

# Chaos Computer Club: The Communicative Construction of Media Technologies and Infrastructures as a Political Category

*Sebastian Kubitschko*

## 4.1 INTRODUCTION

In recent years, scholars have theorized about and conducted outstanding research on the interrelation between digital media and political activism. The interrelation between digital media and emerging forms of political activism has been investigated in insightful ways especially when it comes to protest, mobilization and other forms of ‘contentious’ involvement. When it comes to scholarship in the field of media and communication the focus of a number of recent studies has been on movement-based activism and more or less loosely networked collectives (Juris 2012; Theocharis et al. 2015; Mercea et al. 2016). These studies are particularly valuable because they manage to bridge disciplinary boundaries by bringing together analytical and methodological approaches from media studies, anthropology, political science and sociology. Yet, in contrast to the number of writings on networked and movement-based activism, far less work has been undertaken on more

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S. Kubitschko (✉)

ZeMKI, Centre for Media, Communication and Information  
Research, University of Bremen, Bremen, Germany  
e-mail: sebastian.kubitschko@uni-bremen.de

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concrete entities such as civil society organizations and on the role media technologies and infrastructures play in political engagements other than protest and mobilization (see Karpf 2012). Recent studies on hackers and hacking—understood as one particular set of contemporary political engagement—are no exception in this regard, as they tend to focus on contentious and globally networked forms of activism (Coleman 2014).

By presenting findings from qualitative research on the Chaos Computer Club (CCC), one of the world's oldest and largest hacker organizations, this chapter displays how hackers' political engagement today relies on a wide range of practices related to media technologies and infrastructures and, at the same time, continues to be oriented towards larger publics as well as 'traditional' centres of political power. While we have certain knowledge about hacker collectives at large and singular activities of the CCC in particular (see, for example, Wagenknecht and Korn 2016), we still lack a more detailed understanding of the processes that ultimately enable the Club to thematize and problematize the political qualities of specific media technologies and infrastructures. By employing the concept of communicative figuration—*actor constellations, communicative practices* and their *frames of relevance*—the chapter elaborates how the CCC communicatively constructs media technologies and infrastructures as a political category in its own right.

Adopting a figurational approach in this context is particularly helpful as it allows us to take into account the hacker organization's development over a longer period of time. In addition, it enables researchers to employ an inclusive understanding of the contemporary 'media environment' (Hasebrink and Hölig 2014), which includes a wide range of media technologies and infrastructures, instead of restricting the empirical inquiry to the use of a singular medium or the effects of specific media content. Finally, the approach allows us to investigate the relations between the communicative figuration that is internal and the communicative figuration that is external to the organization. To implement this approach, the chapter will proceed in three aligned steps. First, the hacker organization itself is conceptualized as a communicative figuration, which also includes direct political action in the form of hacking. Second, the chapter explains how the CCC positions itself in the public discourse around media technologies. Third, the chapter demonstrates how the Club's internal figuration and its linkages with relevant actors such as journalists, politicians and judges as well as the general public creates a spiral of legitimation that enables the hacker organization

to constitute media technologies and infrastructures as publicly recognized political phenomena. What this shows us, ultimately, is how hackers problematize media technologies and infrastructures as a theme and field of political engagement in itself, instead of considering them simply a means to an end.

## 4.2 RESEARCHING HACKER CULTURES

Scholars have condensed the far-reaching political relevance of technology by emphasizing that not only the appropriation of individual tools but also access to telecommunications infrastructure such as satellites and internet servers, as well as ‘logical’ infrastructure such as codes and protocols, are prime points of political engagement (Milan and Hintz 2013; Hunsinger and Schrock forthcoming/2017). In other words, with the increasing relevance of practices related to media technologies and infrastructures for social arrangements in general, and for political engagements in particular, media technologies and infrastructures increasingly become sites of political struggle in their own right (Kubitschko 2017). It is in this context that scholarly interest in ‘hacker cultures’—owing to the diversity of hacker collectives the plural is essential—has grown considerably in the past decade. While governmental institutions and mainstream media often use ‘hacking’ as an umbrella term for computer-related crime, these depictions are contrasted with insightful research that highlights hackers’ interaction with contemporary political landscapes.

