Performing (the) digital

Positions of critique in digital cultures

MARTINA LEEKER

Digital cultures[1] are performative cultures. This assumption is illustrated by the ubiquitous and invisible infrastructures that constitute them, which are interstratified by so-called 'smart things'[2] (Engemann/Sprenger 2015; Günel/Halpern 2016), creating a socio-technical environment, in which performances of the technological come about. While human users may not be able to comprehend the entire technological performance, they are without a doubt intertwined with it. The digital performs, the human reacts to the agency the technologies suggest, and vice versa: "Performing (the) Digital".[3]

1 The usage of a plural implies that digital cultures are constituted through a variety of simultaneously existing cultural configurations, which are molded by digital objects and operations. Cultures and technologies are inseparable and constantly and mutually influence each other. For further information on research to the topic of digital cultures see "DCRL Questions: What are digital cultures?" – a research interviews video series, Digital Cultures Research Lab, Leuphana University Lüneburg, available at http://www.leuphana.de/en/research-centers/cdc/digital-cultures-research-lab/projects/dcrl-questions.html.

2 The notion of 'things' highlights the new status of 'objects' as performative. If the notion 'objects' is used, it refers to the new context.

3 The following is therefore not an analysis of artistic performances, which employ media (cf. Leeker 2001), but much rather a contextualization of the same.

There is a considerable genealogical background to this assumption, which needs to be reconstructed. It is founded within a 'discourse history of performativity',[4] which has been taking place across scientific disciplines concerning technology and the humanities since the 1950s. It is through this history that the reciprocity of performance between humans and technology was established. As a result, technical things and computational operations could be understood as performative, while at the same time relieving human agency from mere intentional and representational action.

The expanded definition of performativity allows consideration of a 'dispositif of the performative within digital cultures', which corresponds to the scenario above. This dispositif is constituted by an ensoulment[5] of technical things up to the point of having agency that is not entirely relatable or controllable by humans. The result is a 'technological wonderland'[6] that functions autonomously and (mostly) without friction in the metaphorical backrooms of society, thereby fascinating its inhabitants and inviting them to linger and loiter (Pflüger 2008). Simultaneously, this dispositif does not conceal its precarity: it is constantly at risk of technological failure and the revelation of its ensoulment and magic as pure illusion. This ambivalent relationship between control and loss of control does not, however, reduce its fascinating power of seduction; on the contrary, the ambivalent game only increases its appeal. Performativity therefore implies not a simple expression of action, but a complex amalgam of a performance and production (mis-en-scène) history of unrestricted, ensouled technologies. As outlined below, their purpose is to create a politics and an economy of 'self-illusion'

4 This historic analysis of discourse does not intend to identify a 'correct' definition of performativity. It aims instead to decipher which concepts of performativity are generated within which contexts, what their effects are, and how they are separated and combined with other conceptualizations of the same.

5 Current theoretical conceptions of animism and ensoulment differ from the spiritual traditions of the 19th century (Hagen 1999), which informed notions of performances with technology up until the 1960s (Leeker 2016b). The latter depended on explaining technological worlds with inexplicable phenomena, such as ghosts or ethereal conceptions. Contemporary animism however is purely operative, which makes it all the more fascinating.

6 'Wonder' in this case refers to occurrences that cannot be understood and are therefore processed only through illusions, as would be the case in a magic trick. In this translation, wonder and enchantment are used interchangeably [note from translator]. As the magic happens on the technological side, a power divide is established between technical things and human users.

(Leeker 2012; 2016b) of human actants, which can be understood as a form of governmentality (Foucault's notion of governmentality, cf. Lemke 2001). There is a specific way of generating a self[7] in digital cultures, which is linked to their dependency on data and interaction. Only when something is present can it be mined for data and be engaged with. It is only under these conditions that socio-technological environments produce a self. This self is an illusion, as it is pure invention and it is not relevant in itself, but only within its functionality – a principal obscured by the self-illusion mechanisms of the technological wonderland.

'Ubiquitous computing' marks a paradigmatic manifestation of discourse and dispositif in the context of performativity. This concept plays a central role within a genealogy of current digital cultures and is therefore a vital component in deciphering the realities they produce as dispositif of the performative. Their constitution and effects will be elaborated upon, exemplified through the manifestos and technological things by the artist and engineer Rich Gold,[8] one of the leading researchers at the Xerox Palo Alto Research Center (Xerox PARC). The essay follows the hypothesis that Gold's inventions were essential to the creation of the narrative of fascination and enchantment (cf. Sprenger 2016)[9] of a technological being within digital cultures, thereby mysteriously binding them to the human user.

Art – specifically performance art – has traditionally prevailed as a method of gaining the distance necessary for a reflection and critique of techno-cultural conditions (McKenzie 2001; 2005; 2013). Within 'performing (the) digital' however, this is complicated by an appropriation of technological seduction. The scholarly analysis of the dispositif of the performative more often than not is merely descriptive rather than analytical.[10] How then can performative methods

7 At this point it is vital to clarify that the text does not share the assumption of an existence of a self prior to technological conditions and environments, which is endangered by the same. Instead, the underlying premise is that these conditions produce a self, which is specific to the logic of digital cultures.

8 Gold, Rich: Official Homepage, July 26, 2016 (http://web.archive.org/web/20040223013202/http://www.richgold.org/index.htm)

9 Florian Sprenger (2016) has instigated a seismic shift in seeing ensoulment and wonder as constituents of digital cultures in ubiquitous computing. He has graciously provided his text prior to publication for this analysis.

10 Critique in digital cultures is therefore always constitutively and inescapably self-referential. Its explorations necessarily employ digital tools, as is e.g. necessary for the evaluation of big data. This constitution influences the understanding of science itself, to a point that self-reflexive scientific research is being postulated as an essential

engage with these cultures on a critical level? Methods and epistemology of so-called artistic research (Gramelsberger 2009) may hold an answer to this question.

1. PERFORMATIVITY THROUGHOUT THE DISCIPLINES: A HISTORIC OUTLINE OF A DISCOURSE

An outline[11] of the discourse history of performativity (Wirth 2002b; Seier 2007) shows the performance of machines becoming more human, and inversely, the becoming-operational of human agency. From this venture, the narratives of an unleashing of technology become apparent. It materializes an alignment of human and technology, the creation of agencies of action between humans and technological objects, as well as the (re-)enchantment of the world through human and technological performances.

1.1 Austin Cybernetic

This discourse history of performativity has its origins with John Austin's speech act theory,[12] which the British philosopher presented in twelve lectures as a visiting professor at Harvard University in 1955. Published posthumously in 1962 under the title *How to do Things With Words* (Austin 1975), it became the primary authority on speech act theory, developing a fundamental repositioning of the status of speech. Speech was no longer seen as a description of reality, it no longer functions solely as an expression of something that can be true or false. Rather, it develops agency, as words directly produce the actions they are expressing. Austin calls these words (verbs) that have an illocutionary force 'performative' and the circumstance of creating this agency 'performativity'.

methodology of digital cultures research analyzing the governmental effects and affects of the same.

11 Instead of offering an all-encompassing history of performativity, the intention is to focus on central systemic aspects involved in constructing a certain dispositif of the performative.

12 This starting point was chosen because relevant theorists of performativity mostly refer to Austin in their work. However, the interrelation of semiotics, theater/performance and computational history reach as far back as the early 1900s, for example within Frege's logic of language, Hilbert's self-referential mathematics and Edward Gordon Craig's symbolic theater (Leeker 2013a: 87-106).

Once triggered, the 'performative turn' grows throughout the decades, undergoing modifications by social sciences, technology studies and the humanities, as well as computer engineering, which lead to a re-definition and conceptualization of culture and technology as performative.

This transfer induces a cultivation of the epistemological conditions of the performative turn, which coincided with a realization that language/media have gained their own driving force and power. As they gain agency, they become self-referential. This means that they produce the things they articulate and their articulations are never about something that exists outside of them. However, this seemingly emancipatory condition leads to a precariousness of the relationship of language/media, as well as that of their users to the world. As speech acts are dependent on a variety of factors, some of which are beyond the user's control, the possibility of a failed speech act is prevalent. Attempting to contain and minimize this risk, Austin embeds speech acts in a system of social conventions and institutional ties, creating an extensive list of 'doctrine of infelicities' (e. g., abuse, misfires), which prevent unsuccessful speech acts (Rolf 2009: 26-36). He also excludes insincere speech acts, such as utterances on the stage of a theater from felicitous or successful speech (Austin 1975). These precautions will later reappear in computational engineering and programming language, as well as in a re-orientation of the human and human performance within cultural sciences. For it is exactly those infelicitous speech acts that will later cause an intense critique of autonomous subjectivity (Derrida 1988). Arguing that language/media has its own driving force, an intentional media user is radically put to question. The biggest effect of speech act theory however, is the merge of the symbolic level and action. This effect, spreading through disciplines and cultures, is reminiscent of the magical conditions[13] that every utterance may become reality.[14]

It is, therefore, essential for the dispositif of the performative within digital cultures to note that the performative turn has facilitated an approximation and equalization of medial, technological and human performances. Although Austin

13 Hartmut Winkler (2004: 215-230) has explicated the power of the merge of the symbolic and the practical sphere and as a result advocates for a strict differentiation of performativity according to their degree of practical reference.

14 Austin later reformulated his speech act theory to include locutionary, illocutionary and perlocutionary acts. This differentiation dissolved the difference between constative (related to truth) and performative (related to action) utterances, so that every utterance would become an act, thereby universalizing the performativity of language (cf. Wirth 2002: 9-60).

did not reference media history,[15] the relevance and detonating force of speech act theory fully develops within its contextualization in the development of the computer and cybernetics throughout the 1950s.[16] For the unleashing of language, the collateral subversion of traditional concepts of subjectivity and the coinciding of symbolic representation and action, all run parallel to a practical-productive phase of cybernetics (Kline 2009; 2015), following the heated theoretical discussions on cybernetics in the 1940s (Pias 2002). Since then, speech act theory and computational coding have formed strong ties, or as Inke Arns puts it:

"In code, 'saying' and 'doing' merge in so far as these speech acts are not descriptive or representational, they instead directly affect, move or create their effects […] Ultimately, performativity results in the magical merging of the signifier and the signified […]." (Arns 2001: n. pag.; my translation)[17]

In addition, the performativity of code is put to use in cybernetic machines and systems (Mindell 2000). Not only do they begin to operate autonomously via feedback loops, information processing and closed circuits (Pias 2004), they also begin to have agency within the world (Lettkemann/Meister 2004). The crucial point in this performative turn is therefore the direct human integration into this systemic self-organization as one of many data processing operators (Mindell

15 It can be assumed that Austin was aware of the automatization and formalization of human language. During his time at Harvard, he was closely associated with Noam Chomsky, who was working on the formalization of language at M.I.T at the time. Bernard Geoghegan (2011: 96-126) has laid out a plausible exploration that Claude Shannon's information theory and Norbert Wiener's cybernetic theorems in the 1950s strongly influenced Roman Jakobson's concepts and practices of formalization of language, as well as impacting on Levi-Strauss' ethnographic work. In effect, it is a viable assumption that changes in media relations and technological conditions challenge different scientific disciplines in similar ways and are therefore implicitly or explicitly dealt with in an interdisciplinary manner.

