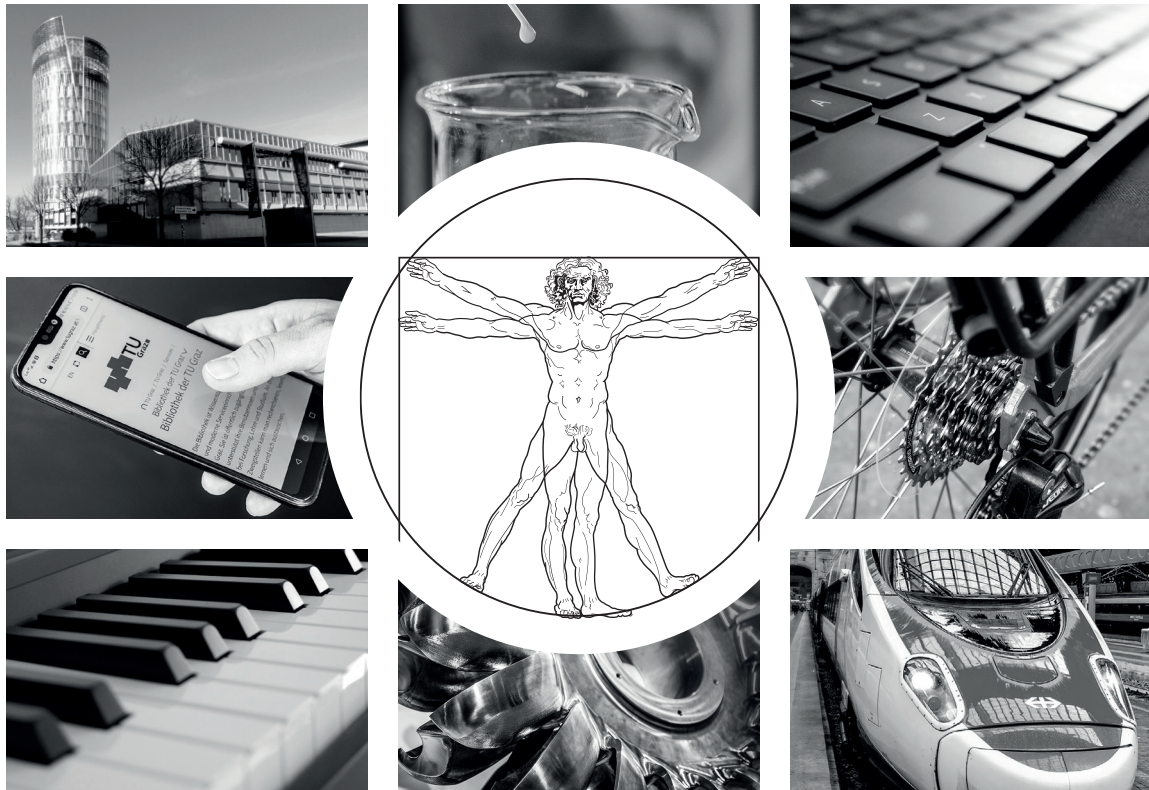Günter Getzinger | Michaela Jahrbacher (editors)

Conference Proceedings of the STS Conference Graz 2019

Critical Issues in Science, Technology, and Society Studies

6-7 May 2019

TU Graz

Preface

Critical Issues in Science, Technology and Society Studies
Conference Proceedings of the STS Conference Graz 2019, May 6th-7th

The annual STS Conference Graz provides a space for scholars from all parts of the world to present and discuss their research with peers. In their papers, the conference participants address the complex ways in which science, technology and society co-evolve and mutually shape one another.

Without exception, the participants of the conference aim to provide a better understanding of the world(s) in which we live. This includes the assessment of emerging technologies, the scrutiny of ethical, legal and social aspects of contemporary scientific practices as well as the transition to environmentally friendly and socially desirable techno-scientific futures.

This volume of proceedings documents part of the work that has been presented at the 18th STS Conference in Graz in 2019. It presents the wealth of ideas discussed at this occasion and fosters collaboration.

