



## King's Research Portal

### *Document Version*

Version created as part of publication process; publisher's layout; not normally made publicly available

[Link to publication record in King's Research Portal](#)

### *Citation for published version (APA):*

Bunz, M. (2022). *How Not to Be Governed Like That by Our Digital Technologies*. (New Critical Humanities). Rowman & Littlefield International.

### **Citing this paper**

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### **General rights**

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### **Take down policy**

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

## How Not to Be Governed Like That by Our Digital Technologies

Mercedes Bunz

*Studying my email inbox at the time when whistleblower Edward Snowden revealed the existence of U.S. mass surveillance by the NSA, I noticed something was wrong. My inbox was populated by my 2,401 email contacts, who were mostly outraged Europeans. But only one of them, my uncle Axel, who had worked for the European Commission for half of his life, sent me an email to let me know his new details using an email service secured against state eavesdropping. This fascinated me. There was explicit outrage that we did not want to be governed like this by our digital technologies, but without consequences—we were concerned but kept on using them. And I was a part of this problem one could describe as a lack of resistance. I had not changed my email addresses either. The problem stayed with me, until a few years later things got computationally more intense. By then, digital technologies had started to enter the next level, not just distributing information but calculating meaning: Deep neural networks had advanced machine learning systems to create algorithms that calculated the meaning of language and images better than ever before; tasks of “Artificial Intelligence” with which computer science had before struggled with for decades. And by calculating meaning they were entering our technical realities even further. I knew it was time to finally face the gap that had emerged between critique and technology and had become visible in that lack of resistance, time to sit down at my keyboard and ask “how not to be governed like that” by our digital technologies.*

\*\*\*

Digital technologies demand from us to return to Foucault’s text “What Is Critique?,” in which he famously posed the question “how not to be governed

*like that*” (Foucault 1978, 44). Now that digital technologies and computation shape the realities of the overdeveloped world, what does it mean to ask “How not to be governed like that”? How are we being governed? Are we being governed *with* digital technology, that is, has this technology become an instrument of power? Or are we governed *by* that technology, is that technology a power of its own right? And if so, how does its power operate differently? After all, politics *counts* (Rancière 1995, 6) while the algorithms running our digital technologies *calculate*. Asking these questions, this chapter seeks to explore how digital technologies shift the power mechanism by returning to Foucault’s inquiry into power and critique to show that the process of digital calculation obscures the power exercised on the individual and the individual’s subjugation. Now there can be power, but that does not automatically mean anymore that there also can be individual resistance. Faced with this problem, the second part of this text searches for a different way of critiquing digital technologies, turning to Deleuze for philosophical support and to computer scientist Philip E. Agre for techno-theoretical assistance. Can Agre’s concept of a “critical technical practice,” which evolves from a *situation* instead of from a *subject*, become a way to insist “not to be governed like that” in the technical realities we live in today? To follow our desire “not to be governed like that” by our digital technologies, however, one first needs to return to the conceptual beginnings of this quest.

### “LIKE THAT AND AT THAT COST”

Foucault’s thinking of critique is profoundly inspired by Immanuel Kant’s contribution to the question in his 1784 essay “What is *Aufklärung* [enlightenment]?” Foucault relates strongly to that text letting us know in “What Is Critique?” that his understanding of it is “not very different from the one Kant provided” and “not very far off in fact from the definition he was giving of the *Aufklärung*” (Foucault 1978, 47). This link to Kant’s text is important. Kant’s approach toward “*Aufklärung*” revolves around a specific unit that will also be the one Foucault is looking at—that of the individual: “Enlightenment is man’s release from his self-incurred tutelage,” is the famous opening sentence of “What Is Enlightenment?” (Kant 1784, 29). Similar to Kant’s “release,” Foucault approaches “critique” as a technology of the self, a practice involving the subject.<sup>1</sup> In his “very first definition of critique,” Foucault (1978) characterizes it as “a way of thinking [. . .] I would very simply call the art of not being governed or better, the art of not being governed like that and at that cost” (45). The text then goes on to specify this “way of thinking” further as a “critical practice” which lies in the “desubjugation” of the subject itself and is directed against the “movement through which individuals are

subjugated in the reality of a social practice through mechanisms of power” (47). Here, Foucault understands the subject not as a substance, but as “a form which is constituted through practices that are always specific to particular social and historical contexts,” as Timothy O’Leary (2002, 110) specifies. Following Foucault along those lines to the contemporary historical context of neoliberalism, Shannon Winnubst (2020, 109) has delivered a trenchant analysis of the most recent form of a constituted “subject.” That is, the rise of a subjectivity conceived as a market with distinct characteristics, leading to the effect that the subject is becoming “fungible” and is following a “calculating rationality.” This chapter is taking up Winnubst’s analysis while it is at the same time moving it from the reality of a social practice to the reality of a technical practice, two realms that overlap. The particular “reality of a social practice” has in some parts become the “reality of a technical practice,” and this technical reality will be the focus of this text.

Let us sketch the expansion of technical practices to show their power to “subjugate” individuals. Digital technologies have become a resource of social life leading to technology and sociality becoming tightly interwoven, at times inseparable (Marres 2017, 7–44). Ever since digital technology spread widely into our everyday lives, device by device, service by service, and data point by data point, it has played a substantial part in the everyday actions of our overdeveloped world. This is the first line of inquiry that comes into view, when moving closer to our object of study: the omnipresence of digital technologies, which informs their mechanisms of power. This omnipresence led to digital technologies taking on more and more important roles on different levels from the social to the political: digital technologies transformed the *micro-level* of everyday life as users delegated “a vast swath of everyday activities to highly packaged and curated software” (Morris and Murray 2018, 8) waking us up in the morning, connecting us to our loved ones far away, while at the same time disturbing our work/life balance by seducing us with notifications to work on weekends. They also transformed the *macro-level* of whole populations: computational infrastructures and digital devices are being used for mass surveillance (Snowden 2019; Zuboff 2019) and enact new modes of racial profiling (Benjamin 2019), while they also spread messages of political resistance (Tufekci 2017).

Let us stay with this last paragraph for a moment, as it is worthy of further inquiry. The examples from the list above, covering both the micro and macro-level of technical practices, demonstrate how widespread digital technologies are. This, as Jef Huysmans (2016; also Bratton 2015) pointed out, is leading to new ways for power as it is now being more and more prevalent beyond institutions. Huysmans refers to this as “extititutional,” in opposition to “institutional,” noting that “the relations and practices of governance in various areas of life, including education, medical practice, mental health,

and security [. . .] are dispersing beyond the physical and spatial confines of the institutions that exercise them” (2016, 78). The shift toward power being exercised in an extitutional manner is important. Digital technologies are media that disperse governance beyond institutions, thereby opening up “extitutional worlds,” “sites” and “moments,” and this has resulted in digital technologies becoming closely interwoven with “power” in a new and different way.