16 Further research would be required to assert whether this happened simultaneously or if speech act theory only became possible within the technological conditions of the computer and the epistemological framing of cybernetics.

17 "Im Code fallen 'Sagen' und 'Tun' zusammen, insofern diese Sprechakte keine Beschreibung oder Repräsentation von etwas sind, sondern diese direkt affizieren, in Bewegung setzen, Effekte zeitigen. […] Performativität läuft so letztlich auf die magische Ineinssetzung von Zeichen und Bezeichnetem hinaus […]." (Arns 2001: n. pag.)

2001; 2002). The conception and recognition of speech act theory is consequently contemporaneous with the becoming-performative of the computer. From a perspective of media epistemology and history, the performative turn can therefore also be read as enabling a narrative of unleashed technology, as well as an alignment of a technological and human-centric conception of performances. The result of this genesis and transmission history is that the different forms of performativity are no longer separate. Performativity represents an inevitable techno-sociality with magical omens.

1.2 Immigration of speech acts to the computer

The interaction of performativity of language and the computer brought about a new model of techno-human relationships in the 1980s and 1990s. Through the developing 'workplace studies', speech act theory migrates into the systems and programming of "Computer Supported Cooperative Work" (CSCW) (Knoblauch/Heath 1999). Here, programs are implemented to facilitate workflows in conference and meeting systems. Formalized speech act theory becomes a key player in multi-agent regulations and communication processes (Schulz-Schaeffer 2000), as well as in electronic transaction processing (Elgass 1996). At this stage, the infelicitous speech acts described by Austin become relevant to the development of programs regulating computers and human-machine interactions, as well as mediated communication between humans or between machines respectively. These infelicitous speech acts serve as a framework for translating philosophical models of language into algorithmic speech acts. These should be successful as long as human and technical 'fallacies' about the fixed allocation of performative verbs to certain actions are excluded as much as possible.

Within the discourse history of performativity, this produces the crucial point that technological performances become 'more humane'. Drawing upon disappointments in scientific research on artificial intelligence, technical accidents and human error in interaction with technological systems, Terry Winogard develops a modest "Language/Action Perspective", and demands consideration of social factors when working with computers (Flores/Winograd 1986; Knoblauch/Heath 1999: 165). Because communication and action are not arranged rationally, they are highly dependent on contingent occurrences within social contexts (Suchman 1987; 1993). This means that human actors are merely partners or counterparts that enable technological performances to become more humane, allowing for the situatedness and processual character of technology to become a factor for labor, organization and economy (Knoblauch/Heath 1999: 166).

This new condition allows for the dispositif of the performative within digital cultures a positive discursive reassessment of the precarity of performative speech acts, which Austin had deemed to be problematic. While they are modularized through the technological level, the level of human communication unchains them. This leads to a consolidation and ennoblement of performativity of technology, which is nonetheless an illusion, as code cannot be noise (Arns 2001). It would then lead to a systemic breakdown. This mise-en-scène of performativity results in a discursive belief of supposedly inevitable socio-technological systems (Suchman 1983; 1993; Knoblauch 1999), which is nurtured by the interdisciplinary work of engineers, computational and information scientists, sociologists, as well as ethnographers and anthropologists. The more their work interacts, the more technological and anthropological systems are approximated and engage in permanent and mutual influence.[18] These socio-technological systems are less a fact, however, than an invention through which digital cultures, deeply rooted in technological forms of cooperation, can come into existence.[19] Orit Halpern (2014) even describes technology as having become a permanent demo or testing ground (test bed) since the 1970s. To continuously develop in a recursive process, this demo needs crisis, accidents, catastrophe and human deficiency. Interactions and a lust for catastrophe and emergence thereby become virulent as factors for the discourse history of performativity, which is accompanied by illusion and the occlusion of technical operations.

1.3 Operationalizing the performative in cultural and theater studies

Contrary to the performative becoming-more-humane of technologies, the discourses on performativity in cultural and theater studies result in an operationalization of concepts of performativity, which inserts itself into spaces, where

18 Heath/Knoblauch give an example of this mutual influence: "dass die Patienten die Schilderung ihrer Beschwerden und Symptome sehr genau darauf abstimmen, wie der Arzt die Daten in das Computersystem eingibt." (Knoblauch/Heath 1999: 170) ("…that patients, when speaking of their grievances, react to the data the doctors retrieve and feed to their computational systems"; my translation)

19 Against this media historic backdrop it would be necessary to investigate the discourse on techno-ecologies, as well as the rediscovery of Gilbert Simondon as a part of euphorically welcomed socio-technological liaisons of the human and the technological.

speech acts/performativity develops its own power, a third force next to human and media.[20] This third entity is generative in accordance with non-comprehensible laws, creating something where there was previously nothing. According to Jacques Derrida (1988), language is generative through self-referential iterations and repetition.[21] Consistent with Judith Butler (1998), performatives produce gender, identity and subjectivity. Finally, Sybille Krämer (2002: 345) clarifies that media need embodiment in operations such as writing, reading and interpreting; therefore voices, for example, can disturb utterances and actions when words have been lost to the wind.

The conception of performativity outlined in theater studies (Fischer-Lichte 2004) in and throughout the mid-1990s (Fischer-Lichte/Kolesch 1998)[22] shows an affinity towards the technological as well. Even if it went by almost unnoticeably, there are deep structural similarities to the performative turn of technology. That is, the notion of autopoiesis is introduced, which of course describes cybernetic feedback (Beniger 1986). Within autopoiesis, cultural and artistic performances complete the coincidence of signs and actions, as well as the resulting self-referentiality of performance. This is demonstrated by the emphasis on so-called 'co-presence' as constituent to artistic performance (Fischer-Lichte 2004).

---

20 "Media anthropology expeditiously retaliates this operationality with de-anthropomorphization: „Damit sieht sich so […] geforderte Medienanthropologie auf einmal […] in der Verantwortung, allerhand von dem, was sie eigentlich bloß verwerfen wollte, wie Bewusstsein und Intention, zu analysieren, und zwar in ihrer realitätsbegründenden Funktion als Operatoren der Komplexitätsreduktion, als Formen der Verdichtung oder des Blackboxing im komplexen Feld der Medienanthropologie" (Engell/Siegert 2013: 9-10) ("media-anthropology, challenged in this way, suddenly has the responsibility of analyzing everything it attempted to dismiss, e.g. consciousness and intention, and attempt an understanding of these functions as constitutional operators, reducing complexity, increasing consolidation or black-boxing within the complex field of media anthropology" [my translation]).

21 Sybille Krämer emphasizes the possibility of finding successful speech acts through re-iterations and performances in the theatrical sense even in Austin's theories. According to Krämer, every execution of a speech act is a re-iteration of the same, which includes the power of iterability and alteration. Speech acts function the same way rituals do, manifesting themselves upon their repetition.

22 The following refers especially to the work on performativity in theater studies through the collaborative research of the *Sonderforschungsbereich* "Kulturen des Performativen" (cultures of performativity) at Freie Universität Berlin (cf. Fischer-Lichte/Kolesch 1998).

Co-presence implies that the bodily presence of the actors and the audience mutually produce the roles, as well as the performance. Performance itself, then becomes a speech act, producing what it enacts: subjects, bodies, spaces, enactment, but also a designation of performativity as liminality (Fischer-Lichte 2004: 305-314) of transformed humans.

This background makes it even more surprising that theater studies tend to disapprove of the notion that technology can perform (Otto 2013: 55-67). The performances of technical things and their regulatory algorithms are seen as sheer and reductive 'performance' (German: *Performanz*), as opposed to human performance, which is open, unpredictable and emergent (McKenzie 2001). However, computational sciences and engineering practices have recorded a jolt towards performativity (Suchman 1983; 1993), which positions it in a discursive field of emergence, unpredictability and contingency. Where the becoming-performative of the computer was meant to bind it into humane structures, the humanities ultimately dispose of the human in the performative.

The denial of performativity of technological performance in some areas of theater studies, sorting it into a system of mere operationality, seems to have a specific cause. The discourses in theater studies constructs itself in this way, so as to hide the effects of their own performativity, which parallels a transformation of human performances into a chain of operations. The genealogy of performativity emerges as an amalgam of affirmation, contradiction and occlusion. From this, the initial scenario can emerge as a performance of technological things and environments in which the human still plays a role, even if it is small and precarious.

1.4 Performance as enchantment

The assertion of the re-enchantment of culture through the power of performativity (Fischer-Lichte 2004: 315-362) is the most important contribution from analysis of artistic performances in theater studies in favor of the dispositif of the performative. According to Erika Fischer-Lichte, performativity corresponds with a renunciation of "comprehensive ability" (Fischer-Lichte 2004: 362), which results in re-enchantment and an "embodied mind" (ibid.). It is the duty of human agents to act in life, as enactment would take place in art (cf. Fischer-Lichte 2004: 362). The unleashing through performances is accompanied by an enchantment of culture, which, according to Fischer-Lichte, parallels "modern society" (Fischer-Lichte 2004: 360):

"Increasingly, they mediate the conviction that the world is indeed criss-crossed by invisible forces, which influence us in secrecy. Although we sense them physically, we cannot see or hear them. It is the assumption that in nature and society emergences occur that are beyond intentionality, planning and prediction; that everything is connected." (Fischer-Lichte 2004: 360; my translation)[23]

Through this enchantment, the world becomes "just as inaccessible as the autopoietic feedback loop that is effective in performances" (Fischer-Lichte 2004: 361).[24]

Performativity as a magical power thereby determines that recognition is suspended and is replaced by the merging of human agents with their technological environment. A condition of non-knowing, emergence and unpredictability becomes the basis for existence. The coinciding of speech and action through speech act theory turns into a gateway for ontological and inherent magic and enchantment. As Sybille Krämer (2002: 323) has lucidly noted, the principle of representation necessary to overcome this magic is thereby extinguished. The human, technology and media converge, so that an over-identification of human agents is delineated, with which they succumb to the illusion of digital omnipresence and omnipotence. This only promotes the unleashing and autonomy of the technological, as well as commitment to it.

