise and competence in a particular domain; *communities of practice*, whose participants deal with similar (professional) tasks (Wenger 1998); *brand communities*, who share a sense of togetherness around a brand (Fournier & Lee 2009); and *subversive communities* (Flowers 2008), who use and develop technological infrastructures in unlawful ways for ideological reasons or for commercial gain. Their main commonalities are a thematic focus that goes well beyond an ad-hoc approach as well as the gradual institutionalization of a group identity with shared principles, conventions and rules among the active community participants, who operate projects of various kinds without a marked formal and hierarchical organizational structure (Mayntz 2010).

Similar to communities of interest, who focus on collaborative work and production processes, *social movements*, whose essential feature is collective protest, are not characterized by distinct boundaries. They are not held together through a formal membership structure, do not have binding and enforceable rules, and rely on continuous polling and consensus building among the participants (McAdam & Scott 2005). However, similar to communities, social movements do not operate without any structure or organization. Charles Tilly and James Rule (1965) conducted early research on how shared values and visions for change can lead to targeted collective action. For this, they examined, aside from the political opportunity structures, the organizing cores of social movements, as they believed these to play a central role in a wide range of processes, ranging from the mobilization of resources to the emergence of identity models, the steering of protests and the recruitment of participants. As with communities, an increasing level of organization generally leads to internal differentiation in social movements as well—with opinion activists and coordinating core structures on the one hand and a broad network of supporters that can be mobilized on the other (Eder 1993; Rucht 1994).

Jennifer Earl and Katrin Kimport (2011, p. 12) distinguish between three forms of online-supported movements: *e-mobilizations*, for which the web is used primarily as a tool to facilitate the coordination of offline protests (e.g., street demonstrations); *e-movements*, where both the organization of the protest and the protest itself take place online (e.g., distributed denial-of-service attacks); and *e-tactics*, which combine online and offline components (e.g., petitions). It should be noted, moreover, that this ideal type categorization serves more as a conceptual tool and that any one movement will most likely be a combination of two or all three forms, especially since online and offline protests generally overlap, as was the case with the Occupy Wall Street movement or the Spanish Indignados (Anduiza, Cristancho & Sabucedo 2014; Thorson et al. 2013; see also Earl et al. 2013).

### *The Basis of Collective Action: The Institutionalization of the Collective*

Despite their heterogeneity and diversity, communities of interest and social movements have three main features that distinguish them from volatile non-organized collectives and that raise them into the ranks of empowered collective actors: (1) institu-

tionalization dynamics, which allow for, structure and stabilize collective action on the basis of their own, primarily informal, rules, norms and organizational patterns; (2) the building of a collective identity that orients the group's vision and actions and that defines its activities to the outside; (3) internal differentiation processes that, over time, spawn the emergence of organizing cores and opinion-leading activists, alongside their respective networks and support bases. While non-organized collective behavior develops on the basis of generally available *infrastructures of the collective*, a successive *institutionalization of the collective* is therefore typical of collective actors and collective action, which often finds its expression in independent organizing and structuring activities and services of the community or movement.

These institutionalization dynamics, which are part and parcel of the creation, consolidation and establishment of each community and movement, have traditionally been understood and analyzed as purely or primarily *social* processes, in other words, as the emergence of social rules, social identities, social organization patterns and social differentiations. By contrast, the role and significance of technical infrastructures for the institutionalization of collective actors and especially social movements has received little research attention until only a few years ago (Hess, Berymann, Campbell & Martin 2007; Della Porta & Diani 2006; Davis, McAdam, Scott & Zald 2005). To be fair, this is not a failing of research and results more from the fact that for a long time there was simply no need to deal with such matters.

Yet with the Internet this changed significantly. Much of what distinguishes movements and communities—collective opinion-forming and voting, political campaigns and mobilization, organization and coordination of activities, professional exchange and collaborative production—has now moved into the online realm. Through this, the mentioned *social* characteristics of the institutionalization of collective actors are not overridden; however, their means of organizing and structuring their communications, production and protest are substantially expanded by the new *technological* infrastructures provided by the Internet and its platforms. Accordingly, the institutionalization of the collective can today no longer be represented as a purely social but only as a *sociotechnical* process, understood as the systematic interweaving of social and technical organization and structuring services, the interplay of which, however, varies greatly from case to case (Table 2).