Chris Kely (2008) emphasizes that hackers play an important role in society as they argue with and about technology. Tim Jordan (2013) characterizes hacktivism as an explicitly political form of computing. Leah Lievrouw (2011) pictures hacking as ‘alternative computing’ to describe a range of activities that focus on constructive political, social and cultural purposes. Gabriella Coleman (2012) depicts hacking not only as a technical endeavour but also as an aesthetic and a moral project that converges powerfully with humour, cleverness, craft and politics. John Postill in his writing on protest movements such as the Indignados in Spain refers to hackers who combine technological skills with political acumen as ‘freedom technologists’ (Postill 2014: 2). There has been growing interest in hackers’ collaborations with alternative media networks such as Indymedia (see Giraud 2014). At the same time, the growing approximation of established news outlets and hackers could be

witnessed in WikiLeaks' collaboration with a range of mainstream media as well as in Edward Snowden's disclosures that were initially edited by Glenn Greenwald for the *Guardian*. Taken together, recent theorization and research highlights the ever more substantial role hackers play for contemporary social and political arrangements. Overall, it can be said that recent investigations of hacker cultures bring forward a multi-layered and revealing characterization of hackers by looking closely at who they are, what they do and why they do it, instead of preserving stereotypes or proclaiming generalizations. It is this latter conceptual positioning of hackers, hacking and hacktivism that this research is drawing on and aims to expand by adapting a figurational approach.

In the context of recent studies on hacker cultures, the CCC is a somewhat particular case. First, in contrast to newer hacker collectives, the Club has been around since the early 1980s—a time before the World Wide Web when the increasing spread of personal computers further stimulated the transition from analogue to digital communication. Second, the CCC is not necessarily a loosely networked collective but rather a concrete entity that is registered as a non-profit organization with around 5,500 members and acts as an official advocacy group. Third, for the most part its activities are not destructive or illegal, but best considered constructive and in accordance with the established law. What started in 1981 as an informal gathering of a few 'politically sensitized computer enthusiasts' (Wagenknecht and Korn 2016: 1107) today is a digital rights and civil society organization whose members have advised all major political parties in Germany over the past years, have written expert reports for the German constitutional court on six occasions and have been invited to be part of governmental committees. Organization, in the context of this framework, is not understood as a static phenomenon, but as a 'discursive construction' (Fairhurst and Putnam 2004) produced through an ongoing process of 'organized sense making' (Weick et al. 2005). It is understood that there is both an internal side to this sense-making—members negotiating what the organization is and should be—and an external side—how the surrounding environment relates to the organization.

The qualitative case study research (Yin 2014) presented in this chapter relies on an 'extended case method' (Burawoy 1998) that is based on a mixed method approach. It brings together 40 face-to-face open-ended interviews with Club members (e.g. co-founders, spokespersons, new members), participant observations during public gatherings

at hackerspaces across Germany (e.g. Berlin, Hamburg, Stuttgart) and hacker conventions (e.g. Chaos Communication Congress in Berlin, SIGINT in Cologne) as well as during more private get-togethers (e.g. personal meetings with journalists). Based on a constructivist grounded theory approach (Charmaz 2002: 677), the primary data set was supplemented with a contextualizing media analysis: taking into account ‘old’ and ‘new’ self-mediation practices (e.g. the Club’s *Datenschleuder* magazine, press releases, the official CCC Twitter account @chaosupdates, legal expert reports, Chaoradio), prominent media coverage (e.g. mainstream media after hacks, during annual Congress) as well as different forms and styles of media access (e.g. columns of CCC members in mainstream outlets, participation in political talk shows, interviews with CCC members). The lion’s share of the research took place over a three-year period from 2011 to 2014 and the contextualizing media analysis continued until 2016.