23 "Zunehmend vermitteln sie die Überzeugung, daß die Welt in der Tat von unsichtbaren Kräften durchzogen ist, die auf uns einwirken, ohne daß wir sie zu sehen oder zu hören vermöchten, obwohl wir ihre Auswirkungen körperlich erspüren können; daß in der Natur und in den Gesellschaften Emergenzen auftreten, die sich jeglicher Intentionalität, Planung und Vorausberechnung entziehen; daß alles mit allem verknüpft ist […]." (Fischer-Lichte 2004: 360) There are distinct similarities between these concepts of performativity and the discourse on techno-ecologies (Hörl 2011). For instance, Mark B Hansen (2011: 365-409) has also explored the invisible forces that operate within media ecologies.

24 "[…] ähnlich unverfügbar wie jene autopoietische feedback-Schleife, die in Aufführungen wirkt." (Fischer-Lichte 2004: 361)

1.5 From performativity discourse to a dispositif of the performative

The variety of discourses emerging within the different disciplines can be bundled to form a discourse history of performativity in light of a dispositif of the performative. Foucault's conceptual framing of the dispositif offers an understanding of the latter, which he describes as following:

> "What I'm trying to pick out with this term is, firstly, a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements." (Foucault 1980: 194)

Accordingly, the dispositif of the performative within digital cultures creates a setting in which material formations, practices and discourses are immersed into a network of relationality. It can be added that it "has at its major function at a given historical moment that of responding to an urgent need" (Foucault 1980: 195). It will be necessary to analyze which needs the dispositif of performativity within digital cultures responds to, and what solutions it offers.

All of the above point to a situation in which human and technological performances have become compatible with a dispositif of the performative within digital cultures on the basis of a heterogeneous discursive field of performativity. It is a hypothesis that this unclear collective arrangement, impossible to homogenize, should enable a place for the uniqueness of human performance with the result that human agents can produce a self within socio-technical environments.[25] These environments could be strongly dependent on a self, as the production of human agents in the discourse on performativity in all its contradictory concepts suggests. In comparison to the autonomous and intentional self, this is a new concept. Because this new self is fundamentally linked to technology in the socio-technological discursive field, but at the same time suggests self-dependency of agency to a limited extent. This is demonstrated in the interaction with programs as it happens within CSCW, just as it is shown in cultural performances. At the same time, the self is confronted with the obscuring of technology through enchantment. Due to these configurations it is a hypothesis that the

25 The concept of the self has been perpetuated in spite of it's permanent swan song (cf. Derrida 1988; Butler 1998).

production of self within digital cultures now relies on a self-illusion, which obscures its technological operations, while at the same time binding the human to them. The generation of a self has to be analyzed within the framework of the dispositif of the performative within digital cultures and their governmental effects (Lemke 2001).

With this prefix the discourse turns into a dispositif, illustrated and exemplified by the magical world of ubiquitous computing created by Rich Gold at the beginning of the 1990s. It is not by chance that great similarities appear in the descriptions of Erika Fischer-Lichte (2004) when she talks about the enchanting performativity of artistic performances.

2. RICH GOLD'S UBIQUITOUS MAGICAL TOY WONDERLAND – INTO THE DISPOSITIF OF PERFORMATIVITY WITHIN DIGITAL CULTURES

Ubiquitous computing of the 1990s has made joint performances of technological and human agents common practice. The performativity of technological performances, once regulated and ensured by speech acts, can now wander from the CSCW systems out into space and back into technological things. Through this, these things are assigned agency and begin to 'speak' and 'answer' to humans, albeit to a limited extent in Weiser's days.[26] The performatives live within the things, which serve as agential callings to their users.

In this manner, the performances satisfy the conceptual framework of the dispositif, laid out here according to Foucault (1980). In the following section, it will be clarified which necessities ubiquitous computing responds to according to the dispositif of performative, and which effects of governmentality it educes.

26 Mark Weiser (1991) imagines the subservient spirits as foresighted and proactive and underlines his theorem with a short anecdote: "Sal awakens: she smells coffee. A few minutes ago her alarm clock, alerted by her restless rolling before waking, had quietly asked 'coffee?', and she had mumbled 'yes.' 'Yes' and 'no' are the only words it knows."

2.1 Ubiquitous Computing and the Arts

In 1988, the inventor of ubiquitous computing (Rogers 2006), Mark Weiser[27] began working on this new project, which he described as: "Ubiquitous computing is the method of enhancing computer use by making many computers available throughout the physical environment, but making them effectively invisible to the user" (Weiser 1993: 75). It marks the dawn of a new world "in which each person is continually interacting with hundreds of nearby wirelessly interconnected computers" (ibid.). This circumferential and mundane socio-technological situation "penetrate[s] all groups in society" (Weiser 1991) and Weiser believed that "sociologically, ubiquitous computing may mean the decline of the computer addict" (ibid.). For him, the effects of addiction materialize within the constant need to be with one's technological things. "Its highest ideal is to make a computer so exciting, so wonderful, so interesting, that we never want to be without it" (Weiser 1996: n. pag.). Simultaneously, "[…] its highest ideal is to make a computer so embedded, so fitting, so natural, that we use it without even thinking about it" (Weiser 1996). In summary, this constitutes the following: Large and immobile computers migrate into small mobile technological things, which form an environment within which they themselves become invisible. This situation allows for human users to engage with technologies without reflecting on them, as they become increasingly obscured. This leads to an ongoing and increasing addiction, which pervades the whole of society. The user is *in* the technological world, which is omnipresent, commonplace and indispensable.

One of the main accomplishments of Weiser's transdisciplinary task force may have been making this ambivalent world more palatable to the user. Over a period of four years, Rich Gold was an important member of the force. He joined the Palo Alto Research Center (PARC) by XEROX in 1991. Gold was a musician, composer, performer, writer, designer, comic-strip artist, game developer, toy maker and a multitalented all round inventor. These qualities allowed him to develop ubiquitous computing into a children's magical wonderland, in which technological objects are animate (cf. Sprenger 2016), function in the backrooms of society and enter into agential relations with humans.[28]

27 Cf. Mark Weiser's homepage (http://pubweb.parc.xerox.com/weiser/weiser.html)

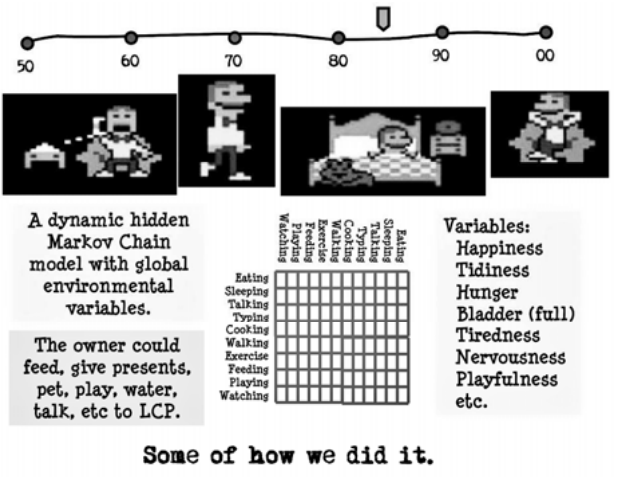
28 Of his function within the lab, Gold says: "But the other task was to construct a philosophy. A Ubi-Comp Cult. My ubi-philosophy was based on Weiser's formulations, but also divergent from it (he was enough of a genius to know that sub-cults were a good thing.) My formulation of Ubi-Comp started with Ubi-Comp product genres […]." (Gold 2002: 66)

Rich Gold's ubiquitous worlds can be seen as performative (McGonical 1999: 8), when applying the criteria laid out in the previous chapters. Firstly, the technological performances bring about liminal experiences (Fischer-Lichte 2004). Secondly, the action they constitute is always a repetition (Krämer 2002), in Gold's case, repeated actions with commonplace objects and toys, and lastly, the symbolic and practical levels collapse into one.

With this, ubiquitous computing can be seen as a dispositif of the performative, demarcating the determining basis for contemporary digital cultures and their seduction. As will be shown in following passages, it is a world in which consciously constructed mis-wiring, enchantment and seduction become strategies, binding the users and operating through their self-illusion. This production or generation of the self is highly strategic and is encouraged incessantly. For technological things and their infrastructures require a self with human agency, to be operated and developed. A person or individual however, is of no importance (Rouvroy 2013).

2.2 "Little Computer People" – less equal agencies

Figure 1: Little Computer People



Gold, Rich (2008): The Plenitude: Design and Engineering in the Era of Ubiquitous Computing, Cambridge: MIT Press, p. 50.

The esprit which feeds the dispositif of the performative within ubiquitous computing can be channeled through a computer game, "Little Computer People" (1985), which Gold developed in the 1980s when working for Activison (Gold 2002: 130-132). The aim of the game was to nurture a little computational figure inhabiting a virtual dollhouse, keeping it fed, active and groomed with the help of the keyboard and joystick.[29] The programmers claimed that these small inhabitants were responsible for bugs within the computational systems (Höltgen 2011).

In this belief, they ascribe an independent existence to the computer, as it interacts with the user in the form of the little computer people (ibid.), while the users are responsible for the well-being of the technological object. What is decisive within this scenario is that the computer no longer needs to be anthropomorphized. Instead, the technological history of the human is transformed into a new model. The circuits and codes within the computer receive their own form of agency, whereby the human user enters the agential community via the small figure. The specificity of this community is that the power structure is hierarchic, because bugs could develop within the system should the little figure not be taken care of appropriately. Gazing upon this situation from contemporary digital cultures, the metaphor within "Little Computer People" couldn't have been more fitting. These days, human agents are data generators who feed technological things with data that keeps them up and running.

