# DIGITAL MATERIALISM

## Origins, Philosophies, Prospects

DIGITAL ACTIVISM AND SOCIETY: POLITICS, ECONOMY AND CULTURE IN NETWORK COMMUNICATION

The *Digital Activism and Society: Politics, Economy and Culture in Network Communication* series focuses on the political use of digital everyday-networked media by corporations, governments, international organizations (Digital Politics) as well as civil society actors, NGOs, activists, social movements and dissidents (Digital Activism), attempting to recruit, organize and fund their operations, through information communication technologies.

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- strengths and vulnerabilities of social networks.

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Dr Athina Karatzogianni is an Associate Professor at the University of Leicester, UK. Her research focuses on the intersections between digital media theory and political economy, in order to study the use of digital technologies by new socio-political formations.

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## Origins, Philosophies, Prospects

BY

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**Baruch Gottlieb** was trained as a filmmaker at Concordia University and has been working in digital art with specialization in public art since 1999. A former Professor of Media Art at Yonsei University Graduate School for Communication and Arts in Seoul, Korea, he is active member of the Telekommunisten, Arts & Economic Group and laboratoire de déberlinisation artist collectives. Author of *Gratitude for Technology* (ATROPOS 2009) and *A Political Economy of the Smallest Things* (ATROPOS 2016), he currently lectures in philosophy of digital art at the University of Arts Berlin and is fellow of the Vilém Flusser Archiv. He is curator of the exhibition series 'Flusser & the Arts' based on the philosophical writings of Vilém Flusser, which premiered in ZKM, Karlsruhe and has travelled so far to AdK Berlin, West den Haag and GAMU Prague. He is also initiator and curator of the exhibition/symposium series 'Feedback' based on the work of the Toronto School. He writes extensively on digital media, digital archiving, generative and interactive processes, digital media for public space and on social and political aspects of networked media.

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# ACKNOWLEDGEMENTS

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# INTRODUCTION

Today's digital technology is often described, also by those working in the industry, as magic. It may appear impenetrably intricate, bewildering even, but magic it is not. Digital technologies are built through the legacy of scientific understanding of material behaviours, programmed into industrial processes. There are human workers all along the production chain too, working in conditions from acceptable to abysmal, under extreme economic and existential discipline. Where then is the magic?

Admittedly, modern science offers only the most dispassionate responses to the big questions. Why are we here? No reason. How did we get here? The Big Bang. And the extreme irrelevance of human life at the universal scale generates metaphysical yearning for meaning. While this meaning will always be insufficient to reason, it can be sufficient to perpetuate sociability, and that is its urgent purpose.

What I want to address in this book is how particularly in the inner workings of the instruments produced to process and provide digital information are realms of extreme technical discipline, 'anthropocracy', and therefore the least metaphysical spaces on earth. Perhaps perversely for this reasoning, where so much uncertainty and wondering have

been removed, there is the tendency to explode the infinitesimal moments of these which must inevitably remain.

The problem with the mystification or metaphysical obfuscation of the instruments made to provide digital information is a political one. It lies precisely in the lack of acknowledgement of the technology's pedigree in forced labour, slavery, and extreme discipline and control over other human beings. This is a civilizational problem. We have never known a civilization in the modern urban sense, whose prosperity, basic functioning, and thereby civil freedoms have not been reliant on an extreme discipline, not only of human beings, but fundamentally of subordinated nature. This will be the discussion in Chapter 1.

Giorgio Agamben (2015, p. 5) elucidates this problem with analysis of the Greek concept *Chresis* (*χρήσις*), the slave as an extension of its master's body (echoing McLuhan's (1966) *Understanding Media: The Extensions of Man*), a particular melding together of human beings into one super being. This meta-anthropos certainly abrades on contemporary concepts of the unassailable dignity of the individual, and of course on the notion of an individual human being at all. Here we can observe through the history of letters (Braverman, 1998, p. 160) felicitous scrambling ellipses designed to attenuate frustration and anger at the injustice in human relations.

Of course we are all in this together, but we don't get to choose which part of the planetary human-technical assemblage we are born into. A careful look at how digital technologies work bursts asunder the pretentions of fairness and freedom that we are constantly told are the principles of human society, and lay bare the politics at stake. This is digital materiality, besides the robotic functioning of infinitesimal transistors, transistors made of metals stripped of the slightest impurities, extreme 'racial hygiene' for minerals, we have the

disciplined and orderly subjugation of generations of workers and their families subordinated to providing a supplying role in the glorious onslaught of technological progress.