Still today there are *social movements in the more classical sense* that, while utilizing web-based communication platforms to mobilize participants and coordinate their activities, nevertheless maintain significant similarities to their offline counterparts in their fundamental organizational modes and structures. Generally they are carried by a series of activists, associations, NGOs and parties who cooperate on campaigns, plan thematically focused protest actions and implement these both offline and online. Moreover, leadership in the organization and coordination of activities is usually assumed by some of these actors (Earl & Kimport 2011, p.147–151). Among such movements are the mass protests against the Anti-Counterfeiting Trade Agreement (ACTA), which were coordinated and effectively publicized by a broad coalition of established left and green parties, NGOs such as ATTAC, clubs such as the Chaos Computer Club, and known web activists from the participating countries (Losey 2014).

*Table 2. Types of social movements and communities with online-leverage*

| | Main characteristics | Online leverage |
|---|---|---|
| **'Classical' social movements**<br>e.g., protests against the Anti-Counterfeiting Agreement (2012); G8 protests (e.g., 2007) | Thematically focused protest actions; carried by a series of established actors | Partly utilizing web-based platforms for mobilization |
| **Loosely networked movements**<br>e.g., Occupy (USA 2011); January 25 (Egypt 2011); Indignados (Spain 2011); Umbrella (Hong Kong 2014) | Shared identity remains very general; (street) protests are organized by opinion-leading activists and social groups | Existing web-based infrastructures are widely used to communicate and organize |
| **Internet mediated issue generalists**<br>e.g., MoveOn.org (*1998); Avaaz (*2007) | Shared identity remains very general; great variety of political activities; organized by a small group of core activists | Use of a great variety of online and offline media to organize, support and disseminate political campaigns |
| **Elite-structured groups**<br>e.g., Wikileaks (*2006); The Pirate Bay (*2003) | Focused on subversive activities; hermetically closed off core structures | Own technological platforms |
| **Decentralized collectives**<br>e.g., Anonymous (*2004); Telecomix (*2009) | No organizing core; distributed operation by small units using a shared identity; meritocratic organizational patterns | Internal cohesion through formation-own platforms; public communication on Twitter, Facebook etc. |
| **Production-oriented communities**<br>e.g., Wikipedia (*2001); Open Source Communities | Clearly defined collective identities and participatory structures; cross-cutting coordinating structures | Own technological platforms for collaboration and communication |

The above movements are different from *loosely networked movements* such as Occupy Wall Street or the Spanish Indignados, where the framework and shared identity that inform the organization of protest actions remain very general, and where web-based technologies and infrastructures like Facebook or Twitter are widely used to communicate and coordinate activities (Caren & Gaby 2012; Gerbaudo 2012). That said, even here, despite the strong role of established social web services, the movements' formation, communication and mobilization has to depend on more than just the web infrastructures as such. These types of movements likewise have to rely on the mobilizing and organizing capacities of opinion-leading activists and established social entities—in the case of Occupy Wall Street: the Adbusters Media Foundation—who initiate the protests and bring them onto the streets. Such social cores are needed to stabilize the surrounding peripheries of following participants through the creation of cross-cutting coordination paths and overarching identities across a wide range of situations.

Moreover, there are *internet mediated issue generalists* that can be characterized as being both well-organized activist groups and social movements. They initiate and support a great variety of political campaigns, raise money for political candidates and organize many other activities ranging from e-petitions to street demonstrations and community meetings. Issue generalists such as the US-American public policy advocacy group MoveOn.org and its international counterpart Avaaz are based on small and well-organized activist core structures, additional campaign workers and large e-mail lists of supporters. Campaigning relies on their ability to flexibly use a great variety of media to disseminate their activities and to organize discussions. For this, they utilize their own e-mail lists and run campaigns using web-based platforms as well as traditional media such as newspapers, radio and television (Karpf 2012).

