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RESEARCH ARTICLE

Between swarm, network, and multitude: Anonymous and the infrastructures of the common

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I use Anonymous as an illustrative case for more general reflections on collectivities in the age of computerization that are not based on shared identities. Whereas theories of collective behavior focus on circular reaction within assemblies of bodies, for the phenomena that this article addresses, communication technology plays a constitutive role in the process of connecting people *and* turning connectivity into collectivity. In order to explore this Internet-based connectivity and its processes of assembling collectivity outside and beyond practices of representation, I approach Anonymous with the notion of Tarde's public and further investigate the dynamics of constituting collectivity with a 'new materialist' perspective that asks to what extent Anonymous can be interpreted either as swarm, network, or multitude. A focus on the interplay of Internet infrastructures and affection, which can produce experiences of the common and thus constitute collectivity, challenges the distinction of mediation and emergence.

Keywords: affect; Anonymous; collectivity; crowd; Internet; multitude; network; swarm

Introduction

Flash mobs, the Occupy movement, and other swarm-like, spontaneous assemblies of people have become more and more visible over the last years. These phenomena do not fit well within classical categories like groups or social movements, which emphasize collective identity and the logics of representation. Rather, these new assemblies seem to emerge without precondition and involve individuals who did not know each other before. In this way, they fit the criteria described in sociological theories of the masses and of collective behavior.

But whereas in theories of the masses and collective behavior constitutive forms of affection and suggestion are based on gatherings of people and thus on assemblies of bodies, the phenomena this article addresses seem to share another quality: in all of these cases, communication technology plays a constitutive role in the process of 'gathering in the digital sphere', thus connecting people and turning connectivity into collectivity. In my article I will focus on one of these phenomena, Anonymous, as an illustrative case for generalizing about collectivity in the age of computerization.

One of the main questions, then, is this: To what extent does the constitutive role of media technologies within Anonymous indicate new qualities of the collective that have not been discussed in sociological theories of masses and collective behavior? How can

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we understand the progression from collective behavior to the constitution of collectivity online? And what new ontologies of collectivity can help to understand these qualities?

Nearly simultaneous with the discussion of new forms of collectivity within the last decade, the so-called 'material turn' opens up the social science perspective on 'dynamic human and non-human materialities which acquire shapes, operate and differentiate also beyond human perception and discursive representational systems', as Parikka (2010a) defines the focus of New Materialism.

Looking at how Anonymous might be understood better through New Materialism than through traditional sociological theory could help to illuminate the more general question of how to understand late-modern mediated collectivity as such.

First I will briefly discuss the methodological challenges of this approach to the constitution of collectivity. Then I will outline a brief history of Anonymous in order to highlight its particular path of emergence and thereby explain the assumption that Anonymous is a form of collectivity that is not based primarily on logics of identity in a representational sense. Zooming in on Anonymous inspires us to focus on the material, operative, and media-technical/infrastructural conditions of collectivity – and to explore what collectivity means.

Methodological reflection

I use Anonymous as an illustrative case for more general reflections on collectivity online. Thus, this article does not strive after representative research results on what Anonymous is. It rather attempts to create a sociological map that contributes to the development of theories of collectivity in the age of computerization. With this draft of a case study, I aim to suggest the need for further investigation into Internet infrastructures as mediators in the process of constituting collectivity. Further, I propose that research on the relations of online architectures and their potential to inspire circular reactions and the collective creation of an agenda could complement the perspective of theories of collective behavior in order to get a better understanding of late-modern mediated collectivity as such.

While it makes sense to examine the development of a potential agenda or a narrative of Anonymous via text-based analyses, it is rather challenging to study sociologically the forms of 'circular affection' which will be relevant in the approach to non-representational collectivity. If 'shared affectively charged behavior' can give insights to the process of constituting collectivity online similar to the description Carsten Stage (2013, 8) offers for the online crowd, an important question is of course what counts as 'affective' processes. This question, and its relation to the infrastructural dimension, underlies the general approach of this article and inspires the examination of new materialist arguments. Contemporary theories of affect can be distinguished by their approach to the order of the affective and the discursive level (see also Stage 2013, 13) and are thus more or less 'new materialist'. Whereas for example Sara Ahmed (2004) describes affects as channeled or even motivated by discourses, the concept of affect from the perspective of Spinoza, Deleuze and Guattari, and Massumi, which this article refers to, defines affect, as opposed to 'feeling' and 'emotion', as a prepersonal phenomenon. This 'new materialist' approach conceptualizes affect as belonging to the bodily sphere, as a phenomenon circulating between (human and non-human) bodies that can interrupt and irritate discursive patterns – but not as an asocial phenomenon (see Pieper and Wiedemann 2014). Within this perspective, affections between human and non-human bodies or materialities emerge and operate beyond human perception. Affect is then only recognizable by the increase or decrease it causes in the

body's vital force. Investigating the circular affection online highlights the paradoxical endeavor of social sciences to do research after the crisis of representation.[1]

Yet, it is not in opposition to Massumi to trace affect in linguistic material in the creation of a 'state of suspense, potentially of disruption', and in the 'excess of any narrative or functional line' (Massumi 2002, 26). Massumi describes the self-ascription of an emotional experience as a re-registering of affect: 'An emotional qualification breaks narrative continuity for a moment to register a state – actually to re-register an already felt state, for the skin is faster than the words' (Massumi 2002, 25). Inspired by Carsten Stage, who refers to Massumi by arguing that affect often intensifies media circulation, the outlined case study of Anonymous traces affect and the development of an agenda (1) in the representational content of the posts and comments on 4chan and in discussions on IRC (internet relay chats), press releases, and interviews with people who were part of Anonymous Operations, and (2) in temporally simultaneous gatherings around specific posts in relation to certain events or topics. Similarly, it tries to combine this focus with the perspective on the materiality of digital architectures (programs, interfaces, codes).

