As We May Be Doing Philosophy: Informationalism – A New Regime for Philosophy?

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Introduction

When Vanevar Bush published his visionary paper "As we may think" in 1945, he outlined an ambitious futuristic vision of information and communication technologies (ICT) which would serve the purpose of amplifying the intellectual capacity of mankind by means of a highly interconnected network called *memex*. Now, in 2007, the hypertextuality of the Web and the new emerging "semantic tools" (e.g., computational ontologies, see Smith, 2003) offer philosophers such practical tools and engineering visions of shared knowledge construction. And, as humanity moves from the Gutenberg age into a globalised networked information culture, philosophers may increasingly exploit or reject these new opportunities. More than offering one more tool, the contemporary pervasive spread of global, networked information technologies and cultures reactuates the issue of the specificity of philosophy in culture and society. This paper is a three-parts construction. In the first section, I will discuss various historical developments which may shed light on the notion of "regime of expression", focusing on the evolution of textual regimes, the limits of residual orality, the role of specialised languages and controlled vocabularies in the "de-oralisation" of discourse, and possibly emerging post-oral regimes. The main function of the second section is to illustrate, with particular reference to Gilles Deleuze's work, various comprehensions of philosophy as conceptual engineering. The two first sections prepare the ground for a critical coverage in the third and last section on *informationalism* as engineerable metaphysics and on computational ontologies as the ultimale engineer tool.

1   Regimes of expression

Textual regimes of expression

In the course of history, philosophy, seen as an activity, has exploited the inherent potential of oral rhetoric and written human linguistic expression with increased specialisation. In addition, philosophers have included abstract graphical notation, diverse diagrammatic representations, and more rarely, figurative pictorial material as an integral part of their discourse. But, as Biggs (2004a, p. 3; see also 2004b) has noted, when dealing with Wittgenstein's manuscripts, "the literature about 'what is a text' […] is more extensive than the literature on 'what is a graphic'".

Plato's strong criticism of writing as constituting the best "technology of the mind" (Phaedrus, 274c-275b) has been extensively commented (Auroux, 1994), but rarely followed by later philosophers. We may suspect that even Plato himself did not confine himself to some primitive oral method untouched by literacy (e.g., while defending the ideal of a dialogical exchange with Menon on mathematics, Plato draws figures in the sand, op. cit., p. 26). As a matter of fact, those very thinkers who have been exalting the virtues of face-to-face directness, of dialogical encounter, have also been prolific producers and refiners of text-based discourse. Moreover, as noted by Ong (Ong, 2002), "Plato's entire epistemology was unwittingly a programmed rejection of the old oral, mobile, warm, personally interactive lifeworld of oral culture (represented by the poets, whom he would not allow into his Republic). The Platonic ideas are voiceless, immobile, devoid of all warmth, not interactive but isolated, not part of the human lifeworld at all but utterly above and beyond it." (op. cit., p. 82). So, Plato's criticism of writing and discourse in praise of a dialogical method did not mean that he embraced the ideals of an already receding pure oral culture. His didactic cross-questioning (*elenchos*) may have more roots in widely used political audit techniques of politicians and administrators after their term of office had expired (the *euthyna* procedure) than in some mythical primeval orality. Its primary purpose is clarification of unhealthy thought (Clay, 2000, p. 180 cited in Gabor, 2002, p.12). *Dialectic* is defended as the most refined philosophical method to search for the truth in opposition to the controversial *eristic* method of the Sophists. None of these oral, face-to-face methods defended or criticised by Plato refer to a natural conversational situation but

to academic or administrative techniques rooted in some well-entrenched institutional practice.

Indeed, during the long history of Western and Early Arabic philosophy, an evolution took place encouraging the development and dissemination of increasingly specialised terminologies and argumentative techniques. Many of these techniques were common in oral situations (lectures, disputes, recitation) and in writing. Gradually, pure textual discourse forms emerged. As an outcome of this process, the rule of textual regimes of expression became firmly consolidated reflecting a process, which took many centuries. In spite of this evolution, the textualisation of the philosophical discourse has not resulted in a plain rejection of face-to-face audible spoken communication (speech) but rather in a more subtle cultural relegation of orality to a minor role. While speech has been acknowledged as "natural language" and as the substrate of any written discourse, it has, if not always in theory, at least in practice been weighed and found inadequate as the primary means of "doing philosophy". Speech in contrast with oral techniques, as illustrated by the Platonic methods briefly described above, is under the rule of textual regimes, at most, useful for preparing, commenting, or refining a written discourse already enriched with textual knowledge.