2.3 Technological objects as toys. Repetition and transformation

The playful seduction intrinsic to the computer game, which didn't lead to entirely cooperative agential ensembles with technological things, are carried forth in Rich Gold's conception of ubiquitous computing. Here, the method of binding users to the technological environment through cooperative strategies is preserved and modified. The modification is compounded through the emergence of the technological things from the computer and the performances are located within entities engaging with the toys in the room.

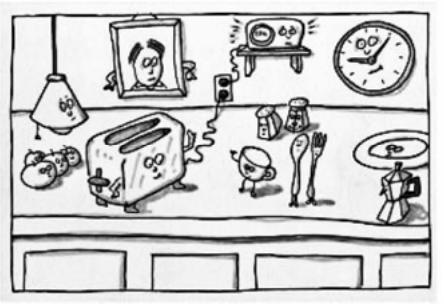
"My formulation of Ubi-Comp started with Ubi-Comp product genres, a carry over from my toy days. Each product category genre had its own history, metaphor, shelf space, use

29 The game has been categorized as the predecessor for the tamagotchi, as well as the computer game 'the SIMS' (Höltgen 2011).

in the world, sales method, manufacturing technique, aesthetics, dependencies and other products dependent on it." (Gold 2002: 66)

This recourse to a toy universe trivialized the essence of these objects, but also offered an advantage. As things we are familiar with from our childhood, they are easily accessible and interaction is intuitive.[30] As Gold put it: "Lastly, they are *colonizing* in that they take the forms of already existing, historically-determined, objects of the Plenitude. There are Ubi-pens, Ubi-cars, Ubi-T-shirts, Ubi-walls, Ubi-notepads, Ubi-Shoes" (Gold 2002: 207). Gold's techno-social universe is inhabited by commonplace objects, which are nonetheless fascinating, as they have been made animate. As Gold says: "Many of the objects about us seem alive, or as I often say, 'enspirited'" (Gold 1993b).

Figure 2: Artist's kitchen



An Artist's Conception of a Ubiquitous Computing Kitchen

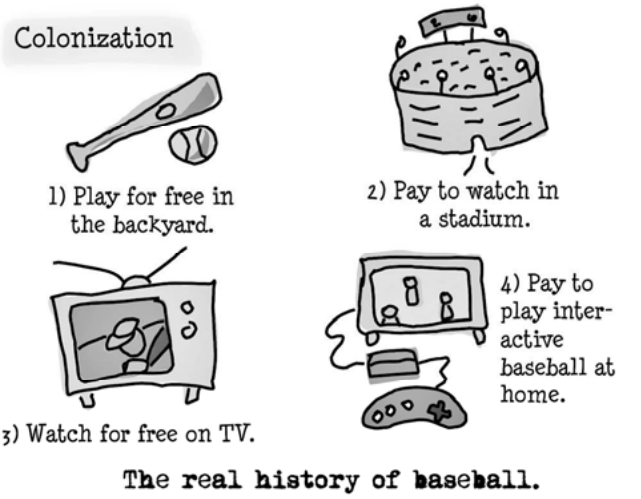
But Weiser said:
"I don't want to argue with my car about where to go."

Gold, Rich (2002): The Plenitude: Design and Engineering in the Era of Ubiquitous Computing, Cambridge: MIT Press, p. 208.

30 Gold's technological objects are more appealing and fun than the reality of ubiquitous computing would turn out to be. Weiser created small, mobile devices for collaborative work processes, like tablets, pads, and boards. These functioned through the logic generated by ubiquitous computing within workplace studies (Friedwald 2008; Bell/Dourish 2011) and tended to be counter-intuitive.

Gold himself states: “So what kinds of toys did I design? I guess the simple answer is that I tried to design computer toys that didn’t look like computers. I wanted the mysterious effects of computation, but I wanted it in non-mysterious objects” (Gold 2002: 137).

Figure 3: Colonization



Gold, Rich (2002): The Plenitude: Design and Engineering in the Era of Ubiquitous Computing, Cambridge: MIT Press, p. 117.

Within this colonization it is essential that the things are not only occupied, but involved in an artistic-performative process of transformation through the designer, as well as the user. A chain of translations occurs, through which the new form and function of the familiar toy is reassessed intuitively. The technological objects repeat a cultural context, transforming it through their iterations. The result is that one feels familiar and at home within technological worlds, and also creatively challenged. However, the creative achievement does not lie within subversion of the familiar, but rather in the consolidation of appearances, inscriptions and agencies.

2.4 Dancers in the dark

The technological things are not only familiar, they are now also enspirited and magical. Gold compares ubiquitous computing with a children's bedroom late at night, when the toys begin to dance as soon as the grown-ups have turned off the lights: "This new augmented reality is perhaps a little like the enchanted village, in which common objects have magically acquired new abilities, a village where toy blocks really do sing and dance when I turn out the lights" (Gold 1993a).

The things are easily accessible; there is a specific attitude to engaging with them. One should approach and act with them like in a children's magical wonderland. Things will guide the way, once the user has opened all channels of perception. As Gold says: "In my sophistry, all things in the world have tiny personalities, little 'selves', small consciousnesses. These enlivened objects help and hinder, collude and conspire, whisper and talk with each other and with us" (Gold 1993b). Things are therefore performative here, as it were, in the sense of the speech act, because they carry calls for action (Gibson 1979) within them. They provide guidence on how to manage them and which actions are appropriate. With Gold, things remain in the shadows; they are dancers in the dark. In this way, the call for action manifests more in the form of seduction, inclinations, fumbling experimentation rather than through cognitive performance. It is more of a felt and experienced action that creates performative artistic and aesthetic practice. The power divide between technological objects and the user that was established within Gold's "Little Computer People" is continued. However, threat is not manifested in the technological thing; it lies within the dark environment surrounding its existence. Embodiment through an environment makes it increasingly difficult to escape looming threat and ambiguity.

Jane McGonical (1999: 29-32) has related Gold's scenario of ubiquitous computing in the children's darkened bedrooms to Winnicot's theory of transitional objects (Winnicott 1971). This theory describes a child's compensatory transfer of affect to e.g. a stuffed animal after the loss of the omnipotence present through symbiosis with its mother. While this may seem far-fetched, it does resonate with Gold's depiction of a darkened nursery – his ubiquitous computational universes are enchanting and seductive. Users alternate between emancipation and disempowerment. In interaction with technological objects, users are omnipotent. At the same time, they are harassed, seduced and led into darkness. Here is the first glimpse of governmentality within the dispositif of the performative within digital cultures. They arise from the constant oscillation between empowerment and disempowerment, which creates and maintains the self-

illusion while repeatedly destroying it. The result is a self-reliant interplay of destruction and re-generation of the self (Moser 2013).

2.5 Ubicomp. Theater with mis-wiring

Within Gold's explanations of the nursery tales as masquerade, he specifies the governmental effect and its methods as follows:

"The everyday objects themselves become a kind of ruse: a baby doll (or toy block) might look like a familiar remnant of childhood but it is really only one of a thousand distributed nodes which control the functioning of the whole house. Likewise, the baby doll itself activates its own mechanisms, behaviors and charms based partly on the comings and goings of its adopted (organic) family, and partly on digital discussions with other objects in the house." (Gold 1993a)

Things are not only performative, they also play a theatrical part, equivalent to Austin's un-serious speech acts on stage. Gold's magical wonderland then becomes a history of mise-en-scène of the performative, in which it performs something other than it is, while keeping this circumstance hidden. What this 'other' is made of can be deciphered with the help of the objects. They are not mere things, but intersections, which could control e.g. an entire house. This exemplifies that the performance lies within technological environments and not within the thing itself. Ubiquitous computing does not correspond with things, but rather the environments they are embedded in. The likeable objects are mere distractions from the regulatory and controlling operations. It is necessary to take a closer look, to define what their calls to action are actually obscuring. In Rich Gold's words:

"Ubiquitous Computing is a new metaphor in which computers are spread invisibly throughout the environment, embedded and hiding as it were, within the objects of our everyday life. Each of these computers can talk with any of the other computers much like chattering animals in a living jungle, sometimes exchanging detailed information, sometimes just noting who's around." (Gold 1993a)

The new objects, now computers, obscure their function as nodes and intersections of technological operations and grids, where they exchange data taken from human agency and transform them in their own logic. What emanates is a doubly structured performativity: The unleashing of technological objects into the performative is accompanied by the performance of a history of mise-en-scène, in which technological performances are obscured.

These mise-en-scènes rely on interaction with technological objects and cunningly implement the mis-wiring Gold supposes are in the human brain. "Our brain thinks that it's fun", Gold (2002: 137) says of the interaction. However:

> "Interactivity exploits one of the mis-wirings of our minds: if something moves and reacts based on invisible forces (like the calculations of a small computer chip) we think it is alive. Our economy is now based on this mis-wiring." (Gold 2007, 53)

That humans blithely participate in the technological environment is an effect of their enchantment, seduction and circumvention and also due to an exploitation of neurological conditions. These form the basis of an inescapable data economy as subconscious levels of perception and processing of human agents are put to use. The techno-ubiquitous universe is therefore a perfidious and ambivalent game, a positively techno-neurotic theater. Interactions and affordances are the interfaces of a ubiquitous wireless connection, as Weiser (1991) has correctly noted, which challenge the users on a psycho-neural level. Users are deliberately misguided, deceived, bedazzled and duped to enable and uphold the technological ecologies. This theatrical play corresponds with the technological conditions in digital cultures.

2.6 Lazy spirit

The effects of this ubiquitous magical wonderland are not mitigated by this doubled performativity. As Gold states: "Our pattern-matching mechanisms seem to make only a lazy distinction between the symbol and the symbolized. This is surely what allows advertising to work, not to mention art, literature, painting, erotica and of course, language itself." (Gold 1993a)

Enabled since Austin, the collapse of differentiation between the symbolic level and agency blossoms within technological performances. A positioning outside of these structures has become just as impossible as a position of critique. Caught in the magical wonderland, one can perform solely for the sake of economic players (e. g., Amazon, travel agencies or health insurance companies), or original data politics in the sense of data behaviorism (Rouvroy 2012), which inserts surfaces to obscure its own interests and technological processes. The magic spell takes effect and temptation wins. A lack of differentiation is no longer the exception – just as Austin had explicated through the conception of 'action language' – but has become the status quo. The magical wonderland of theatrical sciences and artistic performance respectively (in the opinion of Erika

Fischer-Lichte, 2004), as well as the world of ubiquitous computing, undergo a joint venture and, in doing so, promote and enable each other.

