## **Aff – Digital Cyclops 2 – BFHR 7wk**

### **2AC---C/I---HW v. SW**

#### **Only a software based analysis can provide a better understanding of technology in the world**

Frabetti 14 (Federica Frabetti PhD - MRes and PhD in Media and Communications at Goldsmiths, University of London, “Software Theory”, Rowman and Littlefield International Ltd, Pages xv-xix, 2014, MG)

This ambivalence—one could even say, this circular movement—between the technical and the social seems to me to characterize the whole field of software and code studies. Individual **academic** contributions can choose to privilege one term over the other, but ultimately they turn to the technical in order to explain the social, and then revert to the social in order to explain the technical. Representative of a stronger emphasis on the technical aspects of new technologies are studies such as Nick Montfort and Ian Bo- gost’s 2009 book on the Atari video computer system, entitled Racing the Beam, which has been positioned as the inaugural text of platform studies. Overlapping with software studies, platform studies pays particular attention to the specific hardware and software systems on which ‘expressive computing’ (another name for Manovich’s ‘cultural software’—that is, software applications for video games, digital art, and electronic literature) is based. Montfort and Bogost recommend ‘delving into the code’ and giving ‘serious and in-depth consideration [to] circuits, chips, peripherals and **how they are integrated and used’** in order to make sense of new media.22 Also intent on the functional unpacking of technology is the classical work of Alexander Galloway, Protocol (2004), which offers a welcome counterargument to the widespread discursive use of digital networks as metaphors of horizontal connectivity and intrinsic political empowerment. By unpacking the hierarchical workings of ‘real’ networks, which are functionally based on layers of software that ‘wrap up’ the contents of communication, Galloway also unpacks and critiques the rhetoric of freedom that surrounds digital networks. For instance, he demonstrates how protocols incorporate (‘embed’) censorship and other mechanisms of distributed control, and how these technical characteristics **embody a logic of governmentality** which he ultimately associates with the **military origins of the Internet**. ‘Distributed networks’, Galloway states, ‘are native to Deleuze’s control society.’ 23 In sum, for Galloway, discovering the control mechanisms which found the technical functioning of networks is a way to complicate the political discourse on networks inside and outside the academy. Although Galloway’s approach remains very important and politically meaningful for the cultural study of software, it also runs the risk of positioning the technical as the ultimate truth, as showing what ‘truly’ **lies behind any discourse** on technology (**celebratory or otherwise**). In the end, this approach rests on a strategy that draws on technical explanation as a way to reach a ‘deeper’ understanding of technology—an understanding supposedly located ‘behind’ or ‘beyond’ the social.

This ‘quest for depth’ in the analysis of software, which positions software as the truth of new technologies while also intertwining software with issues of ‘power’ (or ‘biopower’), ‘control’ and ‘governmentality’, is also present in more socially orientated studies of software, such as David Berry’s 2011 book, The Philosophy of Software. For Berry, in order to understand the way in which one experiences software today and to develop a ‘phenomenology of software’, software studies need to ‘**unpack’** software, to understand what it ‘**really does’**, to reach a technical grasp of it.24 Yet, again, this process of unpacking leads to the analysis of the practices of production, usage, and consumption that shape and are shaped by software. Importantly, according to Berry, such a deeper understanding of software—which, for instance, unmasks the decisions made by big corporations such as Google with regard to their software—is ultimately an emancipatory practice, because it leads individuals to better-informed political decisions. An analogous emancipatory aim characterizes Robert Kitchin and Martin Dodge’s book, Code/Space (2011), which investigates the way in which **software shapes social space** by enabling ‘forms of automation, the monitoring and controlling of systems from a distance, the reconfiguring and rejuvenation of established industries, the development of new forms of labor practices and paid work, the reorganization and recombination of social and economic formations at different scales’ and many other innovations.25 Kitchin and Dodge develop the idea of ‘automated management’ in order to explore how software enables a whole new range of movements and transactions across space while also automatically and systematically capturing and storing data on these transactions, thus bringing about new opportunities for personal and collective empowerment which are also new possibilities for regulation and control.