Anonymous and a definition of collectivity

Anonymous is a name taken by different individuals and groups to organize collective action, ranging from online political campaigns to street demonstrations, from fearsome pranks to hacking for sensitive information, from human rights activism to technological support for revolutionaries. With Operation Payback (the campaign for the support of WikiLeaks in December 2010) and its contribution to the Arab Spring of 2011, Anonymous became famous in the mainstream media.

Journalists who wrote about Anonymous tended toward big declarations and pronouncements: some wrote them off as cybervigilantes who lack aim (but still manage to cause diabolical havoc), and others declared Anonymous the new face of democratic digital politics fighting for freedom of speech and social justice, as Gabriella Coleman (2012) sums it up.

For the purposes of this article, what matters is not the individual actions and their political impacts but the way Anonymous is constituted as a collectivity. Indeed, Anonymous has developed a certain 'collective identity' (in the form of shared values or even a political agenda), but these manifestations are rather the outcome of circular affection within a particular infrastructure than the other way around. The article will show that the possible 'political' potential of Anonymous can be seen as a result from exactly its specific way of emergence. The latter might also explain the denial of representational practices (that is paradoxically represented in diverse forms of 'representation' such as the Guy Fawkes mask[2] or in constantly repeated slogans that say that Anonymous does not have any leaders, any spokespersons, or a manifest). For sure the engagement in illicit actions is also one reason for not having any single representative. But this lack is also grounded both in the concept of anonymity and in the specific way Anonymous is constituted and constitutes itself. The focus on the latter will situate an observation of Anonymous in the present context – in the more general reflection on the constitution of collectivity *online*. But is Anonymous a collectivity? How did it emerge?

According to people who took part in the actions and discussions of Anonymous and people who happened to survey the first discussions,[3] Anonymous 'started' on 4chan, a technologically simple but massively popular web forum that was founded in 2003. Users of 4chan can post images and texts there without registration, thus appearing as 'anonymous' online. The site encourages anonymous postings, and its most active

section, the forum /b/-Random, explicitly states that there are no rules as to what can be posted. It also has no memory: all postings that do not generate responses will automatically move down the queue and will eventually be deleted. Therefore only the posts that gather enough users are repeated and stay on top of the site and thus can attract more and more attention within a few seconds. That happened with some calls for actions, whether silly ones like 'Spread pictures of cats on the whole Internet' or politically motivated ones that inspired a wave of on- and offline protests against Scientology: both of these 'operations' were undertaken by 'Anonymous'. Over the course of half a decade, as Felix Stalder (2012) pointed out, 'anonymous' turned into 'Anonymous': a simple technical placeholder turned into something more. People who did not know each other, who just gathered on 4chan, became Anonymous, a collectivity that was not based on a common political agenda or a collective identity, but on an assembling of individuals that had agency in the sense of an ability to perform action that has a transforming effect (Latour 2005, 53–4).

But what does 'collectivity' in this case mean? If we perceive that an assembling of individuals has agency, can we call it a collectivity? Before reflecting on the potential new qualities of a late-modern mediated collective in regard to Anonymous, I will provide a brief overview of the notions of collectivity in sociology.

In the early years of sociology (during the late nineteenth and early twentieth centuries) the term 'collectivity' got associated with the concept of community, which Ferdinand Tönnies described as a larger number of people connected through shared values, emotions, and interests (see Tönnies [1935] 1991). Decades later, cultural studies and poststructuralist approaches concentrated on the deconstruction of exactly these 'collective identities' (e.g. Hall 1997) and analyzed the processes of representation and cognitive imaginations of a common space and time (e.g. Benedict Anderson's 'imagined communities'; see Anderson 1991). Thus the notion of collectivity in these culturalist and constructivist analyses again mainly came into focus within the context of the discursive production of identity – and thus was linked to notions of subjectivity.

A phenomenon such as Anonymous, however, demands that we focus exactly on the operative level of the constitution of collectivity, *the potential agency that turns the random gathering of people into a temporary community.* There is another important branch of sociology that is defined by this focus and centers on theories of 'collective behavior'. This theoretical tradition, which goes back to theories of the masses, does not highlight the process of discursive construction of the collective. Rather, it focuses on collective action that is not based on 'identity politics' or 'representation' and that circumscribes forms of purposeless and non-instrumental, decentralized, and unorganized conceptions of collectivity. Can these sociological theories help to explain the constitution of late-modern mediated collectivity? Anonymous exemplifies a group whose constitution seems to involve multiple means of technical mediation, such as brief forms of connectivity and affectivity. Does the understanding of collectivity beyond logics of identity within theories of masses or collective behavior capture a phenomenon like Anonymous?

Collective behavior and the question of the mediator

In exploring this question I will focus on Herbert Blumer's work on collective behavior. Blumer developed one of the first systematic theories of collective behavior (see Stäheli 2012, 101) by strictly distinguishing the interest in collective behavior and its capacity to create new social forms (Borch 2012, 147) from sociology that investigates social orders and its constituents, e.g. communities that are constituted via common myths and norms. Thus, he distinguishes between routine collective behavior in the sense of regulated

group activities, as for example between students and teachers who 'have common understandings and traditions as to how they are to behave in the classroom' (Blumer 1946, 167), and 'elementary forms of collective behavior', which are 'not under the influence of rules or understandings' (Blumer 1946, 168). Informed by nineteenth-century European views of mass psychology, he expands the area of classical mass phenomena by introducing a conception of the mass as a dynamic phenomenon. Thus collective behavior is a mass in motion, a dynamic process changing a random distribution of individuals into a self-organizing phenomenon (see Stäheli 2012). These 'elementary forms of collective behavior' are all based on what Blumer calls 'circular reaction', which he contrasts with the interpretative interaction, 'the form chiefly to be found among human beings who are in association' (Blumer 1946, 170). Unlike interpretative interaction, circular reaction is a type of 'interstimulation wherein the response of one individual reproduces the stimulation that has come from another individual and in being reflected back to this individual reinforces the stimulation' (Blumer 1946, 170).

