

[Wolfgang Ernst: NOTES ON TECHNICAL MEDIA]

NOTEBOOK "MEDIA THEORY, AND TECHNOLOGOS"

[unedited cursory notes, theses, excerpts, grouped into thematic blocks]

Thematic blocks:

- *Media Theory*
- *Technólogos*
- *Virus-induced technologification of academic teaching and research*

Detailed content of blocks:

Media Theory:

- NOTES ON MEDIA THEORY AND MEDIA SCIENCE
- Limits to the Extended Understanding of Media
 - Towards a Media Science

Technólogos:

- NOTES ON TECHNOLOGOS
- "Algorithmic Thought" and / or Media Thinking
 - Escaping "Ontology": Articulations of *Technólogos* with Freud / Lacan
 - The techno-logical allurements
 - Media-Aesthetics from within Technology
 - Relating Technology to Ontology
 - Cybernetics / Interface
 - Embodied knowledge and / or *lógos*
 - Techno-logical correlationalism

Virus-induced technologification of academic teaching and research:

- ON THE EXTENDED "LOCKDOWN" MODE OF ONLINE UNIVERSITY TEACHING, AND THE UBIQUITOUS ALGORITHMIZATION OF ACADEMIC RESEARCH
- Double "ghost lectures" / "ghost readings"
 - Digitization of Academic University (triggered by "Corona")
 - Snippets on Teleconferencing

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Media Theory:

NOTES ON MEDIA THEORY

Limits to the Extended Understanding of Media

- current media theory - extending to geological strata, "rare earths", and its extractions of chemical lithium for batteries - about technology no more? epistemic capacity unfolding from material level of "media"; analysis of media technology not to be confused with "mediative" function

Towards a Media Science

- necessary precondition for "media" analysis: sound knowledge of its technological core; from there branching into more social, or phenomenological, economical, political and other contextualization; "radical" media archaeology, though, rather staying *within* the technological analysis, to create epistemic insights from techno-logical materialities themselves

Technólogos:

NOTES ON TECHNOLOGOS

- question concerning technology not just a contemporary, but a principal one. "Strictly speaking every Age of mankind is, since from the very beginning", *en arché*, "a technological" and not simply technical "age" = "Presentation" of the forthcoming *Mechane* Journal of Philosophy and Anthropology of Technology (January 2019) - at least in terms of coding (the symbolical regime) by articulated language. In favor of a genuine media-epistemology, differentiation between "technology" and "technique" (as technical "extensions of man"; this relation not simply an evolutionary one), rather a media-archaeological rupture

"Algorithmic Thought" and / or Media Thinking

- in analogy to computation / computing differentiation

- beyond Heidegger, the "Question concerning algorithm": essence of algorithm, once implemented, nothing algorithmic, rather time-discrete, processual / procedural analytics / machine; replace ontologic question "what is" by "what it does"

- non-philosophical approach, first of all: inductive, derive epistemic sparks from within the techno-mathematic object; metaphysics returning

into / becoming the machine; a non-human becoming "medium" of thought

- Heidegger's critique of technical instrumentality vs. techno-logical implementation; "embedded mind" (Andy Clarke) returning *via* computing"; *lógos* becoming processual in sense of (data-procedural) "collecting" (*legein*)

- automation of thinking replacing philosophical quest for "truth" by Cartesian procedure / method / algorithm; ex-carnated thinking (parallel to Deleuze, on cinema)

- not only "glitches" breaking logic, but logic itself incomplete = Luciana Parisi, as proposed at TCS-Research Workshop "Algorithmic Thought / Digital Power", March 18, 2019, at SAGE Publications, London; formal reasoning becoming incomplete with Church / Gödel; experimental axiomatics (Dewey)

- from computation to computing: Turing's 1937 negative answer to Entscheidungsproblem, but resulting in the most effective turingmachine

- from AlphaGo "machine intelligence" to AlphaGoZero: playing against itself, from learning rules, no human supervision / no "big data" input