The intertwining between digital technologies and power is also at the core of the articulated analysis of software offered by Wendy Chun in her recent book, Programmed Visions (2011). Chun argues that computers, and particularly software, ‘embody a certain logic of governing or steering through the increasingly complex world around us’, which she calls ‘the logic of programmability’. 26 Programmability gives users a sense of empowerment by ultimately incorporating them into the **logic of a machine** that they **do not fully understand but feel somewhat in control of.** In other words, we feel empowered by software because we **feel in control of something** we do not have a grasp of. In fact, Chun argues that our fascination with software resides precisely in the fact that we do not understand it. Instead, we view it as something hidden, obscure, difficult to pin down, and generally invisible, which nevertheless generates visible effects in the world (for instance, lights flickering on a screen or the functioning of telecommunication networks). Rather than aiming at dispelling the mysteriousness of software, she analyzes how software functions as a ‘**metaphor of metaphors’** in a number of discourses and fields of knowledge precisely because of its relative obscurity. She writes: ‘[Software’s] combination of what can be seen and not seen, can be known and not known—its separation of interface from algorithm; software from hardware—makes it a powerful metaphor for everything we believe is invisible yet generates visible effects, from genetics to the invisible hand of the market; from ideology to culture.’ 27 Although critical of those approaches of software studies that view knowing software as ‘a form of enlightenment’, in her own analysis Chun still combines historical-cultural narratives (for instance, the history of programming languages) with technical explanations (for instance, the exposition of how digital circuits work) in order to complicate her cultural account of technology and particularly of software.

This political commitment with the analysis of software has been taken further by a number of studies on software which draw on neomaterialism, media archaeology, and object-oriented philosophy.28 In their quest for thinking software as a material entity or process which spreads into economics, politics, and—again—the whole logic of control society as an ‘immanent’ force understood in a Simondonian and Deleuzian sense, these studies tend to ‘ontologize’ software as the condition of possibility of contemporary life, and to privilege software studies as a master discourse capable of making visible the foundational but otherwise invisible, hidden, embedded, off-shored, or forgotten nature of software and code. And yet, one could ask: To what extent can software and code be privileged in this respect? On what basis can they be said to constitute the conditions for revealing the truth of human life or society?29

So, to recap, not only is the number of existing studies of software still relatively limited, but these studies also give an account of software that is based on the analysis of the processes of software production, reception, and consumption combined with the technical exposition of how software ‘really’ works (either as a technical artefact or as the all-pervasive logic of control societies). Although I recognize that the above perspective remains absolutely relevant to the political and cultural study of technology, I suggest that this approach should be supplemented by an alternative, or I would even hesitantly say more ‘theoretical’, and yet more ‘direct’, investigation of software—although I will raise questions for both these notions of ‘theory’ and ‘directness’ later on. As I have suggested above, in order to understand the role that **new technologies** play in our lives and the world as a whole we do need to shift the focus of analysis from the practices and discourses concerning them to a thorough investigation of **how new technologies work**, and, in particular, of how software works and of what it does. And yet, in Software Theory I propose an investigation of software that takes historical-cultural and technical narratives as a starting point, rather than as a final one, and I suggest that these narratives should be problematized rather than treated as explanatory. Such an investigation of software will help me to problematize the intertwining of the technical and the social aspects of software which currently preoccupies Software Studies. At the same time, I will refrain from making any sweeping ontological claims about what software is and will instead engage in a critical examination of the alleged relations between ‘software’/’code’ on the one hand and ‘ontology’ and ‘materiality’ on the other hand, as conceptualized by cultural theorists of computation such as Katherine Hayles. This is why earlier on I suggested that the title of this book, Software Theory, hints at a different engagement with theory from what Lev Manovich had in mind.30 Let me now explain how such an investigation of software can be undertaken.

#### **Counter-interpretation – reject debating the Hardware called by the resolution and instead teams must debate over Software**

Hui 19 (Yuk Hui PhD - juror of the [Berggruen Prize for Philosophy and Culture](https://www.berggruen.org/prize/) since 2020, and initiator of the [Research Network for Philosophy and Technology](http://philosophyandtechnology.network/?page_id=625) since 2014, teaching in various institutes including Goldsmiths College, Leuphana University, Bauhaus University, Strelka Institute Moscow, Chinese Academy of Art, and City University of Hong Kong, “Recursivity and Contingency”, Rowman and Littlefield International, Pages 238-241, January 2019, MG s/o PFox)

The destruction of all organic life points to the **only possibility for the survival of the human**, which is the separation between body and mind, between **hardware and software**. This metaphor of software and hardware is technological, but it is also **not a metaphor** because it is a **research agenda** that covers everything from dietetics, neurophysiology, genetics, and tissue synthesis to particle physics, astrophysics, electronics, information science, and nuclear physics. 57 The search for the separation between thinking and organic life is a response to the prospect of solar catastrophe, since the central question is, how is it possible to survive without an organic form of life? Or, as Lyotard puts it: “[H]ow to provide this **software with a hardware that is independent of the conditions of life on earth**?” 58 This is a negative organology, or an extreme humanism. It is negative since it is based on a total negation of the organic and on the belief that **there is a possibility**, no matter how small it might be, of replacing the organic body with an inorganic artifice for the survival of thinking. Lyotard, through the incarnation of a female interrogator called Him, implicitly goes back to the recursive structure of organization and the possibility that such a recursive algorithm could be independent from the organic body:

Most of all: [human]’s equipped with a symbolic system that’s both arbitrary (in semantics and syntax), letting it be less dependent on an immediate environment, and also “**recursive**” (Hofstadter), allowing it to take into account (above and beyond raw data) the way it has of **processing such data**. . . . Isn’t that exactly what constitutes the basis of your transcendence in immanence? 59

The notion of recursivity is raised here, but Lyotard does not explore the relation between recursivity and reflective judgment further. He did not understand the concept of recursion, just as he had already dismissed information theory in cybernetics for its “triviality” earlier in his The Postmodern Condition. Here he is prepared to reject this thesis by invoking Hubert Dreyfus, whose What Computers Cannot Do? A Critique of Artificial Reason (1972) challenged the **research in artificial intelligence** (AI) of that time as being too Cartesian in the sense that AI reduces intelligence to a very limited way of knowing. This could be briefly explained with what in classical AI or “Good Old-Fashioned AI” (GOFAI) is called the frame problem, which is about the AI’s description of the world. In order to know an event or an environment, the AI will have to produce a huge amount of descriptions. However, it remains very difficult to contextualize these descriptions. It is Cartesian because, in this form of knowing, everything is merely **present-at-hand** in the sense of Heidegger, while it ignores the fact that in the preoccupations of everyday life Dasein encounters situations that are ready-to-hand and have to do with embodiment and intuition. The rejection of reducing thinking to a binary form is also a **rejection of the separation between body and mind**. The philosopher, who is challenged in this dialogue, is also a phenomenologist. He has to defend the importance of the body and of sexuality, since without the body and without sexuality, **can thinking exist at all**? Brassier has nicely summarized the perspectives of the two interrogators:

one for which the inseparability between thought and its material substrate necessitates separating thought from its rootedness in organic life in general, and the human organism in particular; another according to which it is the irreducible separation of the sexes that renders thought inseparable from organic embodiment, and human embodiment specifically. 60

If becoming system presents a negativity for Lyotard, this is because it is based on a negative organology, which ignores the question of life and existence. And if Lyotard here invokes this negativity, it is because he wants to think through the question of resistance, as he asks in his introduction: “[W]hat else remains as ‘politics’ except **resistance to this inhuman**?” This resistance is also inhuman since the negative inhuman doesn’t occupy the totality of this concept. Like the sublime, the inhuman also has its double, as Lyotard emphasizes: “The inhumanity of the system which is currently being consolidated under the name of development (among others) must not be confused with the infinitely secret one of which the soul is hostage.” 61

The inhuman is truly posthuman in the sense that it considers the dissolution of the human as messages, waves, particles, and cells. However, the inhuman is not transhuman. Although the inhuman shares the negativity of the transhuman— that is to say, it is imprisoned by the fanaticism of development or technological singularity—at the same time it **resists such negativity not by rejecting a humanmachine hybridity** but by rejecting the tendency imposed by a transhumanist ideology that is **motivated by the anticipation of the solar catastrophe and desire of inorganic immortality**. What is meant by “the infinitely secret one of which the soul is hostage”? Ashley Woodward identifies the double of the inhuman by suggesting that the negative inhuman can be identified with nihilism, and further that art is the second sense of the inhuman. 62 However, I have strong reservations about this second observation since this is too narrow and it does not seem to be what Lyotard was referring to, though it is interesting here to consider in art the potential of overcoming the determination of the system. If the soul is the hostage of the inhuman, it is because the inhuman is like its preindividual reality as well as its call. It is like water to fish: Even though the latter live in the former, it remains transparent to it. This inhuman cannot be reduced to calculation and to representation. The possible explanation of seeing an intimacy between art and the inhuman is that art sends the system back to a primordial creativity in order to undo the totalization of the system. It is clearer when we refer to Lyotard’s reading of Augustine. However, instead of discussing his The Confession of Augustine, I will instead make a short-cut by referring to an episode of a TV program called Apostrophes that was broadcast on the January 9, 1981. I transcribe part of the lengthy conversation below.