Fairness would slow this progress but then other technicities and other vectors of technical and scientific exploration would emerge. What we call progress today is only a narrow tranche of practices of abstraction, I will argue in Chapter 2, which lend themselves well to automation. Abstraction always produces a figure of power and function against a ground of waste. Western technology is fundamentally based on the mode of abstraction, whereby desirable behaviours and properties are extracted from the rest. That technologizing the desirable really represents impressive accomplishments of human intellect should not occlude the persistent

**Figure 1.  Domain and structure of techno-scientific method.**
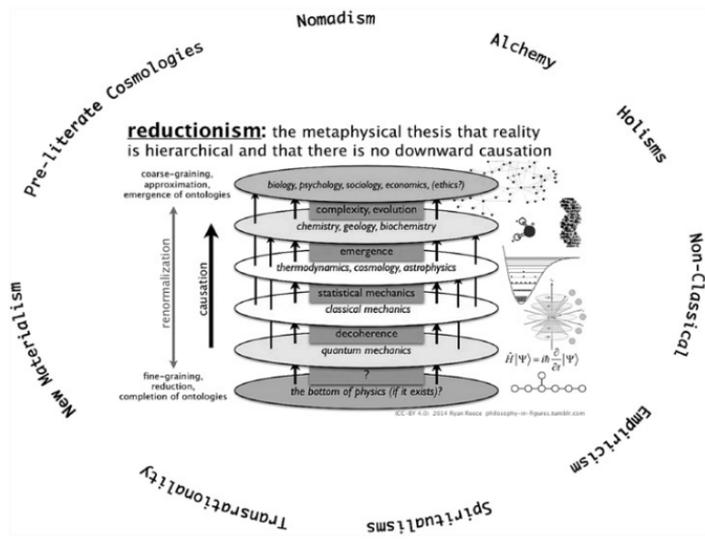
fact of the undesirable unsublimatable remnant produced in the process. Any civilization worthy of high technology deserves to deal satisfactorily with this aporia at the well-spring of its successes (Figure 1).

Technologies are not magic, but maybe we are. After all, we still have a limited understanding of the obscure goings on beneath our skins. The magic really may be in there, but juridically and politically, magic is disqualified and we cannot accept it in our science either. Digital information is mundane industrial production and reproduction, reliant on workers and families and societies contributing under a disciplinary regime of financialized rentier capitalism. That's just the way it is right now, and the way it has been during the pivotal past century of digital technologies emergence. These conditions overdetermine what technologies get developed so as to become prevalent and which do not (Feenberg, 2010). Chapters 3 and 4 will unflinchingly examine the industrial disciplines at play in the generation of digital information. This section may get somewhat technical for some, but its pedantry has the point of emphasizing how there are no mysteries on the inside of the machine. The only mystery, if there is one, is in us.

Chapter 5 will provide a simple examination of the final abstraction in our technological model, the zero-dimension as Flusser (2004, p. 114) likes to call it, of translation of the heterogeneous and fluid world into discrete elements of homogenous digital values. The age of digital computation has promised a convergence of human knowledge practices into a transdisciplinary meta-apparatus which will be able to unlock a world of infinite material plenty, cure death and solve all the problems which have troubled humanity since antiquity. This convergence in the realm of the correlation on massive scale of corpora of homogenous information, first and foremost, before it avails humanity of the sought-after

post-scarcity apocalypse, is designed to produce a market for digital technologies. Just as every film advertises film equipment and every video advertises video equipment, every digital device promotes the electronics industry regardless of how critical the content it delivers. Digital information's materiality is in the devices which provide and process it. And these need to be made, in the extreme disciplinarily of industry. The computation of digital information, which is abstracted multiple times from the phenomena in the world it aims to represent and provide for computation, can't help but provide a promise of absolute human control 'anthropocracy', which is the principle of its functioning and its reproduction.

In the final two chapters, I will attempt to trace the tangles of some of the tricky trade-offs we have culturally absorbed along the civilizational path to techno- and digital emancipation. Here, I very much miss the participants in my seminars who helped me develop and challenge this research. Like McLuhan (1979, 4m30) and Flusser (2004, p. 31), the electronic environment of all-at-once information compels me to want to heal the rupture of the original sin of literacy and attempt a new hybrid of abstract rationality with pre-Socratic, dialogic ways of thinking. Reason forces us to admit that our technical accomplishments are tainted with colonialism, genocide and patriarchy. This compels us to elaborate more cultural practices which can help us, on a regular basis, elaborate the trade-off between discipline and freedom; towards admittedly imperfect and provisional holisms of nature-culture (Barad, 2007, p. 131). Here we can elaborate non-anthropocentric materialisms, informed by the extreme reason of quantum physics, where we can think without pretending to disengage.