At the same time and running somewhat contrary to the above observation of technology’s link to power, the examples listing how digital technologies have transformed the micro- and macro-level of our everyday world also demonstrate how open-ended and many-sided those technologies are. When it comes to power and resistance, digital technologies can be used to enhance power as well as to resist power, thereby showing that they are inhabited by a critical paradox that confirms Foucault’s remark that “power is not something that is acquired” once and for all (1976, 94). Power exercised through technology is *situated*: one and the same technology can be used to *sustain* as well as to *resist* political power, meaning that digital technologies are often at the same time emancipatory *and* suppressive, democratic *and* dictatorial. So, technology is not of a specific power, because of its potential of taking part in both: power and resistance. This paradox characterizes digital technologies, which are being used to govern us; at the same time, we use them to resist being governed “like that.” Now, for readers of Foucault this critical paradox is not at all unexpected. In a brief passage, consisting of five pages regarding “power” in *The History of Sexuality, volume 1*, Foucault (1976, 92–97) links power closely to “resistance” which is “never in a position of exteriority in relation to power” (95).

More interesting regarding an understanding of the governance of digital technology is, however, that in this passage he also points to a third element next to “power” and “resistance”: “force” or “force relations”—and it might be here where one can learn that technology is not a power but that it operates a new and different power mechanism. Foucault’s positioning of “force” as “the first instance” of power is unusual, as Deleuze (1986, 112–115) has noticed. Foucault (1994) uses the term (in French also *force*) eleven times over the five pages exclusively concerned with power (*pouvoir*), whereby “force” is never addressed as an activity and also does not appear as a verb. Throughout Foucault’s argument “force” remains an attribute linked to relations, a word that is always used in its plural form: “force relations” translated from the French expression *rapports de force*, an expression usually used to describe a still developing “power relationship” or a “balance of power” that is still evolving. According to Foucault, “power must be understood in the first instance as the multiplicity of force relations immanent in the sphere in which they operate, and which constitute their own organization” (92).

Described as a “multiplicity” or as “manifold,” Foucault uses “force” as a way to open up power and to position it as a sphere made up of still-evolving force relations that are about to become specific connections; connections either of resistance to the manifesting powers or of power itself. It is here that Foucault’s remarks resonate directly with observations that have been made about digital technologies, such as Donna Haraway’s remark: “We’re living in a world of connections—and it matters which ones get made and unmade” (cited in Kunzru 1997). But as digital technologies make up a field that operates fundamentally different to politics—not counting but calculating—we will need to ask ourselves which connections are being made as well as how those connections function. The question this text follows is therefore: How do the multiplicities of force relations take effect in digital technologies?

Critical technology studies began to investigate the relations and connections being made by digital technology early on. For example, Kittler (1993), Agre (1997), Chun (2006), Suchman (2007), Mackenzie (2006, 2017), or Rieder (2020) explored the functionalities of digital technologies as mechanisms of power in fine detail, thereby contributing to new scholarly fields such as critical media theory and critical technology studies. At the same time, other scholars used computational aesthetic interventions to critically map the borders of computational logic (Fuller 2003; Goriunova and Shulgin 2005; Andersen and Pold 2011) or studied relevant technical interventions in computational counterculture such as hacking (Coleman 2012). Over time and as digital technology became more and more part of everyday life, a third approach started to evolve, looking at algorithms sorting information and communication for the new masses now being called “users” (Bratton 2015, 254–292). Computational toolkits for cultural and sociological research such as digital methods (Rogers 2013) emerged, leading to the approach of digital sociology (Marres 2017). Those seminal critical studies of digital technology analyzed their force relations in great detail by working through and critiquing algorithmic features and their properties. This soon showed that digital technologies should not be simply understood as an “instrument” used to operate our existing social realities. Rather, digital technologies have to be understood as transforming the mechanisms of governance itself. For in their calculated socio-technical realities, “to be governed” means something profoundly different.

### **“TO BE GOVERNED”**

Foucauldian studies of governance have become a field of their own ever since Foucault introduced the neologism “governmentality” in his late work to explore the mediation between power and subjectivity (Lemke

2016, 3). Apart from a few exceptions such as Winnubst (2015, 2019), this dimension of Foucault's work has long been discussed in the context of biopolitics and questions of security, before an increasing impact of digital technologies led to a range of studies exploring algorithms as their own unique technique of governmentality (among others Amoore 2009; Rouvroy 2011, 2013; Cheney-Lippold 2011; Mackenzie 2017, 51–74; Rieder 2017, 2020; Aradau/Blanke 2017, 2018; Bucher 2018, 32–38; Benjamin 2019). And next to these excellent studies advancing our knowledge of algorithms being used by power, there were very soon also studies on how the usage of algorithms transformed the power mechanism itself (Rouvroy 2013; Goriunova 2019a); a transformation so profound that it created the need to rethink critique.

Linking worries about a more general crisis of critique (Latour 2004; Drucker 2015) with the power mechanisms of data analysis, Antoinette Rouvroy declared even “The end(s) of critique” (2013). Or was it that critique simply needed to be thought anew? Could it be that this was the end of a specific power mechanism and its force relations, and the start of another? Rouvroy's groundbreaking text “The end(s) of critique: data behaviorism versus due process” describes in detail how algorithmic practices profoundly transform the mechanisms of critique as we know it, key point by key point—regarding knowledge, subject and with it power relations. The text investigates the way in which knowledge of algorithmic governmentality is set up profoundly differently to the knowledge gained in political governmentality. In the algorithmic realm, Rouvroy writes, “reality—that knowledge appearing to hold—is always already there, immanent to the databases, waiting to be discovered by statistical algorithmic processes” (2013, 147). The effect is that “knowledge is not produced *about* the world anymore, but *from* the digital world” (147, emphasis added). By reducing its operation to digital data “from the digital world” only, the new power mechanism manages to sideline the role of the subject. Power “operates with infra-individual data and supra-individual patterns without, at any moment, calling the subject to account” (Rouvroy 2013, 144–145).