- TM not simulating human brain ("Deep" Learning), but emulation; if mind / computing relation can not be measured / mapped, literally "incommensurable" = Beatrice Fazi, as proposed at TCS-Research Workshop "Algorithmic Thought / Digital Power", March 18, 2019, at SAGE Publications, London); Leo Breiman, Statistical Modeling: The Two Cultures, in: Statistical Science, vol. 16, no. 3 (2001), 199-231

- "hermeneutic ghost" DARPA's "explainable AI" initiative (Fazi), vs. "flat ontology"

- non-linear "layers"; new metaphysics lurking behind the hermeneutic "hidden" rhetoric; "black box" input / output, as long as the between can be mathematically modelled, remaining within the symbolic regime

- neural networks realized in computer graphics chips: schematic concept of "image"; visual pattern-recognizing "Perceptron" (Rosenblatt 1957)

Escaping "Ontology": Articulations of Techno*lógos* with Freud / Lacan

- "typo" *massage* in stead of *message* for book title *The Medium is the Message*" (Marshall McLuhan, with Quentin Fiore, 1967) a "slip of tongue" in the techno-logical sense, both materially, and logically; see Website

"Commonly Asked Questions about McLuhan – The Estate of Marshall McLuhan", marshallmcluhan.com, accessed April 3rd, 2021; answer by Dr. Eric McLuhan to 'Why is the title of the book The Medium is the Massage and not The Medium is the Message?'

- human typesetter one the one hand, but more immediately: the typeset letter frame itself, in its materiality and probabilities (Shannon / Vief)

- technical knowledge from within, a "real" which desires to be articulated, therefore depends on embodiment (Lacan) in the symbolic order / computing in order to become operative (being-in-time, with Heidegger), therefore: equation of the real with "to be", but technology always in being ("*ontology*", participle present)

The Techno-Logical Allurement

- techno-mathematical "standing reserve" (Heidegger's *Ge-stell*) inviting to be inhabited by / as (human) intelligence, while at the same time being subject to physical limitations; weak interpretation: heuristic media-theoretical hypothesis / depends on human scientific curiosity to become explicit (techno*lógos*); strong interpretation: techno*lógos* "in being", involving human intelligence like "memes"

Media-Aesthetics from within Technology

- thinking and writing *with* and *by means* of objects of media-aesthetic experience, instead of cold, distant reasoning about art forms; aesthesiographical focus on moving images, sound art, and other media-cultural practice; "practical aesthetics" the academic companion to practice-based artistic research; Herzogenrath (ed.), *Practical Aesthetics*; Barck et al. (eds.), *Aisthesis. Wahrnehmung heute*

- media art works no intransitive objects of distant intellectual analysis, but inviting analytic reason to get affected by their own *modus operandi*; "sensitive thinking" (Herzogenrath) *with* the matter of aesthetics, widening the analytic scope to its embodied channels; aesthetics in its own medium (and media); conquering *aisthesis materialis*

- replacing lofty philosophical judgements on media art works by precise case studies in materially, or technically, embodied *aisthesis* in its original sense, ranging from technical media such as VR, to cultural techniques such as museology and dance

- material (if not "medial") *aisthesis*, in the Aristotelean sense of the actual matter of perception; against conventional logocentric, word-centered approach, paradigmatic case studies re-interpreting the

aesthetics of multi-media artworks and artifacts as an encounter between human cognition and the physically real

- tracing the matter of artworks and technical artifacts *from within* its own inherent qualities; striking sparks of aesthetic knowledge by precise case studies in applied material practice; instead of getting lost in philosophical abstraction, taking into account the productive frictions which arise from the encounter of cold academic analysis, and empathetic co-aesthetic experience

- technology and aesthetics contradictory realms? "practical aesthetics" an operational (rather than passively analytical) approach to media objects of research, without reducing its effect to the straightforward apparatus; aesthetic matter linked to, but not exclusively determined by technical practices; focus on the aesthetic message of material practice, rather than aesthetic content

Relating Technology to Ontology

- main media-technical / -archaeological issues epistemological rather than ontological

- analytic ontology (Alfred North Whitehead) focusing on the processual "event"; processual ontology close to the essence of media technologies itself (since only when being in operation a medium is in its medium state); media archaeology (different from the apparent archaeological metaphor) not uncovering artefacts but events