JFL: You remember that in the eleventh book that you cited, and that you remember, those confessions, there is this formula, it is a god more interior in myself than me, that is what I make allusion to, what Wilson searches, it is that, isn’t it? There is something in me which is more interior in myself than me, well, this what I call the inhuman, I have the right, it is perfectly clear, in fact, because it is just something with which I will never arrive at having . . .

Interrogator: Vulgarly, when we employ the word inhuman, we think about the horrible, appalling, cruel, and detestable, we don’t think about **interior being which unfolds** . . .

JFL: You do it on purpose!

Interrogator: But I am not philosopher, I am journalist, **I am a bit flat.** 63

Lyotard sometimes refers to this inhuman “which is more interior in myself than me,” as la chose or the child, which carries within it the antidote to the negative inhuman. However, these two inhumans are **not completely separate**, since the latter is also partially a condition for the former, without which the positive inhuman remains merely an element of theology, meaning that there is only one mode of rationalization of the Unknown through God. The logical sense of the inhuman is exemplified in Ludwig Wittgenstein and Gödel, since both logicians refused the subordination to positivism. Like Gödel, who shows the incompleteness of any logical system in terms of proof, for his part Wittgenstein “did not opt for the positivism that was being developed by the Vienna Circle, but outlined in his investigation of **language games a kind of legitimation not based on performativity**.” 64 The positive inhuman is that which resists systematization and reduction to calculation. The question is, how can we articulate the question of the inhuman, which is not hermeneutic, and not reflexive, without returning to theology or mysticism?

#### **Focusing on playing the game of debate with ZERO specific end point enables psychic violence, eliminates Otherness, and creates disaffective behaviors**

Halpern 14 (Orit Halpern - associate professor in Sociology at Concordia University in Montréal, “Cybernetic Rationality”, Distinktion: Journal of Social Theory, 4 July 2014, <https://www.tandfonline.com/doi/abs/10.1080/1600910X.2014.923320>, MG s/o PFox and Townes)

Affective logics

What the cybernetic reformulation of logic as ‘~~psychotic’~~ permitted was an abandonment of **ontological concern** with the past and the present in the interest of focusing on **future interactions**. These models measured not what is happening, but prepare us for **what will happen** as a result of finding patterns of past data, that ironically are devoid of historical temporalities. The transformation in truth claims and epistemology opened a new frontier for study – subjective interactions in environments with incomplete information.

These nervous networks and logical rationalities proliferated in the social and human sciences. Cybernetic and communicative concepts of mind were part of a broader shift at the time in concepts of reason, psychology, and consciousness; informing everything from finance and options trading equations, to environmental psychology and urban planning programs of individuals such as Kevin Lynch, and later MIT’s Architecture Machine Group and the Media Lab headed by Nicholas Negroponte, to the political science models of Karl Deutsch at Harvard, and the ‘bounded rationality’ introduced by Herbert Simon and widely considered the foundation of contemporary finance. The post-war social sciences were repositories of these techniques that transformed what had once been a question of political economy, value production, and the organization of human desire and social relations to problems of circulation and communication by way of a new approach to modeling intelligence and agency (Halpern 2014; Simon 1955; Crowther-Heyck 2005; Simon 1992).

This rationality is also sensible, perhaps **affective**; a situation that puts in considerable revision-dominant understandings of digital and computational mediums as distancing, disembodied, or abstract. And if it is one of the dominant assumptions in the study of modern history and governance that liberal subjectivity and economic agency is defined as a logic guided by a reason separate from sense, then these discourses mark a clear contrast. The historian of science Lorraine Daston reminds us that we would do well to recall that those things today considered virtuous and intelligent, such as speed, logic, and definitiveness in action, were not always so. She is explicit: rationality in its cold war formulation, despite the insistence of technocrats, policy-makers, and free-market advocating economists, is not reason as understood by Enlightenment thinkers, liberals, or even modern logicians (Daston 2011; see also MacKenzie 2006; Mirowski 2002).

If this is true, then our financial instruments, markets, governments, organizations, and machines are **rational, affective, sensible, and pre-emptive**, but not reasonable. To recognize the significance of this thinking in our present, it might help to contemplate Brian Massumi’s definition of ‘pre-emption’. Pre-emption, he argues, is not prevention; it is a **different way of knowing the world**. Prevention, he claims, ‘assumes an ability to assess threats empirically and identify their causes’. Pre-emption, on the other hand, is affective; it lacks representation, it is a constant nervous anticipation, at a literally neural if not molecular level, for a never fully articulated threat or future (Massumi 2007, 4).