The STS Conference Graz is the joint annual conference of the Science, Technology and Society (STS) Unit at Graz University of Technology, the Interdisciplinary Research Centre for Technology, Work and Culture (IFZ) and the Institute for Advanced Studies on Science, Technology and Society (IAS-STS).

Find the **Programme of the Conference** at the DOI: 10.3217/978-3-85125-668-0-00
and the **Book of Abstracts** at the DOI: 10.3217/978-3-85125-671-0

Figures

Figure 24: SW

Figure 25: Diabetes.co.uk. APS how it works https://www.diabetes.co.uk/artificial-pancreas.html

Figure 26: zehn.BE

Overview over cited Interviews

Pseudonym	Description	Interview date
Clara	Mother who uses DIY APS on her diabetic daughter	07.03.2019
Christian	DIY APS user	17.04.2019
Jakob	Father of a child with T1D, uses the system for the child	02.05.2019
Marie	DIY APS user	20.03.2019
Marc	At the time of the interview no user of DIY APS, but actively involved in the community	12.07.2018
Markus	DIY APS user/developer and actively involved in the community	19.07.2018
Tim	DIY APS user	29.03.2019

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Data Doubles and Control Society: Critical Contentions

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Abstract

To date, an almost insurmountable number of social scientific contributions have examined digitalisation. However, there is great disagreement about the question which disciplines, knowledges, theories, methods and methodologies, scientific questions, instruments and techniques are adequate to research digitalisation. For example, ethnographic STS studies claim to produce fine-grained pictures of a diversified, multifaceted living in a digitalised society and deem more theoretical-oriented approaches like Marxist as old-school, wood-cut or non-scientific. The latter counter that an encompassing theoretical approach to disparate global processes of digitalisation is still missing. They disqualify diversity approaches as identity politics, descriptive or simply as a-political. As previous technology debates have shown, a problematic effect might be that the different knowledges travel into scattered social fields such as Science and Technology Studies on the one hand and art and social movements on the other hand.

The aim of our theoretical paper is a twofold: Inspired by meta-analyses of recent feminist theory development, we firstly trace some of the investments with which current approaches try to gain sovereignty about interpretations of digitalisation and bring Marxist and diversity approaches into conversation with each other. Secondly, we want to develop an alternative approach that sees the two camps as different modes of data doubles – namely power and exploitation. As such the competing contributions form entrance points and not end points for analysing digitalisation. We claim that *all* approaches are valuable suggestions for conjointly and forcefully researching, intervening, and shaping current processes of digitalisation.

1 Introduction

Wood-cut, old-school, ideological, objectifying, essentialist, anxious, paternalistic, maternalistic, heteronormative, ableist, white supremacist, neo-colonial, non-scientific – ethnographic STS literature continuously uses such labels for theoretical, Marxist oriented approaches to digitalisation. Only descriptive, narrative, subjective, individualistic, singularistic, academic, neoliberal, post-feminist, identity politics or simply techno-capitalism's make up, Marxists respond. Everyone who moves between Science and Technology Studies and critical theory may have encountered these scientific games in one way or the other.

Instead of remaining stuck in this back-and-fourth, we suggest to take these contentions as a starting point for developing a meta-perspective to both Marxist theoretical as much as ethnographic diversity approaches to digitalisation. There are two main purposes for this: Firstly, we claim that Marxist and diversity approaches equally are not only valuable contributions to digitalisation, they also have much in common. Both rely on two key concepts in the debate on digitalisation: control society and data doubles. Secondly, as older debates in STS show, a drifting apart of those knowledges into disparate social fields is problematic. They should be kept in conversation with each other.[1]

The basis of this paper is a literature search on the subject of digitalisation in journals such as Frontiers, Social Media and Society, Television and New Media, Feminist Theory, Theory, Culture and Society, Gender Place and Culture, Feminist Review, The Black Scholar, The South Atlantic Quarterly and Feministische Studien. At the beginning of our new research project on digitalisation and social movements, we started the search with a rather simple question: How from an intersectional, transdisciplinary perspective is digitalisation currently approached in different scientific fields? How do different knowledges, disciplines, research fields make sense of digitalisation? One main finding was that each milieu has a very specific notion of digitalisation, which is hardly surprising,

