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## “There Simply Is No Unified Hacker Movement.” Why We Should Consider the Plurality of Hacker and Maker Cultures

Sebastian Kubitschko in Conversation with  
Annika Richterich and Karin Wenz

Sebastian Kubitschko is a postdoctoral researcher at the *Centre for Media, Communication and Information Research (ZeMKI)* at the University of Bremen in Germany. His main research fields are political communication, social movements and civil society organisations. In order to address the relevance of new forms of techno-political civic engagement, he has conducted qualitative, empirical research on one of the world’s oldest and largest hacker organisations, the *Chaos Computer Club (CCC)*. Sebastian emphasises the societal and political relevance of hacker organisations: he investigates how initiatives such as the CCC combine their IT and communicative expertise to exert agency in technological developments, public debate and policy making. Conceptually, he is particularly interested in practice theory and how it may be used in media sociological and communication research. His papers have been published in international peer reviewed and open access journals. Together with Anne Kaun, he is the editor of *Innovative Methods in Media and Communication Research* (2016).

For the “Making and Hacking” issue of *Digital Culture & Society*, Sebastian Kubitschko (SK) discussed insights from his research in an email conversation with the issue editors Annika Richterich and Karin Wenz (EDS).

**EDS:** Thank you for taking the time to tell us more about your research! As introduction, could you explain how your interest in hacking emerged and how this research focus evolved?

**SK:** To start with, I want to congratulate you and all authors involved on this issue on hacking and making – two closely related and highly relevant themes that will surely stay with us for some time to come. And let me thank you both for giving me the opportunity to discuss my own work, which basically started with a rather broad interest in the role media technologies and infrastructures play in society

in general and politics in particular. In essence I am intrigued by the question: is political engagement still possible (or imaginable) without media? I don't mean to echo a classical deterministic line of reasoning here. Nonetheless, it seems no longer possible to separate "media" on the one hand and "society" on the other hand. The technical part that drives this development is, without doubt, exciting and of great relevance. But I was – and still am – more particularly interested in people who have the required capacities and resources to deal with media in ways that go beyond the passive, preprogrammed and ready-to-use standard. So, after all, the focus is on actors who are at the heart of concrete political struggles over the construction, appropriation and control of media technologies and infrastructures. And this is where hackers play a central role and have done so over the past 60 years or so.

Media technologies and infrastructures generate contingencies, create opportunities and institute barriers, all at the same time. They diminish the interests of some and promote those of others. It is this charged relationship that we can locate hackers in. Finding a conclusive definition of "the hacker" seems to be an impossible task. The sheer diversity and steady motion of the object under investigation is one of the reasons that hacker studies is a truly transdisciplinary field subsumed across varying scholarly traditions and theoretical backgrounds (ranging from information science, anthropology, political science, media studies, criminology etc.). Not every hacker is a political activist, but there are many who actualise technical skills, knowledge and experiences to materialise concrete interventions, critique and self-determination. The kind of hacks "performed" by hackers tells us a lot about the executing actors' politics.

**EDS:** You are researching hacking communities, and not only that you investigate "hacking practices". What does this mean very practically for your own work as a scholar? How do you conduct your research, and how do you conceptualise your methodological approach?

**SK:** In this regard, it might be helpful to give a brief depiction of hacking. According to my conception, hacking is for the most part about engaging with the world in a practical manner; it is a hands-on approach. At the same time, it is a way of interpreting the world. It might be overstated to frame hacking as a philosophy, but, when exercised seriously, it certainly brings together a cast of mind and mode of life. Wau Holland, one of the CCC's founders, described hacking (in an interview with Italian cypherpunk Ermanno Guarneri in 1990) as "a practice that lets you be inside a situation as soon as it happens and allows you to create new meanings from it." As new walks of life are being explored with a "hacker mind-set," there are certainly many forms of hacking that do not necessarily include technical artefacts.<sup>1</sup>

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1 See, for example, Söderberg/Delfanti (2015).

This popularisation (that often reaches a vulgarising dimension) makes it even more critical to investigate and analyse concrete settings and specific activities to gain better understandings of the plethora of motives, aims and means that fuel hacker cultures. Conceptualising hacker cultures in the singular bears the risk of annulling both context and temporality. There simply is no unified hacker movement, and there might not even be clearly distinguishable hacker generations. Fleshing out specificity is of great importance when you empirically investigate the political dimensions and possible societal consequences of hacking. This approach has, of course, methodological consequences.