Cyberneticians, within 10 years from the war, moved from working on anti-aircraft prediction to building systems **without clear end-points or goals**, and embracing an epistemology without final objectives, or perhaps objectivity (even if many practitioners denied this). Nets, taken as systems, are probabilistic scenarios, with multiple states and indefinite run times even if each separate neuron can act definitively. In cognitive and early neuroscience the forms of knowledge being espoused were always framed in terms of **experiment**, never definitive conclusions. ‘Experimental epistemologies’, as McCulloch put it, came to mean that there are never final facts, only ongoing experiments.

These human and social scientists made operative the unknowable space between legibility and emergence, and turned it into a **technological impulse** to proliferate new tools of measurement, diagrams, and interfaces. At the limits of this analysis is the possibility that emergence itself has been automated. As the theorist Luciana Parisi puts it, cybernetics takes hold of the space between infinity and logic, and makes it the very site of technical intervention, the very site to proliferate algorithms into life (Parisi 2013). If cybernetics initially sought to control the future, now control itself became the unclear site of emergence, an indefinable state that was part of networks operating in the future without full definition or information either about end-points or pasts. The problem of how to act under conditions of uncertainty, or how to define a man or a machine, became instead a pragmatic mandate and a focus on process. Instead of asking what is a circuit, a neuron, or a market, human scientists turned to asking what do circuits do? How do agents act? Creating an ongoing opportunity to entangle calculation and life at the level of nervous networks, by correlating the nervous system with the financial and political system.

Memory as a cyclical machine

Having supposedly exorcised the ghosts of historicity, cyberneticians, however, continued to struggle with memory and signification. In a 1952 letter to the cybernetician Norbert Wiener, Gregory Bateson spelled out the problem of memory, time, repetition, and rationality:

What applications of the theory of **games** do is to reinforce the players’ acceptance of the rules and competitive premises, and therefore make it more and more difficult for the players to conceive that there might be **other ways of meeting and dealing with each other** [ … ] I question the wisdom of the static theory as a basis for action in a human world. The theory may be ‘static’ within itself, but its use propagates changes, and I suspect that the long-term changes so propagated are in a ~~paranoidal~~ direction and odious.5

Discussing the premier private consulting group to the **United States** **government and military** on national security and public policy – the RAND Corporation – Bateson makes explicit a new dilemma: violence. In this formulation, players no longer create violence because of a misdirected desire resulting in a loathing for an imagined Other, but instead are led to produce violence through a **self-referential performance within the game**. Bateson correlates ‘static’ games with ~~paranoid~~ ~~schizophrenics~~, as a perceptual problem resulting in repetitive cycles culminating in **potentially genocidal violence** (nuclear war in this case) – in his language a ‘~~paranoidal~~ direction’. Authority emerging from the pure self-reference of the data field is ~~psychotic~~ and comes at the expense of futurity. Bateson fears that the performance of past data paraded as prophecy will produce only **repetition without difference**. In a stunning inversion of psychoanalytic concerns, Bateson recognizes that the ubiquity of computational logics makes distance impossible to achieve, and induces violence, not as a result of any misdirected object choices or imagined enemy Others – game theories have no such formulations within them – but as the result of performing and repeating commands without interpretation. In fact, it is precisely the lack of imagination that defines this condition. Bateson foresees a total war without desire.

Having displaced older terms of consciousness, reason, and desire from the algorithmic rationality of the network, these terms would return in cybernetics under the **guise of visualization, time, and memory**. At the famous Sixth Macy Conference on Circular and Causal Feedback Mechanisms in Biological and Social Systems in 1949 in New York City, memory was increasingly problematized in terms of the relations between its dynamic and stable elements and storage. In this instance the immediacy and temporality of the televisual came to replace the older conceptions of tapes, photographs, and films. McCulloch opened the conference with a beacon and a warning. He offered the example of a new type of tube, in development at Princeton, similar to a cathode ray tube, that beams onto a screen on which items are stored. The persistence of the ‘memory’ of the beam is temporary, and must be refreshed. This idea of a cycling, or scanning, memory McCulloch viewed as offering the possibility of miniaturizing and expanding machine memory (Pias 2003, 31).

His second example was a warning from John von Neumann: even the entire number of neurons in the brain, according to calculation, could not account for the complexity of human behavior and ability. McCulloch reported the finding that ‘the performance of the army ant [ … ] is far more complicated than can be computed by 300 yes or no devices’ (Pias 2003, 31). But this was not to say that these capacities need be understood as illogical or analog. Rather, McCulloch turned to another model that might retain the logical nature of the neurons, but still account for the capacity to learn, and behave at scales beyond the comprehension of computation.