Blumer describes different stages of collective behavior – milling, collective excitement, and social contagion (1946, 176) – which are also described as steps in the development of an 'acting crowd' (1946, 178). Milling, the first step, starts with a shared 'restlessness' (1946, 172) that is transferred between the individuals by contagion. The central role of 'social unrest' that Blumer describes as the basic quality of collective behavior thus has two important meanings (see Stäheli 2012, 103): it is not only social discontent, dissatisfaction, and rebellion but also the sheer fact of restlessness in the sense of people moving around, as a restless collectivity, that is constituted within the movement based on interstimulation.

These processes of circular reaction were also observed on 4chan before the first Anonymous operations occurred: for instance, people who were part of these spontaneous, unplanned cat postings describe the development of their interaction in a way that is quite similar to Blumer's stages of collective behavior: they explain[4] that they were hanging out on 4chan, had nothing to do, were not discontented but not satisfied either, and then somehow got excited by people starting to post cat pictures with letters on them, and without knowing what was going on they just posted cat pictures as well and felt that there was something going on with them and the other people on 4chan that spontaneously felt part of a community within their common action. More and more users copied the cat pictures or uploaded new ones, and others commented and called these pictures 'Lolcats'.[5] Within a few hours, there were hundreds of Lolcats on 4chan. After a few weeks, the so-called Caturday was established: postings of cat pictures took place only on Saturdays (*Cat* + *Saturday*). A trend was born in which thousands of users participated.[6]

According to Blumer, the circular reaction creates new forms of behavior (Blumer 1946, 175) and also makes the individuals 'more sensitive and responsive to one another' (Blumer 1946, 174). These participants may then 'embark on lines of conduct which previously they would not likely have thought of, much less dared to undertake' (Blumer 1946, 174). Within the common movement the individual is transformed by the circular reaction. Informed by Le Bon ([1895] 2002) and Park (1972), Blumer stresses the aspect of the transformation of the individual by explaining circular reaction based on social unrest and social restlessness as contagious. Clark McPhail points out that this explanation is tautological ('When the restlessness of individuals is stirred by circular reaction, the result is social unrest' [1989, 409]), but this apparent tautology itself is interesting for my purposes.

The inexplicable, seemingly reasonless circular reaction – the mysteriousness of collective behavior, of people seeking something without knowing what they seek, aimlessly

looking around and highly suggestible (McPhail 1989, 409) – is what inspires this article's questions and its examination of Anonymous. How can we understand the constitution of collectivity that cannot be attributed any meaning in the first place? What is the role of technical media, of mediators that transform connectivity into collectivity?

Blumer focuses on the operations of the individuals but does not investigate the role of infrastructures or technical media when theorizing collective behavior.[7] His crowd is based on the immediacy of moving bodies, on the circulation of affect within the physically meeting bodies – thus only the individual can be seen as mediator of flows of imitation and movement, as Urs Stäheli concludes (2012, 103).

Stäheli's argument is that the crowds Blumer describes are based on infrastructures, on urban places where masses emerge or on a medium of transportation such as the ferry in Walt Whitman's poetry (see Stäheli 2012, 116). In Walt Whitman's works[8] the ferry appears as a mediator that creates a sort of collectivity out of the gathering of heterogeneous individuals who do not know each other and do not intend or expect to unify for a common purpose.

In order to reflect on the constitution of such a gathering *online*, of a *non-physical gathering* of people, it is even more obvious that we have to expand Blumer's theory and take into account the role of technical media.

Crowd, public, and media infrastructures

The question of media infrastructures and its relation to collective behavior is not approached in Blumer's work, but it is approached by his mentor Robert E. Park, to whom Blumer owed the concept of 'circular reaction' (see McPhail 1989, 406). Therefore Park referred to Gabriel Tarde and his distinction between the crowd and the public, which he thought of as a product of modern technological developments, as constituted via the newspaper or, earlier, the railroad and the telegraph (Tarde [1901] 1969, 281). The public, understood as 'a purely spiritual collectivity, a dispersion of individuals who are physically separated and whose cohesion is entirely mental' (Tarde [1901] 1969, 277), is, in contrast to crowds, virtually unlimited in size and in the scope of its perpetual influence. Tarde's definition of the public includes criteria exhibited by an online collectivity such as Anonymous: people who do not meet physically but are connected via a technical medium and within this connection perceive a sort of community.

Despite the differences Tarde describes between crowds and publics, to which I will return later in the article,[9] the two 'have in common the bond between the diverse individuals making them up, which consists not in *harmonizing* through their very diversities, through their mutually useful specialties, but rather in reflecting, fusing through their innate or acquired similarities into a simple and powerful *unison*' (Tarde [1901] 1969, 286). For both of them, the crowd as well as the public, it is a circulation of affects that constitutes the collectivity. Neither the crowd, nor the public, nor Anonymous is constituted through shared identities, myths, or narratives. Yet, for this article's questions about the constitutive role of media infrastructures in new kinds of collectivity, Tarde's concept of the public does not offer enough insight: his theory involves the technical infrastructure, but it explains the constitutive force creating the public as ideas or passions that seize the participants. Tarde explains that 'the cohesion of the public is entirely mental' and comes about through 'a continual current of common information and enthusiasm': 'It is only from the moment when the readers of a newspaper are seized by the idea or the passion which provoked it that they truly become a public' (Tarde [1901] 1969, 288). So, unlike the ferry in Whitman's/Stäheli's argument, the medium – the newspaper itself – works less as a

mediator than as an intermediary, transmitting and distributing ideas and passions that then can work as mediators.[10]

What is relevant in approaching an online collectivity such as Anonymous, and necessary for understanding such a collectivity, is exactly the entanglement of the potential mediators – the entanglement of bodies (imitation/circular reaction; crowd) and ideas (mental cohesion; public) as well as communication technology. Tarde already offers strongly important insights to these intersections: if the Internet had existed then, Tarde – 'a thinker of networks before their time', as Latour argues (2002, 119) – would probably have created another concept of collectivity, one that goes beyond the crowd and beyond the public. What new quality is possessed by a collectivity constituted on a board like 4chan?