Qualitative case study research continues to be a highly valuable and effective method for gaining insights to real-world scenarios. Gabriella Coleman’s wonderful anthropological work is probably the best example where this can take you.<sup>2</sup> My main interest is in what concrete hacker collectives like the Chaos Computer Club do, their mode of organising and their “sociotechnical imaginaries,” to use an eloquent phrase by Sheila Jasanoff.<sup>3</sup> More concretely, I am interested in the role practices related to media technologies and infrastructure play for bringing their political work into being, for gaining legitimation and sustaining their engagement over time. In that sense my approach is rather old-fashioned – qualitative, ethnographic, face to face – which means talking to people, visiting the places where they gather and hang out, joining them during meetings with journalists, listening to their conversations. This main mode of data collection is complemented by an analysis of “internal” and “external” documents. The Club itself has a wealth of cross-media material that can be accessed online: for example almost every issue of the hackers’ *Datenschleuder* magazine (published since 1984), the Club’s Hacker Bible Part 1 and Part 2 (published 1985 and 1988), Tim Pritlove’s CRE, the Club’s official Twitter account, video recordings of CCC events like the Congress and the Camp on <https://media.ccc.de/>.

There are also a handful of publications that have been published on or in collaboration with Club members over the past three decades. Finally, there are almost uncountable media reports, newspaper articles and documentaries on the hacker organisation. There is good reason to make use of the growing number of “historical” documents that are archived or stored in a more or less easily accessible way nowadays. Doing so helps to contextualise narratives, qualify propositions and triangulate research findings.

**EDS:** In one of your articles, you describe hackers’ media practices as “interlocking arrangements.”<sup>4</sup> You argue that in order to exert political agency, hackers need to combine technological expertise – for example the discovery of IT security vulnerabilities – with effective communication. They need to interact appropriately with

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2 See Coleman (2012).

3 See Jasanoff (2015).

4 See Kubitschko (2015a).

media as well as policy makers. Could you give an example for this; for example could you comment on a recent case illustrating this interplay and explain how it relates to the notion of “hacking politics?”

**SK:** Back in 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. Following their direct engagement with the machine the hackers were asked to act as experts for the constitutional judges in Germany. In accordance with the Club’s expert report, the German constitutional court ruled the use of voting computers unconstitutional in 2009. The court’s verdict explicitly referred to the findings of the CCC’s hack and stated that voting computers contradicted the convention of the public nature of elections, which guarantees every citizen control of the legality of any election. The legitimization of the hackers’ direct digital action, as well as of their narration by the highest court in Germany, was the tip of a series of acts that started with hacking the computer, initiating a public cross-media campaign and direct interaction with the constitutional court. As a consequence of practising *and* articulating its expertise, the CCC not only politicised the issue of computerised voting but achieved a concrete change in democratic procedure. This is basically what I refer to as interlocking arrangements: the effective complementation of doing/acting and communication/articulation to implement political engagement.<sup>5</sup>

The example itself might not be entirely new, but interestingly enough discussions around the issue are now more relevant than ever. What happens in different environments where such interlocking arrangements are not in place can be seen across the world’s largest democracies – Argentina, Brazil, India and the United States – where administrations still rely on voting computers. In 2015, a programmer named Joaquín Soriano exposed severe vulnerabilities in Buenos Aires’ e-voting system shortly before mayoral elections, allowing for potential voting fraud. After informing the company that makes the Vot.ar e-voting system, police forces raided his house. In early 2017, following the unpleasant experiences during the 2016 presidential election, the Obama administration officially designated election infrastructure – including voter registration databases, voting machines and other systems to manage the election process – as a critical infrastructure subsector. In fear of foreign hacker attacks, the Netherlands made no use of computers for casting votes during general elections in 2017.

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5 See also Kubitschko (in print/2017a).

**EDS:** In the previously mentioned paper, you also describe some historical examples of how hacker collectives have called attention to issues relevant to their work. You refer i. a. to the so-called *Btx* hack which refers to “Bildschirmtext,” the German term for “screen text.”<sup>6</sup> The CCC discovered a security gap in *Btx* which they then used to transfer 135,000 DM (65,000 €) from a savings bank to their own account. They immediately transferred the money back; however, they reported the system’s security flaw and positioned themselves effectively in exposing this gap. How do such practices differ from activities as we could observe them, for example in hacking communities in the United States? Think, for example, of *Backorifice*, which was released by the *Cult of the Dead Cow* (cDc) collective (many years later, in 1998): the software exposed a security gap in Microsoft’s operating system *Windows 98* and allowed users to remote control computers running this system. In this context, we likewise saw controversial debates regarding the ethics and politics of certain hacks during which the *cDc*, for example, openly discussed the question “Was releasing Back Orifice to the public immoral?”<sup>7</sup> How do such attempts and ensuing debates differ from or resemble the ones you have observed – and are there particular factors which may explain this?