Toward post-oral regimes

Walter Ong's (Ong, 2002) distinction between "primary" and "residual orality" may shed some light on the complex contact-area between diverse stages of orality and textual literacy. Primary orality, in Ong's perspective, refers to and expresses knowledge "totally untouched by any knowledge of writing or print" (op.cit. p.12) and may, following Leroi-Gouran (1965), maintain deep ties with gestuality. Residual orality presupposes an exposure to writing or print and involves rather complex mixtures of spoken and written verbality. With reference to Ong's notion of orality, the growth of the textual regimes in philosophy may be interpreted as reflecting the late evolution of residual orality dynamics and possibly exhibiting the first signs of a post-oral period. Further research may study the presence vs. disappearance of distinctive characteristics of primary orality as a possible indicator of this evolution. One may also assess the degree of de-oralisation of philosophical discourse using the basic characteristics of primary orality formulated by Ong (op. cit., pp 34-54.): (a) the disappearance of formulaic

styling replaced in modern philosophy by procedural devices, (b) the replacement of aggregative expressiveness by subordination mechanisms (e.g. systems of hierarchical dependency), (c) the replacement of mnemonic and ritual redundancy by stylistic parsimony, (d) the replacement of polemic, agonistic contrastive discourse, and of categories of empathy by various distancing techniques, and finally, (e) the replacement of situational descriptions and points of view by abstract descriptions.

However, Ong's and Goody's approaches (see Goody, 1968, 1986 and 1987) have addressed primarily the relationship between orality and literacy. As one can expect, they have not dealt with the recent and challenging theme of a possible severing of ties between oral regimes and specialised languages. Early philosophical texts depend heavily on oral rhetoric and conversational dynamics. The written discourse of theologians, lawyers and philosophers has since Antiquity steadily evolved. This gradual change has led from an early formative period, during which texts and transcripts still exhibited a high degree of residual orality, to a late period, during which increasingly specialised languages have added various degrees of embedded argumentational complexity unavailable in plain speech. This late stage may prepare the ground for a post-oral period. The evidence for such a change resides not as much in complexity itself, spoken or written language actually being inherently complex, but in the replacement of one kind of complexity inherited and cultivated through residual orality by another kind of planned, controlled, engineered complexity creating a de facto need for repetitive or automatic treatment.

The concept of "philosophical text" (and also more generally "text") may already hide various degrees of embedded complexity and multiple structures that may challenge even advanced digital transcription techniques (see Huitfeldt, 1992). Critical editors and interpreters have been forced to revise the status of "what is the text" (deRose 2002), as it is the case with the transcription of Wittgenstein's *Nachlass* by Pichler, who acknowledges that his "aim in transcription is not to represent as correctly as possible the originals, but rather to prepare from the original text another text so as to serve as accurately as possible certain interests in the text" (Pichler 1995: p. 691).

So eventually, philosophical texts may discard early conceptions of what constitutes a text and evolve towards a situation where residual orality wanes away, being replaced by argumentative devices with no apparent antecedents in neither primary nor residual orality. These emerging and

future argumentative devices in philosophy may, in my view, reflect and exploit various computing automatisms, with no root in oral practice. Referring to Margaret Mead's generational model (Mead 1970), one may imagine that philosophical regimes may evolve from a post-figurative to a co-figurative stage. While in post-figurative regimes philosophical discourse depends heavily on established oral regimes, in co-figurative post-oral regimes philosophers may look for contemporary models in formal languages, automatism and various network ideals. A post-oral philosophical regime may indeed, involve a radical departure from more than the preliterate heritage. It may depart more profoundly from logocentrism, characterised by Derrida as "the metaphysics of phonetic writing" (Derrida, 1967, p.11) towards a regime of "scriptural symbolism" (a term, which according to Ortigues, 1962, p. 62 cited in op. cit., p. 13 exploits "abuses of vocabulary" e.g. in mathematical "language", which is not a language, but *stricto sensu*, a "characteristic" in the authors' view). It may explore new territories of discourse, which may be expressed, not any more by what we nowadays still perceive as textual expression, but by means of systems exploiting old and new kinds of scriptural symbolisms and processes. I call these "automatised artefacts", referring not only to the computational means available, but also to new cultural, mental competences, which may be necessary to acquire.

Specialisation and processing in the discourse

The departure from oral naturalness towards domain-specialisation can be identified by three evolutionary characteristics: firstly, the introduction and increasingly systematic use of *restricted terminologies* (specialised lexica without standardised processing) and rethorical figures; secondly, the additional *formal notational systems*; and thirdly, the emergence and application of *formal procedures*, which may be argumentative, purely logical or algorithmic.

The first departure from conversational naturalness through the introduction and systematic use of these characteristics can be observed already in the fragments of the Presocratic philosophers that have survived through time. Restricted terminologies appear, in my view, to be consubstantial with philosophy. Even those thinkers, who have deployed considerable efforts to remain "simple" and avoided formal notation, have, even so, ended exploit-

ing some restricted terminology with engineering precision, as it is the case, e.g., in Martin Buber's deceivingly simple text "I and thou" (Buber, 1923).

While using a specialised lexicon is not limited to philosophy, but indeed, reflects various life situations, it is the planned processing of a restricted terminology that brings philosophy together with a large portion of the scientific discourse in a category of its own. Adding formal notational systems to specialised language does not only call for some new kind of "thinking", but also for various degrees of standardised processing based on scriptural symbolism, e.g., in the age of computers, various algorithms. Classical logical notation is only one among several possible instances of *scriptural symbolism*. It is important to note that this evolution has taken place considerably long time before the introduction of computers and of early notions of "computing". This justifies in our view the use of the general term "scriptural symbolism".

