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Open-source cyborgs and DIY data: Chances and challenges for a democratisation of gender

Zusammenfassung

Open-Source-Cyborgs und DIY-Daten: Chancen und Herausforderungen für Geschlechterdemokratisierung

Der Beitrag beleuchtet die aktuelle „politische Ontologie" der Mensch-Ding-Beziehung aus der Perspektive der Debatte „what we design designs us back". Anhand verschiedener Phänomene wird gezeigt, wie das aktuelle technologische Design Objekte-als-Subjekte und Subjekte-als-Objekte produziert, wobei insbesondere die implizite Herstellung von Geschlechterdualismen in diesem Prozess analysiert wird. Es wird zudem gefragt, ob und, wenn ja, wie DIY-Disruption alltäglicher technologischer Systeme diese aktive Produktion impliziten Genderings unterbrechen kann. Designexperimente u. a. aus der „hacking culture" werden als Beispiele für technisch intelligible soziale Störungen von Alltagssystemen herangezogen, anhand derer die Möglichkeiten diskutiert werden, „die Apparate zu verwirren". Dabei wird die These vertreten, dass das Teilen und Analysieren von Daten nicht als objektiver und automatisierter Vorgang aufgefasst werden sollte, sondern als subjektive und manipulierbare Tätigkeit. Abschließend wird das Potenzial unserer Entwicklung hin zu „Open-Source-Cyborgs" ausgelotet – und damit unser aktiver Anteil an der Ausgestaltung unseres eigenen Körpers und Geistes, nämlich durch die Ermöglichung eines stetig neu strukturierten und neu interpretierten materiell-sozialen DIY-Prozesses.

Schlüsselwörter
Politische Ontologie, „Becoming-with-Things", Hacking-Kultur, sozio-materielle Interventionen, Open Source, Gender, DIY-Materialien

Summary

This article draws a picture of the ontological politics that is currently at play in the relationship between people and things from the perspective of "what we design designs us back". Drawing on an array of phenomena, we illustrate how the current discourse on the design of technologies produces objects-as-subjects and subjects-as-objects, and we explore the implicit production of gendered dualisms within this process. The article goes on to discuss whether and how the DIY disruption of mundane technological systems can interrupt this active production of tacit gendering. Illustrated by design experiments involving "hacking culture" as technically intelligible social disruptions of everyday systems, the article then discusses the option of "confusing the apparatus". It is argued that the sharing and analysis of data should not be seen as something objective and automated, but rather as something subjective and manipulable. Finally, we argue the potential of our evolution into open-source cyborgs – and hence, the prospective of taking an active part in the designing of one's own body and mind through a constant DIY reshuffling and reinterpretation of the material-social.

Keywords
ontological politics, becoming-with-things, hacking culture, socio-material interventions, open-source gender, DIY data

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1 Ontological politics

In a world in which we have managed to design everything – from life ("designing babies" using pre-implantation genetic diagnosis) to death (from last will apps to Google's Immortality Project), we can hardly tell the "subject" from the "object" or what is "organic" from what is an "artifice". We have (b)reached an entirely new level and scale of intimacy – from ubiquitous computing to medicinal extensions and nanotechnology. Designed artefacts and systems extend our memory, abilities and fathomable existences, as as we extend theirs. From blogs and feeds, to smartphones and smart homes, to purchased and DIY body augmentation, technology has become deeply a part of us both mentally and physically. And so we have also become accomplices in designing gender – corporeally and cognitively, materially and imagined, in visions and in everyday life.

These are times in which Apple's (originally female) intelligent personal assistant Siri re-establishes the deep-seated notion of the female aide, while Kim Kardashian's bottom as an emoji apparently crashed the Apple App Store due to an overwhelmingly high number of downloads.[1] Meanwhile, pro-anorexia hashtags such as #thinspo ("Thinspiration") had to be banned on several online social forums as they were resulting in the rapid prototyping of sick bodies.[2] This is an era of smart objects in which we design the measurement of everything, from our intake of calories to our menstrual cycle, as a kick-starter project attempts to fund the world's first smart menstrual cup using the slogan "Measure, Analyze, and Track. Help us redefine menstruation".[3] Consequently, these are times in which we are witnessing the production of gender manifested not just in language and behaviour but in principles of products and paradigms of programming.