**SK:** Hacks are a particular form of circumventing, reworking and confronting pre-given commands by governments or tech-corporations. They do, however, largely differ regarding the degree of being destructive or constructive. So it is a question whether one aims to exploit out of personal interest, just for the fun of it, delight in destruction or with the purpose of proposing valuable solutions. The *Btx* hack definitely compromised the system’s reputation *per se*. Yet the larger purpose of the hack was not simply to damage but to voice a publicly recognisable critique of the communication monopoly that was in place in Germany at that time and countered the CCC’s demand for liberating flows of information and communication. It is almost unthinkable nowadays, but the state-run German federal post office (*Bundespost*) had a monopoly on all mediated communication. So, again, context matters. Before the Club members hacked the system, they offered dialogue, demonstrated *BTX*’s security weaknesses at an expert congress and talked about the system’s flaws in their *Datenschleuder* magazine – to little avail. After not being heard or at least not being taken serious, they performed the virtual bank heist and hang a lantern on their achievement.

**EDS:** From December 27 to 30, 2016, the Chaos Communication Conference 33C3 took place in Hamburg. It was the 33rd conference that the CCC organises. Being based in Bremen, you work relatively close to Hamburg, and obviously the CCC is at the heart of your research. What does this event therefore mean for you? Will

6 Introduced in West Germany in 1983, *Btx* was an early online service that transmitted data via the telephone network and displayed content on a TV screen.

7 See, for example, <http://cultdeadcow.com/news/response.txt>.

you attend, or have you attended a CCC conference before? What are your experiences, and what are, in your opinion, particularly important topics that will be discussed and tackled during the event?

**SK:** When we think of interlocking arrangements, one of the aspects that needs to be taken into account is its relevance for sustaining engagement over time. The first Congress (1C3) in 1984 was more or less a direct effect of the *Btx* coup. Following the media hype that resulted from the hack, the Club was able to pull of “THE meeting for data travellers,” as they referred to it, under the official slogan “Open Networks – Why:.” Curious journalists and television crews besieged the roughly 300 participants. Today, with over 10,000 attendees, the Congress has turned into one of the largest and longest-running hacker conventions worldwide. I was not at the last Congress, mainly because the timing is not entirely family-friendly if you want to use the days between Christmas and New Year for spending time with your loved ones. Yet this already explicates how valuable the Congress is for hackers: it is like meeting your family. Coleman has rightfully referred to the hacker con as a “ritual condensation and re-enactment of a lifeworld”<sup>8</sup> In line with this, attending the Congress as well as a number of smaller CCC-organised gatherings across Germany was of great relevance for my research to gain access, to interview people and to gain further insights to the hackers’ way of interacting with journalists.

Overall the topics that are covered increasingly turn towards the political side of things and seem less concerned with the purely technical stuff. If you go there as a layperson, it still might seem pretty techy, but it used to be much more throughout the 1980s and 1990s. In particular throughout the past decade, along with the sweeping digitalisation and datafication of almost any social domain, the Club has seen an astonishing rise of popularity, that is, literally, a growing interest by the *populus*. In addition, a variety of relevant actors – journalists, academics, politicians, legislators, judges and so on – appreciates the vast corpus of expertise that the Club brings together amongst its heterogeneous members; which is rather unique in the world. I can’t think of another country where a hacker organisation of that size has been around for that long and is recognised as a serious actor that has something valuable to say when it comes to the politics of media technologies and infrastructures. This does not mean that the hackers’ objectives are always taking into account, let alone fulfilled. It means that their voice is being heard and tends to be included in the mainstream discourse.

**EDS:** When looking at some of the projects which have been announced for the 2016 33C3, for example regarding 3D printing,<sup>9</sup> some of them seem to be very close to what is increasingly considered a domain of the “maker movement.” Looking

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8 See Coleman (2010).

9 See <https://events.ccc.de/congress/2016/wiki/Static:Projects>.

back at your research so far and the current debates regarding making, how do hacker and maker practices relate to each other?