However, specialised languages may be viewed as forerunners of *controlled languages* (vocabulary and syntax), tailored with the sole purpose to make some specific processing possible. Such controlled languages may rely heavily on diverse kinds of scriptural symbolism, e.g. mark-up languages, algorithmic agents etc. and instaure new regimes of expression, taking over the discourse and emptying what is left of the "text" of the last remnants of residual orality.

The move from primary orality to residual orality under diverse textual regimes, and the evolution from textual regimes reproducing oral communication, to textual regimes mixing orality and scriptural symbolism, constitutes in my view the prehistory of the emerging regime of informationalism. As a consequence, the challenge, which information technologies pose to philosophers, is not limited to the emergence of "new regimes of expressions" or "old discourses in new cloak". Rather, the challenge resides in the dissemination and adoption of the *paradigm of informationalism*, a term I adopt loosely from Castells (Castells, 2004). The real challenge resides in what I, for the sake of brevity, will, refer to and discuss further in this paper as "informationalism" or, more elaborately as *informational substantialism*.

2   Philosophy as conceptual engineering

Engineering concepts

"Doing philosophy" involves some amount of craft or *engineering* as an integral part of the philosopher's activity in general, and of the philosopher's discourse in particular. I understand "engineering" as an activity that takes place irrespectively of which particular kind of work, school, or product the philosopher may lean towards. As a result, the notion of conceptual engineering applies, in our view, as much to philosophical discourse as to everyday speech. It covers as much the discourse found in "popular philosophy", "existential" discourse (e.g. the theatre plays of J.-P. Sartre), as distinctively technical philosophies (e.g., analytical philosophies, the *Principia Mathematica*, ...). Conceptual engineering in philosophy takes place irrespective of the philosopher's language and style and of the philosopher's particular view on language.

The notion of "conceptual engineering" presupposes some various degrees of premeditated design. Actually the degree of awareness a philosopher may or may not possess with regards to design seems to be less decisive. One may just state that it is sufficient that some conceptual system or design is detectable in the work of the philosopher in order to justify the use of the term "engineering". It also presupposes a reduced set of linguistic and non-linguistic "tools", which may be used to collect, assemble, and deploy conceptual constructs. Between the "thinking" of the philosopher and the "work", I assume however the presence of artefacts, which not only enable the production of the work, but impose to some extent a "regime of expression" on the thinker.

Simon Blackburn defines his activity as a philosopher in simple, perhaps, too simple, but, though quite illustrative terms. "I would prefer to introduce myself as doing conceptual engineering. For just as an engineer studies the structure of material things, so the philosopher studies the structure of thought. Understanding the structure involves seeing how parts function and how they interconnect. It means knowing what would happen for better or worse if changes were made. This is what we aim at when we investigate the structures that shape our view of the world. Our concepts or ideas form the mental housing in which we live. We may end up proud of the structures we have built. Or we may believe that they need dismantling

and starting afresh. But first, we have to know what they are." (Blackburn, 1999). For Blackburn, defining himself as a conceptual engineer involves understanding how concepts "are", by studying how they "interconnect" and "function". Blackburn's definition presents a rather mechanistic view of the nature of conceptual items and of their assembly. Indeed, Blackburn's engineering approach may be viewed, if taken literally, as being not *that* remote from understanding how to repair a car engine or computer.

Gilles Deleuze, himself son of an engineer, viewed philosophy not only as *partly* engineered (one may read Blackburn's view of conceptual engineering as being solely a means towards an end) but as *actually* being engineering (Welchman, p. 213; Deleuze, 1968) and little else if anything else. This consistent engineering view is further developed and emphasised repeatedly by Deleuze and his co-author Félix Guattari in the first chapter of their late work "Qu'est ce que la philosophie?" (1991). Deleuze does not want philosophy to remain a reverential conservation of antiques. Nor does he want "conceptual engineering" to be limited to modernise old potiches, read inherited canonical themes. In Deleuze's view, philosophy is a construction site, and the construction that takes place there is a nonsequenial process involving assembly, disassembly, reassembly, and, unavoidably, production of junk material.