- "ontological reversal" whereby activities of cultural techniques such as counting *precede* the associated concepts such as number, normally thought to come first" = Winthrop-Young, Geoffrey, Cultural Techniques: Preliminary Remarks, in: Theory, Culture and Society 30, no. 6 (2013): 3-19 (15); material symbol manipulation (material *token*, Hilbert)

- matter / energy *pre*conditions of technical media, but not yet media archaeological objects; rather processes like electro-magnetic induction (and not steel and magnetism for Wire Recorder); Aristotle's Metaphysics focussing on form and matter, not process: "[...] from Aristotle onwards ontology has dealt with the matter and form of things rather than the relations between things in time and space" = Friedrich Kittler, Towards an Ontology of Media, in: Theory, Culture & Society 2009 (SAGE, Los Angeles et al.), vol. 26 (2-3), 23-31 ("Abstract")

-technologies in ("media") being escaping the ontological question (not simply "forgotten", or rather: systematically "forgotten")

- not static "ontological" objects, but micro-momentary processes revealed in media-experimental settings (a kind of Heideggerian *aletheia*, "Lichtung" / electric lightning) media processes defined by patterns of signals unfolding in time; *dynamic ontology*: frequencies instead of beings, quantities instead of qualities and functions instead of attributes, to paraphrase Bernhard Siegert (referring to Max Bense) = Siegert, *Cacography or Communication? Cultural Techniques in German Media Studies*, 40: "Like physics, aesthetics is a science whose primary object is signals, the physical materiality of signs."

- instead of meta-discursive approach to the phenomenon of material aesthetics, inductive argumentation *from within* the techniques and aesthetic matter, close to object-oriented ontology; signal-processing point of view of the machine instead of "sensual" aesthetics privileging human experience on the phenomenological level

- Beatrice Fazi actually writing a piece comparing "different ways of relating technology to ontology according to three frameworks - digital humanities, cognitive science and German media theory"; any "virtual mediation" co-articulating *technológos*; message after interrupted Zoom teleconference; while discussing this topic: "The unbearable lightness of being has killed our internet connection! [...] Maybe we can continue via email, or attempt virtual mediation in the future again" = Beatrice Fazi, *electronic (re-)communication* 2nd. March, 2021; old computer, for overheating in Skype / Zoom video conferencing, interrupting communication by its sudden breakdown; the machine probably afraid of the conversation topic, the "ontology of media", since this concerns the question of computing itself

- a more critical distinction between the metaphysical question of ontology ("to be") vs. the technological question of the processual ("in being") required; Kittler's use of the term in his "Towards an Ontology of Media" in TCS 2009; some thoughts in proposed contribution to the book which might never "come into being" (*Philosophy After Computation*)

- paraphrasing / redefining from *TECHNOLÓGOS IN BEING. Radical Media Archaeology, & the Computational Machine*:

- lofty philosophical deductions, with its rather liberal, extended and generalized notion of a "machine-oriented ontology" (Bryant 2014: 15), metonymically musing about the essence of machines but rarely coming close to their specificity as technology / their *technológos* in detail; avoiding ontological metalanguage by deriving epistemic insights from close analysis of technological processes from within

- for radically process-oriented media ontology, any technology only coming into being by its very material / energetic ("mateReal") embeddedness *a priori*

- radical media archaeology, in combination with object-oriented ontology, tracing technological operations down to its material and logical roots, such as its core algorithm; emergent phenomena in big data processing revealing their algorithmic knowledge only when in action
- media archaeology checking human-centred media cognition against an ontology of technology from within, thereby avoiding the metaphysical allure
- non-anthropocentric philosophy of technology recognizing the inherent epistemic relevance of technology from within, towards a process-oriented ontology
- techno-locative and time-critical identification / archaeographical description of the interlacing of *lógos* and matter in concrete media-technological scenes; attempts towards a more comprehensive ontology of techno*lógos*-in-being
- against media-philosophical ontology asking for what computers are in essence, "one should focus on what they do: they *execute*" (Gauthier 2018: 156); algorithms requiring to be implemented in the material technique itself to become active
- very term "technology" reminding of this split ontology: It is not only the science of *techné* but of its *lógos* as well
- with the analysis of the materialities of technical operations, philosophical ontology enriched with a processual, temporal turn: *lógos*-in-being, a being-in-operation; technologies "being" in their analogue respectively digital "media" state only when transducing signals and processing data, as systems with *eigentime* (Berressem 2018: 86)
- even if not primarily considered the decisive epistemological condition of human culture, avoiding reduction of technology to a mere subset of a more fundamental ontology
- technologies inexorably operating by exact definitions of their own; can be analysed in the media-scientific laboratory, instead of getting lost in otherwise speculative techno-realism; media archaeology insisting on such grounding, precisely identifying the techno-logical scenes
- tracing the *arché* of technical media, the primary confusion stemming from the question of the "essence" of technology. According to my media-theoretical definition, "media" come into existence only when in operation, signal-processually. There is no "to be" but only "being" for technologies, which is often mistaken for their "ontology". Of course,