Within this sphere of hyper-connectivity, we are not just consuming and downloading, but also producing and uploading data (intentionally or unintentionally) every day and all the time. Surrounded by smart technologies and connected devices, we are continually being read, categorised and targeted, tagged and traced. Be it through the gendered advertising of a news feed, the culturally engineered results from a search engine or the assumptions behind the suggested settings in a smart home: These technologies are not just produced as gender biased, they are actively producing us as such, through every algorithm. In these times of fake news and malicious bots, we sometimes lose track of who or what is speaking and begin to hesitate when trying to draw the boundaries of where we stop and where the technology begins. As "intelligent" artefacts and pattern recognition algorithms learn our behaviour and produce us based on who we are (or how we act), we are potentially taking a step backwards as we give up our agency not just to devices but to our own bad habits. And so, through use, gendered prepositions are designed into everyday interactions and things – as they are deeply entrenched, from the grammar of language to the grammar of code. Therefore, as we gender objects and

1 www.theguardian.com/technology/2015/dec/23/kim-kardashian-emoji-app-kimoji-apple (date of access: 15 February 2017).

2 www.washingtonpost.com/blogs/arts-post/post/instagram-bans-thinspiration-pro-eating-disorder-images/2012/04/24/gIQAXLeaeT_blog.html?utm_term=.dcccf4f209e9 (date of access: 15 February 2017).

3 www.kickstarter.com/projects/700989404/looncup-the-worlds-first-smart-menstrual-cup (date of access: 25 January 2017).

technologies, we become fabricated as gendered objects ourselves. As we hide gender biases in codes and colours we risk becoming nothing more than bad collages of those codes and colours. We are written into them now, and so, these are times in which we must turn back to the gravity of matter – of materialisation and its intrinsic politics. When it comes to the interplay of gender and design, these are times in which we must fathom and grasp the depth of the ontological politics at play.

The current theoretical tun towards the urgency of once again consolidating the dimension of materiality into an analysis of the social covers multiple disciplines and has many names. It has been widely termed as everything from the "ontological turn" (Escobar 2010), the "material turn" (Pierides/Woodman 2012), "continental materialism" (Bryant/Snick/Harman 2011) or increasingly, "new materialism" (Dolphijn/van der Tuin 2012). What these movements have in common is their rejection of traditional dualisms of modern thinking and the excessive strain on linguistics practiced substantially by postmodern movements, a concern for techno-scientific advancements as a challenge towards most social scientific accounts of the physical world and the human hitherto, as well as the idea that the "real" and the "political" are directly connected. Within this overall turn, the attempt is made to take the themes of contingency, flux and difference from their confinement to the realm of culture into the realm of matter (Pellizzoni 2015: 73).

The idea of "ontological politics", moreover, speaks of the conditions of possibility that we are living with and suggests that the conditions of possibility are not given. It speaks to the fact that realities do not precede the mundane practices in which we live, but rather that they are concurrently shaped within these practices themselves. Hence, the term "politics" works to underline this process of shaping, and to reveal the fact that its character is both opened and contested (Mol 1999: 74–75). As a novel combination of materialism and anti-essentialism, hierarchies, identities and dualisms are replaced with fluid, contingent, emergent entities. This, in turn, brings into play nodes and networks, performances and assemblages, as well as human–nonhuman and organic–inorganic hybrids (Escobar 2010). Understanding the current conflict of gender and design at the interface of human–nonhuman social friction as itself being a case of ontological politics therefore allows for an asymmetric, yet holistic perspective. Because if we design systems and things that then in turn design us back, then we are co-constructed as, through and with material and artifice. We are ceaselessly "becoming-with-things". This process is in itself a case of material politics, of gendering and being gendered by design, and can neither be comprehended nor acted upon without a somewhat slanted perspective – a sort of vantage point from a blind spot.

2 Hacking culture

Being in the position of the "designer", one currently finds oneself standing on rather slippery territory. It is not only that we have un/intentionally designed gender into things, or that things consequently design gender back into us – this process is, furthermore, constantly, dynamically, implicitly and furtively at play. In order to find a vantage point, then, the question is how we can actively interact playfully with this interplay.

