





# **Conversation and Figuration from the Horizontality of the 2.0 Decade**

Peter Giger



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## Abstract

This thesis concerns the 2.0 decade, the decade when the social web started to develop. The main research objective is to contribute to our embedment in Internet technology in a conscious and livable way. The thesis is part of a general attempt to improve our understanding of the transformation taking place in the development of the web. We live in a time when knowledge contexts are moving from expert knowledge towards conversational knowledge. My research is mainly presented in the form of five essays.

This thesis could be described as a conversational analysis of knowledge processes during the 2.0 decade. The 2.0 decade came to life in the wake of the information technology bubble in the end of the 1990s. The first decade of the 2000s was the decade when 'the Web' became 'Web 2.0' and the energy of the Internet switched from monetary speculations to conversations. Everyone wanted to start conversations and build digital technology which induced conversations.

Like the concept Web 2.0, this thesis came to life in the wake of the information technology bubble. It presupposes that the knowledge relation between humans and our technology is conversational rather than rational. This basically means that digital technology is not a tool but an integrated part in the person assemblage.

There are many important thinkers embedded in this thesis, but some of them are more important than others, notably Gilles Deleuze and Donna Haraway. However, the thesis does not analyze the text of other thinkers, it involves them in the conversation. Important concepts as assemblage, rhizome (Deleuze) and cyborg (Haraway) are participants in the text rather than being its objectives. They are a part of the general experience behind the essays, together with all the persons I have connected to, the digital technology I have tried to become with. To become with (or develop together with) technology means to acknowledge the idea that technology is more than a tool. It is something within, not something external.

### Keywords

*2.0 Decade, Web 2.0, Aesthetics, Epistemology, Conversation, Figuration, Rhizome, Assemblages, Cyborg, Postmodernism, Person, Attention, Becoming, Serendipity, Desire, Intensity, Machine, Entanglement, Internet, Nihilism, Utopia, Accumulation, Technoscience, Virtuality, Potentiality, Monsters, Horizontality*

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Last but not least, I want to send a warm thought to my mother who passed away a few weeks after the final draft was completed.

## Prologue

This thesis concerns the 2.0 decade, the decade when the social web started to develop. The main research objective is to contribute to our embedment in Internet technology in a conscious and livable way. The thesis is part of a general attempt to improve our understanding of the transformation taking place in the development of the web. We live in a time when knowledge contexts are moving from expert knowledge towards conversational knowledge.

My research is mainly presented in the form of five essays. In order for the reader to apprehend the essays, I will introduce my methodological and epistemological base as well as the objectives and aim of this piece of research.

There are quite a few quotation marks spread out through the thesis. I am using double quotation marks to mark an utterance as very interpretive. Single quotation marks are used to denote that a word is used as a specific concept.

### Why this research topic?

I understand a person as mainly created by choices, at various level of awareness. There is always a zone of pre-choice, where everything is happening leading up to the choice. This zone is obviously filled with previous choices, my own and others in my social context. For this thesis, two choices seem to stand out and I will occupy a tiny amount of textual space to highlight these choices. The first choice is about balance, criticism or affirmation in relation to ICT. The other choice is about different knowledge practices within technoscience of whether to use a traditional discursive practice or a conversational, which I believe to be necessary for the subject matter. The two choices I made were to affirm ICT and to use a conversational methodology and below is some of my reasoning why.

The first choice of affirmation leads to the question: Why do I choose to affirm information technology, when most scholars in the non-‘hard’ sciences seem to have chosen a path of ambivalence?

What is affirmation in the context of technoscience? It is a kind of criticism. Affirming something “other” is to criticize the norm as a whole by proposing an alternative replacement. During the 1990s, I experienced ICT developing along the lines of traditional information and communication technology, such as the telephone, and the television. The Internet appeared to be just another technology to build an efficient society true to the modern dream of technological progress. I have always seen the general idea of technological progress as more or less dystopic. I cannot, for example, see the liberal idea of producer and consumer freedom as compatible with environmental sustainability. I do not think that society as a whole can make the choice of containing our desires leading to overwhelming technological production. Individual persons can do it, but not the assemblage of persons needed to make a difference.

