



Image: Lessened space, Gerlach and Kopp, 2015

Riding the Wave Upside Down

Bachelor Thesis

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2018

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Let's provide an example. A mother buys her child two T-shirts. The child puts on one of the shirts and steps forward smiling, whereupon the mother says: 'Don't you like the other one?'

The child is taken aback.

A dilemma like this is called a Double Bind. And what a dilemma it is! Practically insoluble.

However, the child straightens itself out and puts on the other T-shirt as well, over the first one, but realises immediately the deadendedness of this solution because it also shows a preference. Not in the wearing admittedly, but still in the showing. Because which T-shirt goes on top?

Disillusioned the child shambles off, to return shortly with the second T-shirt pulled over the first, but inside out this time. Now the front sides of both shirts, that normally carry texts or images, face each other, invisible to us.

1. Did the child redeem itself?

2. Or is this a new piece by gerlach en koop?

3. If so, can it be fabricated?

4. If so, can it be shown?

Or is there no reason?

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I Introduction

The present study considers the extent to which digitisation affects our treatment of data and information and how the sheer volume of the latter is changing our traditionally, mostly linearly, designed systems for archiving, editing and processing these very data and types of information. How does such a process shape our self-perception and our ability to generate knowledge from information? Should it turn out that the traditional concepts of data and information processing themselves require revision – which I suppose to be the case – then we must clarify which design concepts promise an adequate treatment of the present and exponentially increasing volume of data and information, not least because I see it as the basis of my creative process. To pursue these issues, we must first distinguish between the notions of data, information and knowledge. This analysis is the focus of part 2, wherein I raise the question of whether and how the concept of information can be sharply distinguished from that of data. And how do we distinguish between ‘information’ and ‘knowledge’? What is needed to turn data into information and information into knowledge? How does information in turn become data?

These distinctions intersect with the domains of quantum mechanics and mathematics as well as with the realms of semiotics and epistemology. Only on the basis of these distinctions can we discuss the challenges and opportunities of digitisation in a comprehensible way – such is the subject of the third part of this study. Part four sketches an alternative concept for archiving, editing and processing information and data. Part five outlines examples from art in which such a concept has already been successfully applied. Finally, part six takes a critical look at our compiled results, in the interest of a fruitful dialogue in the future.

II Data, information and knowledge: a distinction

Data comprise first of all symbols and characters whose meanings become apparent to the individual only in a given context (see GÖTZE 2009). Written characters constitute merely raw data in the absence of context (see *ibid.*). As syntactic components they are meaningless – mere squiggles and dots. To become information, data must be suitably represented (see *ibid.*), functioning then as the ‘representatives’ of information (see *ibid.*). This is also the reason why data are often confused with information (see MIES 2017).

Before data become information, they are prepared, transported, stored, entered or outputted (see GÖTZE 2009). Information accordingly consists in the content of data yielded by the contextualisation of these data. It is people who turn data into information, even if computers often serve as aids. Information can be exchanged on different levels. Information can be relevant or irrelevant depending on the circumstances and context (see MIES 2017).

In a broader sense, the distinction between data and information is similar to that between sound and noise, between graphics or letters, smudges of dirt and paint, between attributes and substance and between inside and outside (see Morton 2016, p. 79). It is the distinction between objective and subjective appearances (see *ibid.*). The members of each pair of opposites always lie a hair’s breadth apart from one another – if at all (see *ibid.*). Contemporary art often seeks ways to undercut such distinctions. The principle applied in such cases is called ‘re-marking’ and transforms an objective image into a subjective one (see *ibid.*). Re-marking is similar to what quantum mechanics says happens on the sub-atomic level, and occurs only once in each case (see Morton 2016, p. 80.). In quantum mechanics, we always face the alternative between wave and particle descriptions in understanding physical reality. We can perform measurements characterising either type of phenomenon – wave or corpuscular – but never both simultaneously. Until a measurement is actually performed, the two possible states of the system corresponding to wave behaviour and corpuscular behaviour, respectively, are superimposed as it were. Prior to that time reality consists merely in a series of possibilities. Postulating a specific unity as the combination of the two states – wave and corpuscular – is impossible, try as we may. Between the aforementioned pairs of concepts there lies nothing that we could give a name to, so that any attempt to do such would be necessarily doomed to failure. The rhizome metaphor fails here as well: if tone b rhizomatically develops from tone a – is it then the same tone or a different one (see Morton 2016, p. 81)? If we say that tone b differs from tone a, what is the rhizomatic strand linking the two (see *ibid.*)? How can it be possible

to generate a ‘semi-tone’ lying between the said tones a and b?