There are no static concepts

It may now be evident that Blackburn and Deleuze agree only superficially on what conceptual engineering may look like. Blackburn emphasises controllability, validation and reliability. Deleuze and Guattari on the contrary endeavour to oppose what they experience as a contemporary decay and fossilisation of the notion of "concept" by emphasising the creative, open-ended nomadic invention of concepts as "event", "happenings" assembled from heterogeneous elements. Understandably, such concepts that are to be engineered, crafted or designed by philosophers, are neither old vases left in the window in need of periodical restoration, nor empty seats left by their occupants. Thus, concepts are neither unearthed from a philosophical underground, nor borrowed *as is*, nor re-used, as parts taken from an old engine in order to produce a slightly more refined remake. For Deleuze, philosophy is about "inventing [such] concepts" with equal importance given to "inventing" and "concept". While smart disassembly, and reassembly of parts may be part of the activity, it does not become philosophy

before invention takes place. Deleuze and Guattari's insistence on concepts as an event of life relies heavily on Michel Foucault's bio-philosophy, as witnessed by the authors' programmatic quotation of the inventor of the concept of biopower: "To shape concepts is a way of living and not of killing life. It is a way of living in relative mobility and it is not an attempt to immobilise life." (Foucault, 1994, pp. 774f). For Deleuze "[the] philosophical concept is related to the cry. It is very much alive, it is a way of life" (Deleuze's lecture, 1980; my translation)[1]. Hence, the Deleuzian concept ceases to be a tangible, monolithic, static construction. It carries along the two characteristics of multiplicity and heterogeneity. The philosopher exploits the narrative power of the discourse, which is condensed into concepts. A concept possesses a local density, expressing some kind of singularity *hic et nunc*.

Two Deleuzian terms express the situational and fluid nature of concepts. The first is the term *haecceity*[2], which expresses the situated coherence of the concept. This coherence remains tied to the conjunctional, confluent, hybrid, and transient nature of concepts. The second term is the Greek notion of *tynkhanon*, a term used by the Stoics with the meaning "that which happens" (Theureau, 1999). Contrary to the contemporary notion of "news" or "novelty", *tynkhanon* carries no sense of irruption, of never seen, nor never-pre-existing. The *tynkhanon* does not refer to some hidden truth revealed by some tricks of lexical magic. It connotes, rather, a notion of confluence, conjunction. It is more related to mathematical notions met in nonlinear dynamical systems (Golub & Baker, 1996; Thom, 1972) and chaos theory, or in Polanyi's notion of emergence (sudden focusing from marginal clues), than to some lexical adequacy (see Polanyi, 1962, 1967). In Deleuzian terms, a philosophical concept "takes place", "happens". The Deleuzian translation of *tynkhanon* may therefore be "conjunctional events" or "singularity in a situation".

Additionally, concepts are not only characterised by their potential to "singularise", to condense, to focus, or to situate. Concepts are also producers of difference and repetitions, related to what Deleuze calls objectiles, morphological variations of a single theme (e.g. sand-dunes in the desert, counterpoint patterns in Bach's music, digital pattern variations, etc.), conveying both self-identity and multiplicity, as well as rhythm in time, space and thought (Deleuze, 1988).

Eradicating hierarchical binarism

Blackburn and Deleuze may both prosper with playing with a conceptual Lego-set. While Blackburn would be concerned with coherence, functionality and verifiability of the construction, Deleuze and Guattari may favour more the production of desire while tinkering with the building blocks, than by contemplating the full assemblage.

For, contrary to a rocket engineer or computer designer, we cannot know what a philosopher can do: "The philosopher becomes a hunter-gatherer, an original sinner, a fire machine, a mind-fucker, a metamorphic resonance, a population all to himself, and whose invention of concepts does not lead to the construction of an architectonic model or monument but cultivates an ambulant population of relayers, a positive feedback system that connect and convolute things in ways that defy established orders and critically interrogates and challenges existing disciplines of thought-control" (Ansell-Pearson, 1997, p. 14). This is quite far away from engineering as understood by the NASA. The Deleuzian approach to conceptual engineering in philosophy appears to be seriously challenging traditional and static notions of concepts as lexical tags. Deleuze and Guattari eject models for thought, knowledge and experience based on single-rooted hierarchical conceptual contructions, best illustrated by the layout of Linnaean taxonomies (Linnaeus, 1735) and phylogenetic trees. Conceptual creation needs to leave binarism, since the "pivotal taproot provides no better understanding than the dichotomous roots. [...] Binary logic and biunivocal relationships still dominate psychonanalysis […], linguistics, structuralism and even information science." (1980, p. 6 in Massumi's translation). The concept engineer needs to explore *radicle-systems* or *rhizomes*. With reference to James Joyce's "multiple roots" and Nietzsche's aphorisms, the authors want to shatter "the linear unity of knowledge", stating that "this time, the principal root has aborted, or its tip has been destroyed: an immediate, indefinite multiplicity of secondary roots grafts unto it and undergoes aflourishing development" (ibid). Replacing "root-cosmos" by "radicle-chaosmos" (op.cit. p.7), Deleuze and Guattari provide radical, or to take after their terminology, "radicle-like" critical perspectives on recent semantic visions to be realised by means of computational ontologies, which fuel the Semantic Web vision (cp. criticism of Berners-Lee, 2001 by Veltman; Ranganathan and Dahlberg 1931).

Already in 1990, well before the emergence of the Internet, and of the more recent Semantic Web vision, Deleuze warned against two powerfull contemporary illusions, the first being the pseudo-creative ideology sold by marketing experts and product designers (French *concepteurs* developing and selling "concepts"), and the second being the claim of some "friends of the concept" to be able to "put the concept in a computer" (Deleuze, 1990). Deleuze may thus be considered as a powerful critic of various brands of conceptual and informational substantialism and a reviver of the still only partially understood Nietzschean idea of concept creation.