The answer, coming through a range of discussions about protein structure and memory within cells, involved refreshing information in time. Wiener argued, ‘this variability in time here postulated will do in fact the sort of thing that von Neumann wants, that is, the variability need not be fixed as? variability in space, but may actually be a variability in time’. The psychologist John Stroud offered the example of a ‘very large macro-organism called a destroyer’. This military ship has endless ‘metabolic’ changes of small chores throughout the day, but still retains the function of a destroyer. This systemic stability, but internal differentiation and cycling, became the ideal of agency and action in memory (Pias 2003, 35).

McCulloch and Stroud went on to present understandings of memory in terms of an opposition between perfect retention of all information with retroactive selection, and memory as a constantly active site of **processing of information** for further action, based on internal ‘reflectors’ or ‘internal eyes’. ‘We may’, Stroud stated, ‘need only very tiny little reflectors which somehow or other can become a stimulus pattern which is available for this particular mode of operation of our very ordinary **thinking, seeing, and hearing machinery.** This particular pattern of reflectors is what I see as it were with my internal eyes just as what I see when I look at a store window, is a pattern on the retinal mosaic’ (Pias 2003, 121). Mental processes are equated here with processing data, and pattern-seeking, but it is internal ‘eyes’ from within the psychic apparatus that allow a selfreflexive apparatus for deferring decisions and agency. Mind emerges from multiple time systems operating between the real-time present of reception and circulating data, and memory in time, a cyclical ‘refreshing’ as in a television screen system, where change, and differentiation – between the organism and the environment, between networks – becomes possible through the delay and reorganization of circuits from within the organism. The problems of computational representation, the initial problems that were faced in mathematically and logically representing intelligence, were reorganized away from a language of conscious and unconscious, discrete and infinite, reason and psychosis, to the new terms of vacillating temporalities between immediacy and reflexivity.

Bateson, also an attendant at the aforementioned conferences and one of the founders of family therapy and addiction treatment programs, offered one of the more compelling models and practices for rethinking mind in his use of a model of the ‘double bind’ to explain **psychic suffering, addiction, and other maladjusted and compulsive behaviors**. In a conference in 1969, at the National Institute of Health, he offered an example to demonstrate his ideas of both psychology and treatment. He discussed a research project conducted with porpoises trained at Navy research facilities to perform tricks and other trained acts in return for fish. One day, he recounted, one of the porpoises was introduced to a new regimen. Her trainers deprived her of food if she repeated the same trick. Starved if she repeated the same act, but also if she did not perform, the porpoise was caught in a double bind. This experiment was repeated with numerous porpoises, usually culminating in **extreme aggression**, and a descent into what from an anthropomorphic perspective might be labeled **disaffection, confusion, anti-social and violent behavior**. Bateson with his usual lack of reservation was ready to label these dolphins as suffering a ~~paranoid~~ form of ~~schizophrenia~~. The anthropologist was at pains, however, to remind his audience that these ~~psychotic~~ animals were acting rationally. In fact, they were doing exactly what their training as animals in a navy laboratory would lead them to do. Their problem was that they had two conflicting signals. The poor animals, having no perspective on their situation as laboratory experiments, were naturally breaking apart, fissuring their personalities (and Bateson thought they had them) in efforts to be both rebellious and compliant, but above all to act as they had been taught. Bateson argued this was the standard condition for humans in contemporary societies.

Having established the mechanisms that led to a decentered and multiple subject, Bateson commenced to articulate the dangers and possibilities of this condition. He recalled how, between the fourteenth and fifteenth time of demonstration, one of the porpoises ‘appeared much excited’, and for her final performance gave an ‘elaborate’ display, including multiple pieces of behavior of which four were ‘entirely new – never before observed in this species of animal’ (Bateson 2000, 278). These were not solely genetically endowed abilities, then, but were learned, the result of an experiment in time. This process in which the subject, whether a patient or a dolphin, uses the memories of other interactions and other situations to **transform their actions** within the immediate scenario was represented as the site of innovation. The dolphin’s ego (insofar as we decide she has one) was sufficiently weakened to develop **new attachments to objects** in its environment through the memories of its past and of other types of encounters. This re-wired network of relations was what was held to lead to emergence through the re-contextualization of the situation within which the confused and conflicted animal found itself.