This fluid co-constructive force of gender and design can perhaps best be understood from a Foucauldian perspective on power, namely simultaneously "producing and being produced by" (Foucault 1994 [1976]: 19). Hence, a playful interaction with this dual power must consequently entail a dual strategy – or perhaps being embedded in the nexus of gender and design itself, more of a tactic (de Certeau 1998). First and foremost, we must attempt a momentary grasp of this fluid process, despite the fact that it leaves us on rather uncomfortable ground. Secondly, we must perceive and formulate a tactic of intervention – not just against the visible outcomes of this inauspicious power (its graspable empirical consequences), but also against ourselves (its source, or one might say in these circumstances, the battery of the gadget). This tactic of self-intervention is vital, as it not only provokes the project of gendered reproduction, but acts as an epistemological approach to understanding it (and understanding one's own tacit participation in the process). When viewed as a design process, or perhaps even as a design of the design process, it seems to provide a way into undesigning some of culture's bad habits and redesigning our options of co-producing the material world. Therefore, what can be perceived as "hacking culture" (the source and the consequence) can be viewed as a process of disorderly design.

This thesis was the topic of a workshop titled "Democratising Design, Democratising Gender" that was held in the context of the international Gender Design Network conference on "Gender and Design in Action: Interdisciplinary perspectives and technological interactions" at the Chemnitz University of Technology in 2016.[4] In dialogue with a diverse group of gender scholars, designers and technologists, the following question was posed: How can we hack our own genders – how can we reorient devices to assist us in troubling our own gendered performance? Based on this hands-on approach, mixed groups of participants took on the challenge of questioning the idea of what gets measured and what can result from that data. They did so using only their bodies and a TI Sensor Tag 2.0, a simple device containing a set of sensors that can, for instance, measure motion, temperature, light and humidity. As an illustrative subversion of a simple and highly rational device, one group created the concept of "transwalking". Being a heterogeneous consortium of people, they attached the device to their hips and used the motion sensor to measure and document the patterns of their different walks. They then overlaid the data to create diverse merges and attempted, in turn, to perform these new patterns. The idea of "transwalking" is, ultimately, based on the idea that one can upload and share one's own individual movements and then be able to cross, hybridise and converge diverging performances in order to finally be able to export, download and learn new gendered performances. The subversion, therefore, lies not only in the insurgent use of the device but also in the conceptualisation of the use of the data itself. Although it is merely an uncomplicated prototype of a way of thinking (and moving), the experiment nevertheless exemplifies the materialisation of alternative parameters for contemplating data: Could we consider data as being publicly personal – of individual distinctiveness shared as open-source gestures? Could we use such DIY hacks to be more playful, interpretive and manipulable with sensors and data, rather than being rationalised, civilised and conforming to culturally mandatory settings?

4 www.genderdesign.org/gender-und-design-in-aktion-rueckblick-zur-jahrestagung-igdn-2016 (date of access: 5 June 2017).

If we are produced so profoundly yet so tacitly by the systems that surround us, then it is imperative that we actively intervene in this system – that we locate our own blind spots. As part of the project "When Objects Turn Subjects: *Forms* of Protest" that was carried out in the framework of a PhD at the Berlin University of the Arts, an experiment was developed that explored the action of writing as a basis for challenging one's own silent presumptions. The open-source "In/correct.plist" file, once installed on a computer, autocorrects a large library of words whilst typing, distorting gendered meaning in the process of its very construction. Words such as "man" and "woman" are, for instance, corrected into "people", "she" into "someone", "masculine" into "idea of gendered identity" and "wife" into "person to whom one is currently committed". As a roguish attack on culture, words such as "babe" are corrected into "fellow intelligent human being" or "cuddle" into "culturally enhanced feeling of togetherness". Hence, whether one is writing an email in an email client, conducting an analysis in a word processing program, or drawing up a budget in a spreadsheet – the file is always present and infiltrates the happening as it takes place.