But the 2.0 decade brought new possibilities to our connection with information technology. Information became more or less indistinguishable from communication. The train of technological progress splintered into multiple possibilities. During the 2.0 decade life online became more and more embedded in overall life. As I see it, the 2.0 decade gave us a completely new set of possibilities regarding our desire for creating and exploring technology as entities and relations online. If humanity “moved” a large part of our desire for technological progress to the world online, we might have a chance to control our desire for bombastic material production. This hope of some control over material production leads to an overall hope for an environmentally and socially sustainable world. This sense of “hope” on these sketchy grounds might seem naive, banal or irrelevant. But I do not think we should recoil from the naive, banal or seemingly irrelevant in technoscience conversations. Conversations evolve through diversity and multiplicity, creativity and courageous acts. Conversation is the point in the second choice.

The second choice and its deduced question is conversation vs discourse in relation to epistemology and methodology.

The choice of conversation leads to the question: Why do I affirm conversational knowledge practices within technoscience, rather than discursive practices and theories?

Again, learning from the 2.0 decade, there are new forms of online communication more similar to the diverse uncertainty of a common conversation than to a semi-public discourse based on academic, political or press-ethical rules and traditions. I strongly believe that the soft sciences should participate in online conversations to a much higher degree than we have seen yet. And when we – technoscience researchers – do participate, we should act not as spectators, but true participants. It is not enough to “study” the online life and transfer the “result” to them. We must find ways to transform our own research into complex forms of participation. We must find ways to deviate from the commonsensical norm in conversation and to participate with complexities.

We should also be more experimental, not hanging around waiting for the “right” experiment. Conversation is about testing and connecting and there is a reason why many researchers within technoscience seem reluctant to add the suffix “studies”. Conversation is a form of practice, not a form of study. The choice between discourse and conversation should always be relevant in technoscience, and perhaps, in some contexts, conversation should be viewed as the primary choice – not the controversial. Researching Internet relations is probably one of these contexts where conversation should be the primary technoscience methodology.

## Epistemological Considerations

My epistemological approach is mainly based on the works of two great researchers: Gilles Deleuze and Donna Haraway. In the following, I will present these two in more detail with some of their core concepts related to this thesis, as well as other general epistemological considerations.

*Although many readers of Deleuze are at least broadly familiar with his view of philosophy as laid out in What is Philosophy?, it is worth recalling it at the outset of any discussion of a Deleuzian concept. This is because what Deleuze is doing when he does philosophy, and creates concepts, is so different from what most philosophers do, that without his “metaphilosophy” in hand, it is easy to become disoriented. For Deleuze (and Guattari), then, philosophy is not a matter of description or explanation. “Philosophy does not consist in knowing and is not inspired by truth. Rather, it is categories like Interesting, Remarkable, or Important that determine its success or failure.” Philosophy is, in a word, practical and normative. It is a practice whose point is not that of getting the right take on things but of making a contribution to our living. Specifically, that contribution is made in the areas of the interesting, the remarkable and the important. (May, 2003)*

### Poststructuralism – Writing as “Interesting, Remarkable, or Important”

The path away from a thinking inspired by ‘truth’ is one of the most important modes in my own thinking, in poststructuralist thinking, in the philosophy of Gilles Deleuze and in the technoscience of Donna Haraway. Poststructuralism, Deleuze and Haraway are the most important theoretical players in this thesis. Todd May’s assertion about Deleuze, above, creates an important connection between authors who either see their self as poststructuralists or are labelled structuralist by other authors. A quick search in Google, Google Scholar or one of the closed academic journal providers is enough to place both Deleuze and Haraway in the poststructuralist conceptual space. This is not to give them the label “poststructuralist”. It just pointing to the fact that they are agents in the poststructuralist conceptual field. Deleuze and Haraway are also connected by their affirmative strategies, as opposed to deconstructionists such as Jacques Derrida. Affirmation was one of Deleuze’s main contributions to philosophy – probably an inheritance from Nietzsche. Haraway is not against or unfamiliar with deconstruction, but her figuration policies are clearly affirmative practices. There might even be some grounds for calling thinkers as Deleuze and Haraway the real, or main poststructuralists, since they represent a force away from the structuralist search for deep truth structures in language.