An example is Marcel Duchamp’s concept of ‘infrathin’ (see DUCHAMP M., cited in RUSSEL J. D. 2006): infrathin cannot be defined according to Duchamp, but merely described. Infrathin is the warmth of a recently occupied seat (see *ibid.*), the thickness of a sheet of paper lying between front and back, tobacco exhaled mixed together with the smoker’s breath odour. ‘Infrathin’ means that something or someone lies neither inside nor outside, and that this something or someone is always located in both places. Infrathin is equally the unification and separation of a person or object with and from his or her environment. It nevertheless seems that just this attempt to undercut the distinction is what puts that distinction into force. However closely we approach the distinction between inside and outside, foreground and background, data and information, tone a and tone b, we’ll never find what lies in-between. This corresponds to a mathematical paradox, which Morton takes from Adorno: Consider two algorithms that generate the number sequences 0.99999... and 1.00000..., respectively: we may never know whether the nines and the zeros indefinitely recur or whether some other digits occur to make the two series diverge from one another (ADORNO, referred to by Morton 2016 p. 81).

Knowledge in turn comprises the collected available information on a particular state of affairs or person (see MIES 2007). The knowledge about this state of affairs enables us to make informed decisions and resolve issues (see *ibid.*). In this way knowledge influences people’s thoughts and actions. Machines too can make decisions on the basis of newly acquired knowledge generated from information (see *ibid.*). To become knowledge, information must be processed (see *ibid.*). Of interest in this regard is a basic idea in the philosophy of science – not least because of its importance for understanding how we form a picture of ourselves. The basic idea is that there exist different areas of knowledge whose fundamental features are already taught in elementary school (mathematics, sports, art, English or Dutch, etc.). What we learn is not only content but above all how one can learn anything to begin with (see Gabriel 2017, p. 223). Learning how to learn thus forms the common denominator of all areas of knowledge (see *ibid.*). As all people are endowed with reason, we can learn from others because we share the ability to know things with everyone else. Known as rationalist universalism, this thesis formed a basic idea of the Enlightenment (see Gabriel 2017, p. 224).

III Challenges and opportunities: handling data, information and knowledge in the Digital Age

After considering the distinction between data, information and knowledge, we can now explore the influence of digitisation on just these elements. We should also clarify how our self-perception has changed because of digitisation and what challenges and opportunities for creative processes emerge. Here we must keep in mind the following circumstance: the Digital Age may be young, considered in the context of historical events and developments. Measured in terms of the developmental stages of digitisation, units of time comprising a few decades correspond to light years. It is primarily the speed of development, coupled with the volume of freely available data and information, which presents problems. The constant (and exponential) growth of this volume is accompanied by technical issues occurring with increasing frequency (see Wollersheim, 1993, pp. 68 f.). Applied knowledge becomes outdated at shorter and shorter intervals and the necessity of constantly upgrading the level of knowledge presents a considerable challenge and burden (see *ibid.*).

This increase in knowledge is moreover accompanied by greater freedom of choice, and consequently the pressure to make more and more decisions within shorter and shorter times (see *ibid.*). It seems that ‘evolution “invented” the mechanics of human thinking in order to solve problems in an (exclusively) “ad hoc” manner’ (DÖRNER 2012, S. 13). Many projects conducted in connection with creative processes are distinguished by their complex character, however, so that the information to be collected is often opaque and incomplete (see DÖRNER 2012, p. 58). These are dynamic situations and segments of reality that are networked with one another, and which are to be organised and influenced (see *ibid.*). Claims to knowledge about the particular action situation and the given field of action may prove to be false (see DÖRNER 2012, p. 59), with the complexity of such systems always being a subjective matter (see DÖRNER 2012, pp. 59 ff.). How does timely art develop under such conditions, however?