**SK:** The closeness of both domains is perhaps most visible in the context of hackerspaces and makerspaces. While many observers today are even unsure of what to call what, the initiators of these localities often choose one or the other label due to discursive or publicity reasons. On first sight the equipment is often similar – 3D printers, circuit boards, laser cutters, soldering irons, computers, dismantled tech stuff and the like. A closer look reveals that materiality or, to be more specific, acting on the materiality of technical machinery is central for both hackers and makers. Although sociality is a key point of hacker and maker cultures, the lack of gender diversity is, unfortunately, also still a commonality.<sup>10</sup> The apparent similarities between hacker and maker practices are a consequence of the fact that we experience certain societal dynamics that have intensified over the past decades: Whenever people want to do something relevant, lasting or attention-seeking, they have to engage with media technologies and infrastructures in one way or another. Similarly, activities geared towards changing both the practical and structural arrangements of society need to be oriented towards media technologies and infrastructures. At least that’s the general impression since clear-cut distinctions between digital/virtual/technical, and material/embodied/social seem no longer justifiable. As a consequence, actors that stand out in this field and gain responsibilities almost inescapably share certain similarities.

Yet, zooming from this grand narrative into observations of daily life, one detects fundamental differences. Makers – especially those who feel home in the Maker Movement – are more often affiliated to a commerce-driven, entrepreneurial culture where creativity and tinkering pays off in monetary ways. For many makers, I would suggest, politics is rather an implicit side effect. But, then again, it would be overly romantic to think that every hacker engages with politics and critique all the time.

**EDS:** In one of your articles, you explicitly speak of “Hacking Politics” and you already addressed this idea earlier.<sup>11</sup> Is there also such a thing as “maker politics” and – if so – what would these be?

**SK:** There certainly is, especially if we consider (rethinking) production *as such* a political mechanism in the way Richard Sennett has juxtaposed craftsmanship with emerging capitalism.<sup>12</sup> Yet, looking for example at the earlier-mentioned

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10 The *Journal of Peer Production* special issue on “Feminism and (Un)Hacking” has some particularly interesting contributions in this regard; see <http://peerproduction.net/issues/issue-8-feminism-and-unhacking-2/>.

11 See Kubitschko (2015b).

12 See Sennett (2006).

Maker Movement, we see a highly institutionalised, globally franchised undertaking driven by Californian ideologists that exhibit not only a normative but almost imperialist mindset. In this case politics largely turns into public relations lingo that relies on self-help proclamations (e.g. sharing is caring, making as self-fulfilment). At the same time, makers who are active in more subcultural formations have their very own politics, strive for re-evaluation and transgression. Here, again, it is essential to take into account the diverse and multifaceted nature of maker cultures instead of buying into a dominant, one-dimensional narrative. This is why publications like this journal issue are such valuable sources to deepen our understandings of these domains.

**EDS:** A comment you have written for *Media, Culture & Society* with the title “Acting on media technologies and infrastructures: Expanding the media as practice approach” can be considered a theoretical discussion of hacking politics.<sup>13</sup> You do not discuss hacking explicitly here but rather political engagement in general. You introduce the concept of “acting on media” in opposition to “acting with media” in this article. Could you explain the difference and also tell us whether you consider “acting on” as a specific practice of hacking communities, or you rather see a general change in how communities use media and technologies nowadays that cannot be covered with an understanding of “acting with” anymore?

**SK:** As you already suggested, the notion of “acting on media” is by far not limited to hackers, although they might be a very fitting and convincing case at hand. Acting on denotes the efforts of a wide range of actors belonging to different fields to take an active part in the moulding of the media technologies and infrastructures that have become part of the fabric of everyday life. In that sense it is not really an opposition to acting with media but rather a complementary level of analysis. By now we know quite a bit about the things people *do with* media, but we tend to lack a profound knowledge about who has the capacity, resources, expertise and interest to *act on* them.<sup>2</sup> This is surely not an entirely new phenomenon, and there are, as always, valuable exceptions who cover this terrain. What I would argue is that now, following the quasi-omnipresence (and banalisation) of computing, scholars need to direct their attention increasingly to those actors that set the parameters and manage to penetrate ever more different social, economic, cultural and political domains in a media-saturated world. Hackers and makers are, without doubt, amongst these actors. Notably, however, the more influential and powerful players are media/tech-corporations that have turned from specialist enterprises into invasive establishments. Media technologies and infrastructures increasingly turn into a site of doing politics in itself.

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13 See Kubitschko (2017b).