Bateson ended in triumph, having now successfully made the psyche inter-subjective and simultaneously amenable to technical appropriation via family therapy (Bateson 2000, 278). The productivity of a ~~schizoid~~ situation rested for Bateson on the discovery made by both communication theory and physics that different times could not communicate directly to one another. Only temporal differences **resist circulation from within the definition of communication** that was being put forward here. Bateson applied this understanding liberally to animals. In cybernetic models the ability of an entity to differentiate itself from its environment and make autonomous choices is contingent on its ability to engage simultaneously in dangerous spatial proximities with other entities and its ability to achieve distance from them in time.

At stake in the negotiation over the nature of networks and the time-scale of analysis was nothing less than **how to encounter difference** – whether between individuals, value in markets, or between vast states during the cold war. A question that perhaps started in psychoanalytic concerns over ~~psychosis~~ found technical realization in cybernetics. For cyberneticians the problem of analogue or digital, otherwise understood as the **limits** between discrete logic and infinity, the separation between the calculable and the incalculable, the representable and the non-representable, and the differences between **subjects and objects**, was transformed into a reconfiguration of memory and storage; a transformation that continues to inform our multiplying fantasies of real-time analytics, while massive data storage infrastructures are erected to insure the permanence, and recyclability, of data.

While the time of neural nets and communication theories is always pre-emptive, the shadow archive haunting the speculative network is one of an endless data repository whose arrangement and visualization might return imagination and agency to subjects. These wavering interactions – between the networked individual and the fetish of data – preoccupy us in the present, speaking through our contemporary concerns with data mining, search engines, and connectivity. The relationship between rationality and control drives the ongoing penetration and application of media technologies as the result of an imperative to seek consciousness through better visualization and collective intelligence through the collaboration of many logical, but hardly reasonable, agents. Architecturally these dual desires incarnate themselves in a **proliferation of interfaces** and a fetish for visualization and interactivity, merged with an obsession to amass and store data in huge systems of data centers and server farms. What had first been articulated as a problem of memory and time has now become a compulsion for analytics.

### 2AC---AT: Cap K

#### **Only the aff can destroy capitalism**

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The technophobes see the first image of cybernetics; Simondon sees the second image of cybernetics and imagines a universal cybernetics or **general allagmatic** to resolve alienation and antagonism between nature and technics. Heidegger sees both mechanism and organism as the impasse of philosophy and therefore wants to go back to another beginning by invoking the pre-Socratic thinkers, an attempt to discover a new cosmotechnics, as I have claimed elsewhere. 96 I believe that it is necessary to read Simondon with Heidegger here, since Simondon’s concept of genesis of technicity resonates with Heidegger’s proposal to **overcome modern technology** by reconstructing a different **thinking** hence another beginning, and in this sense Simondon’s more technologyoriented approach complements Heidegger’s more culture-oriented program. Lyotard, in spite of his fierce critique of cybernetics, allows us to see the importance of the question of sensibility and how it constitutes the postmodern episteme, which may be strategically appropriated to open society to new transformations. These two images of cybernetics have completely different social, economical, and political implications. The organicist epistemology, presenting a new paradigm shift of thought in the twentieth century, is naturalized in practice and it turns out to be nothing organicist but mechanical, like when we use a recursive machine to write a program printing out “**Hello, World**.” Control through tertiary retentions and protensions such as surveillance, social credits, and big data analysis is taking the first path, in which recursive machines are integrating individuals as the constituents of computation. What Deleuze calls the society of control is fully demonstrated in our digital epoch, of which digital control and flexibility (e.g., modulation or performativity) are its means. We may want to say that it is a mechanist use of organicist machines for deterministic use, which, as we wanted to show, is something that has to be reproached, and a broader historical and philosophical perspective opened up, as we have attempted throughout this book. However, let us raise the final question: Is it possible to take seriously the organismic philosophy and transform it into elements of an organology that would allow us to reevaluate actual technological development and leave its finality open?

Organicism is still a philosophy of nature. General systems theory and secondorder cybernetics have moved a step further, but in the twenty-first century, can we go even further toward **elaborating an organological thinking**, one that goes beyond the illusion of human beings as mere observers and machines as replacements for human beings? In order to do so we need to inscribe the cosmos organologically, and this is what cybernetics didn’t do and this is at core of the thinking of cosmotechnics. Cybernetics in the Western tradition has already adopted its “modern cosmology,” namely, astrophysics: **the end of the cosmos**, as some historians have claimed. 97 It is also in this sense that Heidegger sees the end of philosophy and the beginning of a world civilization based exclusively on Western thought. In Chinese cosmotechnics, the cosmos is organic insofar as it is analogical to the body. Chinese medicine is therefore very different from Greek medicine, even though they share certain similarities (for example, diagnosis according to pulses). 98 The cosmos is an organ of principle, governing both the aesthetic and the moral. The heaven-earth that is the name for the cosmos is correlated with the human activities, while these relations are real and maintained by “resonance.” Precisely because of this, Needham considers neo-Confucianism to be a veritable organic philosophy. 99 It is also the reason that Mou Zhongsan, the great New Confucian of the twentieth century, characterizes Chinese philosophy as a moral metaphysics and moral cosmology. 100 Standing against it is treating the cosmos as a mere resource—the eternal goal of the deterritorialization of capital.