This new power mechanism of algorithmic governmentality as “without subject” is an observation that has also been explored in-depth by Olga Goriunova (2019a). The transformation of the subject in the digital realm, which Goriunova's text brings fully to the fore, plays a key point in the context of the question “how not to be governed like that,” because Foucault's and also Kant's critiques evolve from the subject, the individual. And due to a repositioning of subjectivity in our digital technologies, the case of critique has become more difficult. In “The Digital Subject: People as Data as Persons,” Goriunova analyses step by step the “new form of subject construction that arise out of computational

procedures” (2019a, 3). Referencing earlier research into data (Gitelman and Jackson 2013, 8–9), she starts by pointing out that concepts of “data double” or a “data shadow” are misleading when referring to digital subjects. What matters more than linking specific data decisions back to one individual subject is the availability of a wide range of decision patterns. The individual subjectivities behind those decisions do not matter, fragmentary aspects and “shreds” are sufficient, there is no need to prove them authentic. On the contrary, the decisions are rooted in the calculation of thousands of fragments taken from thousands of individuals from which “supra-individual patterns” evolve. In Goriunova’s words:

Digital subjects are values, dynamically re-instantiated correlations, rules, and models, shreds of actions, identities, interests, and engagements, which are put into relation with each other, disaggregated, categorized, classified, clustered, modelled, projected onto, speculated upon, and made predictions about. (2019a, 9)

When creating a digital subject, data is always interlinked and processed, a technical aspect that is essential: digital traces of one individual subject alone are algorithmically not relevant. While from the point of view of a human subject moving through the digital world, there is a direct relation to her or his data, this is different from the point of view of the algorithm. When calculating, the human subject and its individual data are linked up by the algorithm with other data points in order to find supra-individual patterns. Only when several data points can be calculated can the data “make sense” from the algorithm’s point of view. The plurality of data is of much greater importance to the calculation of the digital subject than the scarce input by one individual.

Through foregrounding the calculation, algorithmic governmentality avoids direct force relations to individual entities or subjects. Earlier forms of governmentality used disciplinary, instrumental, or neoliberal reasoning to shape the subjectivities of human individuals they ruled over, aiming for direct impact: disciplining, reasoning with, addressing the subject. The operation of algorithmic governmentality, however, is grounded in calculation which is fundamentally “opposed to relation,” as Goriunova writes (2019a, 4). The new power mechanism operates by setting up a non-relation, by establishing “distance.” “Distance” is the mechanism through which algorithmic governance rules: “a digital subject is neither a human being nor its representation but a *distance* between the two” (Goriunova 2019a, 4), and this distance can be “interrupted, recruited, intersliced” (6). The effects on the power mechanism of algorithmic governance and its force relations are profound. With the emergence of the digital subject, “to be governed” has changed. The reciprocal relation that was typical for the power mechanism



described by Foucault: “Where there is power, there is resistance, and yet, or rather consequently, resistance is never in an exteriority to power” (1976, 95). This relation has been interrupted. The fact that there is power no longer means that there will be resistance because the relationship is no longer reciprocal. There is a relation from the individual subject to the data input which sets off the calculation of the digital subject, but the same direct relation is not the case anymore the other way around. The data of the individual initiates a calculation that does not lead to “its” digital subject, because the digital subject is always already part of a much broader calculation. In other words, the digital subject is <sup>always</sup> even more characterized by the data set than by the individual who initiated <sup>the</sup> its calculation, <sup>and, as a mere prompt,</sup> who finds itself now exterior to power. Text

Being calculated through data mining and analytics, the digital subject is linked to an infra-personal pattern for which the individual subject does not count. That infra-personal pattern is found through data mining calculations that are not representative—they exceed conventional statistics, as Adrian Mackenzie writes: “[C]onventional statistical regression models typically worked with 10 different variables (such as gender, age, income, occupation, education level, income) and perhaps sample sizes of thousands” (2015, 434). While ten variables remain representative, the data mining calculation that creates the digital subject depends on many more variables, or as <sup>Mackenzie</sup> ~~Mackenzie~~ puts it: “data mining and predictive analytics today typically work with hundreds and in some cases tens of thousands of variables and sample sizes of millions or billions” (434). Using “tens of thousands of variables” and “sample sizes of millions or billions” to create a digital subject obscures any link to the individual’s sample that initiated a calculation. By calculating and mixing the individual’s sample with millions of other data bits, the individual has been successfully distanced from its input. Instead of a direct relation between individual and digital subject, the millions of other samples used for the calculation of the digital subject have deflected any direct relation. The computational power mechanism operates by keeping the individual at a distance, by denying a certain relation. Through distancing the individual from the digital subject, the force relations have changed. The reciprocal relation of power/resistance described by Foucault (1976, 95–96) is annulled. The construct of a digital subject, through which algorithmic governance operates, cannot be negated anymore directly by the individual, because its individual input has become irrelevant through calculation, through mixing the individual’s data with thousands of other data points. Now there can be power, but that does not automatically mean that there also can be individual resistance—unless a different way of resisting can be found.

**“BY OUR DIGITAL TECHNOLOGIES”**

Finding this new method of resistance is not straightforward. When algorithmic practices transformed the reciprocal relationship of power/resistance thereby shifting the power mechanism, they also outmaneuvered the power of “negativity” that had been intimately linked to critique (Coole 2006). Critique “*not to be governed like this*” was fueled by the reciprocal relationship between resistance and power, or in Foucault’s words: “Resistances [. . .] are inscribed in the latter [power] as an irreducible opposite” (1976, 96). In the case of algorithmic governmentality and its digital subject, however, power shapes the digital subject (a construct that does have power and produces an effect on the individual); at the same time, the calculation of the digital subject has been linked to millions of other samples and obscured by a calculation, thus making the action of one individual who resists that algorithmic power irrelevant.<sup>2</sup> The individual cannot inscribe itself as an opposite to the algorithm, or as Rouvroy states: “Algorithmic governmentality is a mode of governmentality without negativity” (159). And exactly this aspect—the helplessness demonstrating the loss of the power of negation—can be seen in contemporary sociological observations as the following three examples show: the concern about privacy disclosures on Facebook, the mapping and acquiring of public space by Google, and the mass surveillance by U.S. security services. In all three cases, there is critique as well as extant alternatives that could lead to a negation of the status quo, but no action is taken by the subjects.

First, platforms and the disclosure of personal information: It is a well-known issue that the power of platforms and their reign over personal information has led to privacy issues, for which one of the most successful platforms at the beginning of the twenty-first century, Facebook, is a good example. Over a longer period of time, research studies have shown again and again that “users” are worried about their data. A 2014 survey found that 91 percent of Americans “agree” or “strongly agree” that people have lost control over how personal information is collected (Madden 2014), and that a substantial percentage of Facebook’s users are worried (Wilson et al. 2012). Interestingly, while this concern has been articulated in these studies, the same users behaved differently when online, and several reports noticed this discrepancy between reported privacy concerns and actual privacy behavior online (Wilson et al. 2012, 212 quoting Acquisti and Gross 2006; Stutzman and Kramer-Duffield 2010; Tufekci 2008). From the perspective of the user, there seems to be a non-relation between their individual concern and their online profile. They are concerned, but their concern does not lead them to delete their Facebook accounts.