As already noted, the challenge lies in the arduous procedure for acquiring information, as much unwanted information must first be filtered out in the process. The limited time we have at our disposal for converting information into decisions on action becomes problematic if we must rely on the completeness of the collected information or on the accuracy with which such information reflects reality – that is, on our having selected the ‘correct information’ (see KUHLMANN, 1990, p. 45).

In my opinion this volume of data and information also offers crucial advantages: A pluralistic society throws our identity into question in repeatedly demonstrating that we could always be

someone else. Everything is just one of many possibilities. Proxy servers enable us to assume arbitrary identities and submerge our identities as users in an obscure jumble, compelling us to lead a reflective life. Such a life style can be a great advantage for the artistic creative process. The point is then to change perspectives and to consider issues and challenges from these different perspectives. A conscious break is made with linear thought patterns.

The self then sees itself as a social function – and becomes immaterial. We change realities and create new ones because we have drives. Without drives we would be passive windows to reality and not viable in the long term – as Freud would have probably put it (see GABRIEL 2017, p. 250). What Freud calls ‘drives’ can also be described as endeavours to change, in contrast to mere perception, however (see GABRIEL 2017, p 251). Perception aims at changing nothing, but only at first taking things in (see *ibid.*). Our perceptions are embedded in systems of desires and urges of all kinds and never occur in life in a ‘pure’ state free of desires (see GABRIEL p. 251). Our decisions are to a certain extent always psycho-sociologically and culturally shaped. Therein lies the basis of our freedom of action (see GABRIEL 2017, pp. 285 ff.). In the Digital Age and in a pluralistic society our options for action greatly multiply. Not only in art have fluidic identities become commonplace. Any order permanently grounding states of any kind has long since become obsolete, as physics has known for some time. There exists not only the one will and the one world (see GABRIEL 2017, p. 300). We can want, desire, prefer or choose all sorts of things, without our will, desires, abilities, preferences or choices operating like foreign agents within us, concealed below our consciousness and controlling us from behind our backs, as it were (see *ibid.*). To learn and assume new perspectives within this diversity and these possibilities is the opportunity afforded by digitisation for my artistic process.

IV Stigmergy: an alternative concept of organisation and communication

We now come to the concept of ‘stigmergy’, which seems to me the most promising approach to handling volumes of data and information in connection with creative processes.

Stigmergy is a mechanism of indirect coordination between participants or activities (see WIKIPEDIA 2018). A trace left behind in an environment by an action stimulates the performance of the next action by the same or another agent (see *ibid.*). In this way, the successive activities tend to reinforce and build upon one another, leading to the spontaneous emergence of coherent and evidently systematic activities (see *ibid.*). Stigmergy can also be understood as a form of self-organisation; a form of communication in a decentralised system (see *ibid.*). It generates complex, apparently intelligent structures without any need for planning, monitoring or direct communication between the agents (WIKIPEDIA 2018).

A distinction is made between sematectonic and marker-based stigmergy: in the case of sematectonic stigmergy the momentary state of task completion (for example, the state of nest-building by insects) influences the behaviour of individuals in communication with one another, while marker-based stigmergy places task-independent markers (such as pheromones) in the environment (see *ibid.*).

The principle of stigmergy was first observed in nature. For example, ants seeking food communicate with one another indirectly by leaving behind pheromones along their paths: An ant colony is accordingly a stigmergic system (WIKIPEDIA 2018).

Another example is the hills constructed by termites. While building their highly complex structures these insects also communicate through pheromones: each insect contributes a particle of moist earth from its environment, invests the particle with pheromones, and deposits it in the shared structure (see WIKIPEDIA 2018). The pheromones attract the other members of the colony, who are then likely to deposit their bits of earth in the same vicinity. As a consequence, bit by bit pillars, arches, tunnels and chambers are built (see *ibid.*). To be sure, such markers can become obsolete or evaporate, preventing an effectively coordinated procedure from always emerging (see *ibid.*).