The novel aspect of an online collectivity such as Anonymous is how it combines the criteria that, according to Tarde, most importantly differentiate the crowd and the public: the individuals who comprise the collectivity do not meet physically; they are dispersed and connected through a shared infrastructure, like the public. But whereas 'the action of physical agents on the formation and development of a public is almost nil', it is 'supreme in the formation and behavior of crowds' (Tarde [1901] 1969, 287) and also, in a specific way, in Anonymous. Like the crowd, Anonymous is constituted only from the moment that the assembled individuals experience a 'circular reaction', as Blumer called it, and the potential agency of their temporary community. Within the infrastructure of 4chan, users simultaneously observe both the content of others' posts and what others are *doing*: their movements on the screen, the rhythms of their activities in posting anything, writing words or sentences, posting pictures or videos. Within the new infrastructure of the Internet, a board like 4chan enables, on the one hand, the dispersion of the individuals taking part in the collectivity, and, on the other hand, the specific sort of shared and simultaneous perception of one another. As Latour (2002, 119) points out, 'Things are different now that the technological networks are in place and that many of the arguments of Tarde can be turned into sound empirical use'; now thinkers like Tony D. Sampson (e.g. 2012), Jussi Parikka (e.g. 2007), and Eugene Thacker (2004) combine Tarde's concepts of suggestion and contagion with a reflection on the role of communication technology for the constitution of collectivity.

Thus we are beginning to address the main question of this article: to what extent does the constitutive role of media technologies within the Anonymous phenomenon indicate new qualities of the collective that were not discussed in earlier sociological theories of non-identitarian collectives?

First I focused on Blumer's concept of collective behavior and its underlying mechanism of 'circular reaction', which helps us approach Anonymous. But within Blumer's theory the individual works as the only medium, so I then turned to Tarde, whose ideas offer insights into other potential mediators that can transform connectivity into collectivity beyond the individual. Tarde is seen as a pioneer for theories of the 'new materialism': although he does not yet focus on the agency of 'things' like the paper of the newspaper and still considers the material world of subject creation, his materiality has an incorporeal materialist dimension (see Sampson 2012, 59). His radical social monadology is based on the premise that 'every thing is a society' (Tarde [1895] 2012, 28), that the social is a circulating fluid, a principle of connections (see Latour 2005, 13).[11] From this perspective, a 'digital object is far from static but incorporates too an intensity that stems from its relational status' (Parikka 2010b).

In order to investigate the mediators that serve as constitutive forces for Internet-based collectivities, I will further address the question of how to conceptualize dynamic

constellations of heterogeneous elements that are *collectivated* and have agency within the assembling/connection. Therefore I will focus on the two primary models/metaphors of collectives used in discussing new Internet collectives: the swarm and the network.

Between swarms and networks: connectivity and digital contagion

I will explore to what extent Anonymous fulfills the criteria of each of these two by referring mainly to Eugene Thacker's typology of collectivities/collectives without center. In his article 'Networks, Swarms, Multitudes' (2004a, 2004b), Thacker reconstructs the scientific-historical backgrounds of these models of collectivity and strongly links collectivity with connectivity – which will accompany the task of approaching Anonymous as an Internet-based group phenomenon.

As the notion of networks developed in graph theory points to a static topology of nodes and edges[12] and does not capture networks' inherently dynamic characteristics, Thacker chooses instead to reflect on the biological paradigm of 'swarms' (2004a, 2004b). For Thacker, 'insects are the privileged case study' for technologically and politically new ways of organization where the many pre-exist the one, where animal packs function without heads (without one specific reason or leader); insect swarms thus 'suggest logics of life that would seem uncanny if thought from the traditional subject/object point of view' (Parikka 2008, 115). Thacker describes the swarm as decentralized, self-organizing, and spontaneous (2004b). Similarly, the emergence of Anonymous can be conceived for the first time on 4chan. This board is no network with a stable distribution of edges and nodes, as users are not registered here; it is more a point through which changing sets of users briefly connect again and again continuously. According to Thacker (2004b), one of the main criteria for a swarm is a directional force that is without centralized control but works as a collectivity because it has a spontaneous purpose – one that cannot be traced to one of the individuated units of the swarm. A minimum of connectivity allows the emergence of swarms: for example, Anonymous suddenly gathers around a topic of interest on 4chan and then spontaneously exchanges cat pictures or sends emails en masse to government sites and cause them to crash.[13]

Like Thacker, Eva Horn (2009), in her theorizations of the swarm, stresses the constitutive force of affect. As already mentioned in the methodological reflection, the concept of affect, derived from Spinoza, does not imply any notion of intention or conscience (in the Marxist sense) or the reason and motivations of individual actors; affect is only a reaction to the fact that a human is touched by another and mobilized, and this mobilization continues en masse (Horn and Gisi 2009, 17). 'Affects operate in the mode of connectivity, they circulate, create dynamics, produce subjectivity and mobility. They operate as – vivid and dynamic – immanent force' (Pieper, Tsianos, and Kuster 2011, 230). The Lolcats and the creation of the so-called Caturday (examples I used when explaining Blumer's concept of circular reaction) illustrate the role of mutual affect in the development of collectivity and creativity on 4chan. In contrast to forms of suggestion and imitation from body to body, as in crowd- and collective-behavior theory, in the case of Anonymous an online swarm forms through the relative synchronization of a Tardean public in relation to a specific online site and its affective unification. In order to capture the bodily affective qualities of the media infrastructure, digital objects such as the board 4chan must themselves be approached through the notion of affect, since they are characterized by their translational capacities (Parikka 2010b): the abstractions that algorithmic measures are based on return to organic bodies as sounds and visions, as actions or frameworks for action. The 'digital contagion' (Sampson 2012) on 4chan is closely tied to the anarchically organized and relatively

non-structured board, where postings are regulated neither through moderators nor through the architecture of the interface; above all, this digital contagion cannot be attributed to any individual, due to the site's fundamental anonymity. Jana Herwig (2012), who studied 4chan, comes to the conclusion that its users do not respond to other users or identities but to opinions and positions. But not only the ideas affect the users, it is the interplay of the ideas with and within this kind of infrastructure as well as with the rhythms, pictures, and sounds of the postings of the users. It is important to recognize this sort of circular affection that is facilitated on 4chan. In other words, 4chan can produce collective assemblages because its chains of association inspire emergences that are not traceable to individual elements.