Second, the monopolistic power of specific services: A second case showing the same paradox of personal concern not leading to personal action is the discrepancy between the critique in Germany being uttered against the corporation Google and the usage of the same service. Germany is known for being extremely sensitive about data privacy. Consequently, its citizens are highly critical of big technology corporations collecting users' data, and especially critical toward Google (Schomakers et al. 2019; Sauerbrey 2014). This might be expected to manifest itself in Google's services being left in favor of a more independent search engine, for example, DuckDuckGo. The actual usage of the search engine Google in Germany, however, is paradoxically among the highest worldwide with a market penetration of 95 percent; compared with a lower market share of 88 percent among its far less concerned U.S. users (Kunst 2019).

Third, the surveillance of digital communication: An example can be found in the minimal reaction to whistleblower Edward Snowden's disclosures of global U.S. surveillance. Top secret documents leaked by ex-NSA contractor Snowden were made public in June 2013. They proved the collection of internet communications facilitated by U.S. internet companies such as Microsoft, Facebook, Apple, or Google. Those U.S. companies were legally obliged to hand over email, video and voice chat, file transfers, videos, photos sent to or from specific selectors as well as their social networking details, information that was then stored on government databases. After the disclosures, U.S. citizens expressed discomfort with this activity. In a survey conducted by the Pew Research Centre (Madden 2014), 61 percent of respondents assumed that the government is monitoring their personal communications and said they have become less confident that surveillance efforts serve the public interest. This criticism, however, stands in contrast to people's actual behavior: only 18 percent say they have changed the way they use email "a great deal" or "somewhat" (2014, 4) leading the Pew Research Centre to remark that "a notable numbers of citizens say they have not adopted or even considered some of the more commonly available tools that can be used to make online communications and activities more private" (5).

If we take a step back from these examples, what is it that comes into view? The link between power and resistance appears to be interrupted. We find individuals who do "not want to be governed like that" but at the same time continue as if nothing had happened—they could withdraw but they do not resist the very powers which they see as oppressive. As digital consumers, we all continue to comply with our digital services, even though we feel threatened and do not like the way we are treated. The belief that direct resistance is possible, or that in direct resistance there is a counter-power, seems to be absent in times of algorithmic governmentalities: "platform sovereignty" (Bratton 2015, 51, 374). In the examples above, resisting—negating

the technical practice by withdrawing from it—does not seem to be seen as having an effect on the technical practice, or as having an effect on the power of a technical service. From the point of view of the individual in front of the screen, from *our* point of view, a turn to a different digital tool is merely a change of interfaces. Choosing a new tool does not affect the way power is enforced on us. On screen and through data mining, we have become part of a technical practice that through calculation always already exceeds our own individuality and that of any other individual. Even though the calculation has been triggered by our data, the fact that it is then further processed and calculated means that our data has been effectively positioned out of direct reach. The contemporary operation of digital technology transforms the data of an individual into a pattern. The pattern affects the subject but does not represent it—there is no direct link. This “non-relation” with which the digital subject operates is a very effective power mechanism. Negating a non-relation is not an option. Different ways to criticize digital technology and its calculations need to be found. Ways that center the efforts of critique less on a direct link between power and the subject. These ways emerge when we approach the concept of critique from a different angle: That of problematization leading to affirmation, a possibility frequently discussed by Deleuze which has been brought forward productively by, for example, Grosz (2003) and Thiele (2008). In the following, Deleuze’s concept of critique will be read in view of our desire “not to be governed like that” by our digital technologies, to be then linked to observations about a critical technical practice by computer scientist Philip E. Agre.

## “NOT”

While the option of resistance through direct negation has been deflected, our desire remains: we still do “not” want “to be governed like that.” The task is now to find other ways to bring about the “not” in order to resist. To explore this task, this section will turn for assistance from Foucault to his comrade Deleuze while still being guided by Foucault’s iconic motto that he himself called “the eternal question” (1978, 44): How not to be governed like that. In exploring alternative ways of “not” doing something, Deleuze’s work on the production of theoretical concepts, including his problematization of negation, is helpful (Braidotti 2017, 291–292). While Foucault’s main interest lies in analyses of power through detailed genealogies, Deleuze’s work in the 1960s tends toward more conceptual and theoretical thinking that aims to leave the concept of direct negation behind, turning toward a radical version of “affirmation”—radical as it needs to be a different path for resistance. However, Deleuze and Foucault share a common philosophical gesture. As

others have shown (Koopman 2016), both were critical of the reception of programs of negative dialectics dominant in their country and time, and both shared a debt to a certain aspect of Kantian philosophy. This results in a general appreciation for each other's work in interviews and reviews, leading Foucault to embrace the concept of affirmation that Deleuze had developed in *Difference and Repetition*, on which he commented in his review of Deleuze's book:

The freeing of difference requires thought without contradiction, without dialectics, without negation; thought that accepts divergence; affirmative thought whose instrument is disjunction; thought of the multiple [. . .] We must think problematically rather than question and answer dialectically. [. . .] And now, it is necessary to free ourselves from Hegel—from the opposition of predicates, from contradiction and negation, from all of dialectics. (Foucault 1970, 358–359)

Turning with Foucault to the Deleuzian concept of radical affirmation, the first thing to note is that this kind of affirmation is not straightforward—it is not simply affirming something, as Thiele (2017) has pointed out. Just switching from a negative to a positive attitude is not deemed radical enough. According to Deleuze, such a move would still remain within the framework of practicing dialectics. To generate radical difference, a difference that is at the same time “different in itself” (Deleuze 1968, 55) is needed.

Deleuze enrolls, therefore, a carefully constructed neglect of the negative step by step and without negation; work that started in his writings on Nietzsche's *Bejahung* [affirmation] in *Nietzsche and Philosophy* (1962), which was then developed further in *Difference and Repetition* (1968). This is the book in which Deleuze leaves Nietzsche further behind by making his suspicion of the negative fully explicit: “One can always mediate, pass over into the antithesis, combine the synthesis, but the thesis does not follow” (Deleuze 1968, 51). For: “difference in itself [. . .] cannot be reduced or traced back to contradiction” (51). “It is not the negative which is the motor” (55). Having found that affirmation cannot be the “other” of negativity, Deleuze maneuvers around the concept of negation thereby changing the view: “Negation is difference but difference seen from its underside, seen from below. Seen the right way up, from top to bottom, difference is affirmation” (55). By changing perspectives, the concept appears anew. Indeed, everything looks radically different as Deleuze notes: “This proposition, however,”—the proposition to see difference from top to bottom—“means many things” (55); and he starts to list them: “that difference is an object of affirmation; that affirmation itself is multiple; that it is creation but also that it must be created, as affirming difference, as being difference in itself” (55).