2.7 The necessity and use of the dispositif of the performative within digital cultures

Within the dispositif of the performative that paradigmatically came to light through Rich Gold's visions, a technological and humane performance of a life with and in socio-technological environments can be designed and regulated. It is constituted from fascinations such as (a) playing with of control and loss of control, (b) enspirited things and opaque technological environments, (c) the completely imbalanced cooperation with technological things and the dissolution into agential communities with the same, (d) the insecurity of evidence and unforeseeable technological and cultural processes, and finally (e) technological seduction. The independence and restricted intelligibility of technological environments refer to the Foucauldian plight (1980 [1977]), to which the dispositif of the performative responds. With regard to the independence of technology, the socio-technological performativity produces a new highly dubious cooperative configuration of the relationship between technology and the human. This differs strongly from the traditional model of an instrumental relationship between the two. In this model the technological was a secondary object to an autonomous subject. In breaking with the old paradigm through the socio-technological performance, human agency, subsumed within agential communities, still has a place in informational technological systems and infrastructures. Furthermore, socio-technological explanatory models allow for redefinitions of the 'human' and 'technology', which in theory should allow for a differentiated engagement with complicated historical formations of technology and culture. These should then react to technological environments and their capacity to process complex data. In effect this leads to a black-boxing of technology, which cannot be grasped through traditional methods of theory generation and understanding (cf. Beyes/Pias 2014).[31]

Finally, the dispositif described creates a specific form of becoming self and self-governance, which, as exemplified by Rich Gold's infantile magical wonderland, feels secure within these new environments. The strategy of self-illusion takes place in performance within the agential communities, where actually the

31 However, Rich Gold's work exemplifies how non-comprehension and non-knowledge are mostly an effect of smart exploitations of mis-wiring, as well as intellectual laziness.

desire to cooperate with the human agent is lacking. The self is an illusion in the sense that it is created solely to entertain the operations of technological objects and infrastructures, without substantiating itself or receiving attention for anything other than its function. To secure these operations, the illusionary self is continuously 'addressed' and thereby perpetuated. This generation of self is methodologically grounded in the enchantment and seduction of enspirited things, as well as psycho-neuronal mis-wiring, through which it becomes self-illusion. This way of producing and simulating a self is constitutive for the condition, function and preservation of digital cultures. The illusionary, conjured self, once generated, begins to resist the exposure of its precarious existence, thereby securing the data flow necessary for the politics and economy of these infrastructures (Günel/Halpern 2016). From a governmental angle of digital cultures, this self is a huge asset, as it governs itself for the sake of keeping up the illusion and is automatically piloted by technology. This makes it impossible, or at least deeply difficult, to reach an awareness of the magical enchantment and mis-wiring it is subjected to, just as it obscures the real political and economic structures.

Looking into this history of performativity might help to define how digital cultures make their human agents give away their data and feel at home in technological environments. A contradictory 'regime of nevertheless' develops, in which, despite all insecurity, despite insight into the doubly performative constitution, and with all knowledge of the obscurity of technology, as well as its enchantment and seduction, thought and action nevertheless succumb.

3. PERFORMING THE PERFORMING THE DIGITAL. POSITIONS OF CRITIQUE

The question arises, how positions for observation, reflection and critique can be found in the situation of performative ubiquity? When the symbolic level and agency merge and create a reality beyond mere representation, when performances that were previously considered methods of subversion (Butler 1998; McKenzie 2005, 2013) are constitutive for digital cultures, there seems to be no possibility of escaping or even undermining these structures.

3.1 Performance as critique, according to Foucault

According to Foucault (1992), critique is not a critique of the possibilities and conditions of knowledge and awareness, nor does it constitute judgment. Critique of knowledge/epistemology is transformed into the search for the genesis of knowledge/epistemology, as well as the power structures, which enable them or which they produce. Instead of passing judgment, the aim is exposure to e.g. reveal functions and effects of categorizations and interpretations, even one's own attitudes and assessments in an attempt to suspend them (Seier 2011). This is what Florian Sprenger calls a "genealogical critique" (Sprenger 2014: 12), which "tells the story of a becoming and confronts what has become with its contingency: It is possible that everything may have been different and it is possible that everything will be different. This applies especially to the genealogists themselves. Critique is therefore the creation of space for the non-essential and the annulment of common sense" (Sprenger 2014: 12-13; my translation).[32]

Based on this methodological and systematic understanding, a critique of the dispositif of the performative requires an understanding of how governance, deduced from Foucault's understanding of governmentality, functions in this scenario. This is the basis to steer a practice, which enables – to paraphrase Foucault – not to be governed by an identifiable constellation of power in such a way. Critique is never the suspension of power structures, but always the other side of this coin. Hence, power itself, as well as one's own part within power structures, have to be understood in order to undermine them (Raunig 2008; Seier 2011; Sprenger 2014). Critique within the dispositif of the performative means recognizing the seduction, enchantment, the psycho-neuronal occupation, as well as the self-illusion, so as to be able to subvert them. It is then a strategy to develop a performance of 'performing (the) digital'. To do so, the following section will present methods of a 'discursive aesthetic', as well as forms of knowledge and existences within artistic research (Busch 2009). Within theory and practice of the latter, the focus will be on the epistemological power to question and subvert knowledge structures in particular. In this way, critique can become a practice, exploiting the notion of genealogical critique that everything is, to an extent, contingent.

32 […] erzählt die Geschichte eines Gewordenseins und konfrontiert das Gewordene so mit seiner Kontingenz: Es wäre möglich, dass alles anders gewesen ist, und es ist möglich, dass alles anders sein wird. Dies betrifft insbesondere den Genealogen selbst. Kritik heißt demnach, einen Raum für das Nichtnotwendige zu schaffen und Selbstverständnisse auszuhebeln (Sprenger 2014: 12-13).

3.2 Queering through performance

Jon McKenzie (2001; 2005; 2013) has developed helpful theoretical and practical research to specify reflexive performance. He has elaborated upon performativity as a competitive display of technology and the self, replacing discipline in "becoming the central dispositif of power and knowledge of our times" (McKenzie 2013: 44). He also investigates its subversions, as seen with, e.g., the Design Lab of the University of Wisconsin-Madison. Its task would be "to democratize digitality" (McKenzie, this volume). At the same time, the following will explore McKenzie's entry point and approach, so as to suggest a modification of the same.

For McKenzie, the problem with a critical performativity lies within the vast scope of the dispositif of knowledge and power of the performative that it is difficult to elude. It ranges from the system-optimizing performance within neoliberal organizational structures – "perform, or else" (McKenzie 2001) – to high-functioning performances of technology, as well as cultural *and* artistic performances (McKenzie 2013). This combination makes it difficult to view performances solely as instruments of resistance of contemporary constellations of power, as would be often assumed within performance and theater studies (McKenzie 2005: 23). McKenzie (ibid.) suggests three categorizations of performances (organizational, technological and cultural), seeing them to be part of a socio-technological machine of production and organization, which allow for a differentiated view. He calls these categorizations of "machinic performance" (ibid.), where the components of this 'machine' can be distinguished from each other through the degree and the quality of their effects and values and in this sense: performance. McKenzie distinguishes between "efficiency" (organizational performance), "effectiveness" (technological performance) and "efficacy" (e.g., cultural performance) (ibid.: 24), whereby each performance can turn into the named effects and values. It is therefore a continuous tightrope walk, whether artistic performances are suitable for intersecting, or queering societal power structures and technological norms, as they can only happen 'within' socio-technological arrangements (ibid.: 28), "[…] seeking out and making connections with mutant elements already at work within them, while at the same time guarding against the microfacsisms that inhabit activist groups of the Right and even, at times, the Left" (ibid.: 28-29).

The subversive mutations within artistic performance may however, so also McKenzie, lead to an affirmation of a technological self, when its characteristics – namely transgressiveness, resistance and liminality – collide with technological or organizational performativity. This problematic turn may come up in

McKenzie's experiments, perhaps due to the effect of the performative in digital cultures. If, for example, technological performativity is evaluated positively and develops into a description of the situation within digital cultures, just as if within these, knowledge of complexity and unpredictable conditions would determine the state of the art, then artistic performance can no longer queer the system of normative and efficient performativity. It would engage in cooperation and repetition of the same nature, instead of intervening (Leeker 2015). This tipping point is present even in McKenzie's work, when he states:

"My guiding premise is that the traditional distinction between active and contemplative lives is collapsing in our own digital moment, and turning into a new, mixed performative life that is bringing with it new modes that are more networked than hierarchical, more collaborative than individual, more ecological than humanist, more affective than theoretical, more holistic than specialized, more fragmented than unified. I call these post-ideational modes of thought and action, since they move us away from Western culture's most fundamental assumptions about thinking, the image of distinct ideas, specialized disciplines, stable subjects and objects of knowledge, and clear distinctions between theory and practice, argument and rhetoric, writing and media. New performative modes of 'thought-action' draw instead from such areas as experimental arts, indigenous media, neuroscience, and recombinant culture, mashing up practices of orality and literacy, stability and plasticity, mythic and dialectical thought, visual and aural forms, contemplative and active lives." (McKenzie n.d: 1)

3.3 Perspectives on discourse-analytical aesthetics and permanent observation

To prevent the constitution of cultural performances from becoming mere repetition of the dispositif of the performative, an altered form of critique will be explored. Due to the equiprimordial sense of the discourses on performativity, a performative configuration may not be the most suitable. Hence, the 'performing of performances' of the dispositif will be the focus. It is considered an applied critique with performative methods, informed by media history and media epistemology. Instead of formulating a specific discourse, it is necessary to register the discursive formations, reconstruct their genesis and analyze them. Subsequently, an aesthetic can be carved out, which makes these analyses visible and experienceable, foregrounds their ability to change, while at the same time reflecting upon their effects. Based on genealogical critique, a discourse-analytical aesthetic can be produced (Leeker 2013b; 2014a; 2014b). This aesthetic may form statements, but also substantial and creative suggestions (re-design), which

nonetheless differ from McKenzie's ideas. An essential factor would be the observation of their productivity. Based on the discursive productivity, which is more difficult to pinpoint within digital cultures due to the consolidation of symbolic and practical levels, while simultaneously being increased by these same factors, constant observation is the crucial silver bullet in the barrel of critique. "Queering" would then consist not of designing or creating performativity, but rather in intersecting its discursiveness.