Soon after the first Anonymous swarms appeared on 4chan, more infrastructures labeled as 'Anonymous' channels (e.g. AnonNews and different IRC channels[14]) emerged that were all oriented towards the open and anonymous infrastructure of 4chan. These sites seemed to give Anonymous a permanent pattern and stable connectivity, as within the definition of networks (derived from graph theory) (Thacker 2004a). Anonymous would thus have started to move on the two axes of tension within Thacker's distinction of 'group phenomena' (2004b) – collectivity/connectivity and purpose/pattern – and to function like a hybrid of network and swarm.

Yet Thacker's strict distinction between networks and swarms is only meant to distinguish theoretically the models of collectivity (technology, biology, politics) – he concludes the section about networks by stating that 'networks do not exist', then proceeds to explain the notion of a 'living network' (Thacker, 2004a): nodes exist only because of the traffic on the edges. This is especially evident on boards like 4chan, where users of the site do not create any profiles and users/visitors are not tracked. It is only when users are connected with and on 4chan *and* do something that there is a network. If users on 4chan observe what other users are posting and follow their movements on the screen, they are already more than connected – they are related with each other, as there are then affective processes at work. The mere connection of individuated units (e.g. people whose iPhones are permanently online but maybe in their pockets) is not enough to form a network on 4chan.[15] Only from the moment a circular reaction emerges and thus from the moment connectivity is mediated into collectivity is there a 'living network'. On 16 December 2010, after Operation Payback,[16] the developers of Anonnews.org said in an anonymous interview with the magazine *Computer und Technik* that a 'creative force' within Anonymous is what creates operations like Leakspin or Operation Paperstorm, or websites such as AnonNews.org and IRC channels (see Jannsen 2010). The developers of Anonnews.org do not act as developers; in their view, the site only *exists* if people use it. In other words, it is not just ideas that can spread only via 'circular reaction'/affect; Internet infrastructures, too, can exist only if they create connections where affects can circulate. A *living* network only exists within the mediations of the connected and thus related individuated units.

Can such a swarm-network stabilize as a collectivity? The development of Anonymous can give further insights into how an Internet-based collectivity can exist beyond the temporarily limited forms of collective behavior (e.g. the online operations based on circular reactions on 4chan and in IRC channels) and nevertheless work differently than offline groups and their common identities. Theorists of 'collective behavior' after Blumer suggested, in contrast to their predecessor, that mass emergency behavior could be understood as normative and meaningful. Ralph H. Turner and Lewis M. Killian (1957) declared that every collective behavior generates a normative order (see Borch 2006, 93) and thus a collective identity. Can the basic infrastructures of the Internet generate new normative

orders for collectivity that differ from the concepts of social identity proposed by the norm-based approaches to mass emergency?[17] I will attempt to outline the development of an agenda of Anonymous and show why this is not a process from 'collective behavior' to 'collective identity' by pointing again to the infrastructural mediators within Anonymous.

Community beyond identity: emergence and mediation

'An Open Letter to the World', one of the most far-spread documents of Anonymous,[18] states: 'We have begun telling each other our own stories. Sharing our lives, our hopes, our dreams, our demons. […] As we learn more about our global community a fundamental truth has been rediscovered: We are not so different as we may seem'. Furthermore, the letter claims that Anonymous is the idea of the well-being of all humans, which should be guaranteed through the freedom of information and communication. Anonymous maintains that in anonymous online communication all voices are equal, thus people can experience their commonality without prejudice. Anonymous's concern, the letter states, is based on the experience of a non-unifying community that does not formulate any identitary conditions for membership. Thus, within the processes of online (co-)operation, a figure of inclusion is activated that works differently than collective identities of inclusion and representation, such as 'the Italians', 'the women', or 'the socialists'. These narratives and self-descriptions that Anonymous develops indeed point to something common to everybody who could communicate anonymously online, without aiming to homogenize any potential differences. This sort of the common is described as discovered and produced rather within communication than through the creation of an identity and antagonisms that define what belongs to the community and what does not. It is a narrative of a community that creates a spontaneous unity within communication, a community as fluent and dynamic as the multitude – the model of decentralized collectivity that, in current political theory, is grounded in its Spinozist definition. Hardt and |Negri (2000, 2004) describe the multitude as the vitally collective social form of the 'control society', as subversive potential to the present form of capitalist exploitation and hierarchies in Empire (Hardt and Negri 2000, XI), where sovereignty has turned into governmentality, which no longer depends on a central authority (Hardt and Negri 2000, 339) but operates through biopower, the technology of power that subsumes all life under capital. Yet, in the various branches of the post-Fordist society, excesses and surpluses of sociability and creativity are generated (see Tsianos, Papadopoulos, and Stephenson 2008, 251) that cannot be exploited and that produce the common. The multitude thus arises from dynamic networks of new subjectivities, situated in non-reductive co-operation based on and constitutive of the common as a set of socially situated faculties, resources, and domains irreducible to privatization, which is not constituted through logics of representation or the attribution of specific similarities: 'Insofar as the multitude is neither an identity (like the people) nor uniform (like the masses), the internal differences of the multitude must discover the common that allows them to communicate and act together. The common we share, in fact, is not so much discovered as it is produced' (Hardt and Negri 2004, XI).[19]

At first glance, this description of the multitude recalls the self-descriptions of Anonymous, as the multitude in theory is constituted not through logics of identity but rather through the denial of exactly those logics and through the concept of openness for everyone. An interviewee who has joined some anonymous IRC chats[20] says that more and more users told stories and shared their personal experiences and that he or she felt connected with all human beings because – and the interviewee stresses this explanation – 'the other anons could be anybody in the world'. The common narrative of Anonymous stresses

the common experience of an anonymous exchange online, a kind of reflection of what Anonymous does with users: the experience of a common that is 'produced' within the process of communicating and co-operating.