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1. For example in feminist STS debates on reproductive technologies, Marxist and diversity feminisms separated decades ago and took different routes (Franklin 2013, 185–221). Already in 2005 Charis Thompson bemoaned that class and economy had taken a back seat in feminist debates on reproductive technologies (Thompson 2005, 71). Only in 2016, the symposium "Making and breaking families" made diversity approaches and class analyses on reproductive technologies to converse (Smietana, Thompson, and Twine 2016).

according to the credo of Science and Technology Studies about the inescapable situatedness and contestedness of *all* knowledge (Davis and Evans 2011; Haraway 1995). However, what struck us was the deep mutual mistrust against each other, the fierceness and eager with which the different approaches try to devalue each other and the ever similar storylines they deploy.

Although we examine journals that might not count as STS journals in a narrower sense, the topic we engage with – digitalisation – is a classical STS subject. Furthermore, our meta-perspective has much in common with an established STS analysis of scientific knowledge production. It is not only the contents of the two fields we engage with, it is also the rhetorical forms in which the arguments are brought forward that interests us.[1] We treat scientific texts on digitalisation not solely as endproducts of a long scientific research process but as "technologies" themselves (Hemmings 2005, 118) – or, to put it in STS jargon, as actants *inside* a scientific praxis (Latour 1987, 40). While scientists *inside the laboratory* carry out research through textual practices, social scientists do that by rhetorical strategies inside their "laboratories" – journals, talks, lectures or seminars. They deploy specific textual techniques of citation, omission, non-engagement, labelling, specific storylines and dramatizations. Both aim at mobilizing allies, gaining power and winning scientific controversies (Wieser 2014, 29).

Due to the limitedness of the space and because all contributions, be they Marxist or diversity oriented, are implicitly or explicitly based on the concept of control society and data doubles, we do not present the argument of the respective positions in its entirety, but briefly sketch the demarcations in order to quickly enter the conversation.

As "diversity approaches" we describe a whole branch of contributions often from an ethnographic oriented STS field such as Postmigration Studies (Borkert, Fischer, and Yafi 2018; Latonera and Kift 2018), Disability Studies (Reeve 2012; Ng 2017), Queer and Transgender Studies (Hansom 2011; Jenzen 2017; Erlick 2018), Feminist/Black Code Studies (Johnson and Neal 2017; Wade 2017) or Xeno- and Glitchfeminism which do not

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1. Such interest in the rhetorical forms of scientific controversies partly stems from our own multi-disciplinary background and the tensions that caused. UK has a strong orientation towards sociology, Marxist theory and questions of class and economy. AW is trained in Melodrama Studies and underlines the melodramatization of scientific story telling. Both are united by their interest in so-called identity knowledges, especially in queer approaches on digitalisation.

carry out ethnographic STS studies themselves but base their arguments on it (Russel 2013, 2018; Laboria Cuboniks 2015; Hester 2018). Recurring, connecting investments are firstly, the methodological STS postulate of "live subject research". Secondly, a critique of digital dualism (Jurgenson 2011), which assumes that the on and offline are two distinct worlds, often idealizing the offline world and reproducing existing norms and privileges. Thirdly, a political standpoint and strategy that is not completely hostile towards the digital but aims at repurposing technologies for one's own aims; and finally, a touching upon but not thinking through of key Marxist categories such as accumulation, class, labour, work, or the state.

The Marxist approaches we include, in turn, firstly discuss digitalisation theoretically. They base their arguments on examples and not on ethnographies or extensive empirical work (e.g. Fuchs and Sevignani 2013; Jarrett 2016; Thatcher, O'Sullivan, and Mahmoudi 2016; Couldry and Mejias 2018). Secondly, the rejection of digital dualism is not a matter close to their heart. The authors are not troubled by the normative presuppositions of digital dualism.[1] Their credo, thirdly, is "Resist. Not just repurpose!" Or to put it differently, they do not see any potentials in digitalisation but underline its exploitative until predatory dimensions. The digital is negatively determined. And finally, questions of normalization, identity, difference do not form part of their analysis.