literally "ontology" already refers to a present participle (ancient Greek *on*), that is: the operative "mateRealities", rather than to "to be", but is conceptually mistaken when used to identify timeless (transcendental, metaphysical) qualities.

- Kittler on media ontology, in: TCS 2009; still inserting the question into a "history of being" (Heidegger's "Seynsgeschichte"), whereas more radical media-archaeological approach keeps the question of technology apart from ontology right from the beginning (*en arché*, or diagrammatically "from scratch" as expressed by Kittler, p. 30) in a non-historical epistemic frame. While most of Kittler's examples still refer to cultural techniques (alphabetic writing, the book form, etc.), a more rigid restricting of technical media to events like the electro-magnetic induction cannot be linked to the history of ontological debates but rather create a break; question of technology has not simply be "forgotten" in the history of ontological ideas (McLuhan, Heidegger, Kittler), but has / is a distinct epistemic field at all; remain two options: either widening the concept of "ontology" in a more literate sense, with the "on" as participle present addressing processual being (close to Whitehead, but this time not applied to natural science, but to its coupling with technical *lógos*), or keeping "ontology" distinct from the thinking of technology, since the philosophical tradition has limited "ontology" too much, therefore in combination with technology, it will always make associate the wrong questions; actually not fundamentally different from Kittler in TCS, but maybe a more radical emphasis of his implicit argument. Where Kittler still enframes the relation of technology and ontology within a historical (explicitly "recursive" knowledge frame as two related emanations, radical media archaeology tries to rethink them apart with an different tempoR(e)al; where Kittler still sees technological autonomy within history (after all, as introduced by TCS, Kittler has been the "chair of Aesthetics and Media History" at Humboldt University), rather grant techno*lógos* an autonomy of its own, not related to any "historical ontology", in favour of a more processual ("atemporal" in a double sense) ontology

- "An anti-ontological approach to media, a radical opening of the analytical domain to any kind of media process, has been more productive and theoretically challenging than any attempt [...] at answering the question of what media 'are'" = Eva Horn, There is No Media, in: Grey Room 29 (Winter 2008), 7-13 (8)

- with Turing, the "human" defined as inhuman: a paper machine; long desire of human thinking to get liberated from its "human" idiosyncrasies in favour of pure *lógos* (Platonic idea); becomes material in technologies, now re-entry of human cultural knowledge (technology) in nonhuman "caber"space; pure "Geist" not meta-physical any more, but implemented in the real of technology (matter / energy), becoming "active matter" aka computing; concrete: cultural techniques (alphabet)

returning from within: alphanumeric code (symbolic) and microchip silicon "printing" production "lithography" (matter) = see Kittler, There is no Software - but this time operative itself; techno/*lógos* taking over

Cybernetics / Interface

- intuitive, "immediate man-machine communication" = Licklider 1960 vs. symbolically coded (*lógos*) input by teletype / alphanumeric keyboard; even "speech assistants" (Alexa, Siri) forcing human to adopt to machine understandability / "formal" language as phenomenal equivalent to machine language; no "symbiosis" (term justified only for coupled organisms) but coupling of organism (man) with machine (computer): asymmetric "symbiosis", suspended by cybernetic premise of signal traffic "in the animal and the machine" (Wiener 1948)