Assuming that the multitude in 'many instances […] brings together the technically-based regime of networks and the biologically-based regime of swarms', as Thacker writes (2004b), one could come to the conclusion that Anonymous as a living network realizes the model of the multitude. But does the concept of the multitude really integrate a technically based regime of networks? Do technical infrastructures as mediators play any role in the model of the multitude?

The multitude, in fact, is not designed to be a collectivity based on Internet infrastructures. The form that the multitude, as a new organizational model for movements of the common, shall take is not precisely defined. Although Hardt and Negri themselves use the term 'network' quite often, they do not elaborate which network model they are referring to.[21] Regarding Hardt and Negri's vitalist claims that 'the flesh of the multitude is pure potential, an unformed life force, and in this sense an element of social being, aimed constantly at the fullness of life' (2004, 192), William Mazzarella concludes that the multitude is based on the fantasy of 'unmediated immanent life' (2010, 715). Hardt and Negri stress this conceptual purity of the multitude by opposing multitudes to crowds, which they define precisely through the need of a leader, institution, or infrastructure to mediate the productive energy. Similarly, Christian Borch argues that 'pitting the multitude against the crowd served a strategic semantic purpose' (2012, 291). Referring exclusively to the crowd theory of Le Bon ([1895] 2002),[22] Hardt and Negri write: 'Crowds […] naturally and necessarily follow a leader whose control maintains their unity through contagion and repetition' (2004, 260).

For Anonymous, there is a sort of leader that is the infrastructure, as we will see in the next paragraph. The theoretical opposition between infrastructures intertwined in power relations and the emancipatory swarm is not borne out. The constitution of Anonymous is always based on an already shared infrastructure. This infrastructure is part of what inspires the emergence of the swarm, as any swarm emerges through the mediation of technical and social codes as well as by the circulation of affects, since even affects are not unmediated.

That the self-organization of the multitude is, in contrast, conceptualized as independent from any sort of government and mediation reveals the deficiencies that result from the concept's political teleology – its 'revolutionary climax', as Mazzarella (2010, 726) calls it. The formation of the multitude, conceptualized as an act of liberation out of the post-Fordist networks of the Empire, emphasizes the antagonism of group energy and social order that Le Bon's theory is based on (see Mazzarella 2010, 720). Likewise, Borch concludes that 'Hardt and Negri in effect turned Le Bon upside-down' (2012, 294). Thus the concept of the multitude, especially when opposed to that of the crowd, contradicts Hardt and Negri's own analytic of power, which wants to move far beyond such rigidities.[23] The concept falls back into a thinking of modern sovereignty that sets the multitude free from any sort of mediation as a counter-power creating a truly democratic society (Hardt and Negri 2004, 324).[24] Yet with the contradictions in their work they cannot explain how this transition works, how the common of the multitude can be 'produced', while individual differences are respected.

The model of the multitude lacks a materialist approach to forms of mediation and infrastructures of the common and therefore cannot answer the question of how the experience of community is possible if there is no unity in the sense of a common identity. If one focuses on the infrastructures that permit circular affect within anonymous exchange and

thus the experience of the common in the first place, then the oppositions of mediation and emergence, institution and revolution appear less viable.

New mediators

Whereas the multitude is conceptualized to emerge within but ultimately step out of the networked infrastructures of the Empire as an unmediated community, Anonymous emerges not in networks that exploit individuals but on 4chan.[25] As I mentioned earlier, more and more stable nodes like Anon.Ops and Anon.news have developed that are interwoven with the myth, the narrative that Anonymous established. For Anonymous, infrastructure and narrative, purpose and pattern are mutually constitutive. In addition, Anonymous can be considered a living network (Thacker 2004b). Within the constitution of this living network, meaning is attributed to the infrastructures themselves: the common belief in their emancipating agency is what constitutes Anonymous as a collectivity with longer time-horizons than the short-term swarms have.

By approaching the differing notions of 'the leader' in the theories of Freud, Tarde, and Le Bon, Urs Stäheli (2011) describes the leader in Tarde's self-referentially emerging crowd as an affective and imitative force that does not exercise control but, rather, functions as a mediator: 'Being a medium of self-organization, the figure of the strong and heroic leader is now translated into a magical and affective form of communication' (Stäheli 2011, 77). In a similar way the infrastructure within Anonymous replaces the former crowd leader with a swarm facilitator whose function is to spark imitation of a new practice or idea, as Stäheli (2011, 74) explains in relation to Tarde's crowds. Anna Gibbs, too, refers to Tarde's distinction between crowds and publics: she notes that media in some ways replaces crowds with publics and is now also used in the services of crowd formation (2008, 41). As shown earlier, these models do not yet take into account the materiality and the infrastructures of media itself, but they nevertheless already display one basic quality that helps to understand Anonymous and that reappears in the later theoretical models of networks and online swarms: all of them only exist if there is circular reaction going on. A public exists only from the moment that ideas or passions distributed via the newspaper affect the readers, and, likewise, the network exists only within the relations of the individuated units that interact. Plus there is the parallel between the function of the leader of a Tardian crowd and the role of the networked boards online for the emergence of the swarms. But there are some crucial differences between the offline and online environments for the circular reactions. One is the varying levels of physical intensity. Despite the speed, intimacy, and multimodality of online communication, which could have physical effects, the interacting bodies do not meet. As within a Tardean public, the person could be 'much more in control of his intellectual freedom than a lost individual swept up in a crowd. He can think about what he reads, in silence' (Tarde [1901] 1969, 283). In a similar way, on 4chan users can follow the movements on the screen from a distance: they can go into the kitchen to get a cup of tea and then continue to chat or only observe without posting anything themselves. With these particular qualities that urban spaces do not have, online infrastructures can allow spontaneous circular reaction and imitation, but at the same time, due to the distance between the bodies they link, they could for example reduce homogenizing tendencies that work within physical gatherings. If in an anonymous chat room the idea to create a press release, a video, or an operation emerges, the more support the idea receives through users who chat in the IRC channels, the more the idea gets modified by them, then this circular affection creates a collective assemblage (see also Wiedemann forthcoming, 13). Jane Bennett's concept of distributive agency attributes various assemblages a spectrum of