In addition, the Internet has *elite-structured and clearly focused groups* that are characterized by subversive or illegal activities. Falling somewhere in between movement and community, these groups build their own technological platforms and have core structures and core actors, sometimes hermetically closed off, as well as support networks. A good example of such a group is WikiLeaks. A highly person-centered community, it has formed around a non-commercial organization that, nearly impermeable to influence from the outside, finds classified documents and makes them publicly available. Headed and represented by Julian Assange, it employs a very small team of employees and draws on a large pool of activists and supporters. However, the latter are not actively involved in decision-making (Roberts 2012; Davis & Meckel 2012).

By way of comparison, the internationally active *hacktivist collective* Anonymous, which carries out illegal cyber attacks of all kinds, is much more decentralized. Unlike WikiLeaks, it does not have an organizing core that is acknowledged by all participants, and the small units it operates are not necessarily aware of each other's presence. However, in and of themselves, these units are well organized and perform hacker attacks for which they publicly claim responsibility under the Anonymous label. Thus, they form different decentrally organizing cores of the movement. The movement maintains internal cohesion primarily through the formation of specific communication platforms (e.g., 4chan). Yet, this aspect of the movement is not egalitarian either. Here as well, meritocratic organizational patterns and their associated opinion leaders have emerged who dominate and structure the communication (Coleman 2014; Dobusch & Schoeneborn 2013).

Finally, in the open content and open source domain we now see very stable and infrastructurally independent *production-oriented communities*. These have not only developed their own and open technological platforms on which they collaborate and communicate, but also have clearly defined collective identities and clearly regulated and differentiated participatory, work and organizational structures. Such production communities are characterized, as shown in the example of Wikipedia, by two main features: One, they have cross-cutting coordinating core structures that culminate in the founding of an own umbrella organization (e.g., the Wikimedia Foundation), and two, over time they generate highly structured forms of self-organization at the operational level, with quality standards, work rules, control structures and a clear division of roles among the active contributors (Niederer & Van Dijck 2010; König 2013).

The above overview and the corresponding Table 2 are not meant to provide an all-embracing typology. Instead, they serve to strengthen and illustrate our argument and give rise to two observations: *First*, the *technical* web infrastructures have, despite their differences, become action-orienting and -structuring reference points for social movements and communities. The formation of new collective actors increasingly occurs through online-based communication and, often starting with little more than unstructured collective behavior, they eventually turn into organized forms of collective action. The Internet is, therefore, now a major starting point of new social formations.

The internal structures of social movements and communities, too, are increasingly co-shaped by the web-based technical possibilities, the main ones being: new opportunities arising out of the removal of barriers to participation in collective activities, including their interconnection; an expansion of participants' radius of interaction and participation, including their possibilities to mutually observe each other; and greater transparency and control of the activities taking place in the organizing cores, which need to be promptly answered for and justified before the supporters. In addition, the new web-based technical possibilities constitute the foundation and structural basis for community-oriented work and production processes that would not be possible without the Internet. Finally, the Internet gives collective actors new means for shaping their image and visibility. It expands the possibilities for publicizing perceived grievances and influencing public opinion, and allows to facilitate the mobilization and networking of protests, and to increase the visibility thereof.

However, the online technologies thereby do not—which is the *second* point we wish to highlight—override classical forms of *social* organizing and structuring. Sustainable online-centered social movements or communities regularly resort to familiar social patterns of communicating and organizing in the course of their cross-situational stabilization and institutionalization (O'Mahoney & Ferraro 2007).

First, with time, collectively accepted social *rules, norms and values* take shape that have an influence on the orientation of a group's action. This applies to, for example, the editing and exclusion rules for Wikipedia entries or the collaborative work and production practices of open source communities. In this case, they evolve and manifest largely through web-based communication and structuring processes.

Second, online-centered social movements and communities are characterized by the gradual formation of a *collective identity*. And as was the case with their offline predecessors, collective identity serves multiple purposes: It is reflected in the group's vision, ideology or mandate; often has a reach far beyond the group's activist core; forms the motivational point of reference for participants; has a mobilizing impact; consolidates collective action; and communicates the group's meaning to the outside.