Two kinds of conceptual engineering

Engineering is thought to deal with design of machines and physical constructions. Information technologies and automata theory have propelled us into the realm of engineering non-physical virtual systems such as computer programmes, Web Sites or "knowledge bases". Increasingly, the notion of "machine" or "mechanisms" is not to be taken in the strict sense of "physical mechanical devices", but more generally, as "machine-like arrangements". These arrangements (a rather poor translation of Deleuze's use of the term *agencement*) of physical, social and mental nature express the more general, less obvious notion of *machinic thinking*, which pervades Deleuze's and Guattari's work. The machinic domain of the "societies of control" as described by Deleuze in his book on Michel Foucault (Deleuze, 1986), is a society where power is "exercised through machines that directly organize the brains (in communication systems, information networks etc.) [...] toward a state of autonomous alienation from the sense of life and the desire for creativity" (Hardt & Negri, 2000, p. 23). So, to paraphrase the last quotation, the ambition of conceptual engineering in philosophy, or more generally information modelling, is not to produce systems autonomously alienated from the life-context which produced them, but to become and remain a function of life. Following Deleuze, I propose a gradual distinction between two kinds of engineering visions in philosophical activity, and, more generally in concept modelling: the first being a Deleuzian desire-driven crafting of concepts, the second being automated and alienating machinic engineering. Conceptual engineering is, following Foucault, Deleuze and Guattari, not what Aristotle referred to as *technea*, physical and mental arrangements and activities, whose purpose is "to create what nature is unable to accomplish" and "interposes between nature and

humanity a kind of creative mediation"(Guattari, 1991, p. 1; my translation).

Daniel Dennett (1995, p.3 cit. by Welchman, op. cit. p. 222) assumes that some *unconscious engineering* takes place in all human activity, also in that particular kind of activities named "philosophy". So "engineering" does not need to be premeditated. It just needs to be at work as a system of production. Meanwhile, engineering implies, following Dennett, some notion of a design space. Translated loosely to Deleuze's terminology, unconscious engineering may express some *agencement* (*agency*). The interesting thing about machinic agency is that it possesses some code that may spill over from one implementation to another (this is one aspect of the Deleuzian deterritorialisation). The design *in se* can acquire productive autonomy.

3   Informationalism: the substitution of "this" by means of data

Posthumanism in the making

Manuel Castells offers a pragmatic, utilitarian, and rather harmless definition of *informationalism* as "a technological paradigm based on the augmentation of the human capacity of information processing and communication made possible by the revolutions in microelectronics, software, and genetic engineering […] It is the technological paradigm that constitutes the material basis of early 21st century societies" (Castells, 2004). The initial impression of innocuous technological evolution, however, disappears rapidly when Castells emphasises the revolutionary, generalising nature of ICT and the rapid growth of information society. It constitutes a simultaneous recapitulation and take-over of "previous historical developments of information and communication technologies (such as speech, printing, the telegraph or the non-digital telephone). It tends inherently toward universality, ubiquity and geneality. It possesses three basic properties, which explain its multidimensional expanding potential: the first being its "self-expanding processing and communicating capacity in terms of volume, complexity, and speed", the second being its "recombining ability on the basis of digitization and recurrent communication", and the third being its "distributing flexibility through interactive, digitized networking"(ibid).

Keeping Castells's definition and the previous discussion in mind, one may attempt to refine the definition of informationalism by distinguishing between four possible versions of the paradigm:

The first covers the most basic definition of Castells and may be labelled *practical and utilitarian informationalism.* However, it derives its power from alleged intrinsic properties, some kind of embodied networking rhizomatic power animating ICTs.

The second version may be labelled *totalitarian informationalism* and is directly related to Michel Foucault's notion of bio-technological power (or: biopower). It involves not only computer networking and traditional media (e.g., ear-tapping, video surveillance), but extends its domain to social engineering and mental engineering.

The third, most challenging version, implied in Castell's discussion, but treated mostly from a very general ethical perspective, may be labelled *posthuman informationalism.* The term refers to various visions, belief-sytems, political, and scientific agendas which converge toward possible modifications of "being human" by humans. Posthuman informationalism covers the informational interpretation of biogenetic engineering as 'transcription machinery'. It addresses also the notion of extending *humanhood* to open-ended becoming-versions of *posthumanhood.* It refers to diverse cyborg utopias, as well as exploitation of the notion of virtuality to explore extensions or replacements in order to transgress the biologically inherited constraints of earth-bound body experience. It reactuates notions of extension of the "I" to virtual spheres and various exosomatic utopias. It offers a new kind of metaphysical programme, where humans are put in charge of the engineering of a postphysical human. It revives themes from literature and cinema, and expresses the constant concern and desire of Western culture for human automata, a theme covered extensively by Deleuze's works on cinema (Deleuze, 1983 and 1985).