**EDS:** In your article you write that you are puzzled that hardly anybody asks the relevant question: “Who can and does act on the conditions, formations and affordances of media technologies and infrastructures?” Could you try to give an answer yourself?

**SK:** When speaking of affordances I don’t necessarily suggest a deterministic reading of socio-technical arrangements but simply refer to the many possibilities and limitations inherent to each and every technological invention. To put it blunt, being capable of acting on media nowadays strongly relates to the ability to look through incredibly complex apparatuses to internalise and interpret them in ways that matter. The vast majority of citizens simply do not have the means or resources to question the pre-given technologies and infrastructures supporting large portions of their daily life. The spread of media technologies might enhance people’s ability to collaborate, mobilise, coordinate common activities and so on. Nonetheless, being an active citizen in societal constellations that increasingly rely on stuff one does not really understand is a fundamental political problem. It does, in fact, point to profound limitations of what is often referred to as “participatory culture.” Ultimately, if you don’t understand – let alone control – the things you rely on an everyday basis, you neither have the liberty nor the agency to change them in any meaningful way. This does not mean that the citizenry is doomed to be an uncritical, passive substance but points towards the emergence of new kinds of relationships and dependencies. There are a growing number of actors – individual, collective, organisational and institutional – who have that capability to act on media. Hackers, makers and other “tech-activists” are, without doubt, amongst them.<sup>14</sup> Notably, however, the more influential and powerful players are governments and media/tech-corporations.

**EDS:** What trends can we observe when we talk about politics in a digital environment? We observe politicians themselves being active on social media for many years now, a practice I would rather describe as acting with media, and activists acting on media as in examples of hacking politics?

**SK:** The political apparatus is a good example for the ways relevant actors might do a lot of things with media – to cultivate their public profile, to be in touch with the people and to get their message across – and at the same time might not act on the media. Legislators, judges and politicians in general have a hard time keeping up with the pace of technological innovation. That’s not necessarily a new thing, but along with the continuing globalisation of digitalisation the pressure has certainly not decreased. The business practices of Uber and Airbnb are one of many examples for this development as is, for example, the challenge of setting new rules related to the use of digital technology for the purpose of warfare. We

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14 See Milan (2013) and Postill (2014).

could also think of so-called artificial intelligence and the practical as well as ethical provocations its actual execution entails. In other words, acting on media technologies and infrastructures is turning into a routine part of policy- and law-making. Here activists, as in many other fields, are struggling for attention and setting the agenda – sometimes amongst each other but mostly against corporate players. The novelty, from my point of view, is that never before in human history have we seen such a small number of corporations being involved in so many different sectors that span across so many different social domains. Take the evolution of Google into Alphabet Inc. as a somewhat prominent example that proves my point. What started as a basic American search engine has turned into a multinational conglomerate owning, producing or involved, amongst others, in household technology, advertising, robotics, data centres, energy, operating software, communications infrastructure, mapping and cartography, life sciences and autonomous driving. The suggestive name says it all: the longer-term aim is to be as pervasive as human language itself and be aboard people's lives from A to Z. Another, much smaller but not less important example is the way some corporations are reconfiguring the heat supply system in European capitals by replacing conventional forms of heating with data-driven heat production.<sup>15</sup> What we see here is that media/tech-corporations have turned from specialist enterprises into invasive establishments.

**EDS:** What are your plans for further research? Will you continue to investigate the field of hacking politics, or do you have other plans for the near future?

**SK:** As mentioned earlier, I am currently particularly fascinated by the ways large media/tech-corporations successfully “invade” large parts of the social, cultural, political and economic world. So I will continue to engage with hacker cultures, alternative politics and civil society organisations, but empirically my research will focus on the corporate side of things. When we look at the struggles for actively influencing the broader circumstances under which media technologies and infrastructures hit the ground, this is, at least in parts, the other side of the coin. Computerisation, digitalisation and datafication are ongoing phenomena populated by interactions between heterogeneous individual, collective and institutional actors belonging to different social domains – many of them holding competing world views and representing conflicting interests. Governments, corporations, civil society organisations, interest groups, public and private research institutions are all involved in struggles to get their voices heard, their demands accepted and their proposals implemented. The degree to which these actors realise their socio-technical imaginaries in practice varies, of course, drastically. Nonetheless, it is hardly ever a “the winner takes it all” scenario, but rather a dialectical, longer-term negotiation process. So I am really excited to learn more about the ways specific media/tech-corporations affect and define part of social reality.

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<sup>15</sup> See Velkova (2016).

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