With the question of the moral we also come back to the question of episteme, which I reformulate as the question of sensibility, or, if you wish, a reterritorialization against determinism. The destruction of capitalism will happen **not** because it is surpassed by its technology, but because its cosmotechnology is **fundamentally** against the conditions of subsistence and existence. The epistemologies of capitalist technologies can be overcome **only** by different cosmotechnics that provide alternative epistemologies and maintain technodiversity and noodiversity. Or, put another way, the totalization of capitalism through more advanced means can be challenged by inventions and usages only according to **different ontologies and epistemologies**. 101 Looking back at history, the Polynesian gift economy that inspired the work of Marcel Mauss and Georges Bataille has been haunting capitalism ever since, and continues in the anticapitalist thought of anthropologists like David Graeber, though modern science has since long rejected Hau and Mana. This sensibility of the world, of the relation between humans and the cosmos, is different from the modern view, but being at odds with modern science is not an excuse not to develop a cosmotechnical thinking that will organologically inscribe science in its working principle. For a hundred years the absolutization of science has **led to conflict**, while the absolutization doesn’t mean that one is moving toward an end that is called the Absolute, since the Absolute is neither a thing nor a theory of a thing, but is precisely the unthinged (Unbedingt) of an epoch. If we follow Hegel’s analysis in the Vorlesungen über die Ästhetik that the absolute spirit passed through different stages from art in the ancient Greek time to religion and, arriving at the Enlightenment, philosophy, perhaps cybernetics is the current expression of the Absolute, as Günther has analyzed. 102 After Hegel’s verdict on the end of art, we continue to produce more and more artworks. Religions have survived even though they are not compatible with modern science. There are still many Christians, as there are many Buddhists. What sustains religion is not purely fanaticism, but rather faith, and it is in faith that we find the inhuman, as Lyotard found in Saint Augustine’s Confessions. Maybe after the end of the age of reason art will come back with new gestures and as new forms of resistance, which are beyond the linear history that Hegel has perceived. However, all these remain to be thought and explored beyond the Enlightenment humanism. If the end of European philosophy, according to Heidegger, means the need for new forms of thinking to surpass the challenging mode of unconcealment in modern technology, then these new forms of thinking must first render **modern technology contingent before elevating it to necessity**. The fundamental question is the regrounding of technology. We have to emphasize that this is not to add an ethics to AI or robotics, since we won’t be able to change the technological tendency by just adding more values. Instead we have to provide new **frameworks** for future technological developments so that a new geopolitics can emerge that is not based on an apocalyptic singularity but technodiversity; this is also the reason cosmotechnics is a political concept.

What Needham tried to think through in his multiple volumes of work is the relation between ancient Chinese thought and modern Western science and technology. In other words, he wanted to render Chinese thought contemporary: contemporary not in the sense that Chinese thought has already anticipated and is more superior than modern Western science and technology (in the bad spirit of nationalism and ethnocentrism), but rather in the sense that Chinese thought may be useful for showing another way of thinking without being simply opposed to European thought. 103 I hold the view that the contribution of a study of Chinese thought of technology in The Question Concerning Technology in China (and this is by no means limited to China, but has to be open to all cultures and civilizations) is not only the demonstration of a philosophy of the organism, which has been done by Needham, but rather a reopening of the concept of technics as multiple cosmotechnics and the future of technological imaginations. This will necessitate the rediscovery of the **nonmodern epistemologies and the reinvention of epistemes** through the regime of **aesthetics** as responses to the current crisis from the point of view of localities, or as what Augustin Berque calls recosmosizing [récosmiser]. Schiller’s aesthetic education remains important for us today, and it is all the more significant when we recognize it as a political and cultural project, but we can no longer respond to Schiller’s question with the same humanist approach, since future **aesthetic education will be about inhumanity**. Aesthetics is at the base of the episteme in the sense that it is local and constituted by its particular way of **living and sensing,** which are very often mistakenly considered as mere customs. When Whitehead claims that time and space are relational, he is proposing at the same time a new science and a new aesthetics.