### 4.3 FORMING A COHERENT HACKER ORGANIZATION

Let me start by going way back in time to unpack the political development of the CCC. The Club’s first activity that attracted attention to the hackers as actors in the field of computing was the so-called Btx hack. Since its nationwide launch in 1983, Btx (abbreviation for *Bildschirmtext*, ‘screen text’) was an ‘interactive’ online system that was part of the German Federal Post Office’s monopoly on mediated communication—including mail, telephone, computer networks and hardware. Integrating a telephone and a screen in one medium, the main purpose of Btx was to facilitate and promote e-commerce and digital communication. Although the system was far less networked, it can be seen as a precursor of more recent services such as online payment systems and news tickers. In the autumn of 1984, two CCC members exploited a security flaw in Btx, which allowed the hackers to transfer 135,000 Deutschmark (c. 68,000 euros) from Hamburg’s savings bank to their own donation page. Immediately after the hack, the CCC retransferred the money and reported the incident to the data protection commissioner. The hack not only demonstrated the system’s security flaws but also provided evidence of the hackers’ technology-related skills and knowledge.

At this time, the network of actors interrelated and communicating with each other was still readily comprehensible and the Club’s

communicative practices were largely based on face-to-face interaction, as most of its members were based in Hamburg. Yet the increasing spread of personal computers and digital infrastructures such as bulletin board systems at that time went hand in hand with the emergence of local CCC chapters and meet-ups across Germany. In stark contrast to other existing means of communication, the newly developed networks were largely decentralized. This was important in a social and a political sense when it comes to *actor constellations*. As hackers were still a minor sub-cultural phenomenon and people interested in the creative and subversive use of technology were dispersed across the country, the possibility of sharing information and knowledge across time and space was a big step towards building a sense of communality. More concretely, the emerging ability to merge offline and online communication showed the initial Club members that new forms of connectivity were possible, opening up new modes of engagement. The *frames of relevance* that guided the Club's constituting practices were predominantly concerned with the political demand for more open and freely accessible communication and information infrastructures. Overall, the character of the CCC was defined by the objective to form a collective of politically motivated technologists that would not only do things with technology but also act upon it. The Btx hack was exemplary in this context as it explicitly problematized the Post Office's monopoly by showing its limitations and shortcomings. Similarly, the desire to communicate and collaborate and to coordinate activities within and beyond the Club's boundaries through decentralized infrastructures was the driving force behind the hackers' efforts to establish these networks.

Yet, throughout the mid- and late 1980s, the CCC had to acknowledge that to establish and keep up its frames of relevance was anything but an easy task. During that time, the CCC was publicly affiliated with illegal hacks that, amongst other things, involved the Soviet Union's KGB (the Committee for State Security) and hacking into NASA (National Aeronautics and Space Administration) computer systems. As internal communication soured, accusations got out of hand and disputes amongst core members led to controversies that almost saw the Club's dissolution. After reorganizing and re-establishing its own identity over the coming years, the hacker organization got its feet back on the ground by keeping its activities more coherent and better structured. The CCC also reformed its organizational structure. While the Club continued to grow and spread across German-speaking countries

and increasingly brought together people who contributed heterogeneous backgrounds, perspectives and experiences, the 1990s saw the re-emergence of a more exclusive core team; which echoed the organization's constitution in its early days. This team of core members effectively coordinated the heterogeneity by merging face-to-face and mediated communication that relied on technologies such as Internet Relay Chats (IRC) and other self-programmed protocols for online messaging and data transfer, allowing one-to-one as well as group communication. Communicative practices were not only critical in the exchange of expertise and the debate of issues across the CCC's members, but also in the formation of a core team of actors who would coordinate the hackers' collective actions and specify its frames of relevance.