In the following, two examples are introduced, with which this discourse-analytical aesthetic was tried and tested. The examples consist of student projects the author devised within the transdisciplinary field of 'Complementary Studies' at Leuphana University Lüneburg. Both projects theoretically engaged with contemporary socio-technological discourses and had the task of visualizing and thereby enabling a critique of their effects. On the one hand, this includes the examination of the problematic positioning of human agents within unleashed technological environments. On the other hand, the students engaged with methodologies to critically deal with the non-knowledge and not-comprehension intrinsic to digital cultures.

3.4 You can never be too paranoid!

Paranoia will be elaborated as an appropriate method and epistemological attitude of providing critique for the dispositif of the performative within digital cultures that can be realized and tested through performance. As Marie-Luise Angerer has claimed, you can never be too paranoid (Leeker 2013b). Digital cultures are increasingly non-transparent, directing human agency on an affective level (affective computing) and are implemented for operations in the dark. Paranoia is no longer a pathological condition, but has become an indispensable modality for knowledge creation and an epistemological machine.

This insight was explored through a video installation performance on "Media and Paranoia" (2014) (Leeker 2014a).[33] Film clips about paranoia produced by RFID or webcam hacking were confronted with paranoia arising due to the interventionist activist group 'Anonymous' or the 'darknet' (Leeker 2014b). This range of paranoid fields is symptomatic for the ambivalent status of paranoia, as its focused usage has already been taken up within contexts of the political left

33 The project developed from a seminar in the winter semester of 2014/15. The installation was made up of film clips covering the project theme, as well as faked vlogs the students produced thematically. A final presentation gathered all films into one live composition.

as well as by groups aiming at resistance or political education (c.f. McKenzie as quoted above). Consequently, paranoia is necessary and yet problematic. Not only does it level political camps, it is also involved in cultural production processes, creating the fear it is meant to overcome. In this way, paranoia is a strategy of governmentality, which Eva Horn identifies as a "political style of digital cultures" (Horn 2012: n. pag.).

The installation, which serves as a showcase for a methodology of critique in digital cultures, aimed to clarify these ambivalences of paranoia – being at the same time an instrument of knowledge and governmental discourse – and still put its reflexive potential to use as a behavioral pattern and a form of knowledge production. A contradictory situation is created, which is just as paranoid as its object of study, so that paranoia, resurfacing as a form of knowledge production, can be implemented against the paranoia of governmental discourse, without absorbing or reinstating the latter. The performative installation transpired to be a suitable aesthetic method, for it created a situation that was both immersive and reflexive. Visitors of the installation were drawn into the paranoid environment, while at the same time being forced to critically question the often contrary contributions presented.

In this way, educated paranoia comes to be an essential method of performing the performing in digital cultures and could be implemented in different contexts, institutes and projects.

3.5 Owlglass pranks with disabled things

A second method of critically performing within the dispositif of the performative is the engagement with 'owlglass pranks'. Discourses are taken seriously and exaggerated to a point of over-affirmation. This pointed and exaggerated embodiment probes its governmental consequences and epistemic effects, thereby considering modalities of change.

Through this critical method, the exhibition/performance 'Versehrte Dinge' (disabled things)[34] assessed the contemporary plane of discourse within digital cultures 'after' ubiquitous computing. The current situation is embossed by a 'techno-ecologism' (Hörl 2011), which acts on the observation that singular media entities have dissolved into a techno-social environment, which is inhabited by smart things (Engemann/Sprenger 2015) that intend to engage and cooperate

34 This project took place within a student seminar in the winter semester of 2015/16. An audiovisual and textual documentation and analysis of the project is in preparation (Leeker 2016c).

with human users (Latour 2001; Gießmann/Schüttpelz 2015). Here, things would gain an emancipated status, equitable to other entities (Latour 2001) within symmetric agencies. The socio-technological environment is translated into a hyper-nervous system of existences, which addresses, affects and appropriates the human on a preconscious level (Hansen 2011).

Owlglass pranks raised the question of whether things and technological environments then have their own agency and rights. For example, can damaged things simply be disposed of within these new conditions? If not, what does that mean for human agents, surrounded by broken technical things? The exhibition created a parallel universe in which a Magna Carta of things was presented as a daycare center with psychological support for broken things. The over-affirmation presented 'Siri' as a fairy godmother of mediated knowledge production. The delivery and circulation of data became a right, as they are equal to human agents. This over-affirmation intentionally induced a reflection of the unleashing of objects, which visitors could experience within the exhibition and its performances.

Within this form of artistic research with discourse-analytical aesthetics, another method was an incessant ambivalence meant to drive visitors into an alternating state of emotions and thought, which was induced by guides leading them through the exhibition. These guides prompted euphoric, as exemplified in Weiser and Rich Gold's work, and critical views of the given situation. In the case of the latter, the critique was grounded in analyses of contemporary discourses on techno-ecologies and things from media- and cultural studies, which engage with their utilization for capitalistic chains of valorization (Schröter 2015) and the phantasm of techno-totality (Engemann/Sprenger 2015: 58).[35]

It is here that the circle comes to a close. The narratives of the dispositif of the performative are simultaneously a foundation for a critique of the same within artistic performance with discourse-analytical aesthetics. The performance of owlglass tales deconstructs the performativity inherent to digital cultures from a position of media history and epistemological critique, without directly suggest-

35 As Engemann and Sprenger put it: „Die Totalitätsfigur der Ubiquität und ihres Anspruchs eines totalen Einschlusses in eine Welt der Adressierbarkeit verweist auf historische Formationen von Allwissen und Weltschließung, die in ihren theologischen, aber auch geschichtsphilosophische Dimensionen bislang kaum reflektiert wurden" ("the figurative totality of ubiquity and its claim to a total enclosure into a world of addressability points to historical formations of omniscient and foreclosed worlds, which have hardly been reflected upon within dimensions of theology and philosophy of history") (Engemann/Sprenger 2015: 58; my translation).

ing alternative worlds. Contrary to Jon McKenzie's suggestions, different design models can only prosper through a reflection and recognition of the governmentality of the dispositif of the digital. The problematic situation, in which scholarly disciplines describing and analyzing digital cultures will always reproduce the things they are describing, is diverted to a certain extent, as the over-affirmation of discourses of things and techno-environments allows the altering of designs by divesting them of discourse.

3.6 Artistic research as critical practice

In closing, artistic research will be described as a critique of the dispositif of the performative within the unique conditions of digital cultures. This leads to an understanding of critique as a practice that creates alternatives to a problematic democratizing configuration, which follows performative maelstroms (cf. McKenzie). This 'praxeological turn' is essential, as Gerald Raunig (2008) has explained, as critique is only effective when it does not stagnate as an attitude, but leads to an alternative conception of living. A necessity within this process, as Raunig explores, is the doubled figure of critique as "suspension and recomposition". The particular task of suspending a judgement is to create spaces for new composition and practice. Raunig clarifies that this practice of recomposition relates to a manipulation of "textual machines" and "social machines" (Raunig 2008). It is imperative to not only appropriate texts and interpretations, but also actual habits of living. It should be stressed that this recomposition as critical praxis lies within an affirmation of a techno-social 'have-become'; hence the goal is the claim that the modes of living are not manifest and could always be different.

Raunig (2008) exemplifies this critical practice through a scenario of resistance. The Beguines were female members of a Christian denomination in the 13th century, who took no vows and did not live in confinement, thereby leading a life outside of the regulations of a pastoral community as a practicing critique. The reconfiguration of textual machines takes place through, according to Raunig (ibid.: n. pag.), "the attempt to intensify, reinterpret and rewrite them, the excessive application and outdoing of the rule, the over-affirmation and exaggeration of the regulations: to the extent that Beguines exercised ecstatic practices". Concerning social machines, Raunig goes on to say: "[…] Beguines […] lived unmarried and in poverty, or more strongly formulated: in the rejection of the marital dominance of men and in the rejection of wealth, which was also understood at the time in the sense of a rejection of power and higher position" (ibid.: n. pag.).

The suggestion here and within the two projects "Media and Paranoia" and "Disabled Things" is that they can be seen as examples of artistic research formulating a critical practice within digital cultures. The projects fulfill Raunig's criteria of critique as a practice. Within artistic practice the textual machine is subverted, especially in the form of a discourse-analytical aesthetic. For example, when meaning is suspended through over-affirmation or exaggeration and knowledge can be re-configured. Furthermore, Raunig (2008) hints at the textual work of the Beguines to be "ecstatic practice", creating non-biblical messages, such as performative practices of knowledge production, building a basis from which knowledge can be re-configured. Within the project "Media and Paranoia", the paranoid status of the 'Anonymous' collective and the 'darknet' was only discovered through the performance within the installation. From here, knowledge and the production of it could be reconfigured as a form of enlightened or educated paranoia. A contestation of the social machine happened when the protagonists of artistic research began falling out of each of their various disciplines and reconfiguring the same.[36] For they are not generally accepted within an artistic context, nor within academia, but reconfigure their life and work within academic contexts from a marginalized position. Fittingly, Raunig writes of the Beguines: "This means that the Beguines were border-crossers, who were always and from the start in danger of being thrown into the outside of ecclesiastical immanence" (ibid.: n. pag.).

Finally, artistic research can represent a practice, which develops in the tradition of the Beguine practices as a model for critique. This transfer is especially useful within the specific conditions of the dispositif of the performative within digital cultures, for both engage with knowledge, understanding and the drawing up of boundaries.[37] Because of the mentioned self-referentiality of digital cultures and the irritation of conceptions of reliable knowledge due to the significance of illusions (Gramelsberger 2009; Pias 2011), the current situation makes knowledge itself unreliable and inaccessible (Beyes/Pias 2014). In this context,

36 This includes the foundation of institutes for artistic research or the creation of PhD-programs at art academies, which, despite all just critique, have managed to question and reconfigure traditional knowledge regimes (cf. Busch 2009: 141-158).