Viewing poststructuralism from this perspective, Derrida and the deconstructionists become the end of structuralism and not something after. They are not structuralists or poststructuralists, but the break itself. Deconstruction had the power to create a break, but lacked the power of affirmation. Deconstruction was an important part of postmodernity, but now when it has consumed the energy of structuralism and other epistemologies inspired by truth, we have to affirm new futures. Gilles Deleuze and Donna Haraway are two of the main players in that journey.

But how to create a philosophy which is supposed to be interesting, remarkable or important – and for whom? Philosophy is “making a contribution to our living”, May says. The risk is that we take this all the way back to the time before the enlightenment, when a hierarchy of priests were the mediators of knowledge.

Poststructuralism – Writing as “warm, involving and risky”

Philosophy as “interesting, remarkable or important” ideas does not really solve the problem. We just move it from a judgement of truth to a judgement of value. But the problem is not value as such. Evaluation is an important part of all contexts. The question is whether the soft sciences need gatekeepers or not? Bruno Latour proposed a switch from a mode of science to a mode of research:

*In the last century and a half, scientific development has been breathtaking, but the understanding of this progress has dramatically changed. It is characterized by the transition from the culture of “science” to the culture of “research”. Science is certainty; research is uncertainty. Science is supposed to be cold, straight, and detached; research is warm, involving, and risky. Science puts an end to the vagaries of human disputes; research creates controversies. Science produces objectivity by escaping as much as possible from the shackles of ideology, passions, and emotions; research feeds on all of those to render objects of inquiry familiar. (Latour, 1998)*

Research as “warm, involving and risky”. This phrase could be called the sensual mode of affirmative poststructuralism. Deconstruction is a negation of warm and risky, and the involvement is more a counter-force than something constructive – regarding the disciplines and transdisciplines generally sometimes conceptualized as ‘soft sciences’, i.e. sciences creating soft knowledge. By soft knowledge I mean bodily knowledge, or every knowledge that is not obviously rationally reducible. There are a lot of sources to draw from regarding the difference between soft and hard knowledge. My view is mainly based on the writing of the Swedish intellectual historian Sven Eric Liedman. In his book *I Skuggan av Framtiden* (In the Shadow of the Future) (Liedman, 1997), he draws the line back to the enlightenment, seeing the hard and the soft as two parallel, simultaneous enlightenment projects. Hard knowledge is the rational empiric paradigm, or the Sciences, including statistics and “quantitative” methodologies from the social sciences giving “hard results”. Take a quantitative interview study, for example. It has the potential to give a fairly certain result of how many persons have answered a particular question. This methodology can have great value, but it can never represent what these persons think, know or have experienced – only what they answer. The question of what these persons think can only be represented by a conversation, and a conversation can never be represented by rational empiric formulations. A conversa-



tion is a complex field of negotiations and compromises. A conversation can be reduced by analysis, but is then deterritorialized and reconstructed to something other. A reduction of a conversation can never represent the conversation itself. We, researchers in the soft sciences, have to learn to create and participate in conversations. We need this conversational perspective because discursive knowledge is not enough.

I hope, and believe, that the coming decade will entail a burst of explorations in conversational participation within the soft sciences. My five core essays, my practice analysis, are just attempts (essays) to relive the web 2.0 technology conversation I have been a part of over the last decade. They are very far from being representations of the 2.0 decade, but I hope they say something about the warm, involving and risky business of reliving a story like this.

### Internet, Mode 2 & Conversations

The Internet has changed research in more ways than just making it easier to publish and retrieve information. You could say it has changed the way ideas are created, and thereby the whole game of creating ideas. Ideas are located closer to each other, and they are more entangled<sup>1</sup> making it harder and harder to claim some sort of academic licence on ideas. On the Internet, ideas are created by fragmentation and recontextualization – temporary assemblages<sup>2</sup> moving rapidly, not completely unlike the dissemination and formation of ip-packages on the Internet. It is a fact that some of us develop in relation to the Internet more than others, and that the Internet therefore is more integrated in us as persons. But it is also very likely that future generations will be more involved in the Internet than we can imagine. And this involvement is really what my practice analysis is about. It is a warm and risky involvement in Internet practice during the 2.0 decade based on a conceptual world formed from intellectual history. It is warm, mostly because it is affirming, and it is risky because it is very particular, local – even if some of its suggestions, and results, are expansive and generalizing.