In this context, drawing clear boundaries between inward-oriented and outward-oriented communication was essential. One of the main reasons for establishing and upholding internal communication boundaries was the importance of coordinating collective action in ways that didn't allow 'outsiders' such as journalists and other actors interested in the Club's undertakings to gain sensitive information about ongoing or upcoming activities. For this purpose, communication had to be more exclusive and oriented towards individual members and subgroups instead of the Club as a whole. Participants identified several tools as adequate solutions to establish tailored and more efficient modes of communication, with IRC being one of the main channels for elaborating projects amongst a rather exclusive circle of members. In contrast to the more open information environment of internal mailing lists to which large numbers of members could subscribe, IRC was a much more restricted channel: it allowed longer-term, active and trusted members to communicate amongst each other and to form small groups that shared valuable information. Being able to communicate with each other through online systems such as IRC allowed the CCC to create different layers of exclusivity in which members could communicate one to one and amongst a selected few. These layers permitted the hackers to solve most of the issues related to keeping up boundaries between internal and external communication. Likewise, these layers formed and deepened existing organizational structures within the Club by creating exclusive communication environments for the sake of executing political work in more dynamic and secretive ways.

More recently, the spectrum of these tools has, of course, increased beyond IRC. While newer channels were not 'cannibalizing' existing

tools, CCC members were employing contemporary digital technologies that played an important role in internal collaboration, coordination of digital direct action and more basic practices such as fine-tuning press releases. Web-based editing tools, for example, allowed a number of individuals to collaboratively edit a file, either simultaneously in real time, or deferred in non-real time. The major asset of these web-based editors, generally referred to as Pads, was seen to be in their ability to enable time-efficient, location-independent collaborations amongst a chosen group of people. Pads were an advancement on wikis, for example, as they brought different technological affordances together and enabled CCC members to act interlinked, multi-locally, and time-efficient. Depending on the particular need of the group, different communicative practices that formed layers of exclusivity fluently merged from one application to another. While the use of particular tools such as IRC and Pads was creating and underlining organizational structures, this was not only done for reasons of secrecy or exclusivity. The fact that only a selected number of individuals were involved in particular activities and included in exclusive communicative practices was to a large degree also down to practicality. Considering the growing size of the CCC, the Club's activities and internal organization would be simply unmanageable without the discussed practices. Bringing together a well-integrated group of people and keeping the number of participants in a given collective action down meant that the communication process could be more direct, productive and effective.

The overall level of connectivity had intensified drastically since the emergence of the Club in the early 1980s—from bulletin boards, through global communication networks, to instantaneous and overlapping web-based interaction. Yet in spite of this ongoing development, one can observe certain forms of continuity. Despite the rapid growth in membership figures, the CCC's communicative practices enabled members to form internal groups and layers of communicative intimacy that created margins between internal and external communication and maintained organizational boundaries within the Club. Communicative practices related to face-to-face communication as well as tools that emerged in the 1990s, and more contemporary technologies allowed a core group of members to stabilize the Club's political engagement successfully over time. On the one hand, restricting the number of actors also helped to maintain the boundary between internal and external communication. On the other hand, it enabled the Club to establish a



more constructive communication process, as a lower number of participating members also meant a lower number of differing opinions; which, in turn, enabled the group to keep the frames of relevance more focused and to make decisions in a timely manner. Accordingly, performing direct digital action in the form of hacking was directly related to communicative practices, as they later played an important role in relation to organizing, coordinating and executing the Club's political projects. Despite rapid growth of the organization, communicative practices allow the Club to act on politically controversial issues in timely and discreet ways. Consequently, considering the internal side of sense-making when it comes to the CCC's organizational formation, one can see how communicative practices, a specific actor constellation and establishing frames of relevance go hand in hand. This communicative figuration within the hacker organization formed the Club's basis for executing well-orchestrated hacks, emphasizing that for the hacker organization media technologies and infrastructures are not simply instruments for acting politically but are political matters in themselves.