One may argue that informationalism constitutes both a paradigm in the Kuhnian sense (Kuhn, 1970), and a *discourse* and *episteme* as understood by Foucault (1966). It is also agitating the spectre of totalitarian regimes integrating *inter alia*:

- A post-mechanic industrial logic (e.g., anything can be produced given the mastery of an informational description of objects, so "cars" are not any longer cars, but physical instances of an informational design);

- A socio-political discourse tending to reframe "social structure" in terms of "information structure" (see Beck, Giddens & Lasch, 1994);
- New cognitive and mental strategies applied by individuals to themselves (following Foucault's notion of biopower).

Engineerable metaphysics

Informationalism relies on a vision of reality, which combines in a novel way a basic world-view with a powerful production principle. Hence, the term *engineerable metaphysics* may suitably describe this vision. Engineerable metaphysics presupposes a *discourse* and an *episteme* telling where the reality of objects in the world may reside. It may be formulated as a semi-philosophical, semi-technical programme, building on a few but powerful assertions (I use capital letters in the following to distinguish some concepts underlying engineerable metaphysics from their normal usage):

1. The World is populated with Objects.

2. Concrete Objects in the World possess phenomenal and *evident* surface information, which may be immediately accessible to senses or to sensory devices. The surface information may be of a general kind (e.g. my car may have wheels) or of a real kind (e.g. my car has worn tyres).

3. Abstract Objects in the World also possess, house, contain hidden Latent Information, not immediately accessible to senses or to sensory devices.

4. Concrete Objects may contain Abstract Objects.

5. Purely Abstract Objects do not possess evident phenomenal information. Such objects only contain Latent Information.

6. Concepts are the mappings of such Abstract Objects to themselves, or of Abstract Objects to Concrete Objects.

7. Information Structures constitute not only descriptors of latent information but may serve also as genitors of Real Concrete Objects in the World (e.g., the abstract description of "cars" may be used to actually produce the cars which I will drive next week) .

8. Objects become interesting when an Information Structure may be mapped onto them.

9. Whatever possesses a revealed Latent Information and is mapped as a processable Information Structure qualifies this "whatever" as an Object.

10. Such Objects, real, concrete or abstract may be Things, Persons, Relation, Characteristics or Events.

11. The raison d'être of Objects in this World is to yield Information Structures.

12. When the Information Structure can be revealed by some mapping, the Object may be, for all practical purposes, replaced by its Information Structure. This is the *substitution argument*.

13. Reality tends to reside more in the Information Structure than in the Object.

14. Data is what makes Information Structures mappable and processable.

15. Natural Language (natural speech) tends to be inadequate to describe such Objects.

Conclusion

Computational ontologies (Smith, 2003) offer the promise to implement a part of the programme outlined above. A representative definition may be found in Smith (op. cit., p. 155) which defines a computational ontology as an attempt to "provide a definitive and exhaustive classification of entities in all spheres of being. The classification should be definitive in the sense that it can serve as an answer to such questions as: What classes of entities are needed for a complete description and explanation of all the goings-on in the universe? Or: What classes of entities are needed to give an account of what makes true all truths? It should be exhaustive in the sense that all types of entities should be included in the classification, including also the types of relations by which entities are *tied* together to form larger wholes."

If one adds *processing power*, e.g. by means of computer algorithm, on top of the *descriptive power* of such computational ontologies, whose ambition is to describe the characteristics of objects in the world and of their *ties*, one moves disturbingly close to *engineering* the metaphysical programme outlined above. Recent "transgressive" approaches to cell genetics, as illustrated by biophysicist Albert Libchaber's effort to study and reproduce protein self-assembly as computation and molecular evolution as "transcription machinery" (Noireaux, 2005), build upon such an informational model.

It may be wise to go back to, among others, Deleuze, Foucault, Bergson, Guattari, and to ask what philosophers may become in the age of informationalism.

References

Ansell-Pearson, K., (Ed.) (1997) *Deleuze and Philosophy, The Difference Engineer.* Warwick Studies in European Philosophy, London: Routledge.

Auroux, S., (1994) *La révolution technologique de la grammatisation.* Paris: Ed. Mardaga.

Beck, U., Giddens, A. and Lash, S. (1994), (eds.), *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order.* Cambridge: Polity.

Berners-Lee, T. et al. (2001) The Semantic Web – A new form of Web content that imeaningful to computers will unleash a revolution of new possibilities. *Scientific American*, May 2001.

Biggs, M. (2004a) What Characterises Pictures and Text? *Literary and Linguistic Computing*, 19, 3, 2004, pp. 265-272.

Biggs, M. (2004b) Visualisation and Wittgenstein's Tractatus. In: Malcolm, M. (ed.) *Multidisciplinary Approaches to Visual Representations and Interpretations*. Amsterdam: Elsevier B.V., pp. 293-303.)

Blackburn, S. (1999) *Think: A Compelling Introduction to Philosophy.* Oxford: Oxford University Press:

Boss, G. (1978) « La langue des philosophes », *Revue de Théologie et de Philosophie*, v. 110, no. 3, Lausanne.