37 At this point, artistic practice is not understood as its own or different, non-rational knowledge (Mersch 2009: 27-47; Badura et al. 2015). From a discourse-critical point of view, these concepts should be viewed within their productive effects, e.g. in the way they produce knowledge. Through articulation of a different, aesthetic knowledge, the same is produced and commissioned to consolidate or discredit knowledges from within rational sciences.

artistic research targets the borders and evidence of knowing and non-knowledge, understanding and non-comprehension, as well as the borders between the human and the technological, acting as theory and practice to question these concepts.[38] Artistic research can therefore be seen as a critical practice within digital cultures,[39] which collects and negotiates spectrums of unsettling knowledge and pushes thresholds in a specific manner.

The constant observation of the dispositif of the performative within digital cultures, as it is cultivated within discourse-analytical aesthetics, can at least sporadically become a 'practice of critique' through the constitution of artistic research.

Translated by Sara Morais

REFERENCES

Arns, Inke (2001): "Texte, die (sich) bewegen: zur Performativität von Programmiercodes in der Netzkunst", lecture at the "Kinetographien" conference, European Academy Berlin, July 20, 2016 (http://www.netzliteratur.net/arns/performativ-code.html)

Arns, Inke (2007): "Read_me, run_me, execute_me. Code als ausführbarer Text: Softwarekunst und ihr Fokus auf Programmcodes als performative Texte." In: Medien Kunst Netz, June 22, 2016 (http://www.medienkunstnetz.de/themen/generative_tools/software_art/)

Auslander, Philip (1999): Liveness: Performance in a Mediatized Culture, London: Routledge.

Austin, John Langshaw (1975 [1962]): "How to do things with words." In: The William James Lectures delivered at Harvard University in 1955, Oxford: Clarendon Press.

Badura, Jens/Mersch, Dieter et al. (2015): Künstlerische Forschung. Ein Handbuch, Berlin/Zurich: Diaphanes.

Bell, Genevieve/Dourish, Paul (2011): Divining a Digital Future: Mess and Mythology in Ubiquitous Computing, Cambridge, MA: MIT Press.

Beniger, James (1986): The Control Revolution. Technological and Economic Origins of the Information Society, Cambridge: Harvard University Press.

38 Thanks to my colleague Andreas Bernard for pointing this out.

39 Further research will be necessary to analyze in what way, if any, artistic research is also a product of technological and discursive digital cultures.

Beyes, Timon/Pias, Claus (2014): "Transparenz und Geheimnis." In: Zeitschrift für Kulturwissenschaft 8/2, pp. 111-117.

Bourdieu, Pierre (1990 [1982]): Was heißt sprechen? Zur Ökonomie des sprachlichen Tausches, Vienna: Braumüller.

Busch, Kathrin (2009): "Wissenskünste. Künstlerische Forschung und ästhetisches Denken." In: Elke Bippus (ed.), Kunst des Forschens. Praxis eines ästhetischen Denkens, Berlin/Zurich: Diaphanes, pp. 141-158.

Butler, Judith (1998): Haß spricht. Zur Politik des Performativen, Berlin: Berlin Verlag.

Derrida, Jacques (1988): "Signature Event Context." In: Jaques Derrida, Limited Inc, Evanston, IL: Northwestern University Press, pp. 1- 23.

Elgass, Petra (1996): Teambasierte Geschäftsprozessplanung: Konzeption und prototypische Umsetzung eines computergestützten Planungsmodells, Wiesbaden: Deutscher Universitäts-Verlag.

Engell, Lorenz/Bernhard Siegert (2013): "Editorial." In: Zeitschrift für Medien- und Kulturforschung 1/2013, Schwerpunkt Medienanthropologie, pp. 5-10.

Engemann, Christoph/Sprenger, Florian (2015): "Im Netz der Dinge. Zur Einleitung." In: Christoph Engemann/Florian Sprenger (eds.), Internet der Dinge. Über smarte Objekte, intelligente Umgebungen und die technische Durchdringung der Welt, Bielefeld: transcript, pp. 7-58.

Fischer-Lichte, Erika (2004): Ästhetik des Performativen, Frankfurt am Main: Suhrkamp.

Fischer-Lichte, Erika/Kolesch, Doris (eds.) (1998): Kulturen des Performativen. In: Paragrana: Internationale Zeitschrift Historische für Anthropologie 7/1.

Foucault, Michel (1980[1977]): "The confession of the flesh." [Interview], In: Colin Gordon (ed.), Power/Knowledge: Selected Interviews and Other Writings, New York: Pantheon, pp. 194-228.

Foucault, Michel (1992[1978]): Was ist Kritik? (W. Seitter, trans.), Berlin: Merve.

Friedewald, Michael (2008): "Ubiquitous Computing: Ein neues Konzept der Mensch-Computer-Interaktion und seine Folgen." In: Hans Dieter Hellige (ed.): Mensch-Computer-Interface: Zur Geschichte und Zukunft der Computerbedienung, Bielefeld: transcript, pp. 259-280.

Geoghegan, Bernard Dionysius (2011): "From information theory to french theory: Jakobson, Levi-Strauss, and the cybernetic apparatus." In: Critical Inquiry 38/1, pp. 96-126.

Gibson, James Jerome (1979): The Ecological Approach to Visual Perception, Boston: Houghton Mifflin.

Gießmann, Sebastian/Schüttpelz, Erhard (2015): "Medien der Kooperation. Überlegungen zum Forschungsstand." In: Navigationen 15/1, pp. 7-54.

Gold, Rich (1993a): "This is not that pipe." July 30, 2016 (http://web.archive.org/web/20040305153117/; http://www.richgold.org/PIPE/pipe.html)

Gold, Rich (1993b): "Art in the age of ubiquitous computing." In: American Art 7/4, pp. 2-11, June 30, 2016 (http://web.archive.org/web/20040318231033; http://www.richgold.org/UBI-ART/HTML/slide7.html)

Gold, Rich (2002): "The plenitude: Design and engineering in the era of ubiquitous computing." June 30, 2016 (http://hci.stanford.edu/dschool/resources/ThePlenitude.pdf.)

Gold, Rich (n.y.): "No information without representation." June 30, 2016 (http://web.archive.org/web/20040305153039; http://www.richgold.org/inform/information6.html)

Gramelsberger, Gabriele (2009): "Epistemische Praktiken des Forschens im Zeitalter des Computers." In: Elke Bippus (ed.), Kunst des Forschens. Praxis eines ästhetischen Denkens, Berlin/Zurich: Diaphanes, pp. 91-108.

Günel, Gökçe/Halpern, Orit (2016): "Demoing unto death: Smart cities, environment, and 'apocalyptic hope'." In: The Fibreculture Journal, forthcoming

Hagen, Wolfgang (1999): "Der Okkultismus der Avantgarde um 1900." In: Sigrid Schade/ Georg Christoph Tholen (eds.), Konfigurationen. Zwischen Kunst und Medien, München: Fink, pp. 338-357.

Halpern, Orit (2014): "Inhuman vision." In: Media-N: Journal of the New Media Caucus, Special Issue Art and Infrastructure, June 30, 2016: (http://median.newmediacaucus.org/art-infrastructures-information/inhuman-vision)

Hansen, Mark B. (2011): "Medien des 21. Jahrhunderts, technisches Empfinden und unsere originäre Umweltbedingung." In: Erich Hörl (ed.), Die technologische Bedingung. Beiträge zur Beschreibung der technischen Welt, Berlin: Suhrkamp, pp. 365-409.

Höltgen, Stefan (2011): "Vom Bug-on-a-chip zum House-on-a-Disc. 'Little Computer People' und die Archäologie des Computerfehlers." In: RETRO Magazin 21, pp. 12-14.

Hörl, Erich (2011): "Die technologische Bedingung. Zur Einführung." In: Erich Hörl (ed.), Die technologische Bedingung. Beiträge zur Beschreibung der technischen Welt, Berlin: Suhrkamp, pp. 7-53.

Horn, Eva (2012): "World Trade Center Paranoia. Politische Ängste nach 9/11." July 7, 2016 (https://germanistik.univie.ac.at/fileadmin/user_upload/inst_germanistik/Aktuelles/Horn_WTC_Paranoia.pdf)

Kline, Ronald (2009): "Where are the cyborgs in cybernetics?" In: Social Studies of Science 39/3, pp. 331-362.

Kline, Ronald R. (2015): The Cybernetics Moment. Or Why We Call Our Age the Information Age, Baltimore: Johns Hopkins University Press.

Knoblauch, Hubert/Heath, Christian (1999): "Technologie, Interaktion und Organisation: Die Workplace Studies." In: Schweizerische Zeitschrift für Soziologie 25/2, pp. 163-181.

Krämer, Sybille (2002): "Sprache, Stimme, Schrift. Sieben Gedanken über Performativität als Medialität." In: Uwe Wirth (ed.), Performanz. Zwischen Sprachphilosophie und Kulturwissenschaften, Frankfurt am Main: Suhrkamp, pp. 323-346.

Latour, Bruno (2001): Das Parlament der Dinge. Für eine politische Ökologie, Frankfurt am Main: Suhrkamp.

Leeker, Martina (ed.) (2001): Maschinen, Medien, Performances. Theater an der Schnittstelle zu digitalen Medien, Berlin: Alexander press.

Leeker, Martina (2012): "Just do it. Mimesis in technischem und künstlerischem Systems Engineering." In: Friedrich Balke/Bernhard Siegert/Joseph Vogl (eds.), Mimesis, Archiv für Mediengeschichte 12, pp. 153-166.

Leeker, Martina (2013a): "Theater – Raum – Medien: Optionen für einen reflexiven Umgang mit Medienkulturen." In: Kristin Westphal/Benjanim Jörissen (eds.), Vom Straßenkind zum Medienkind: Raum- und Medienforschung im 21. Jahrhundert, Weinheim/Basel: Beltz Juventa, pp. 87-106.