AQ: Deleted quotation marks to avoid double emphasis in 'Deleuze enrolls, therefore, a carefully constructed.'

sure, thank you.

Deleuze's take on affirmation places it as unrelated to negation. None of its features (being multiple, being a creation, which must be created, being different in itself) is related to an oppositional negative. To Deleuze, "difference is the object of affirmation or affirmation itself" (52). So how could this affirmation, whose motor is radical difference, work to criticize digital technologies?

Turning again to the text, one sees that Deleuze describes affirmation not as a simple relation, that is, it is not the affirmation of something one is for—a move that can be useful as the power mechanism of technology also operates with a "non-relation" as Goriunova (2019a) pointed out. Instead, Deleuze explicitly connects difference with affirmation describing it as "multiple" and as "a creation which must be created" (1968, 55). Here, affirmation is a process that is creative, and is producing something. To describe this process, Deleuze makes use of a somewhat obscure image he steals from Nietzsche; after all, "theft is primary in thought" (200). The image of a game of dice is taken from Nietzsche's *Thus Spoke Zarathustra*. This image figures prominently in Deleuze's *Nietzsche and Philosophy* as well as in *Difference and Repetition* and *Logic of Sense* (1969)—an image that Deleuze scholars (e.g., Thiele 2008, 183–184) turn to often. Adapting two paragraphs of *Thus Spoke Zarathustra*, Deleuze links the throw of dice to chance and addresses chance as "an object of affirmation" (1968, 198). Deleuze describes the force relations at play further as constituting a new structure, one that forms a new problem: "The throw of the dice carries out the calculation of problems, the determination of differential elements or the distribution of singular points which constitute a structure." And "the disparities which emanate from a throw begin to resonate, thereby forming a problem" (198). This forming of a problem is the core work of Deleuze's radical affirmation. It unfolds through the creation of a problem, a problem that has not been set up intentionally but that happens through chance which needs to be affirmed, to allow it to constitute its own structure.

Interestingly, Foucault saw his own work related to this approach remarking ~~about his own work~~: "The notion common to all the work that I have done [. . .] is that of problematization, though it must be said that I never isolated this notion sufficiently" (Foucault 1984 cited in Koopman 2016, 105). Could this notion of problematization, which Foucault and Deleuze embrace, and which recently also gained attention in sociology (Savransky 2020), help to find a way of critiquing digital technology? Can Deleuze's slightly cryptic and obscure concept become a way to approach the calculations of our digital technologies critically? At first this seems unlikely, the more as it is known that Western discourse usually addresses digital technologies not at all as the "forming" of "a problem" but rather uncritically as a "solution" as Morozov (2013) showed. But what if we instead understand the calculations performed

Koopman

by our data mining digital technologies not as a solution but as a process of creation? The next section will explore this with the help of observations that computer scientist Philip E. Agre (1997) made in his text “Towards a Critical Technical Practice.”

### “HOW”

Agre’s text “Towards a Critical Technical Practice: Lessons Learned in Trying to Reform AI” lends itself well to Deleuze’s and Foucault’s approach of “thinking problematically” instead of “answering dialectically” (Foucault 1970, 358). As a computer scientist informed by post-structuralist theory, in particular Foucault (Agre 1997, 148, see also Dieter 2014), the text can be read as an example of criticizing digital technologies through problematizations, which is described by Agre as a move “Towards a Critical Technical Practice”; a move that happens on two intertwined levels. On the level of *critical* practice, the text repositions and opens up technical practice via problems toward a constructive collective engagement. On the level of *technical* practice, to which the next section will turn, the text recalls Agre’s struggle in pushing a paradigm change in Artificial Intelligence against a rule-based symbolic approach that reduced the world to a rule-following model mirrored by an artificial mind (143).

Agre and his collaborating colleagues did not want to approach AI as an artificial mind that simply follows rules. They were trying to divert from this mentalist notion of AI adopted by the established community of AI researchers at the time. ~~Instead~~<sup>instead</sup> they wanted to think of AI as a calculation that could acknowledge the complexity and uncertainty of the world and its messiness—a world in which even “routine interactions” would be inhabited by “chance” (1997, 149). Incorporating that chance into programming, they believed that AI needed to open up to interaction and improvisation. To support his research problematizing the planning approach followed by others in the field and in order to find a different computational approach, Agre started studying things and situations that did not go according to plan in his own everyday activities.

I became interested in what I called “hassles,” which are small bits of trouble that recur frequently in routine patterns of activity. Having noticed a hassle (e.g., an episode in which silverware tried to jump into the garbage disposal while washing dishes), I would write out in some detail both the episode itself and the larger pattern’s attributes as a hassle. (146)

Agre recorded those “hassles,” the “mundane mechanics of his daily life” (146) as he also called them, exploring them in depth. Describing this with

a Deleuzian vocabulary, one could say: when distributing singular points through writing up a hassle in detail, disparities start to emanate from this “throw.” Soon, Agre started to notice an effect of his problematizations: “writing out the full details of an actual episode of being hassled would raise an endless series of additional questions, often unrelated to what I was looking for” (146). Agre remarks that this activity pushed him further away from the concepts that he had been taught. Agre’s practice of problematization was “forming a problem”:

In broad outline, my central intuition was that AI’s whole mentalist foundation is mistaken, and the organizing metaphors of the field should begin with routine interaction with a familiar world, not problem solving inside one’s mind. In taking this approach, everything starts to change, including all of the field’s most basic ideas about representation, action, perception, and learning. (149)

Far beyond just correcting the calculations of mentalist AI, Agre’s approach was soon questioning the field’s “most basic ideas”—and it is here that Agre’s technical struggle resonates with Deleuze’s concept of radical affirmation. This resonance starts with finding a problem through writing up the hassles from which new and additional questions emanate; it then leads Agre to a profound reorientation in which “everything starts to change” including the field’s basic ideas, making Agre’s approach toward AI “different in itself” (Deleuze 1968, 55). This results in Agre’s approach being one of “affirmative difference” because Agre is not positioning his approach as an alternative to or negation of the prevailing mentalist notion of AI as a mind. On the contrary, as he states, “the very concept of alternatives is misleading” (150).