Embodied knowledge and / or *lógos*

- logocentric knowledge genealogy of the European University; current transformation of academic life *via* pandemically enhanced "digitalization" no simple extension of classical teaching / learning into the "hybrid" realm, but a fundamental metamorphosis; *Geistervorlesung* facing a camera instead of a lecture hall, in allusion to the "Geisterspiele" which means soccer plays in empty arenas

- idiosyncratic "social" factor; to what degree even academic knowledge rooted in "extended mind" (Clark) / "embedded mind" (Varely), which is reduced by "digitization" of University communication (Zoom); according to Judith Butler, Notes toward a Performative Theory of Assembly, Cambridge (Harvard University Press) 2015, "assemblies of physical bodies have an expressive dimension which is not reducible to speech, since their physical presence affect the outcome of their gatherings" = as paraphrased by Katharina Loeber, Big Data, Algorithmic Regulation, and the History of the Cybersyn Project in Chile, 1971-1973, in: Soc. Sci. 2018, 7, 65; doi:10.3390/socsci7040065; vs. (techno-)*lógos* hypothesis; assembly close to *legein* as "collecting"

Techno-logical correlationalism

- according to techno/*lógos* hypothesis, technically embodied knowledge a specific form of revealing (Heidegger) which can only unfold in / as operative media; material reasoning; thought (symbolical order) implemented in mateReal an asymmetric correlation

- in Kantian "correlationalism", human insight restricted "to the correlation between thinking and being, and never to either term

considered apart from the other" = Quentin Messailloux, *After Finitude: An Essay On The Necessity Of Contingency*, trans. Ray Brassier (Continuum, 2008), 5

- media-active (techno-logically appropriated / controlled) correlationism: *lógos* must relate to matter / energy in order to know it as "information"

- prior to discovery of fossils no knowledge about existence of dinosaurs = Levi R. Bryant, entry CORRELATIONISM. An Extract from Peter Gratton / Paul J. Ennis (eds.), *The Meillassoux Dictionary*, Edinburgh University Press, <https://eupublishingblog.com/2014/12/12/correlationism-an-extract-from-the-meillassoux-dictionary>, accessed July 20, 2021; "archaeological" pre-historic notion of *arché* (Messailloux' "ancestry") turned principal resp. structural by media archaeology: against Kantian "correlational" scepticism that whether or not things-in-themselves are this way something never knowable, media-active correlation of investigative *lógos* with *téchne*

- Karen Barad's generalization of quantum entanglement; Nils Bohr: measuring instrument entangled in observed object; measuring media themselves form of materialized thought / investigative matter; techno-correlationism: we must relate techno-logically (that is, in technically implemented thought) to matter and energy in order to know it, such as unpredictability of algorithmic behaviour once coupled to big data (MA thesis Johannes Maibaum, on Fast Fourier Transform)

- different understanding of *technology*: no technical "being" apart from being "thought" by a subject, or (formal) language

Virus-induced technologification of academic teaching and research:

ON THE EXTENDED "LOCKDOWN" MODE OF ONLINE UNIVERSITY TEACHING, AND THE UBIQUITOUS ALGORITHMIZATION OF ACADEMIC RESEARCH

- state of the art in April 2021: looking forward to seeing less "images" from computer screens, and see real student faces again, as soon as post-pandemic university takes place again - but then, is there any knowledge- and *lógos*- related "essence" of academic teaching and learning ("embodied" or not), which cannot be "digitized"?

- on the "non-digitizable element" in university teaching and learning practices: still necessity more than simply "social" argument that the university must be founded on meetings and exchanges where students and teachers appear to each other in real presence; especially for faculty members "speaking as belonging to the generation before the digital natives" = e-communication Jacob Lund (Univ. of Aarhus) on April 28,

2021 / "old school", a more precise epistemic definition required of what Zoom video conferencing could ever substitute - "maybe in part but never fully" (Lund). / practice; recent "livestreamed" lectures; Agamben's question, whether an academic "contact" can be maintained via Zoom, on the paradox that the "digital", although etymologically related to the hand, does not allow for indexical, only electric "touch"; Agamben's text: <https://illwill.com/philosophy-of-contact>