variability in terms of how they respond to similar affects (see Bennett 2010) without saying that matter is *alive*. This new-materialist approach instead focuses on the non-linearity of transformation and emergences that can be inspired, as described before, by the affective interplay of the ideas with and within the open and chaotic architecture of the anarchical boards as well as with the sounds and images and their rhythms.

Furthermore, website users can create their own infrastructures for the gatherings – new boards like 4chan, or sites where they can commonly create videos or IRC channels for discussions about anything. As within 'recursive publics', a term Christopher Kelty (2008) uses to describe communities of developers, online users 'can modify the infrastructure they seek, as a public, to inhabit and extend' (Kelty 2008, 9 f.). In addition, on a board that, like 4chan, does not require identification and does not track its users, they can interact without being watched, can experiment without being surveilled.[26] Unlike an urban space, a board such as 4chan has no borders and no center; people who do not know each other and neither see nor hear each other can assemble and communicate, and all the communicative acts theoretically can be equally perceived. On this sort of online playground, swarms may emerge because there is no prior agenda as to what should be posted. There can be 'viral love' (Sampson 2012, 127) between communicating individuals in the sense of a circular affect that creates compassion and thus moments of the multitude. But these forms of circular reaction are not automatically facilitated by every online infrastructure, and, more importantly, this powerful myth about the revolutionary forms of contagion online tends to block any perception of the new leader's ambiguity.

New forms of control

The specific infrastructure as constituent actant does not automatically imply that the collectivity mediated by it is decentralized, without hierarchies, and potentially emancipatory. The infrastructure is not neutral; even anonymous environments online did not fall from heaven, and users and creators are not newborns.

The Internet is structured by an architecture of code and protocol, by the dispositives of communication and the biopolitics of software in which the machinic and the human become entrenched and impossible to disassociate. The entanglement of cultural practices and technical infrastructure[27] that constitutes Anonymous is always governed and thus coded on two different but connected levels[28]: code is the basic technological process, the set of rules and instructions that, for example, govern the permutations of all the 0 s and 1 s that lie behind user interfaces; yet code is also the cultural framework, which is directed and interpreted socially and performatively. Besides those who are excluded due to reasons of the digital divide, hierarchies also develop within anonymous communication due to positioning and to the hegemonies within communication: some users know how to program, whereas others can speak neither in computing language nor in English; some do not dare to speak, or if they do speak they are not heard, while others know how to identify users of apparently anonymous chat rooms.

The assumption that new media gives us some kind of special insight into new qualities of the collective tends to dematerialize these technologies, in the sense that it removes them from their relations from and with specific social, political, and economic assemblages.

Investigating the interplay of infrastructures and power structures the myth that Anonymous develops, its particular understanding of human nature and freedom and its entanglement with network and swarm technologies must be further taken into account. The belief in the automatism of social swarming and the grassroots/democratic 'nature' of human techno-collectives, for example, refers to cybernetic logics, to economic theories,

and potentially to early neo-liberal thinkers – for example, Friedrich Hayek, whose vision of spontaneous order and self-organization are in turn reflected in the principles of cybernetics. In the case of Anonymous, the infrastructures do not automatically turn the connected elements collectively stupid, as Le Bon's crowd theory would have it. But they also do not automatically work as a productive potential, as conceptualized for the multitude. Being connected, whether in networks or in swarms, does not presume the formation of a political agenda with common goals. Thus approaches that address swarms directly as democratic tools should be carefully challenged.

According to Sebastian Vehlken's account of swarming as a cultural technique, swarms have become relevant as structures of organization and co-ordination, as effective optimization strategies and zoo-technological solutions for 'the governmental constitution of the present itself, in which operationalized and optimized multitudes have emerged from the uncontrollable data drift of dynamic collectives' (Vehlken 2013, 127). The logic of contagion, which is linked to the mathematics of epidemics and organization theories, becomes a key tactic in commercial, security, and technological contexts within current forms of capitalism. The notion that spontaneous collective moods can be guided toward specific goals seems to be the latent exercising of an affective biopower over an increasingly connected population, as Tony Sampson notes (2012, 126): This governmental constitution, that is exhibited for example in viral marketing, tries to capitalize the affectability, the users' capacity to affect (and to be affected), via indirect action-at-a-distance, by making them more responsive to the contagions of others, and inspiring social belief. The architecture of the Internet that creates a dynamic informational space 'suitable for the spread of contagion and transversal propagation of movement (from computer viruses to ideas and affects)' (Terranova 2004, 67) can serve biopolitical and capitalist vectors, but it also integrates the potential for experimentation and becoming – for becoming collective in new ways.

Conclusion

If one asks about new forms of collectivity developed in and through the Internet, Anonymous – more than other collectivities before it – can present the entanglement of the operative, infrastructural, and symbolic mediators in the process of constituting collectivity. These mediators can have controlling as well as liberating potentials, coding as well as affective characteristics. Anonymous as an example of a late-modern mediated collectivity arises from collective behavior as Blumer described it, and also demonstrates qualities of Tarde's crowds and publics, but is better understood as a living network, as a hybrid of swarm and network. Such a living network exposes new forms of mobilization, new aesthetic and political practices that have no precedent: the joint creation of texts (within infrastructures that allow any number of users from anywhere to think and write together at the same time), the spontaneous development of an agenda, the new speed and reach of mobilization, the effects of spontaneously made decisions, and the definition of targets. I would then argue in favor of further investigating the relations of the practices and technologies of a *living network* with specific social, political, and economic assemblages.