2 Mutual Mistrusts

Between Marxist and diversity approaches there seem to be little overlap, and older front lines in STS, as mentioned above, are repeated. One common strategy of Marxists is the claim that diversity positions lost the big picture – that is a fundamental critique of capitalism in digital times. For example, feminist Marxist Kylie Jarrett is not convinced by diversity positions: "Feminist projects, she [Nancy Fraser] says, became oriented toward the politics of identity instead of critiquing the gendered systems of capitalism" (Jarrett

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1. It is not a uniform position towards digital dualism which characterizes Marxist positions. While earlier Marxist works on digitalisation such as Manuel Castells (1999) were based on an obvious digital dualism, in Nick Couldry's and Ulises Mejias forceful piece on data colonialism a transformational, nearly Latourian thinking of the digital co-exists with dualistic conceptions of the digital. Only Kylie Jarrett (2016, 102) openly discusses the imprecise division into online and offline worlds and understands digital activities as hybrid practices.

2016, 16). They would correspond with a "post-feminist state" and a "mode of feminism that claims power and agency but is robbed of its critical transformative powers" (Jarrett 2016, 16, also 94 ff). By devaluing such standpoints as postfeminist they are posed as non-feminist. Jarrett's historiography of feminism is based on the assertion of a development from a "real radical" feminism that had the big picture in mind to a feminism that has lost its critical edge as it is only interested in 'individual issues'. Jarrett tells a teleological story of loss and decline, that relies on its very own understanding of contemporary feminism. It wrongly equates diversity feminisms outlined above with identity politics. Jarrett does not even bother to read such so-called identity feminisms. Instead, she brings Nancy Fraser in as a friend. By citing renowned authors the own argument is endowed with power (Latour 1987, 31; Wieser 2014, 27) and a particular narrative is portrayed as widely accepted, as fact rather than an interpretation (see also Hemmings 2005, 129).

Diversity positions in turn also deploy specific devaluing markers. Comprehensive anti-capitalist criticisms of the digital are branded as anxious towards new technologies (Russel 2018). For example, ecofeminism is portrayed as outdated, essentialist, naturalist, even heteronormative. Marxist techno-feminist Maria Mies appears as a killjoy (Hester 2018). Live subject research is brought into play to discredit theoretical positions as woodcut-like ideology: They would be methodologically incapable of dealing with the complexity of living a digital live (Reeve 2012; Jenzen 2017) and by that they are implicitly judged as ableist and transphobic. Here, too, the message is simple: More empirical, ethnographic, diverse knowledge about living in and with digitalisation leads to better and more precise concepts, less objectification and more agency of the researched, which paves the way to digital gender justice. Far from dismissing the everyday completely, we claim that the political scope of such knowledges is also limited. It is a critical knowledge, a theory-driven knowledge and a political knowledge. Nevertheless, the path from knowing to justice is not so self evident as it may seem.

3 Discussion

So far we have shown how Marxist as much as diversity accounts deploy textual techniques in order to position themselves as the better scientific approach to digitalisation. One could say that every story, even the scientific one, is fictional and uses

specific story lines, dramatizations, cuts and connections, valuations and devaluations. But to return to the claim we made at the beginning, that a multifaceted approach in formally telling *and* contentwise understanding digitalisation is needed, we suggest to focus on what unites and not what separates these accounts. In other words, a common feature is firstly that all positions deal with questions of a capitalist control society and secondly rely on the concept of data doubles. Both are critical terms developed by theoreticians to understand the social in contemporary digital times. The concept control society was introduced by the French philosopher Gilles Deleuze almost thirty years ago. Deleuze argued that there was a shift from disciplinary societies to societies of control – from societies of total institutions and closed systems to open societies constituted of multiple circulations. For our concern this point is important, because the dynamic, dispersed and delocalised nature of digitally mediated societies comes to the fore. That also means a less static understanding of the social, an understanding of the social as constituted of flows; and as we would like to argue later, it is an approach suitable to grasp different modes of the digital.