Co-operation between and ‘collective work’ by the termites become possible only through the stimulation of the ‘workers’ by what they have already accomplished (see ERB 2015).

The concept sketched above for explaining the emergent order of insect structures or ‘insect states’ serves as a paradigm of swarm intelligence, and in the Internet Age forms the theoretical background for projects in commons-based peer production, such as open-source software

engineering or even Wikipedia: An individual leaves behind the germ of an idea (for example, the start of a Wikipedia article or a 'red link' to an article yet to be sensibly written, so as to attract other users (MERETZ 2010). To-do and feature-request lists are created; controversial content and developmental steps are discussed on separate pages whilst the actual work continues (ibid.); newly interested parties benefit from the transparency of the discussion and developmental history of Wikipedia to enter the dialogue in a well-informed fashion (ibid.). Building upon a nondescript beginning, the original concept thus gradually evolves into a complex structure of interconnected content (ibid.).

predecessors' contributions in a certain order (see *ibid.*), namely by adjoining their text or graphics to the preceding articles (see *ibid.*). The purpose of the concept is to network the participants and to create a space for unexpected debates and unexpected open-ended developments (see *ibid.*). New perspectives and the linking of different lines of thought are also intended to help the reader embark on previously foreign paths (see *ibid.*). The magazine therefore need not be read linearly, from beginning to end. Rather, each reader is urged to choose his or her own starting point and from there to work forward or perhaps backward (see *ibid.*).