Such disruptions of mundane technological systems have the potential to interrupt the active production of tacit gendering in-process and can be viewed as technically intelligible social disruptions of everyday systems and acts. They entail designing mere frameworks for critical realisations and curious play rather than intentional authored meaning in and of itself. Through these micro experimentations with large power structures we have the opportunity to re/act rather than just be acted upon – that is, to adapt the systems rather than just be adapted to them. On the one side, this provides the possibility of reclaiming some agency, at least as interplay, in the production at the nexus of material/culture. However, it also allows us to attempt to do so without taking the view of either solely material (and its object) or culture (and its subject), but rather to embrace the co-constructive powers at play. Because, we would argue, it is exactly at the point of this slippery ground that design and gender meet to fabricate the dialectic itself.

Further, when viewing the junction of the material production of culture and cultures actively choosing how to produce material, we are currently witnessing the growth of a rather interesting social movement, namely the democratisation of design and technology. What was once left to either design professionals or hobbyists now clashes in everyday life as an entirely new type of space emerges. In term of physical spaces, we are for instance seeing an explosion of urban fabrication labs[5] that aim to enable anybody to imagine, concept and fabricate products as they act as experts of their own bodies and everyday lives. And in digital space we are seeing a new generation sharing open-source code on GitHub as mundanely as they tweet their opinions.[6] In terms of gender and design, this opens up a potential possibility: It means that people who fall between the grid and outside of the target groups can partially fabricate an alternate material reality. It means that anyone with an interest in gaining the technical and material literacy to do so (of course, packaged nicely in kits and 5-minute "how-to" videos) can reconnect their connected devices, redesign surfaces and functions of products using open-source code and knowledge, and rethink how the things around them are acting, and how they are

5 www.fabfoundation.org/index.php/fab-labs/index.html (date of access: 11 June 2017).

6 www.wired.com/2015/03/github-conquered-google-microsoft-everyone-else/ (date of access: 5 June 2017).

acting with their things. So, as the power of materialisation, fabrication and production is democratised and decentralised to an extent that we could have hardly imagined a decade ago we are being provided with a peculiar chance in regard to gender.

As a distinctive development, maker-spaces are making culture. For instance, the maker-space Liberating Ourselves Locally (LOL) in East Oakland characterises itself as a social justice space of gender diverse, majority queer and trans hackers, artists and activists who provide resources for the community to learn, play, experiment and build skills while working on self-determination and community empowerment projects.[7] Similarly, the London-based group Transcode draws attention to transgender issues through a topic-focused hackday, as well as though introductory programming workshops that allow members of the community who are not working in the field of technology to participate in the development of transgender applications.[8] Concurrently, the US-based mini-incubator Transhack attempts to shift the ways that trans-gender, non-conforming, a-gender and non-binary people live by creating technologies that are economically empowering, to improve access to social services and to promote gender safety while bringing visibility to trans-tech innovators and entrepreneurs.[9] This initiative was launched in response to the growing social and economic barriers that are troubling the trans community, whose members, they argue, are unemployed at twice the national rate (four times when it comes to transgender people of colour), experience a high degree of homelessness and suffer immense discrimination when accessing adequate health care, legal services and housing. Operating as an online platform and initiating hackathons that have been attended by over six hundred transgender developers, designers and coders, they have launched dozens of applications and helped to launch several start-ups and social enterprises. Applications developed in this context range from the "YO Restrooms" app that finds the closest gender-safe bathrooms to "Who Did I Miss", a simple form-site that contacts conference organisers to encourage and recommend diverse speakers, to "Transgress", an app that allows people to bypass web filters to access sites addressing transgender issues.[10]

These examples are particularly interesting because they raise the question of who in fact gets to write the options of the material–social. Of course, they illustrate the power of possibility, as access issues are still far from solved. However, in relation to the discussion of gender and design, these movements make explicit the almost invisible power that lies in code and code literacy and the importance of gender bias and gender access in this context. They raise the critical questions of design – of who gets to design and on what terms – and of the power that design has to create or subvert existing paradigms of products and programming.