Data double was introduced into the discussion of control society later by Haggerty and Ericson (2000). The social scientists understand data doubles in terms of power: Data doubles are on first sight opaque flows of data. Their reassembling serves aims of a surveillance society – governance, commercialization and control (Haggerty and Ericson 2000, 613). While thus Haggerty and Ericson already have a negative stance, we, for a start, stick to a more neutral understanding of data double: Data doubles happen, emerge, are generated at every point when flows are reassembled. Data double is the mere fact that the series of discrete flows that constitute control societies are reassembled into an additional self – be it functional or not. Such selves *can* be used for further social acts such as scrutinizing and intervention, and yet, such selves can also be used for other purposes beyond control, commerce and governance. To begin with such a neutral understanding is important as our goal is to reconcile competing scientific narrations of the digital: Which modes the act of reassembling actually follows – the mode of exploitation, the mode of power, the mode of identification, the mode of disidentification, or even the mode of a new eSthetic of existence – cannot be foresaid entirely.

Control society is the more encompassing, broader, general concept, while data doubles is the concept to fine-grainely grasped the various forms digital selves and digital subjectivation can take on. Therefore, data doubles are a key component of control society. They describe how through generating digital duplicates of our lives a control society is enacted, realized, and comes into being. Data double form the skeleton, the basis, the relais of contemporary control societies in digital capitalism (Haggerty and Erickson 2000): Today each living human being enters the digital by using their iphones, smart watches, computers or other digital devices. By doing so, people willingly or unwillingly generate a virtual data double of themselves.

However, what after the usage of digital devices happens – what exactly the generation of a data double means in social terms – the above discussed approaches interpret disparately. Our point now is that instead of playing whole branches out against each other and delegating one of them to the domain of the ideological or the a-political, we suggest that the contributions deal with different *modes*[1] of data doubles. While firstly ethnographic diversity approaches elaborate on the power aspect of data doubles, secondly Marxist approaches underline the mode of exploitation. Thirdly both modes are interwoven.[2]

1 Data doubles as a mode of power

To understand data doubles as a mode of power underlines that the capture of data and its algorithmic processing is not a neutral act. Data doubles do not merely depict, describe or portray the non-virtual world. On the contrary, algorithms categorize and classify practices according to dominant social ideas – expectations of manhood and womanhood, ability and disability, sexuality, race and class.

The power aspect in this is precisely that they limit the surplus, the diversity, the excess of

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1. We understand mode as a specific form of pragmatics and follow Haggerty and Erickson who said: "Rather than being accurate or inaccurate portrayals of real individuals, they [data doubles] are a form of pragmatics: differentiated according to how useful they are in allowing institutions to make discriminations among populations (Haggerty and Erickson 2000, 613)." Yet we claim that it is not only institutions but individuals themselves, social movements and other non-instituional bodies that produce, circulate and engage with data doubles.

2. We do not claim that data doubles only take on these two modes. For more see Hörl 2018 and Lupton 2014.

data that living bodies, minds and environments provide. The statistical models upon which data doubles are produced operate according to specific "cybernetic" forms of social stereotyping. They "define the actual meaning of gender, class, or race themselves" (Jenzen 2017, 165). For example, a 23-year-old male friend willingly underwent sterilization. While online he is regularly confronted with adds that show modern versions of fathers. Men in their 20s or 30s holding their kids, feeding them or walking with them through landscapes. Another female friend who is not biologically capable nor socially willing to have children also got displayed guidebooks for mindful mothering or adds for pregnancy clothes. Data doubles here operate through visual suggestions. Such suggestions differ from Marxist understandings of data doubles as the mere fact of classification and the invitations for identifications are not per se an act of exploitation, repression or domination. Such propositions may annoy, they may enervate or bug you, however, to understand them in mere negative terms misses the quality of exerting power in digital times. Such visual suggestions based on algorithmic classifications are a mode of power that works productively and positively through nudging: The algorithm assumes that a 23 year old male is willing to become a father and that every woman has the suitable body and the desire to become a mother.

The newness to older, non-digital forms of power such as Foucauldian normalization is that it does not assume an inner core, truth or authenticity of an individual. The digital is an action on the environment – on environmental variables (Hörl 2018, 155; Foucault 2008). Not inner organic attributes such as genes or blood but situational characteristics are to explain what a human being is: Power operates through behavioural incentives like food intake, movement habits, dating practices. And the preferred media to access such environmental variables is digital media.