By refuting alternatives, Agre deviates profoundly from (still existing) approaches toward digital technologies and their strong focus on solutions. A focus that often tempts computer scientists, as Agre writes, to assume that “the only legitimate form of critical argument is that ‘my system performs better than your system on problem X’ ” (150). Agre’s approach leaves behind this technical rationale and its goal “to write programs that solve problems better than anybody else’s” (149). His reorientation from planning to being explicitly open to “hassles” (or “problems”) directs him instead toward a different technical practice when addressing computational problems. But while Agre’s description of finding and developing such a different technical practice resonates as shown above with Deleuze, one piece is still missing. In what way is Agre’s approach more than just a new technical practice? What is it exactly that makes it a *critical* technical practice? And which aspects of his critical practice can be used for our quest “not to be governed like that” by our digital technologies?



Agre does not want to deliver a solution but aims to find and follow technical problems. As we will see in this section, the critical part of Agre's technical practice starts with introducing this very different approach toward technology: "to think problematically" (Foucault 1970, 358). Certainly, this is the suggestion one finds at the end of Agre's own text—to pay attention to finding and diagnosing technical difficulties and problems:

Faced with a technical difficulty, perhaps we can learn to diagnose it as deeply as possible. Some difficulties, of course, will be superficial and transient. But others can serve as symptoms of deep and systematic confusions in the field. (1997, 154)

It is the technical difficulties which lead to the critical part of a technical practice, because only through those difficulties and problems does "critical engagement" (153) with the "deep and systematic confusions" emerge. And this "engagement" is to Agre a concept so important that it becomes the heading of the last section of his text. Much like Deleuze, Agre does not believe in simply negating the "confusions" of others. His experience was that it is "actually impossible to achieve a radical break with the existing methods of the field," which is why "the goal of this [critical technical] practice should be complex engagement, not a clean break" (151). Therefore, "critical engagement" (153) is the point at which Agre's move "Towards a Critical Technical Practice" culminates: "maintaining constructive engagement" (154). And that, according to Agre, is not easy:

As I worked my way toward a critical technical practice, this was the part that I found hardest: maintaining constructive engagement with researchers whose substantive commitments I found wildly mistaken. It is tempting to start explaining the problems with these commitments in an alien disciplinary voice, invoking phenomenology or dialectics as an exogenous authority, but it is essentially destructive. (154)

Turning away from this destruction and instead focusing on technical practice as a "constructive engagement" (and not as a solution delivered by an equation, algorithm, service, or device) results in opening up those technologies to a creative as well as a more collective process. It means to enter the power mechanism not in the moment of its execution (the creation of the digital subject) but earlier, at a time when force relations are still multiple as the calculation (data/model) is being developed and negotiated. And where could such an engagement be more effective as in digital technical practice, in which force relations remain always open, because the next version of a technology is always emerging leaving room for engagement. As Agre writes, a critical

technical practice is a technical production that is spanning “borderlands, bridging the disparate sites of practice that computer work brings uncomfortably together” (155). For computer engineers, “uncomfortably” would mean that those nontechnical voices are not just used for “testing” to optimize the design solutions at the very end of a computational production.

What would engage<sup>ing</sup> with the force relations of a digital practice ~~in that manner~~ mean for scholars in digital humanities or media and technology studies? Most certainly “maintaining constructive engagement” (154) comes with the need to embrace some technical understanding and to acquire some expertise in the inner workings of computation to link up technological with intellectual infrastructure, an approach that can be seen in the work of Olga Goriunova (2019b), Leif Weatherby (2020), or ~~Bernard~~Rieder (2020). This approach, which ~~Alan~~ Liu (2012) already called for a decade ago, deeply intertwines theory with the inner mechanics of digital technologies instead of projecting well-established critical questions upon it. A work that is important: Digital technologies have become an extitutional place for power, and the force relations of this power need multiple engagements as well as to be opened up and shared. Agre’s *critical* technical practice could be read as a call for a *collectively* produced technology that is constantly evolving; an algorithmic practice that is always generating new additional questions to which engineers, media and technology scholars, and the communities they work in, with or for need to turn, in order to critically explore the force relations and adjust the algorithmic practice version by version.

AQ: Please check the sentence ‘What would engage with the force relations ...’ for clarity.

Bernhard

Alan

## UNCOMFORTABLE CONCLUSION

As we have seen, the power mechanisms at work in digital technologies are structured in profoundly different ways from older forms of power. Despite this, far too often we still seek orientation in the Hegelian metaphor of “master and servant,” a metaphor which deeply informed the power mechanisms of politics and its force relations; a mechanism we are deeply familiar with. One can easily see that the concept of a political subject with its strong individual agency is seductive. It promises more than a distributed agency which would be typical for a constructive engagement as Agre envisioned it; an engagement that would be very differently set up as “a matter of intra-acting” (Barad 2007, 214), offering “semi-agency” as Kaiser (2012, 2017) conceptualized it. However, despite being seductive when it comes to our digital technologies, the construct of a political subject is nothing but a confusion. Digital technologies are not masters and users are not their servants. The power mechanism of digital technologies and their force relations function differently—digital technologies calculate and do not count—and

because of that a form of resistance informed by politics will come to nothing. Once we are willing to leave behind the idea of digital technology as an “instrument” that functions and is supposed to serve us, and we are willing to adopt a more collaborative approach that includes a more profound engagement with it, then different urgently needed forms of critical practice will come into view.

Algorithmic governance has introduced a “distance” between the individual and the digital subject, which is always already part of a much broader calculation. Absorbing the individual in this calculation has dissolved the reciprocal relation of power and resistance. However, the eternal question of “how not to be governed like that” by our digital technologies remains. Agre’s move toward a critical technical practice allows us to turn the power mechanism of algorithmic governance upside down to enter into the middle of algorithmic calculation asking “uncomfortable” questions such as: How is this calculation configured? What are the technical reasons for configuring it like this? What situations are produced by this configuration? Which ones have been forgotten and ignored, which ones cannot be addressed by the calculation? But also: Who controls the distance in which the digital subject is produced? Who can break this distance down? When should it be broken down? These are critical questions that do not negate, but critically *and* constructively *engage* with the technology and the situation it produces, thereby mirroring a remark Joanna Drucker (2015) once made: “We need to formulate a modernism of engagement founded in a recognition of complicity—ours and its—with the machinations and values according to which we live.”