What we are witnessing in these sorts of experiments – from hacking one's own personal actions through inverting, rethinking and reusing systems and artefacts, to the larger movements of democratising technology, thereby granting access to more diverse groups – is the designing of a vantage point from a blind spot. Whether these are the blind spots of our own personal selves (things that I did not realise about my own be-

7 www.oaklandmakerspace.wordpress.com (date of access: 17 February 2017).
8 www.trans-code.org (date of access: 17 February 2017).
9 www.transhack.org (date of access: 17 February 2017).
10 www.transhack.org (date of access: 17 February 2017).

haviour and thinking) or the blind spots of society (transgender needs and perspectives on technology), it is clear that gaining access to these blind spots makes for a more holistic view. Moreover, these perspectives potentially open up a possibility space (from re-filtering search functions to physical mischief with objects), and thus hacking culture could potentially enable a more active process of swapping, playing and performing our genders. Whether *things* are our extended memory or embedded in us (from body hackers to social hackers), the realisation that we can actively co-design our existences as thoroughly designed objects in itself provides an intervention. The power of democracy in this particular context might lie not just in the "fairness" of distributed power, but also in the opportunity that is inherent to the lack of consensus itself. When grasping the extent of the reproductive materialisation of gender and sexuality in our current material culture, perhaps it is less about representing a clearly defined minority (hence, "the other") and more about creating a fabricated confusion. This is, enabling a materialisation of fluid options that cannot be tied down to normative definitions of good or bad, correct or incorrect, or real or fake – applying a tactic of "confusing the apparatus" in order to confuse oneself.

3 Material subjectivities

In a highly gendered and heteronormative world, very little is produced outside of the traditional boundaries of gendered and sexual politics, not least design and technology. From technophobia to technophilia, feminist debates on gender and technology have moved through a large spectrum of positions – from the scepticism of technology as the machinery of patriarchal reproduction, to unwarranted optimism about its liberating potentials. However, technofeminist approaches emphasise that the relationship between gender and technology is fluid and flexible and that feminist politics, and not technology per se, is the key to inclusion and equality (Wajcman 2007: 287). Thus, not only are new technologies a potential agent for change, but the object of gender politics itself (the strategies and tactics of use) also takes on an equally strong agency.

As all genders are potentially taking an active part in the information, communication and fabrication revolution and are no longer victims of the digital divide, the potential, at least, for designing diversity remains. And so in an age in which we are witnessing an intimate and comprehensive merging of the natural and the artificial, the subject and the object, and where systems and artefacts can no longer be viewed as separated from the political, we are, it seems, dealing with entirely new parameters. As humans are deeply engaged in simulated environments, and artificial agents are co-inhabiting our social world, gender is performed not only by people, but also by things. Hence, we must engage with the idea of human–nonhuman co-performances, mediated by our imaginaries, producing our material subjectivities as we enter into novel social relationships with new systems and things.

We are living in an age in which we plot to design the entire social–material world as sensing and measurable, producing information that reveals just as much about us as it compels us to think and act according to the data compiled. From "smart objects" to "smart contracts", we are coming to rely more and more on measurable data. However,

all too often we hear the word "data" and believe that it portrays a truth of how things are and provides the basis for how things could be. We hardly perceive the ever-shifting, interpretive and even performative parameters of these measured "facts". In this context, we must reclaim the power of ir/rationality, seeing the sharing and analysis of data not as something objective and automated but rather as something subjective and manipulable, opening up a new and pivotal space. In a world that is increasingly operating deeply between material, measurement and mind, it becomes more crucial than ever that we reconsider where individual bodies and aspirations can alter and act.

If we can no longer see our bodies as being separate from the technologies that reify them, as Donna Haraway advocated three decades ago with her concept of the cyborg (Haraway 1991), then let us evolve into *open-source cyborgs* taking an active part in the designing of our own bodies and minds. If we are to be measured, from our bodies to our environments, then let us reclaim the concept of measurement and what it can do by exploring ideas of DIY data. Let us live out the potentials of a constantly reshuffled and reinterpreted DIY material–social, of shared open-source possibilities for alternatively lived realities in which the power of who designs our everyday lives has been decentralised, co-construction democratised and where we provoke ourselves and the fabricated norms of society to create such an inordinate material confusion that heteronormative gender-dialectic mentalities become too difficult to uphold.

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