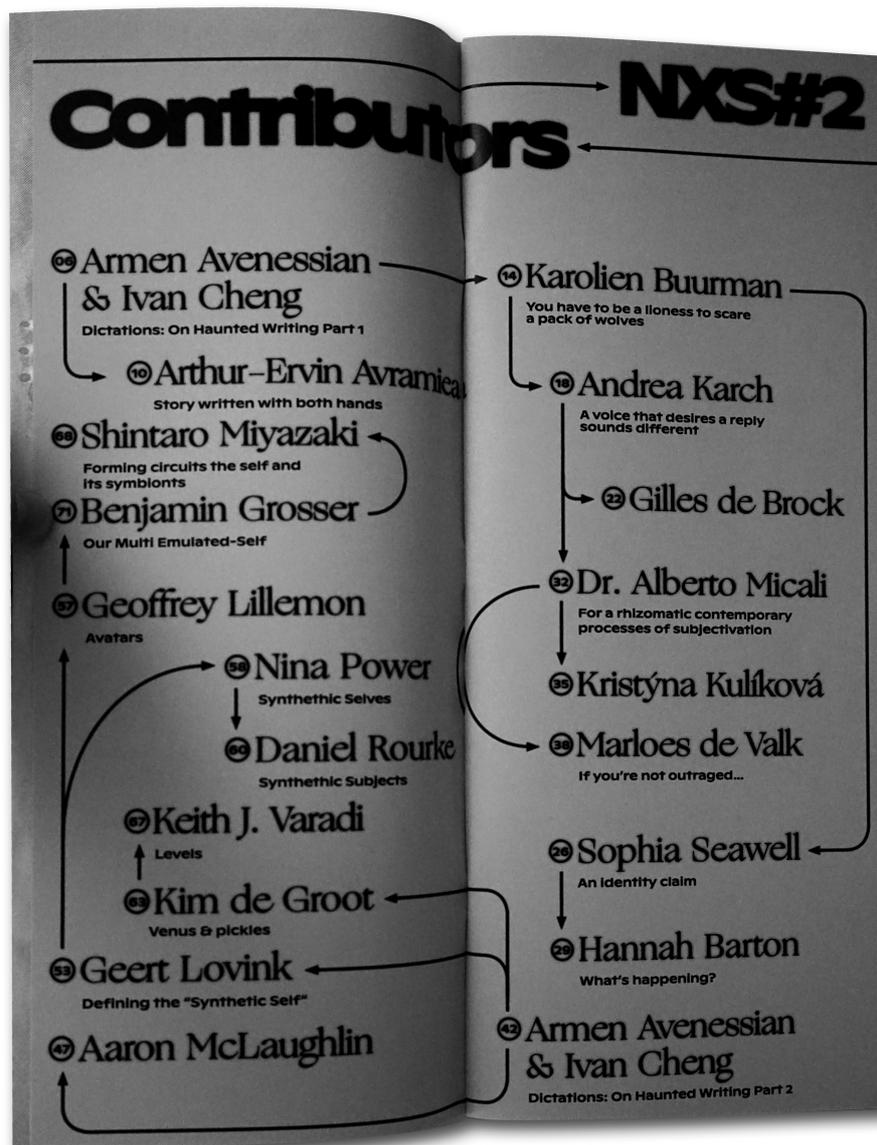


Image: NXS issues #2, 2017

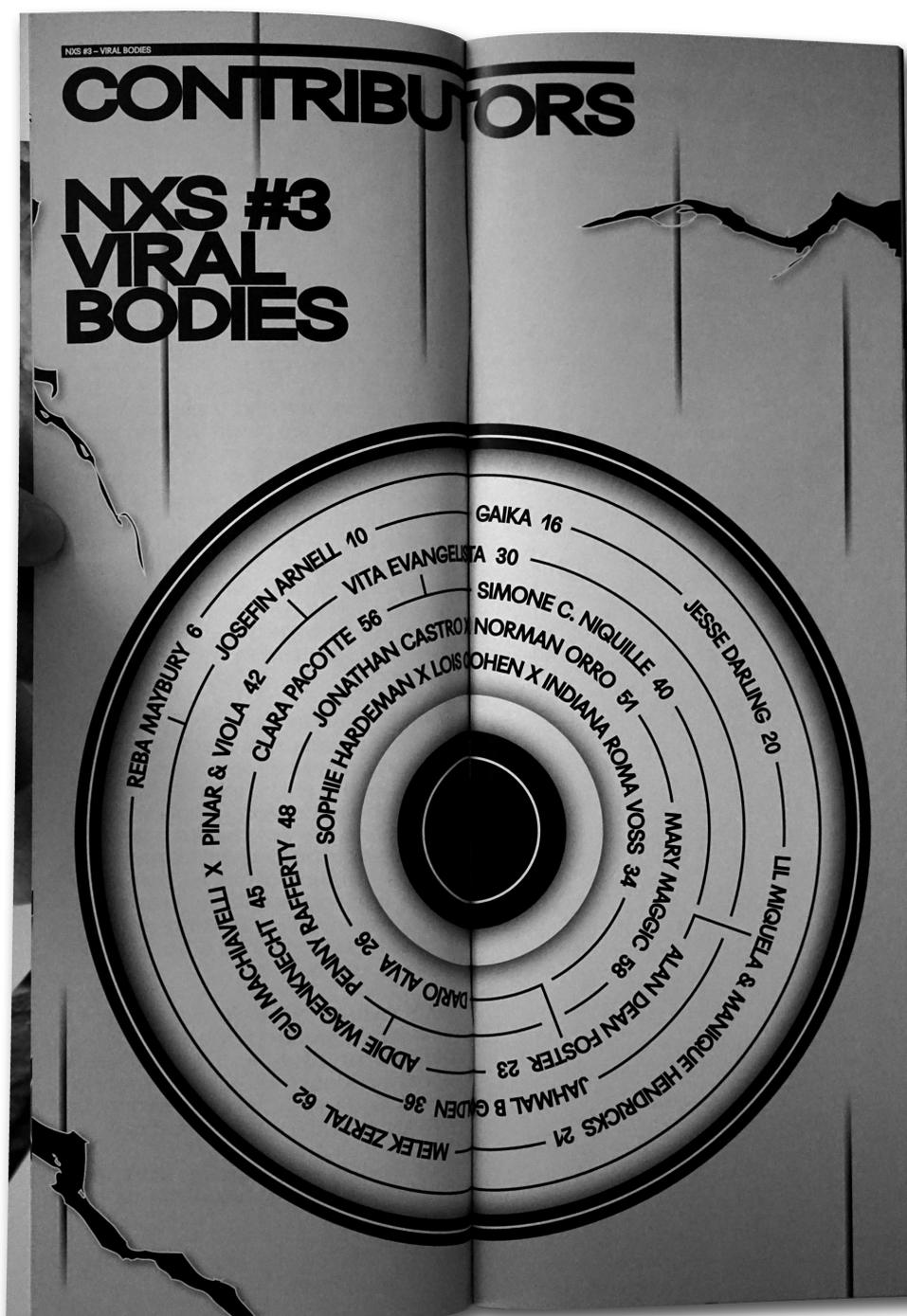


Image: NXS issues #3, 2018

The concept artist and poet Kenneth Goldsmith is actively pursuing the possibilities of creative processes in the Digital Age. For him the internet and our digital environment afford the opportunity for rethinking creativity and authorship (see GOLDSMITH 2011). Kenneth Goldsmith creates his art from the digital remnants of others. In 2013 he called upon everyone who was willing



Image: Printing out the internet, Kenneth Goldsmith, 2013

to do so to print internet pages of their choice and send them to him in Mexico, where he would present them in an exhibition entitled *Printing Out the Internet*. Between 26 July and 31 August 2018 he piled up over ten thousand tons of paper from over twenty thousand participants in the LABOR Art Gallery in Mexico City (see LITERALLY MEDIA LTD. 2015). Needless to say, this project was doomed to failure from the start. Regardless of how many tons of paper the participants used in compiling their printed internet pages, they could never grasp the internet as a whole. New articles and pages came and to continue to come – in much greater quantities and much faster than we can print.

VI Conclusion

An exponential growth in freely accessible information and data in the Digital Age necessitates new ways in handling this information and data. Linear thinking and action have only limited prospects for success. The timely handling of data and information, their successful editing and processing, not least as part of artistically creative processes, require interdisciplinary networking and the linking of different types of thinking and approaches. The aforementioned convergence and co-operation in the creative process alters our understanding of authorship and intellectual property and forces the artist to discover and appreciate the potential in others' work. It necessitates a change in perspective, and promotes one's own creativity. The internet offers countless ways to keep one's own creative flow alive. Data require contextualisation, and demand to be converted into information and finally into knowledge. The context itself can be changed arbitrarily, while data and information can be arbitrarily combined. Such re-contextualisation and re-combination seem most effective if they proceed non-linearly and intuitively. Such an approach bears an enormous creative potential that should be unfolded. The