Having arrived at the end, let us return to our beginning. When Kant wrote “Was ist Aufklärung?,” he assigned the work of emancipation not to the powerful who might be asked to share their power and give us a say. Rather, by asking *everyone* to use their own reason to free themselves from their self-incurred tutelage, he distributed that emancipating work that is the power “not to be governed like that.” According to “Was ist Aufklärung?,” every citizen was capable of and self-responsible for utilizing their capacity for reason. Today, the contemporary way of knowing or using reason is more often than not a knowing or reasoning with algorithms—and so it is important we remain involved in their technical practice. Digital technologies have become the means by which we find and distribute knowledge, through which we make decisions about each other and calculate our way in the world. And when using our digital reason, we need again to free ourselves from our self-incurred tutelage. Accepting a responsibility toward the technical practices we use, and engaging critically in their adjustments, does not mean that everyone needs to learn how to code. It does mean, however, that we have to leave behind our idea of technology as an instrument that merely

serves us and do ~~some more~~<sup>our</sup> homework to understand its technical practice. As we find the old form of subjugation put aside, our task is now to critically engage in the new form, the calculation, and in the shaping of the situations the calculations around us create in order to “not be governed like that” by our digital technologies.

## NOTES

1. This is worth noting—after all, the point for initiating critique is not necessarily the subject; it can also be a class, a movement, or an event. At the very end of his lecture on critique, Foucault does link critique not just to an “individual” but also to a “collective attitude” (67).

2. Interestingly, Winnubst (2015, 184) has likewise observed the evaporation of the force of negativity through differences becoming superficial and fungible.

## BIBLIOGRAPHY

- Agre, Philip E. 1997. “Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI.” In *Social Science, Technical Systems, and Cooperative Work: Beyond the Great Divide*, edited by Geoffrey C. Bowker, Susan Leigh Star, William Turner, and Less Gasser, 131–157. New York: Psychology Press.
- Amoore, Louise. 2009. “Algorithmic War: Everyday Geographies of the War on Terror.” *Antipode* 41 (1): 49–69.
- Andersen, Christian Ulrik, and Søren Bro Pold. 2011. *Interface Criticism: Aesthetics Beyond Buttons*. Aarhus: Aarhus University Press.
- Aradau, Claudia, and Tobias Blanke. 2017. “Politics of Prediction: Security and the Time/Space of Governmentality in the Age of Big Data.” *European Journal of Social Theory* 20 (3): 373–391. <https://doi.org/10.1177/136843101666762>.
- . 2018. “Governing Others: Anomaly and the Algorithmic Subject of Security.” *European Journal of International Security* 3 (1): 1–21. <https://doi.org/10.1017/eis.2017.14>.
- Benjamin, Ruha. 2019. *Race After Technology: Abolitionist Tools for the New Jim Code*. Cambridge: Polity.
- Bratton, Benjamin. 2015. *The Stack: On Software and Sovereignty*. Cambridge, MA: MIT Press.
- Bucher, Taina. 2018. *If . . . Then: Algorithmic Power and Politics*. Oxford: Oxford University Press.
- Cheney-Lippold, John. 2011. “A New Algorithmic Identity: Soft Biopolitics and the Modulation of Control.” *Theory, Culture & Society* 28 (6): 164–181.
- Chun, Wendy Hui Kyong. 2006. *Control and Freedom: Power and Paranoia in the Age of Fiber Optics*. Cambridge, MA: MIT Press.

Barad, Karen. 2007. *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning*, Durham/London: Durham University Press.

- Coleman, E. Gabriella. 2012. *Coding Freedom: The Ethics and Aesthetics of Hacking*. Princeton: Princeton University Press.
- Coole, Diana. 2006. *Negativity and Politics: Dionysus and Dialectics from Kant to Poststructuralism*. London: Routledge.
- Deleuze, Gilles. [1962] 2006. *Nietzsche and Philosophy*. Translated by Hugh Tomlinson. New York: Columbia University Press.
- . [1968] 1994. *Difference and Repetition*. Translated by Paul Patton. New York: Columbia University Press.
- . [1969] 1990. *The Logic of Sense*. Translated by Mark Lester and Charles Stivale. New York: Columbia University Press.
- Dieter, Michael. 2014. "The Virtues of Critical Technical Practice." *Differences* 25 (1): 216–230.
- Drucker, Johanna. 2015, May 3. "Recognizing Complicity." *LA Review of Books*. <https://lareviewofbooks.org/article/recognizingcomplicity>.
- Foucault, Michel. [1969] 2002. *Archaeology of Knowledge*. Translated by A. M. Sheridan Smith. New York: Routledge.
- . [1970] 1998. "Theatrum Philosophicum." Translated by Donald F. Brouhard and Sherry Simo. In *Foucault, Essential Works, Volume 2: Aesthetics, Method, and Epistemology*, edited by James Faubion and Paul Rabinow, 343–367. New York: New Press.
- . [1976] 1978. *The History of Sexuality. Volume I: An Introduction*. Translated by Robert Hurley. New York: Pantheon.
- . [1978] 2007. "What is Critique?" Translated by Lysa Hochroth. In *Michel Foucault: Politics of Truth*, edited by Sylvère Lotringer, 41–81. Los Angeles: Semiotext(e).
- . 1994. *Histoire de la sexualité, tome I: La volonté de savoir*. Gallimard.
- Fuller, Matthew. 2003. *Behind the Blip: Essays on the Culture of Software*. New York: Autonomedia.
- Gitelman, Lisa, and Virginia Jackson. 2013. "Introduction." In *Raw Data' Is an Oxymoron*, edited by Lisa Gitelman, 1–14. Cambridge, MA: MIT Press.
- Goriunova, Olga. 2019a. "The Digital Subject: People as Data as Persons." *Theory, Culture & Society* 36 (6): 125–145. <https://doi.org/10.1177/0263276419840409>.
- . 2019b. "Face Abstraction! Biometric Identities and Authentic Subjectivities in the Truth Practices of Data." *Subjectivity* 12: 12–26. <https://doi.org/10.1057/s41286-018-00066-1>.
- Goriunova, Olga, and Alexei Shulgin. 2005. *Software Art & Cultures*. Aarhus: Aarhus University Press.
- Grosz, Elizabeth. 2003. "Deleuze, Theory, and Space." *Log*, Fall No. 1: 77–86. <https://www.jstor.org/stable/41764951>.
- Huysmans, Jef. 2016. "Democratic Curiosity in Times of Surveillance." *European Journal of International Security* 1 (1): 73–93.
- Kaiser, Birgit Mara. 2012. "To Experiment and Critique with Kleist's Kätchen" Position Paper for *Terra Critica: Re-visioning the Critical Task of the Humanities in a Globalized World*, Utrecht University, December 7/8. [http://terracritica.net/wp-content/uploads/Kaiser\\_positionpaper.pdf](http://terracritica.net/wp-content/uploads/Kaiser_positionpaper.pdf).