Environmental power is also a programme that wants to optimize systems of difference, and such systems of difference are left open for fluctuating processes (Hörl 2018, 159). Consider for example the online dating platform OkCupid. Diversity, perversion, imperfection is appreciated. Similar to Facebook the platform is open to debate, critique and to the expansion and integration of nearly every new form of desire. However, in order to use the platform everybody has to qualify themselves according to specific classifications. One's own desire still has to be named, labelled and categorized.

The aim of diversity approaches is precisely the struggle *against* such an immobilization of manifoldness in data doubles. They problematize the digital as being part of a world in which identitarian classification is the precondition for political participation and for the access to rights and resources. Identitarian classification is also the precondition for the opposite – for discrimination and exclusion. As such, diversity approaches do not strive, as Marxist feminisms claim, for exhaustively exploring the experience and existence of people situated as black, queer, or disabled in a digital world. The identification of features, characteristics and differences of distinct groups is not at all their goal. An integral part to exploring data doubles as a mode of power is instead the delineation of new eSthetics of existences. These new digital selves undermine, appropriate, and rework dominant ideas of identities and populate queer-friendly platforms such as Tumblr or TikTok.

In sum: Self-portrayal in digital media is a *gentle* compulsion to which people have to succumb, often undeniable with pleasure. It is a soft form of power as the algorithm produces suggestions, offers and ideas. From a Marxist point of view such power is often overlooked as it does not lead to *direct* discrimination, exploitation or capitalization. However data doubles as a mode of power are deeply enmeshed with questions of exploitation. Which leads us to the next point.

2 Data doubles as a mode of exploitation

Marxist approaches deal with the exploitative dimension of data doubles. Their pragmatics function exploitatively when people's personal data are *repurposed* for the use of others (Lupton 2014). In most Marxist approaches the owners of platforms are defined as such others. Yet, insurances, employers, governments are further examples for others that might profit from data doubles. From this perspective, digitalisation means the creation and opening up of ever more social milieus for data extraction and translation into processes of capital accumulation, which media sociologist Nick Couldry and Ulises Mejias (2018) catchily named data colonialism (on accumulation see also Thatcher, O'Sullivan, and Mahmoudi 2015).

While Couldry and Mejias do not engage with questions of gender, race, heteronormativity or ability, autonomist Marxist media scientist Kyle Jarrett (2016, 2018) formulates a position of exploitation that follows older debates of Marxist feminism. In contrast to Couldry and Mejias, she does not work with the concept of accumulation, but departs from

labour. Social media platforms do not function "without the uploading of content, social interactions and affective engagements of their users" (Jarrett 2016, 2). Their "unquenchable thirst for content" forms the main driving force of exploitation (Jarrett 2018; Couldry and Mejias 2018, 3). Or to put it differently, platforms are the "muscle" of data colonialism (Couldry and Mejias 2018, 6).

In order to make this work around platforms visible and to underline its structural similarity to capitalism with other forms of feminized work, Jarrett introduces the term digital housewife. Housework and digital practices are both unpaid, they are often regarded as voluntary, unproductive labour. Both are often described as pleasurable, but at the same time capitalism heavily relies on it, even more: it is absolutely necessary. While the housewife is indispensable for the reproduction of the worker, for the platform it is the digital worker. Both forms of work support the well-being of others: Liking photos or writing nice comments have a similar positive effect as cooking, touching, or listening attentively. Both types of work can be fun: Playing with children, caring, cooking or having sex can be as pleasurable as uploading photos to Airbnb, giving compliments to friends on Facebook or likes at Instagram. Both works serve the production, preservation, deepening of interpersonal relations or even keep others healthy. While commenting on Facebook photos strengthens a friend's self-esteem, the housewife at home keeps the family together (Jarrett 2016, 2). Finally, both works are still largely carried out by women or are at least devalued as feminine. Who has never experienced the belittling smiles, when one speaks about their facebook friendships?