Only taking into account the past decade, the following hacks are of particular relevance in this context. In October 2006 the CCC, together with the Dutch citizen group *Wij Vertrouwen Stemcomputers Niet* ('We do not trust voting computers'), hacked a voting computer that was at that time in use in elections in the Netherlands, France, Germany and the United States. By demonstrating that the computers were not forgery-proof and that a fraud would be almost impossible to reconstruct, the hackers convincingly showed that basing elections on the use of these computers would endanger the democratic process. In 2008 Club members obtained fingerprints from the German interior minister at that time, Wolfgang Schäuble, and published them in a format designed to fool passport fingerprint readers. The hack underlined the vulnerability of biometric identity systems at a time when biometric passports were increasingly being introduced on a global scale and fingerprints became obligatory in German passports. The critique of the spread of insecure biometric applications in day-to-day life was recapitulated when in 2013 the Club hacked Apple's Touch ID—a technology that allows users to unlock their iPhone by fingerprint identification—within a week of its release. Another prominent recent collective action was the so-called *Staatstrojaner* ('Federal Trojan Horse') hack. In 2011, two years before the issue of surveillance gained global currency owing to Edward Snowden's revelations, the CCC disclosed surveillance software

used by German police forces that violated the terms set by the constitutional court on this matter. Yet, as will be shown in the following section, to understand the way the Club thematizes and problematizes the political qualities of technology, one also needs to take into account another dimension: besides the aforementioned internal dynamics the Club's activities were, of course, also interrelated to external elements.

#### 4.4 FROM THE INSIDE TO THE OUTSIDE

Taking the above into account, it might come as no surprise that from day one the Club complemented its hacks with outward-oriented communication aimed to make the hackers' findings comprehensible and its political demands visible to the largest possible public. The Btx hack itself, for example, would not have been overly effectual if news media had not picked up the story. As news media reported widely on the hack and were largely in support of the hackers' criticism, the hack gained an event character. Following the Btx hack, the CCC was recognized as a collective actor that had something relevant to say about the communication and information landscape in Germany. The CCC was invited to speak on the main television news magazine of public broadcaster ZDF, the advice of Club members was frequently sought by national newspapers, they were asked by corporations to speak on data security and were requested by the newly established Green Party to write a report on the Party's potential use of networked computing. One of the important details here is that instead of only being the subject of media coverage, the CCC had the opportunity to communicate its point of view to different audiences.

Related to the relationship of non-state actors and established media outlets, Richard Ericson and his colleagues (1989) make a useful distinction between media access and media coverage. By access, they mean the news space, time and context to reasonably represent one's own perspective, whereas coverage entails news space and time but not necessarily the context for favourable representations (Ericson et al. 1989: 5). This distinction is vital because it demonstrates that media access—as with access to all kinds of resources at institutional levels—remains a political question (Freedman 2014). While media coverage simply denotes the amount and prominence of attention and visibility a group receives, media access indicates that an actor has a particular standing and is treated as an actor with a serious voice in the media. Gaining positive

coverage once may not be hard. Sustaining regular access and standing, which enhances the actor's ability to embed its concepts and ideals in public discourse (see Phillips et al. 2004), can be extremely difficult. Seen from this perspective, the Btx hack shows the ways in which the CCC as a non-state actor had to rely on established media outlets to mobilize public support, to increase the validity of their demands and to circulate their messages beyond like-minded people. Established news media were, however, not the only part of the Club's media ensemble; and these are a few examples that date back to the CCC's early days. Right from the start the Club had close affiliations with the then newly founded alternative *tageszeitung* ('daily newspaper'), commonly referred to as *taz*, one of the Club's co-founders (Wau Holland) being a columnist during the mid-1980s. In addition, the hacker organization has published its own *Datenschleuder* magazine since 1984 (still ongoing) and was very active in enlarging bulletin boards systems (BBS) in Germany throughout the 1980s. Consequently, the Club's media ensemble relied on practices related to analogue and digital media and comprised both coverage by and access to news outlets.

At this point it is helpful to make a leap in time and focus on more recent developments. The end of the 1990s and the early 2000s saw a growing pervasiveness of radical and alternative media platforms and online networks that amplified actors' ability to voice the political relevance of their endeavours (see Rodríguez et al. 2014). Along with this development, scholars emphasize that actors increasingly invest human, technological and financial resources in "being the media" instead of hating it' (Cammaerts 2012: 125). The CCC is no exception in this regard. Over the past two decades, Club members have initiated a regular radio show (Chaosradio), podcasts (e.g. CRE and Alternativlos), accounts on both popular and alternative online platforms such as Twitter, Quitter and personal blogs, to name some of the more prominent examples. Instead of abandoning outward oriented channels such as the Chaosradio show or the *Datenschleuder* magazine, the Club integrates its 'trans-media' (Costanza-Chock 2014) efforts into a 'media manifold' (Couldry 2012), where one communicative practice does not necessarily substitute for the other, but plays a part in the Club's overall media ensemble.