- urgent to launch a spontaneous response to the challenge of the COVID-19 virus to culture, and practice; facing the "lockdown" of most public life, an ongoing discussion about the "systems relevance" of "soft" issues like culture, and aesthetics in such times; humanities's apparatus of research and text production, however, "much less agile than our minds" - therefore only belated "postpandemic" reflections on its consequences = e-communication Jacob Lund, December 16, 2020 - the usual "lag" of humanities, *versus* Virilio-like capacity for analysis in "realtime" in the military strategic mode; the consequences *of* the pandemic vs. consequences of the plague / contagion *on* aesthetics

Double "ghost lectures" / "ghost readings"

- students editing Media Theories' "ghost lecture" ("Log book Media") during first semester of Corona lockdown of Humboldt University (summer term 2020) in German; part of the text actually an automated speech-to-text transformation ("Watson") of the video-recorded / transmitted "live" lecture = Wolfgang Ernst, Geistervorlesung. Techniknahe Analyse in Zeiten der Pandemie, edited by Thomas Fecker & David Friedrich, Glückstadt 2021; "[...] intriguing that it was partially done with automatic technologies. This adds an extra layer of interest to it - too bad that I gave up on learning German after reaching B.1 at Goethe Institut which was not enough [...] to even learn how to write an e-mail in German [...]. I am happy to use Deep L for automatic translations of German texts that I want to read, when they are available as digital documents" = response August 7, 2021, Marcus Bastos from Sao Paulo - which actually is the perfect machine learning "reader" response to the automatic "Watson" transcription of my lectures! In the end, algorithmicized readers will read algorithmically produced texts - a different kind of posthuman "academic" knowledge transmission

Digitization of Academic University (triggered by "Corona")

- Jussi Parikka, Digital Contageons; expert on computer viruses (the symbolical) protecting against the micro-biological virus (the real) once genetically decoded; counter-weapon mRNA (vaccine) built on informational concept (non-invasive, no genetic manipulation)

- academic return to "normal life" / to a life of calm after pandemic COVID-19 plague? even in Wuhan, people's life restarting "after pressing the 'pause button'. Everything seemed the same as before, but something looks different than before"= Chen Wei, 25 September, 2020; a different discursive atmosphere; change for old European university as institution of knowledge dramatic; academic "home office" and the digitization of teaching and research having a serious impact on the self-understanding and definition of what represents the core of university, with restricted seminars or lectures in real presence; urgent need to reflect on that radical transformation; combination of "Corona virus + digitization" actually transsubstantiating the essence of academic university; its delegated to (and subsequent substitution by) online-services

Snippets on Teleconferencing

- participant asking, in the videoconference discussion following Paris *Technologies de la Visibilité* conference lecture WE "The Image Function" (November 2020), on political biases of machine learning and AI, immediately got an invitation to participate at another Zoom conference on "Security" - by human attention, or a machine logic / profiling being Zoom software itself?

- remembering the first round of lockdowns: a couple of students (professional DJ's in the club scene) organizing online parties *via* YouTube and Facebook streaming services "surprised to discover that when any copyright material, even in short samples, appeared in their streams, the connection was cut within a matter of seconds. Even with obscure small edition albums" = electronic mail Raviv Ganchrow, Dec 4, 2020; Ganchrow "skeptical that their signals were really being monitored considering the amount of data crisscrossing the net in streaming during lockdown and the fact that DJ mixes often have overlapping audio tracks that would make the recognition process all the more calculation heavy" = *ibid.*; according to DSP expertise apparently possible "by way of an older set of algorithms coming from genetics, specifically tree-structure algorithms for DNA sequencing" = Ganchrow *ibid.*; thereby connecting to decoded Corona-19 virus and the mRNA coding of its counter-vaccine; this algorithm "highly efficient in tracking any pre-catalogued sequenced data signatures like those of audio waveforms. And given other advances in speech recognition machine listening, it too could be standard protocol by now every time we go live" = Ganchrow *ibid.*; fascinating evidence of automated "censuring" (aka copyright-protection) for YouTube audio livestreams; what will occur in online transmission of weekly university lectures; underlying algorithms stemming from genetics making it even more ironic in times of the pandemic virus triggering such explosions of "streaming media" communication