Third, distinctive although easily recognizable *organizational interrelations and core structures* develop that guide, coordinate and in part also control the activities of online-oriented social movements or communities. In the case of well-established communities in the web (e.g., open source communities in the Linux realm), these interrelations and structures are often held together through independently operated technology platforms on which the bulk of the communication, opinion-forming and the actual work take place. As for social movements, loosely-networked activities occasionally transform

into fully-fledged political parties (e.g., the Italian 5 Star Movement or the Spanish Indignados).

Fourth, in that context, more or less pronounced social *influence and power asymmetries* regularly emerge that arise from internal differentiation processes. Thus, online-centric movements and communities, too, are characterized by rather small activist cores (often with no more than 100 to 200 users), who are largely responsible for the structuring and the output, and a far greater, in terms of numbers, periphery of participants and sympathizers who support the objectives of the formation and who can be mobilized around issues or projects (Pentzold 2011; Gamson 2004).

The Internet therefore does not lead to a disintermediation of genuinely social organization and structuring services. Instead, classic social organization patterns and institutionalization dynamics of collective actors mix with technological structuring services in new ways. The evolution of meta-individual intentionality, the emergence of a collective identity, and the development of informally coordinated rules and coordination structures—all of which transition situational and spontaneous collective behavior into cross-situational consolidated collective action—remain genuinely social processes. Thus, while the Internet technologies can support the forming and stabilization of social movements and communities, the latter rely on much more than technology alone to build and maintain their momentum. Without tightly focused processes of social institutionalization, initially spontaneous emerging movements run the risk of turning out to be a flash in the pan and to lose ground as fast as they gained it, as can be seen in the development of the oppositional movement in Egypt or the decline of Occupy (Lim 2012).

## Conclusion: The Socio-technical Formation and Institutionalization of the Collective on the Internet

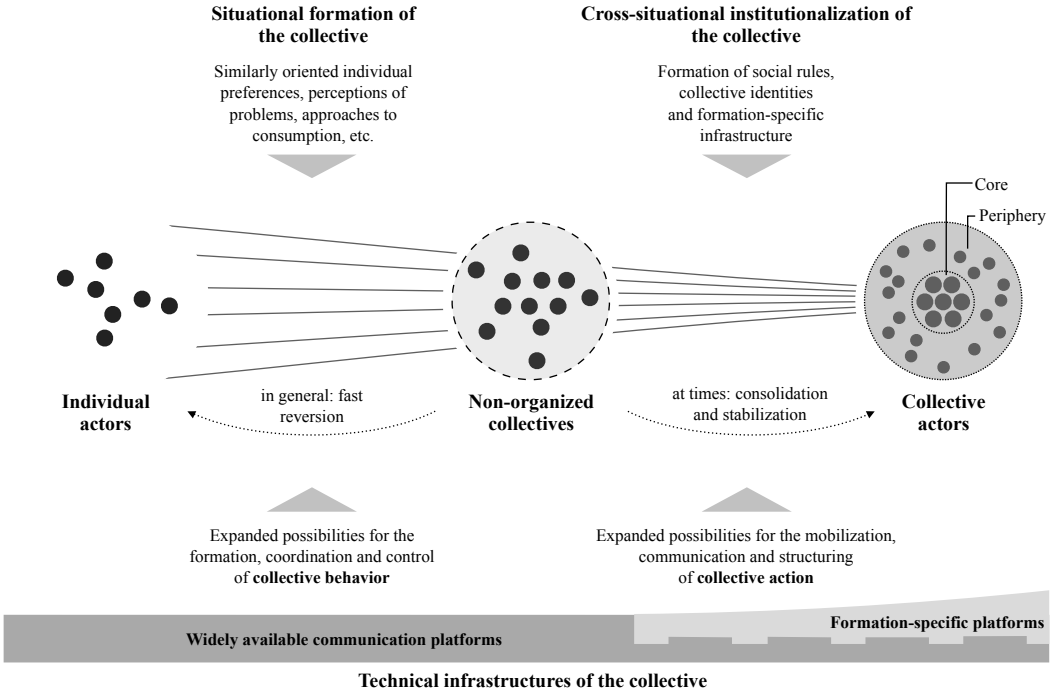
Our initial questions were: How might the different online-centered collective formations be classified along actor-based and institutional lines, and what influence do the technical infrastructures in which they operate have on their formation, structure and activity?