Following this depiction, one might expect that the CCC has detached itself from interactions with mainstream outlets. This is not the case at all. On the contrary, the CCC has in fact intensified its interactions

with well-established media. In particular its styles and modes of access to mainstream media have diversified and multiplied (e.g. personal contacts to journalists, writing regular columns for well-established newspapers, being an editorial member of online outlets, acting as informants). Despite the ability to increase its media ensemble, the importance of gaining positive coverage by and access to established media outlets and news channels is essential for the CCC. Mainstream outlets are important sites for the Club to exist in the public mind, make its voices heard and achieve public recognition beyond the circle of like-minded individuals—especially important because of the ongoing fragmentation of the media environment and the competition of different actors for public attention. Being covered by and having access to mainstream media outlets continues to be an effective and possibly necessary route to co-determine public discourse for non-state actors such as the CCC.

For emerging groups such as Anonymous, it has been argued that satiating the media hunger for spectacle, media attention and column inches has become an end in itself and therefore an obstacle to political movement building (Coleman 2014). In the context of the CCC, it cannot be said that the hacker organization has been captivated by the demands of news media and popular online platforms, which might lead to trivialization and debasement of its aims. Similarly, the Club is not aiming for visibility at any price; which can be seen in the fact that it does not make use of Facebook or many other capital oriented and data hungry infrastructures. In the case of the CCC, publications of particular activities such as the Staatstrojaner hack in the *Frankfurter Allgemeine Zeitung* are the result of elaborated coordination amongst core members of the Club and the newspapers' editors. While mediated visibility does not equal empowerment and is not a political end in itself, access to established news channels appears to be particularly important for 'hackers' also because the term still tends to have a negative connotation.

Based on a multi-layered media ensemble that reaches different audiences and publics, the CCC is able to communicate its political message to a wide range of actors. As a consequence of this, the hackers' outward-oriented communication establishes and strengthens the Club's position in public discourse. It is important to mention here that the hackers' communicative practices are not limited to mediated communication but, as briefly mentioned above, also strongly rely on face-to-face interactions; which is the case when members are invited to share their expertise in governmental committees and public hearings, and when

they advise individual legislators and politicians, as well as when they are invited as experts to advise sections of a parliamentary party in the Bundestag or the constitutional court in Germany. The ability to interact with ‘outsiders’ largely relies on the fact that a core group of members forms clear and well-recognizable frames of relevance through organizing both inward- and outward-oriented communication. Bringing the previous section together with this line of reasoning, one can remark that the CCC’s internal communicative figuration not only enables the Club to execute direct digital action in the form of hacking, but also allows the hacker organization to communicate with a diversity of relevant actors (including the larger public) in coherent ways. In the case of the CCC, the relations between hacking and the communicative figuration within the Club are best understood as interlocking arrangements (Kubitschko 2015). These, as will be argued below, have wider consequences for the Chaos Computer Club’s standing as a political actor. To substantiate this line of argument, the final section will put the spotlight on the dynamics that result from the figurational arrangements discussed above, and show how they put the Club into a position to influence larger frames of relevance related to media technologies and infrastructures.

#### 4.5 SPIRAL OF LEGITIMATION

So far this chapter has argued that the hacker organization’s internal figuration is closely connected to its way of executing political work. In addition it has been shown that the CCC’s direct digital action and its mode of publicizing its activities rely on one another. Interestingly enough, when we look more closely at the way the Club interacts with the media environment and with institutionalized politics, one notices that these interactions complement one another or are in fact even interdependent. The Club’s media ensemble and interactions with relevant actors perpetuate each other and co-determine the Club’s ability to politicize media technologies and infrastructures. The dynamic at hand that best describes this process will be referred to as a spiral of legitimation.