artist should here keep in mind that his or her work will often generate a fictitious reality. An ambience, an atmosphere, involves not so much the rupture from a supposedly inconsistent aesthetics as an expansion of the latter. A monism denying the difference between data and information, or generally between inside and outside, between putative conceptual opposites, is equally obsolete. The situation is the same with any dualism that seeks at all times strictly to separate the considered state or concept from its complementary partner. Instead, we seem to need dualities that do justice to immaterial as well as material realities. Findings in the natural and social sciences as well as the humanities are only together able to generate a coherent picture of our realities (I deliberately use the plural form here since I assume there is no such thing as the one and only reality, will, world, etc.). An all-encompassing natural, possibly still strictly nomological, determinism is just as wrong-headed as the idea that everything occurs randomly, coupled with just a hint of probability. Determinism and freedom of action are not mutually exclusive, since we need natural laws, such as that of gravity, in order to perform actions in the first place. These actions are nevertheless always influenced by psycho-social and cultural factors, and are not wholly explainable in terms of neuronal connections.

If, therefore, monism on the one hand is as much doomed to failure as dualism on the other, the same must also apply to art, which avails itself of such ideologies. A re-marking endeavouring to blur distinctions creates an ambience, an atmosphere, that always harbours a fictitious reality of which the artist must be aware.

Art always has a social responsibility that is more difficult to live up to than is often supposed. For if the attempt both to eliminate and highlight differences is always doomed to failure; if an ambience (however formed), an atmosphere (however formed), is always only the expansion of an inherently inconsistent aesthetics, then we must ask what remains for the artist. If there is no way out, then we must take the way 'in': critical kitsch can serve as a means here. A dense ambience, a conscious directing of effect, coupled with the equally deliberate break with the same, seems an appropriate means to meet the challenges instead of simply obscuring them. Failure thus becomes a basis for timely art.

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