Boss, G. (1987) *Les machines à penser, l'homme et l'ordinateur.* Zürich, Grand Midi.

Boss, G. & Longeart, M. (1991) « Représentation philosophique par réseau sémantique variable », *Laval Théologique et Philosophique*, v. 47, no 2, Québec.

Boss, G. & Longeart, M. (1993) Intelligence artificielle ou philosophie sur ordinateur, *Revue de Synthèse*, IV, 1993, pp.255-279. Paris.

Buber, M. (1923) *Ich und Du*. Leipzig (English translation by Kaufmann, W., *I and Thou, Martin Buber, A new translation, with a prologue and notes*. New York: Charles Scriner's Sons.)

Bush, V. (1945) As we may think. *Atlantic Monthly*, July 1945. [available from various Internet addresses , e.g., http://www.theatlantic.com/doc/194507/bush, last accessed September 15th, 2007]

Castells, M. (2004) Informationalism, Networks, and the Network Society: A Theoretical Blueprint. In: Castells, M., Ed. *The Network Society, A Cross-cultural perspective*. Northhampton, MA: Edward Elgar, pp.3-48.

Clay, D. (2000) *Platonic Questions: Dialogues with the Silent Philosopher*. University Park, Pennsylvania: The Pennsylvania State University Press.

D'Arcy Thompson, W. (1917) *On Growth and Form*. [2nd Ed., reprinted, Cambridge: Cambridge University Press, 1968.]

Dahlberg, I. (1995) Conceptual Structures and Systematization. *International Forum on Information and Documentation*, vol. 20, no. 3, July 1995, pp. 9-24.

Dahlberg, I. (1974) *Grundlagen universaler Wissensordnung : Probleme und Möglichkeiten eines universalen Klassifikationssystems des Wissens*. Hrsg. von der Deutschen Gesellschaft für Dokumentation e. V. (DGD), Frankfurt/Main, Pullach bei München: Verlag Dokumentation.

Deleuze, G. (1968) *Différence et répétition*. Paris: PUF.

Deleuze, G. & Guattari, F. (1980) *Capitalisme et Schizophrénie. Volume II: Mille Plateaux*. Paris: Éditions de Minuit. [Cited from English translation Deleuze, G. & Guattari, F. (1987) A Thousand Plateaus Capitalism and Schizophrenia. Translated and with a foreword by Brian Massumi, London-NewYork: The Continuum Publishing Company.

Deleuze, G. (1980) *Séminaire enregistré sur Leibniz* [Available online as mp3 recordings of Deleuze lectures at Université de Vincennes at http://www.webdeleuze.com last accessed September 15th, 2007]

Deleuze. G. (1983 and1985) *L'Image-mouvement et l'Image-temps*. II. Vols, Vol. I 1983, Vol. II 1985, Paris: Les Éditions de Minuit.

Deleuze, G. (1986) *Foucault*. Paris: Les Éditions de Minuit.

Deleuze, G. (1988), *Le Pli, sur Leibniz*. Paris: PUF.

Deleuze, G. (1990) Qu'est-ce que la philosophie ? *Revue Chimères*, n° 8, mai 1990, Paris.

Deleuze, G. & Guattari, F. (1991) *Qu'est-ce que la philosophie*. Paris: PUF.

Dennett, D. C. (1995) *Darwin's Dangerous Idea: Evolution and the Meaning of Life*. London: Allen Lane / Penguin.

Derrida, J. (1967) *De la Grammatologie*. Paris: Les Éditions de Minuit.

DeRose, S. J., Durand, D G., Mylonas, E. and Renear, A. H. (1990) 'What is Text, Really?', *Journal of Computing in Higher Education*, 1(2): 3–26 [Reprinted in: 1997 as a "classic reprint" with invited commentary and authors' replies in the ACM/SIGDOC, Journal of Computer Documentation 21(3): 1–24].

Foucault, M. (1966) *Les mots et les choses. Une archéologie des sciences humaines*. Collection «Bibliothèque des sciences humaines», Paris: Gallimard.

Foucault, M. (1994) La vie: l'expérience et la science. *Dits et écrits*, t. 4, Paris, Gallimard, 1994, pp. 774-5

Gabor, O. (2002) *Dialogical Writing in Philosophy and Literature: A study on Plato's Crito and Gorgias and Peacock's Nightmare Abbey*. Thesis submitted to the Faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Arts in English, April 17, 2002, Blacksburg: Virginia Tech.

Gollub, J. P. & Baker, G. L. (1996). *Chaotic dynamics*. Cambridge : Cambridge University Press.

Goody, J. ed. (1968) *Literacy in Traditional Societies*. Cambridge: University Printing House.

Goody, J. (1986) *The Logic of Writing and the Organization of Society*. Studies in Literacy, the Family, Culture and the State. Cambridge: Cambridge University Press.

Goody, J. (1987) *The Interface between the Written and the Oral*. (Studies in Literacy, the Family, Culture and the State). Cambridge: Cambridge University Press.