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# 1

# DOM

*Domestication*

— how we adapt all things to human needs

## MATERIALITY: AESTHETICS AND ANAESTHETICS

> *I differ* toto caelo *from those philosophers who pluck out their eyes that they may see better; for my thought I require the senses, especially sight; I found my ideas on materials which can be appropriated only through the activity of the senses. I do not generate the object from the thought, but the thought from the object; and I hold that alone to be an object which has an existence beyond one's own brain.*
>
> — Ludwig Feuerbach (1843/1890)

We live in a technical world, which is to say we live in an artistic world. Art in Latin is simply *Techne* in Greek; both words indicate something which is not simply found in the

world, in Nature, where we, as human beings, emerged, making distinctions between ourselves and the rest of creation, artistic distinctions, technological distinctions. This distinction from the World, from Nature, assumes there is somewhere else to go, there isn't. No matter how ingenious our arts, no matter how lofty our aspirations, no matter how transcendent our ideas we will always be bound by the laws of Nature, though we may never know them all. And so will our technologies always be bound by physical laws which are not of our making.

We are not ever separate from the world. A dream or the idea of God takes place in a fleshy gravity-laden metabolism called a body which must be sustained materially. Individualism is only a question of degree. We are all in this together, with the stones, with the ocean waves, with the sun in the sky, with the bulbs, stems roots of flowers, and with the darknesses inside. We know this to be true through constant confirmation of our senses. Our senses connect us with the world and reassure us that we are not alone, the world is with us and in us, we are the world and the world is us, anything else is non-sense.

Non-sense is only possible because of technology, because technology is an abstraction. Language is a technology. It abstracts simplified words, 'terms' to designate classes of things and actions in the world. Terms terminate. Definitions ascribe finitude, frontiers of pertinence. Language requires some arbitrary epistemic bounds in order to function as communication. Nature before language, perceived through human senses is still too effusive, to all-engaging to allow for communication.

The word apple is an abstraction from all the possible apples. It is a resonant word, if spoken it engages our ears and our tactility almost as completely as an apple itself, only without the expected tastes and smells. Unlike an apple, we can

always have the word apple, but with this availability comes a loss, it is an abstraction. We get the semantic power of communication, we lose the immediate nutritive value, the particular smell or smoothness or colour of any particular apple, we lose the apple's rootedness in the tree, and the tree in the earth and the air with the bees, we lose a lot with the word apple, and that is why it is such a powerful technology.

The word 'apple' is incomparably more flexible than is an apple. You can name your record company after it, or your computer company, or it can stand in for all knowledge in a parable of original sin. 'Apple' is an abstraction from the world of apples and therein lies its power. It is revolutionary. We are, and the world is still recovering from the appearance of the technology of human language. This is well recorded in the first books 'in the beginning was the word […]' (John 1:1).

The world we live in today is a world in-formed by the abstraction technology of language. Philosopher of communication Vilém Flusser liked to stress that information was the process of applying formal constraints on something, 'to put the form in', in the sense that when we inform each other, we are changing each other's form (Flusser, 2007, p. 19). Human language abstracts out generalizations, and human beings use these generalizations in a human economy of social gestures which allow us to communicate. Communication indicates commonalities, and the important commonality in language is that other human beings can understand it. This is how we, as human beings, to some degree, abstract ourselves from the all-encompassing omni-sensual, churning mass of universal existence. We take a 'step back' into human consciousness: the original sin.

Transfixed in our world of abstractions, it becomes easy, and even advisable, to forget that this new technical domain is still completely bound within Nature. Technologies of abstraction, which afford us so many unprecedented

possibilities to act with effective precision, concurrently produce narcotic ellipses where the satisfaction of dominion over a particular material realms generates ecstatic fantasies of immanent omnipotence. This ecstatic state has buoyed our linguistic ability to communicate, in a realm of anthropomorphic terms, safely at one remove from implacable and all-enveloping Nature which always threatens to absorb us again forever. 'And the Word became flesh and dwelt among us' (John 1:14). In an anthropomorphic world of abstract words we elaborate our highest human ideals which can supersede and numb the yawning pain of the rupture with universal integrity.