Leeker, Martina (2013b): "Die Projekte der Messe der Medien." May 16, 2016 (http://projects.digital-cultures.net/dcrl-experiments-interventions/wissensordnungen/messe-der-medien/projekte-mm/#InnerDCRLhollangerer and: https://vimeo.com/94499178)

Leeker, Martina (2014a): "Medien & Paranoia. Eine Live-Installation zur Fortbildung in Paranoia." May 16, 2016 (http://projects.digital-cultures.net/dcrl-experiments-interventions/wissensordnungen/medien-paranoia)

Leeker, Martina (2014b): "Die Projekte zu Medien & Paranoia." May 16, 2016 (http://projects.digital-cultures.net/dcrl-experiments-interventions/wissensordnungen/medien-paranoia)

Leeker, Martina (2015): "Yes Men und die Barbiehaare. Künstlerische Interventionen in technologischen Bedingungen digitaler Kulturen." May 16, 2016 (http://projects.digital-cultures.net/dcrl-experiments-interventions/politische-oekonomie/yes-men-barbiehaare)

Leeker, Martina (2016a): "Medienästhetik und implizites Wissen, 1964/1991/2011." In: Anja Kraus et al. (eds.), Schweigendes Wissen in Lernen und Erziehung, Bildung und Sozialisation, Weinheim: Juventa-Beltz, forthcoming.

Leeker, Martina (2016b): "Theater and Engineering. Kontrolle und Macht in medialen Umwelten in den 1960er Jahren, und heute?" In: Friedrich Balke/Maria Muhle (eds.), Räume und Medien des Regierens, München: Fink, pp. 198 – 217

Leeker, Martina (2016c): "Versehrte Dinge. Eine Ausstellungs-Performance im Übergang zum Technosphärischen." In: Martina Leeker, Experiments and Interventions. On Methods for Digital Cultures (http://projects.digital-cultures.net/dcrl-experiments-interventions/), forthcoming.

Lemke, Thomas (2001): "Gouvernementalität." In: Marcus S. Kleiner (ed.), Michel Foucault. Eine Einführung in sein Denken, Frankfurt am Main: Campus Verlag, pp. 108-122.

Lettkemann, Eric/Meister, Martin (2004): "Vom Flugabwehrgeschütz zum niedlichen Roboter. Zum Wandel des Kooperation stiftenden Universalismus der Kybernetik." In: Jörg Strübing/Ingo Schulz-Schaeffer/Martin Meister/Jochen Gläser (eds.), Kooperation im Niemandsland. Neue Perspektiven auf Zusammenarbeit in Wissenschaft und Technik, Opladen: Leske + Budrich, pp. 105-136.

McGonical, Jane Evelyn (1999): This might be a game. Ubiquitous play and performance at the turn of the twenty-first century, Diss., University of California, Berkeley, July 13, 2016 (http://www.avantgame.com/McGonigal_THIS_MIGHT_BE_A_GAME_sm.pdf)

McKenzie, Jon (2001): Perform or Else: From Discipline to Performance, New York: Routledge.

McKenzie, Jon (2005): "Hacktivism and machinic performance." In: Live Ends. Performance in the Information Age. Performance Paradigm 1, pp. 22- 30, July 13, 2016 (http://www.performanceparadigm.net/wpcontent/uploads/2007/06/mckenzie.pdf)

McKenzie, Jon (2012): "Smart media at the University of Wisconsin-Madison." In: Enculturation: A Journal of Rhetoric, Writing, and Culture, June 11, 2016 (http://enculturation.net/smart-media)

McKenzie, Jon (2013): "Performativitäten, Gegen-Performativitäten und Meta-Performativitäten." In: Erika Fischer-Lichte/Kristiane Hasselmann (eds.), Performing the Future. Die Zukunft der Performativitätsforschung, Munich: Fink, pp. 141-159.

McKenzie, Jon (n. d.): "Practicing the Vita performativa." May 16, 2016 (http://www.labster8.net/wp-content/uploads/2015/09/McKenzie-Vita-Performativa-abstract.pdf).

Mersch, Dieter (2009): "Kunst als epistemische Praxis." In: Elke Bippus (ed.), Kunst des Forschens. Praxis eines ästhetischen Denkens, Berlin/Zurich: Diaphanes, pp. 27-47.

Mindell, David, A. (2000): "Cybernetics: Knowledge domains in engineering systems." July 26, 2016. (http://web.mit.edu/esd.83/www/notebook/Cybernetics.PDF.)

Mindell, David A. (2001): "Automation's finest hour: Radar and system integration in World War II." In: Thomas P. Hughes/Agatha C. Hughes (eds.), Systems, Experts, and Computers. The Systems Approach in Management and Engineering, World War II and After, Cambridge, MA: MIT Press, pp. 27-56.

Mindell, David A. (2002): Between Human and Machine: Feedback, Control, and Computing before Cybernetics, Baltimore, MD/London: The Johns Hopkins University Press.

Moser, Jeannie (2013): Psychotropen. Eine LSD-Biographie, Constance: Constance University Press.

Otto, Ulf (2013): Internetauftritte. Eine Theatergeschichte der neuen Medien, Bielefeld: transcript, pp. 49-84.

Pflüger, Jörg (2008): "Interaktion im Kontext." In: Hans Dieter Hellige (ed.), Mensch-Computer-Interface. Zur Geschichte und Zukunft der Computerbedienung, Bielefeld: transcript, pp. 323- 389.

Pias, Claus (2002): "Die kybernetische Illusion." In: Claudia Liebrand/Irmela Schneider (eds.), Medien in Medien, Köln: DuMont, pp. 51-66.

Pias, Claus (2004): "Zeit der Kybernetik – Eine Einstimmung." In: Claus Pias (ed.), Cybernetics – Kybernetik. Die Macy-Konferenzen 1946-1953 2: Dokumente und Reflexionen, Zurich: Diaphanes, pp. 9-42.

Pias, Claus (2011): "On the Epistemology of Computer Simulation." In: Zeitschrift für Medien- und Kulturforschung 2/1, pp. 29-54.

Raunig, Gerald (2008): "What is ciritique? Suspension and recomposition in textual and social machines." July 26, 2016 (http://eipcp.net/transversal/0808/raunig/en)

Rogers, Yvonne (2006): "Moving on from Weiser's vision of calm computing: Engaging ubicomp experiences." In: Paul Dourish/Adrian Friday (eds.), UbiComp 2006: Ubiquitous Computing, Heidelberg/Berlin: Springer, pp. 404-421.

Rolf, Eckard (2009): Der andere Austin. Zur Rekonstruktion/Dekonstruktion performativer Äußerungen – von Searle über Derrida zu Cavell und darüber hinaus, Bielefeld: transcript.

Rouvroy, Antoinette (2012): "The end(s) of critique: data-behaviourism vs. due-process." July 26, 2016 (https://www.academia.edu/7754445/The_end_s_of_critique_data-behaviourism_vs._due-process.)

Rouvroy, Antoinette (2013): "Gouvernementalité algorithmique et perspectives d'émancipation: le disparate comme condition d'individuation par la relation?" In: Politique des algorithmes. Les métriques du web. RESEAUX, 31/177, pp. 163-196.

Schröter, Jens (2015): "Das Internet der Dinge, die allgemeine Medienökologie und ihr ökonomisch Unbewusstes." In: Christoph Engemann/Florian Sprenger (eds.), Internet der Dinge. Über smarte Objekte, intelligente Umgebungen und die technische Durchdringung der Welt, Bielefeld: transcript, pp. 225-240.

Schulz-Schaeffer, Ingo (2000): "Vergesellschaftung und Vergemeinschaftung künstlicher Agenten. Sozialvorstellungen in der Multiagenten-Forschung." In: DFG-GZ: MA 759/2-2, Technikbewertung und -gestaltung Research Reports 3, TU Hamburg.

Seier, Andrea (2007): Remediatisierung. Die performative Konstitution von Gender und Medien, Munster: LIT press.

Seier, Andrea (2011): Elend der Kritik? Bruno Latours Kritik an Diskursanalyse und Dekonstruktion. In: Wolfram Breger/ Jürgen Link/ Rolf Parr (eds.), Kulturrevolution. Zeitschrift für angewandte Diskurstheorie 60, pp. 59-63.

Sprenger, Florian (2014): "Die Kontingenz des Gegebenen. Zur Zeit der Datenkritik." In: Mediale Kontrolle unter Beobachtung 3/1, July 26, 2016 (http://www.medialekontrolle.de/wp-content/uploads/2014/09/Sprenger-Florian-2014-03-01.pdf.)

Sprenger, Florian (2016): "Handlungsmächte und das Zaubern ohne Zauberer: Von der Beseelung der Dinge zum Ubiquitous Computing." In: Jan Müggenburg et al. (eds.), Trick 17. Mediengeschichten zwischen Zauberkunst und Wissenschaft, Lüneburg: Meson press, pp. 87-114.

Suchman, Lucy (1987): Plans and Situated Actions: The Problem of Human-Machine Communication, New York: Cambridge University Press.

Suchman, Lucy (1993): "Technologies of accountability: On lizards and aeroplanes." In: Graham Button (ed.), Technology in Working Order, London: Routledge, pp. 113-126.

Weiser, Mark (1991): "The computer for the 21st century." In: Scientific American 265/3, pp. 94-104.

Weiser, Mark (1993): "Some computer science issues in ubiquitous computing." In: Communications of the ACM 36/7, pp. 74-84.

Weiser, Mark (1996): "Ubiquitous Computing." July 26, 2016 (http://www.ubiq.com/hypertext/weiser/UbiHome.html)

Winkler, Hartmut (2004): Diskursökonomie – Versuch über die innere Ökonomie der Medien, Frankfurt am Main: Suhrkamp, pp. 215-230.

Winnicott, Donald W. (1971): Playing and Reality, London: Tavistock Publications.

Winograd, Terry (1987): "A language/action perspective on the design of cooperative work." In: Human-Computer Interaction 3:1, pp. 3-30.

Winograd, Terry/Flores, Fernando (1986): Understanding Computers and Cognition. A New Foundation for Design, Norwood, NJ: Ablex.

Wirth, Uwe (ed.) (2002a): Performanz. Zwischen Sprachphilosophie und Kulturwissenschaften, Frankfurt am Main: Suhrkamp

Wirth, Uwe (2002b): "Der Performanzbegriff im Spannungsfeld von Illokution, Iteration und Indexikalität." In: Uwe Wirth (ed.), Performanz. Zwischen Sprachphilosophie und Kulturwissenschaften, Frankfurt am Main: Suhrkamp, pp. 9-60.