As early as the 1990s, media activism and media art were already performing political and aesthetic experiments with exactly these infrastructures between connectivity and collectivity (see Broeckmann 2001). Yet there is an important difference in a phenomenon such as Anonymous: these earlier projects were initiated and managed by experts who were informed about the techniques, knew how to build them, and intentionally experimented with them. Anonymous, by contrast, is a phenomenon of Web 2.0, where anybody can

open a chat room without being part of an academic and artistic project and without knowing what is behind the interface. Now the masses too can swarm.

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Notes

1. The term 'crisis of representation' refers to a theoretical development in social sciences that demonstrates the impossibility conceived within human language and culture of a correspondence of significations and systems of significations on one side and a world of pre-semantic elements that exist 'per se' on the other side, as Reckwitz (2003) concludes.
2. The Guy Fawkes mask is a depiction of the best-known member of the Gunpowder Plot, an attempt to blow up the House of Lords in London in 1605. The portrayal of a face with an over-sized smile and red cheeks, a wide moustache upturned at both ends, and a thin vertical pointed beard came to represent broader protest after it was used as a major plot element in *V for Vendetta*, published in 1982, and its film adaption in 2006. After appearing in Internet forums, the mask became a well-known symbol for Anonymous, the Occupy movement, and other anti-government and anti-establishment protests around the world (see http://en.wikipedia.org/wiki/Guy_Fawkes_mask).
3. In April 2012, I conducted interviews with people who had been part of several Anonymous operations. I contacted them in two ways: (1) I could address some of them directly because the FBI had already revealed their identities, (2) I asked in chat rooms used by Anonymous if users would do anonymous interviews via email.
4. See note 2.
5. LOL = 'laughing out loud'.
6. Users criticized those who posted Lolcats on other days. A trend was born that spread across the Internet (see Wikipedia on Lolcats: http://de.wikipedia.org/wiki/Lolcat).
7. Even if Blumer was one of the pioneers studying the effects of media on society, especially of movies and broadcasting, he did not link these approaches to the theories of collective behavior.
8. Walt Whitman's journalistic and poetic work strongly influenced early American sociology. He was especially passionate about the connection of urban infrastructures and masses (see Stäheli 2012, 107).
9. For a discussion of the notion of irrationality that Tarde attributes to the crowd by contrasting it to the critical discussions that interaction in publics could take, see Borch (2006, 87).
10. For the distinction of intermediaries and mediators, see Latour (2005, 37–8).
11. This is controversial: Lisa Blackman for example argues that Latour 'fails to recognize the hierarchical view of humanity that was being proselytized in his (Tarde's) elucidations of the concepts of invention and imitation' (2008, 40).
12. Thacker shows that even a view of networks that privileges the relations between things, rather than things-in-themselves (edges rather than nodes), 'also cannot account for the dynamics within networks; dynamics that show us a more complicated view of the separation between nodes and edges' (Thacker 2004a).
13. For example, Anonymous is said to have contributed to the breakdown of websites of the Egyptian government, ministers, and institutions through several distributed denial-of-service attacks in January 2011. A denial-of-service attack (DoS attack) or distributed denial-of-service attack (DDoS attack) is an attempt to make a machine or network resource unavailable. It typically consists of the efforts of one or more people to interrupt, temporarily or indefinitely, an Internet service.
14. IRC stands for Internet Relay Chat, which is a text-based chat system. It allows conversations with any number of people in so-called channels. New channels can be opened at any time by any user, and one can also simultaneously participate in as many conversations and channels as one wants (see http://de.wikipedia.org/wiki/Internet_Relay_Chat).

15. If they have agreed to online services that locate the users automatically it is different: then there is traffic on the edges, even if the users do not communicate actively.
16. Operation Payback involved repeated DDoS attacks against financial services, such as Visa, in order to defend Wikileaks in December 2010.
17. There are various norm-based approaches since the 1980s that assume that mass emergency behavior is cognitive, i.e. based on reasonable beliefs rather than non-cognitive emotions or instincts; for an overview see Drury and Stott 2011.
18. http://anonnews.org/press/item/210/.
19. There is a diversity of concepts of the common: For example, Giorgio Agamben formulates an understanding of the potential, of the common that is oppositional to the concept of the common within the theory of the multitude because it is not related to a creative force (1993, 13). Also, Jean-Luc Nancy's remark that 'community' cannot be produced in the context of labor (2001, 2) shows the contrast with a post-operaist theory, which conceptualizes the common as that which has to be produced and is not essentially unifying.
20. See note 11.
21. They thus assume that the networked multitude is non-hierarchical, that it is distributed evenly, providing every node – or singularity – with access to a common, with a link, which in no way suppresses the uniqueness of the nodes it connects, as Linda Brigham (2005) sums up.
22. If Hardt and Negri had applied other crowd theories, an 'entirely different image would emerge in which the differences of crowds and multitudes were much less significant and clear-cut' (Borch 2012, 291).
23. The reference to the historic emergence of biopolitical productivity (post-Fordism, etc.), on which the concept of the multitude is theoretically based, actually situates its potentiality and presents it not as outside Empire but as immanent to it.
24. As argued by, for example, Borch (2012), Hardt and Negri lose one profound insight of Spinoza's multitude, which is its ambiguity.
25. Unlike, for example, Facebook, this type of board does not earn money from its users, as they do not register there.
26. For an overview of the discussion on the relation of anonymous infrastructures and the notions of accountability and trust, see for example Friedman and Thomas (1999).
27. See for example Alexander Galloway's work on 'protocol', on 'how control exists after decentralization' (2004) as an analysis of power structures in the age of informatization.
28. See the call for papers of 'CODE: A Media, Games & Art Conference', which took place 21–23 November 2012 at Swinburne University of Technology, Melbourne, Australia: http://code2012.wikidot.com/call-for-papers.

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