3 The interwovenness of both modes

The two pragmatics of data doubles do not function separately. Digitalisation is both – power and exploitation. It works positively and productively but also negatively and extractivistly. *Before* data can be repurposed for means which do not serve the giving subject, people have to become users of digital media, and by becoming users of digital media they willingly undergo self-classification or they are unwillingly identified by algorithms. When we enter Tumblr, Facebook or Okcupid, we tick boxes, we display preferences, we follow our sexual, visual, consumerist desires or we have been identified. Our movements have been traced and connected to previous data. And all these processes are not neutral but follow dominant ideas of identity or as John Cheney-Lippold

aptly puts it, "And somewhere, in a database far, far away, you may very well have a gender, a class and a race" (2011, 165). Only if such classifications have been performed, negative exploitative acts can be exerted. The virtual selves can serve the generation of new products, they can serve health insurances to deny benefits, they can serve governmental restrictions and police repressions. Judges can base their unfair sentencing on that. At airports people can be kept from leaving or entering a country, or they can even be imprisoned.

For this reason, we follow Foucault's careful and clever distinction between power and domination, and we try to further develop and apply it to questions of digitalisation. From such a perspective, the Marxist approaches to digitalisation follow an understanding of power which is close to a juridical mode: The usage of digital media, then, predominantly subserves bigger entities such as the state, corporations, capitalism, patriarchy, and the epicentres of data colonialism. Marxist approaches are implicitly stuck in an economistic theory of power, which Foucault termed the "economic functionality of power" (Lemke 1997, 102). The problem is the exclusivity with which power is reduced to economic demands and reproduction. Power is only there to maintain class, capitalism and the law of productivity.

Our objections, however, do not negate the importance of economic factors for contemporary digital societies per se. On the contrary, we think that power relations are deeply interwoven with economic relations, that both form a clew, and that they are entangled. Power relations and economic relations, such as the norm to still intelligibly represent "masculinity" or "femininity" online and exploitative data extraction, do not form separate and clearly distinguishable spheres. We suggest to rather ask how exactly they are connected – to explore the form of their interwovenness.

In turn it becomes possible to think the digital self in diversity approaches not as a self-absorbed self but as connected to broader economic, juridical, or state relations. The digital self is then a product and an effect of such relations, and at the same time their carrier, maintainer and producer. In a digital world, gendered and racialised self-relations are for example constitutively interwoven with economic mechanisms of domination. For that reason feminist initiatives such as Black Girls Code, a US-American NGO which introduces girls of colour to technical skills, does not naively idealize a digital diversity self, moreover Black Girls Code's decisive aim is to overcome the digital divide. They explicitly

criticize the fact that access to the digital world and all the economic, social, juridical benefits it entails is still a white privilege. In other word, Black Girls Codes shows that struggles for new digital subjectivities are always also struggles against economic suppression. It also shows that both are interwoven.

With understanding the digital as control society, as a distinct series of flows, the newness of a digitalised society in relation to older technological societies can also be grasped – namely that both processes work simultaneously: Input and output of data are conflated. The digital, then, is a material-virtual arrangement – a space of possibilities that conditions, forces but also enables the synchrony of different social practices beyond immediate territorial proximity and beyond the duty to be present. Deterritorialization and reterritorialization of information streams alternate so quickly that they virtually fall into one. Different modes of the digital continuously take place and can hardly be distinguished from each other (Latonero and Kift 2018, 3; Castells 1999). As soon as one enters the digital realm by self-classification the data might also be used for the generation of profit. For the user of digital media such processes often remain opaque, sometimes labelled as digital Angst.

To consider the interwovenness of both modes rejects a view according to which diversity approaches dismiss a critical analysis of exploitation and idealize a digital subject as an autonomous, creative agent, as much as Marxist approaches are not blind to diversity, to the manifoldness of digital lives. Rather, it is precisely the complexity, the dynamic and the simultaneity of different data pragmatics in a control society that makes it possible to think through the connections between power and exploitation. Such an approach shows how data doubles of diverse qualities emerge in global data colonialism and at the same time function as a constituent moment of these forms of digital domination.

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