According to Mark Suchman, legitimacy is practically the basis of politics as it addresses the forces ‘that constrain, construct, and empower organizational actors’ (Suchman 1995: 571). In the expanding literature on legitimacy Suchman’s definition has been generally accepted as the most suitable: ‘Legitimacy is a generalised perception or assumption that

the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions' (Suchman 1995: 574). Overall, legitimacy, to a large degree, rests on being socially 'comprehensible' and 'taken-for-granted' (Suchman 1995). Echoing the notion of taken-for-grantedness, Berger and Luckmann (1967: 94–95) consider legitimation a process whereby comprehensibility deepens and crystallizes. Skill, effort and practice are regarded necessary elements in the process by which an actor becomes taken-for-granted (Bourdieu 2000). Accordingly, legitimacy is not simply out there for the asking, but has to be created as well as exploited by actors who seek to gain legitimation.

Scholars who diagnose correlations between communicative practices and the social standing of political actors have argued for a strong link between media representation and legitimacy (Lazarsfeld and Merton 2004 [1948]; Koopmans 2004). This chapter agrees with these accounts, as far as the media environment serves both as an indicator of legitimacy by society at large and as a source of legitimacy in its own right (Deephouse and Suchman 2008). At the same time, the figurational approach presented here complements and complicates existing lines of reasoning. It does so in two ways. First, as has been underlined above, one needs to take into account both actors' inward oriented and outward oriented communicative practices. In addition, it is understood that media representation today goes far beyond coverage by mainstream media as it relies on actors' multi-layered media ensemble. Second, instead of arguing for a straightforward causal correlation between 'media attention' and social standing, this research reveals a more eclectic process: a spiral of legitimation that is based on the relation between the organization's internal communicative figuration and the communicative figuration related to the public discourse around the political qualities of contemporary media technologies and infrastructures.

At least over the past two decades it has become a dominant *frame of relevance* in public discourse that along with their pervasiveness (or even omnipresence) media technologies and infrastructures are an ever more important part of the social world. More and more people make use of and relate their daily activities to media in one way or another. At the same time legislators, politicians, judges and other actors with decisive power related to policy-making and the law are in need of advice, consulting and grounded recommendations. That is to say, the CCC's ability to manoeuvre their issues into public discourse and to advance their

political goals to a great extent relates to prevailing social arrangements. The more media technologies and infrastructures find their way into people's everyday lives, the more attentive citizens, media representatives and decision-makers are to actors who demonstrate and articulate reasonable engagement in relation to technical transformations. Gaining and maintaining legitimacy is something that is framed and conditioned by social realities. While legitimation can be at least partially secured through institutions such as the media, legitimacy is never simply mediated.

In the case of the CCC, institutional politics react, amongst other things, to public pressure that is built up through a multi-layered media ensemble; which confirms that actors who receive preferred standing and are able to stabilize their appearances across the media environment over time tend to be considered trustworthy. Interestingly enough, this relationship also operates the other way round. Media representatives consider CCC members as legitimate voices and provide them access to their outlets owing to their regular interaction with institutional politics. Politicians, legislators and judges learn about the organization's engagement in part through the hackers' outward oriented communication. As a consequence, they invite Club members to articulate their stance in particular contexts, such as committees, consultations and hearings. Owing to the Club's involvement in institutional politics, different media outlets regard the CCC as worth covering as well as worth granting access to. Media environments and institutional politics, each in their own way, mutually signify the CCC's engagement before a wide public. As a consequence its virtuous role as a civil society organization that has something valuable to say about the political relevance of technical developments continues to be acknowledged, inscribed and stabilized. Throughout this process, the Club gains opportunities to illustrate its activities, articulate its objectives and politicize particular themes. This process is accompanied by the Club's regular direct digital actions that constantly demonstrate the hackers' high level of technology-related skills, experience and knowledge. Overall, instead of linearity one needs to stress rotation and reciprocity as the defining processual dynamics that create an attribution process, whereby the narration 'CCC hackers are the good ones' emerges and stabilizes.