There can henceforth be no absolute truth in any language utterance, but only in the existence of languages themselves. Onomatopoeia shows how linguistic systems always and arbitrarily anthropomorphize all phenomena. Onomatopoeia reveals that even in the ancient technology of spoken language, the great heterogeneity and diversity of the world is first and fundamentally proscribed and conformed before it comes to serve its communicative function. Looking through this list of onomatopoeic dog sounds from various languages, it is easy to observe that what might be a common sound around the globe is refracted into dozens of local approximations to conform to the predilections of those local languages. The generalizable 'bark' of a dog (as a sound from 'Nature') is made precise as it enters civil language. Language is as much about control as it is about expression.

Dog barking:

*In Afrikaans,* woef
*In Albanian,* ham ham
*In Arabic,* haw haw, hab hab
*In Armenian,* hav hav հաւ հաւ

*In Basque,* txau txau *(small dogs),* zaunk zaunk *(big dogs)*

*In Batak, kung-kung*

*In Bengali,* gheu gheu, bheu bheu, bhou bhou

*In Bulgarian,* bow bow бау бау, djaff djaff *джаф джаф*

*In Catalan,* bup bup

*In Chinese, Cantonese,* wōu-wōu 旺旺

*In Chinese, Mandarin,* wāng wāng 汪汪 *[zho 14]*

*In Croatian,* vau vau

*In Czech,* haf haf

*In Danish,* vuf vuf, vov vov, bjæf bjæf

*In Dutch,* waf waf, woef woef

*In English,* woof, arf, bow wow, ruff

*In Estonian,* auh auh

*In Finnish* hau hau, vuh vuh

*In French,* ouah ouah, *ouaf ouaf, wouf wouf*

*In German,* wau wau, waff waff, wuff wuff

*In Greek, ghav ghav γαβ γαβ,* woof

*In Hebrew,* hav hav הַב־הַב, *[heb 4]* haw haw הָאוּ־הָאוּ *[heb 4]*

*In Hindi,* bho bho

*In Hungarian,* vau vau

*In Icelandic,* voff voff

*In Indonesian,* guk guk

*In Italian, bau bau*

*In Japanese,* ワンワン *(*wan wan*)*

*In Kannada,* bow bow

*In Kazakh, арп-арп, шәу-шәу*

*In Korean,* meong meong 멍멍

*In Latgalian,* vau vau
*In Latvian,* vau
*In Lithuanian,* au au
*In Macedonian,* av av *ав ав,* dzhav dzhav *џав џав*
*In Malayalam,* bau bau
*In Marathi,* bho bho
*In Norwegian,* voff voff, vov vov
*In Persian, vāq vāq* واق واق, *hāf-hāf* هاف هاف
*In Polish,* hau hau
*In Portuguese,* au au, ão ão, béu béu
*In Romanian,* ham ham
*In Russian,* gav gav *(гав-гав),* tyaf tyaf *тяф-тяф*
*In Sinhalese,* buh buh
*In Slovene,* hov hov
*In Spanish,* guau guau
*In Serbian,* av av *ав ав*
*In Swedish, vov vov, voff voff*
*In Tagalog, aw aw*
*In Tamil,* vovw-vovw, loll-loll, vazh vazh
*In Telugu,* bau bau
*In Thai,* hong hong, bok bok
*In Turkish,* hav hav
*In Uropi,* waw waw
*In Vietnamese,* gâu gâu, s*ủ*a s*ủ*a
— From a Wikipedia article list of Cross-linguistic
onomatopoeias https://en.wikipedia.org/wiki/
Cross-linguistic_onomatopoeias

The fact that these dog sounds, translated out of the universe into human language, are purely yet differently mimetic and not discursive reveals anthropomorphic necessity. That

dogs bark in different languages shows that we are not listen-ing to them very carefully because we are more fundamentally concerned with each other, fellow human beings. The other-ness of canine expression is sublimated into meaningless human mouth phonemes; just as human language comes to sublimate the otherness of other humans.

The world of dogs is an immense untranslatable unknown. So close to us yet so far, an abyss opens up between us and the dog whereby we sense all we lose and have lost through the exercise of power on the world through technologies such as language. This abyss is sublimated on a personal level through direct physical affective interaction with the dog, and on a cultural level through translating dog sounds into sounds available in our languages.