Guattari, F. (1991) L'hétérogénèse machinique, *Chimères*, No. 11,1991, pp.1-19

Hardt, M. & Negri, A. (2000) *Empire*. Cambridge, Massachusetts- London, England: Harvard University Press.

Kuhn, T. S. (1970) *The Structure of Scientific Revolutions*. Chicago: Univ. of Chicago Press

Leroi-Gourhan, A. (1965), *Le geste et la parole*. Paris: Albin Michel. TomeI: Technique et langage. 1964, Tome II: La mémoire et les rythmes. 1965

Linnaeus, C. (1735) *Systema Naturae*. [12th edition available online at http://gallica.bnf.fr/Catalogue/noticesInd/FRBNF37273248.htm#listeUC last accessed 15th September 2007]

Mead, M, (1970) *Culture and Commitment: A study of the Generation Gap*. New York: Doubleday (Natural History Press, published for the American Museum of Natural History).

Noireaux V. et al (2005) Toward an artificial cell based on gene expression in vesicles. *Phys. Biol.*, No. 2, 3, September 2005, pp.1-8.

Ong, W. J. (2002) *Orality and Literacy: The Technologizing of the Word*. Routledge, London and New York, (2nd edition).

Pichler, A. (1995) 'Transcriptions, Texts and Interpretations' in: Johannessen, K. & T. Nordenstam (eds.) *Culture and Value: philosophy and the cultural sciences*. Pp. 690-695. Die Österreichische Ludwig Wittgenstein Gesellschaft, Kirchberg a/W, Austria

Peirce, C. S. (1931-1935): *Collected Papers*. vol.1-6 (ed. by C. Hartshorne et P. Weiss), Cambridge (Mass.), Harvard University Press;

Peirce, C. S. (1958): *Collected Papers*. vol.7-8 (sous la dir. d'A.W. Burks),

Polanyi, M (1962) *Personal Knowledge: Towards a Post-Critical Philosophy*. Chicago : University of Chicago Press.

Polanyi, M (1967) *The Tacit Dimension*. Repr. Gloucester, Mass. : Peter Smith, 1983.

Ortigues, E. (1962) *Le Discours et le Symbole*. Paris, Aubier [2nd ed. 1977].

Ranganathan, S. R. (1931) *The Five Laws of Library Science*. Madras Library Association (Madras, India) and Edward Goldston (London, UK). [available online at http://dlist.sir.arizona.edu/1220/ last accessed 15th September 2007]

Ranganathan, S. R. (1951) *Classification and Communication*. University of Delhi (Delhi, India).). [available online at http://dlist.sir.arizona.edu/1150/ last accessed 15th September 2007]

Smith, B. (2003) Ontology, in Floridi, L. (ed.), *Blackwell Guide to the Philosophy of Computing and Information*. Oxford: Blackwell, pp155–166.

Theureau, J. (1999) Activité-signe & phanéroscopie, conférence in: *Séminaire interdisciplinaire Phiteco «Signes & Techniques: Sémiotique & Technologie»*, 18-28 Janvier, Compiègne.

Thom, R. (1972) *Structural Stability and Morphogenesis. An Outline of a General Theory of Models.* Translated from the French edition by D.H. Fowler. Reading (MA): W. A. Benjamin.(1976) originally published as *Stabilité structurelle et morphogénèse. Essai d'une théorie generale des modeles*.

Veltman, K, (2004) Towards a Semantic Web for Culture, *Journal of Digital Information*, Volume 4 Issue 4, Article No. 255, 2004-03-15 [available online at http://jodi.tamu.edu/Articles/v04/i04/Veltman/ last accessed 15th September 2007] .

Welchman, A., (1997) Machinic Thinking' in Ansell-Pearson, K. (ed.) *Deleuze and Philosophy* (London: Routledge 1997), pp. 211–33; reprinted in Gensko, G. (ed.) *Critical Assessments: Deleuze and Guattari*. 3 Vols (London: Routledge 2000), Vol. 3 Deleuze and Guattari, pp. 211-27.

Whitehead, A. N., and Russell, B. (1910) *Principia Mathematica*. 3 vols, Cambridge University Press, 1910, 1912, and 1913. (Second edition, 1925 (Vol. 1), 1927 (Vols 2, 3). Abridged as Principia Mathematica to *56, Cambridge University Press, 1962.).

On line references:

Homepage of Albert Libchaber: Libchaber, A. J., Home page. Available from: http://www.rockefeller.edu/research/abstract.php?id=93 [last accessed 15th September 2007].

Notes

1. "le concept est de l'ordre du cri, C'est quelque chose de très vivant, un mode de vie."

2. Deleuze's use of the term *haeccéité* originates in Duns Scotus' definition of individuation as *haecceitas "thisness"* (cf. *Ordinatio* 2, d. 3, pars 1, qq. 1-6) in opposition to *natura communis*, e.g., common traits features existing in any number of individuals. Also Peirce uses the term as an existential qualifier.