With a view to their status as actor, social collectives can be distinguished into two basic types, each of which apply to both the off- and the online context (Fig. 1):

- The first type consists of *non-organized collectives*, such as masses, crowds or issue publics, whose activity is characterized by situational spontaneity and an accordingly high volatility. They have no own cross-situational coordination and decision-making structures and are not discernible as autonomous social actors but rather as spontaneous and volatile forms of collective behavior.
- The second type consists of *collective actors capable of intentional, strategic action*, such as communities and social movements, who are, by contrast, shaped by cross-situational institutionalization processes during which distinct group identities,

shared rules and goals as well as coordinating and organizing core structures emerge that enable collective action.

*Figure 1. Formation and institutionalization of online-centered collectives*




What is unusual and specifically new about them in the online realm? This new consists, in short, of the significantly elevated role which technology—or, more specifically, technical infrastructures—plays in terms of the shaping, formation, operation and organization of collective behavior or collective action. Non-organized collectives and collective actors can no longer be described and summarized primarily with social categories, as was previously appropriate. Instead, they exhibit a close and novel interlinking of social and technological factors.

As infrastructures of the collective that did not exist previously, these technical systems and platforms do indeed facilitate the situational *formation of the collective*, in other words, the spontaneous emergence and operation of non-organized formations. They do so namely by allowing for reduced transaction costs and an accelerated speed of exchange, in turn enabling these formations to expand their range of action more readily. Through their rule-setting properties, web-based social media also contribute significantly to the structuring and cross-situational stabilization of both collective action and collective behavior, yet also to an unprecedented degree of observability and social surveillance, which is heavily exploited by the mostly private operators of the platforms and by state intelligence services.

In addition, as action-structuring and -orienting points of reference, the web-based technical infrastructures, in the form of commonly available or formation-specific plat-

forms, contribute substantially to the cross-situational *institutionalization of the collective*. They generate greater visibility of collective expressions of behavior and action, which offers an ideal breeding ground for the formation of new collective actors with low-threshold opportunities. The web-based infrastructures also expand the patterns of interaction between the participants, contribute to the consolidation, organization and internal control of the activities of communities and movements, facilitate their external communication, and open up new possibilities for expressing grievances, exerting influence on public opinion and enhancing the visibility and mobilization of protest actions.

As inadequate as it may be to conceptualize and analyze web-based collective formations exclusively with social categories, it would be just as problematic to aggrandize technology or technical infrastructures into being the main and overriding factors of collective behavior and actions on the Internet. This is because the very technological foundations in which collective actions take place reveal themselves to be genuine social processes—be it as new general offers and infrastructures developed by the leading Internet companies or as independently-operated platforms that are created and further developed in the context of communities or social movements.

None of these web platforms on which people communicate, organize, work and mobilize is merely a technological offer that users can utilize or redefine as they please. Instead, social structuring patterns are already embedded in the platform technologies themselves. All technical specifications—not only those of commercial corporations but also those created by communities or movements—have rules, standards and action guidelines incorporated into them that influence the group's activities in a manner similar to social institutions and that (co)structure the actions of their users in often very rigid ways. The presence of a clickable 'like' button—and the absence of a technically just as easily implementable 'dislike' button— on Facebook for instance is not just a technical gimmick but a structural element of social rule-setting (Van Dijck 2013, p. 9–23).

Processes of the formation and institutionalization of collective actors in the web, which generally transition successively from situational collective behavior into consolidated collective action, can indeed be sustainably supported and co-structured with communication technology. However, the fundamental structures and activities of communities or movements remain highly dependent on social conditions, which can be supported and shaped, but not substituted by technology. Among these conditions are: the emergence of a meta-individual identity and intentionality; the development of collectively accepted norms and values; the development of informal rules and coordination patterns; and the establishment of organizational structures and role differentiations. Technology alone cannot achieve that.

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