- . 2017. “Semi-Agency.” In *Symptoms of the Planetary Condition: A Critical Vocabulary*, edited by Mercedes Bunz, Birgit Mara Kaiser, and Kathrin Thiele, 143–148. Lüneburg: Meson Press. <https://doi.org/10.25969/mediarep/1893>.
- Kant, Immanuel. [1784] 2007. “Was ist Aufklärung?” Translated by Lewis White Beck. In *Michel Foucault: Politics of Truth*, edited by Sylvère Lotringer, 29–37. Los Angeles: Semiotext(e).
- Kittler, Friedrich. 1993. *Draculas Vermächtnis: Technische Schriften*. Leipzig: Reclam.
- Koopman, Colin. 2016. “Critical Problematization in Foucault and Deleuze: The Force of Critique Without Judgment.” In *Between Deleuze and Foucault*, edited by Nicolae Morar, Thomas Nail, and Daniel W. Smith, 87–119. Edinburgh: Edinburgh University Press.
- Kunst, Alexander. 2019. “Search Engine Usage by Brand in Germany 2019.” *Statista*, June 18, 2019. <https://www.statista.com/forecasts/998761/search-engine-usage-by-brand-in-germany>.
- Kunzru, Hari. 1997. “You Are Borg: For Donna Haraway, We Are Already Assimilated.” *Wired* 5. <https://www.wired.com/1997/02/ffharaway/>.
- Latour, Bruno. 2004. “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern.” *Critical Inquiry* 30 (2): 225–248.
- Lemke, Thomas. 2016. *Foucault, Governmentality, and Critique*. New York: Routledge.
- Liu, Alan. 2012. “Where is Cultural Criticism in the Digital Humanities?” In *Debates in the Digital Humanities*, edited by Matthew K. Gold, 490–509. Minneapolis: University of Minnesota Press.
- MacKenzie, Adrian. 2006. *Cutting Code: Software and Sociality*. New York: Peter Lang.
- . 2015. “The Production of Prediction: What Does Machine Learning Want?” *European Journal of Cultural Studies* 18 (4–5): 429–445.
- . 2017. *Machine Learners: Archaeology of a Data Practice*. Cambridge, MA: MIT Press.
- Madden, Mary. 2014. “Public Perceptions of Privacy and Security in the Post-Snowden Era. Few see core communications channels as “very secure” places to share private information” [report]. *Pew Research Center*, November 12, 2017. <https://www.pewresearch.org/internet/2014/11/12/public-privacy-perceptions/>.
- Marres, Noortje. 2017. *Digital Sociology: The Reinvention of Social Research*. Cambridge: Polity.
- Morozov, Evgueny. 2013. *To Save Everything, Click Here: Technology Solutionism and the Urge to Fix Problems that Don't Exist*. London: Allen Lane.
- Morris, Jeremy W., and Sarah Murray. 2018. *Appified: Culture in the Age of Apps*. Ann Arbor: University of Michigan Press.
- O’Leary, Timothy. 2002. *Foucault and the Art of Ethics*. New York: Continuum.
- Rancière, Jacques. [1995] 1999. *Disagreement: Politics and Philosophy*. Translated by Julie Rose. Minneapolis: University of Minnesota Press.
- Rieder, Bernhard. 2017. “Beyond Surveillance: How Do Markets and Algorithms ‘Think’?” *Le foucauldien* 3 (1) 8: 1–20. <https://doi.org/10.16995/lefou.30>.
- . 2020. *Engines of Order: A Mechanology of Algorithmic Techniques*. Amsterdam: Amsterdam University Press.

- Rogers, Richard. 2013. *Digital Methods*. Cambridge, MA: MIT Press.
- Rouvroy, Antoinette. 2011. "Governmentality in an Age of Autonomic Computing: Technology, Virtuality and Utopia." In *Law, Human Agency and Autonomic Computing*, edited by Mireille Hildebrandt and Antoinette Rouvroy, 119–139. London: Routledge.
- . 2013. "The End (s) of Critique: Data Behaviourism Versus Due Process." In *Privacy, Due Process and the Computational Turn: The Philosophy of Law Meets the Philosophy of Fechnology*, edited by Mireille Hildebrandt and Katja de Vries, 157–182. London: Routledge.
- Sauerbrey, Anna. 2014. "Why Germans Are Afraid of Google." *The New York Times*, October 11, 2014. <https://www.nytimes.com/2014/10/11/opinion/sunday/why-germans-are-afraid-of-google.html>.
- Savransky, Martin, ed. 2020. "Special Issue: Problematizing the Problematic." *Theory, Culture and Society*, November. <https://doi.org/10.1177/0263276420966389Schomakers>.
- Schomakers, Eva-Maria, Chantal Lidynia, Dirk Müllmann, and Martina Ziefle. 2019. "Internet Users' Perceptions of Information Sensitivity—Insights from Germany." *International Journal of Information Management* 46 (6): 142–150. <https://doi.org/10.1016/j.ijinfomgt.2018.11.018>.
- Snowden, Edward. 2019. *Permanent Record*. New York: Henry Holt.
- Stutzman, Fred, and Jacob Kramer-Duffield. 2010. "Friends Only: Examining a Privacy-Enhancing Behavior in Facebook." *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1553–1562.
- Suchman, Lucy A. 2007. *Human-Machine Reconfigurations: Plans and Situated Actions*. Cambridge: Cambridge University Press.
- Thiele, Kathrin. 2008. *The Thought of Becoming. Gilles Deleuze's Poetics of Life*. Berlin: Diaphanes.
- . 2017. "Affirmation." In *Symptoms of the Planetary Condition: A Critical Vocabulary*, edited by Mercedes Bunz, Birgit Mara Kaiser, and Kathrin Thiele, 25–29. Lüneburg: Meson Press. <https://doi.org/10.25969/mediarep/1893>.
- Tufekci, Zeynep. 2008. "Can You See Me Now? Audience and Disclosure Regulation in Online Social Network Sites." *Bulletin of Science, Technology & Society* 28 (1): 20–36.
- . 2017. *Twitter and Tear Gas: The Power and Fragility of Networked Protest*. New Haven: Yale University Press.
- Weatherby, Leif. 2020. "Critical Response I. Prolegomena to a Theory of Data: On the Most Recent Confrontation of Data and Literature." *Critical Inquiry* 46 (4): 891–899.
- Wilson, Robert E., Samuel D. Gosling, and Lindsay T. Graham. 2012. "A Review of Facebook Research in the Social Sciences." *Perspectives on Psychological Science* 7 (3): 203–220. <https://doi.org/10.1177/1745691612442904>.
- Winnubst, Shannon. 2015. *Way Too Cool: Selling Out Race and Ethics*. New York: Columbia University Press.
- . 2020. "The Many Lives of Fungibility: Anti-Blackness in Neoliberal Times." *Journal of Gender Studies* 29 (1): 102–112.
- Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London: Profile Books.