Anthropomorphism is the sublimation of the terrifyingly expansive and complex into languages and aesthetics of human scale. The distinction of Human and Nature is ceasing to be relevant; humanity acknowledges its fundamental integrity in Nature anew as Human Nature supplants and sublimates Nature *tout long*. In the face of so-called 'anthro-pogenic climate change' in the 'anthropocene', the era of the *anthropos*, we need, more than ever, to find cultural forms which allow us to encounter the world outside the hall of mirrors provided by our technologies, where everything that happens is pre-interpreted to be proportional to conservative human aesthetics, human proclivities, human needs.

## DATA

There is a first datum that precedes and informs all data. Data is literally, etymologically a given, plural form of datum, from dare 'to give'. Data is what we receive; it is the *noumenon* which we variably and various discern into phenomena. For

a foetus in gestation, data comes through the flesh of the mother. Upon ejection into the world the schizosomatic maternal filter falls away and the infant begins to distinguish the five senses and process perceptions. Through perceptions, apperceptions, intuitions, and instincts, phenomena are gradually elaborated through experiential memory.

Perceptions are produced through the senses by activating (stimulating) bio-chemical corporal nano-technologies. Environmental variations are distinguished through such 'natural technologies' into sensations. These sensations are then interpreted into meaning, sense, through comparison with previous sensual experience. This is a process of 'information', whereby the noumenon 'in-forms' subjects through their perceptions.

We are still not yet in the domain of language, barely grasping coalescent concepts. The meaning of sense data is produced pre-linguistically through contextualization with lived experience. This irrefutable subjective continuity is what produces the desire for sharing experience, communication, the congregation of experiences. Screaming into the unknown eventually gives way to the schizo-oblivion we know today as the thin membrane of 'me', assailed on one side by the enclosed obscure *noumena* of the body and on the other by the illuminated extents of 'Nature'. But this membrane is a Möbius, as Nature includes the *cogito* and the obscure intra-agency of the body. Nature, *noumenon* is the unsublimatable meta-context from which we divine information in the flight from fear and striving for *ataraxia*.

All data is a kind of abstraction, only an abstraction in as far as the perceiving human body perceives its perceptions individually, ideally, in the Cartesian sense, in a perfect artificial consciousness divorced from its context. This means that all data exist in an anthropomorphic epistemology first, at best one which also integrates anthropic activity within and

not without a concept of Nature, which expands beyond any-thing that any human being or network of human beings can directly sense or comprehend. This is not to say human beings are incapable of intuiting and sharing intuitions they cannot define. The words like 'data' fail them but do not occlude the experience. This is the role of poetry, prose, music and the other arts, it's called sublimation.

Sublime is Nature rendered into the world of human being. Sublime preserves all of the polyvalent expansiveness of Nature, removing the awful terror and horror that strikes one in the face of the immensity of existence. Through words, drawings, music, we sublimate the inexpressibly diverse and expansive. When data first begins to register as information in awareness, it is always already sublime.

## NATURAL DATA

Nature matters. Nature is prime matter. Nature is us and we are Nature. Nobody is outside of Nature, and no technologi-cal instrument or artifice is outside of Nature. However, we need to confront at every turn the historical vestiges of a distinction that was made a long time ago between Human Being and Nature which has since become the dichotomy artificial/nature culture/nature or even, more provocatively nature/nurture.

The Greeks did not speak of Nature; they spoke of physics. This is because anthropocentrism was just emerging with the introduction of the alphabet. Domestication had already long begun, convening the forces and affordances of 'Nature' to reliably supply the needs of human beings. This is what we call civilization: the disciplining of Nature for the purposes of regularizing the provision of social needs. The means by

which the affordances of 'Nature' are convened for the purposes of civilization is called technology.

When we speak of 'Nature' and 'Natural affordances', it is important to emphasize that these have always included the affordances of other human beings. This can be understood principally in two senses: (1) Slaves, women's indentured labour, prisoners of war and other types of labour often also are assumed and convened by force, disciplined to serve the needs of civilization; (2) Once the distinction between *anthropos* and Nature becomes culturally relevant, it emerges that Nature is not simply 'without *anthropos*', in the light, to be ascertained, but also within, in the dark, to be intuited and obeyed. The inner-nature affordance of human beings must be reproduced at the animal level, with food and drink, shelter, etc., for contributions to civilization to be sustainably afforded.