This is not to say that this spiral of legitimation cannot go into reverse. Legitimacy is never definitively acquired and remains open to challenge and dependent on social perceptions (Rosanvallon 2011: 7). Similarly, it is understood that no political actor is (il)legitimate for 100%

of the time or across all locations. The Club's de-legitimation during the mid-1980s is a telling example in this context. Accordingly, a spiral of legitimation refers to the growth and spread as well as decline and withdrawal of a given actor's legitimacy and explicitly takes into consideration that organizational legitimacy changes over time. Conceptualizing the processes at hand as a spiral of legitimation takes into account that legitimation is never constructed in a vacuum, but relies on communicative practices and is evolved in relation to concrete actors' constellations within an environment that has specific dominant frames of relevance. While it is impossible to (mathematically) measure legitimation, it is certainly possible to observe a given actor's standing, reputation and taken-for-grantedness. Similarly, by taking into account the figurational arrangements both within and surrounding a given organization it is possible to determine whether the spiral is in an upward or downward dynamic.

Considering that, analytically, one can distinguish between different levels of legitimation, it should be noted that empirically these levels overlap the term spiral of legitimation, which conceptualizes legitimacy as a relational process. Legitimacy is not a matter of singular events but of the relation between different communicative figurations over time. Again, it is necessary to highlight that spirals of legitimation are not self-perpetuating feedback loops. Neither do they rest on figurations that occur overnight. Accordingly, spirals of legitimation point to a process of inscription over time whereby individuals coming together around common ends, objectives or projects develop into meaningful political actors. By doing so, it echoes understandings that see time as a critical component in actors being able to co-determine political settings, as political claims can only be realized over the long term (see Andrews and Edwards 2004). Looking more closely at the Club's legitimation, one notices that the hackers' current ability to practise a demanding vision of politics is strongly affiliated with the organization's history. For more than 30 years, CCC members have been acting on the politicization of media technologies and infrastructures. Only by transporting its activities and voice over time and space did the Club manage to establish itself as a reliable reference point with a lasting resonance to which different actors, publics and audiences can relate.

Sustaining political engagement over time to challenge existing conceptions of what is understood as political and shifting the legitimate boundaries of recognized actors is a demanding task. The CCC



continuously actualizes its engagement to avoid it becoming vague through more or less spectacular hacks, and has established mechanisms to survive the ebbs and flows of mass attention. Considering the social standing of the Club as a trusted civil society organization, one needs to take into account distinct temporalities that include the effective publicizing of actions such as the Staatstrojaner hack as well as the hackers' continuous contributions to the public discourse around the political qualities of media technologies and infrastructures since the early 1980s.

## 4.6 CONCLUSION

Taking into account both the deep embeddedness of hacker cultures in the evolution of computerized society and the concrete case of the Chaos Computer Club, it becomes clear that acting on media technologies and infrastructures entails a wide set of activities: it manifests itself not only in form of direct engagement with technical devices and systems, but also occurs through interaction with different actors, through articulating viewpoints, through sharing knowledge and experiences in different circumstances. As has been argued in this chapter, to understand the way the Club has gained recognition as a trustful actor that has something valuable to say about the role media technologies and infrastructures play in society, it is beneficial to investigate the communicative figurations within and surrounding the hacker organization. By investigating the *constellation of actors*, the *frames of relevance* and *communicative practices*, the chapter shows how the CCC thematizes media technologies and infrastructures as sites of an active political struggle in their own right. Doing so not only allows conceptualizing the relations between hacking and the communicative figuration within the Club as interlocking arrangements but also points towards a dynamic that has been described as a spiral of legitimation. This denotes the process through which the CCC's engagement is acknowledged and stabilized (or denied and destabilized) over time. While the Club's current role as a trusted civil society organization strongly relates to internal figurations, it is likewise related to the public discourse surrounding media technologies and infrastructures' role as an ever more important part of the social world. By bringing these two dimensions together and by considering time as a critical component, it is possible to further understandings of organizational actors' ability to co-determine political arrangements.

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