When I write about soft knowledge as problematic, I do not mean that hard knowledge is unproblematic. I just mean that this thesis is occupied with the transdisciplinary conversation about soft science conversation methodology. I am well aware of the problems with hard knowledge, laid out by thinkers such as Donna Haraway, Bruno Latour and Karen Barad, but this thesis is about the epistemological status of soft knowledge embedded in conversations.

But why do I want to occupy myself with the risky business of discussing conversation as a research methodology? I do not think that a conventional shape can represent or perform the actual era this thesis is written in. To be potent, the shape has to have some degree of resilience. By resilience, I mean a shape with two simultaneous properties: adaptability and recognizability. It can have temporary transformations depending on context, i.e., we still have a social understanding of what it is when it becomes. This resilient shape is also my reading of the concept Mode 2, developed by Helga Nowotny, Michael Gibbons and others (Gibbons, Limoges & Nowotny, 1994; Nowotny, Scott & Gibbons, 2001). They asserted that the “The old paradigm of scientific discovery

(‘Mode 1’) – characterized by the hegemony of theoretical or, at any rate, experimental science; by an internally-driven taxonomy of disciplines; and by the autonomy of scientists and their host institutions, the universities – was being superseded by a new paradigm of knowledge production (‘Mode 2’), which was socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities” (Nowotny, Scott & Gibbons, 2003, p. 1). This description of Mode 2 is similar to what I call a conversational mode of knowledge production. The difference is mainly that a conversational mode of knowledge production is ostensibly formal-informal, while Mode 2 is directed towards formal knowledge production. In a conversational mode, the formal and informal are entangled in one single conversation. This is just how the web works: social systems such as Twitter and Facebook are indistinguishable on the formal-informal scale and so is the blogosphere. Knowledge on the Internet has the property of formal-informal entanglement, and perhaps it is fair to speculate over the question if this mode of knowledge points to the future. But since Mode 2 is a wrapping for all knowledge production during the last decades, conversational knowledge is just one piece in that puzzle. So when I use the term Mode 2, I am pinging the concept worked out by Nowotny, Gibbons and other. Conversational knowledge is a figure I am trying to develop and it refers to a particular or a sub-mode of knowledge production embedded in Mode 2.

Pinging is a technological term, but it works well as a metaphor in conversational knowledge production. Pinging is a term developed to describe a certain kind of data exchange between Internet servers. I use it for its metaphoric qualities and because it is used by the blogosphere to describe a particular kind of communication between blogs. It works like this: if I publish a blog post with a hyperlink to one of your blog posts, then my blog server notifies your server about this linking. If your server is configured to manage pingbacks, you can display this communication on your blog. My readers obviously know I have linked to your blog post, but your readers can also know that with linkback management. This is a very rough and rudimentary description of the feedback layer in common conversations, except that we do not normally need a server to distribute the flow of feedback. The feedback mechanisms in a common conversation work without central command, but they are also semi-randomly human. The complex flow of feedback in daily conversations is impossible to predict in a systematic way according to poststructuralist thinking. This is where conversation and discourse are fundamentally different. A discourse is an ordered conversation. In a discourse, there is a set of (mostly informal) rules. These rules create some degree of determinacy in the conversation. The rules make the discourses distinguishable from each other with the hope of some predictability.

As all knowledge processes, the arguments for Mode 2 have been criticized: “Some philosophers, historians, and sociologists of science regarded the argument in the book as either simplistic or banal (or perhaps both)” (Nowotny et al., 2003, p. 1). This critique might be explained by confusion of identity. Both Mode 2 research and conversational knowledge production are transdisciplinary. Transdisciplinary knowledge processes obviously share the property of ‘complexity’ with disciplinary knowledge processes,

but the complexity has different directions. Transdisciplinary complexity is horizontal while disciplinary complexity is vertical. The value in the former is about width, while it is about depth in the latter. If you expect vertical complexity, you might not see the fields of horizontal complexity at all. For me, it is often the other way around. Gilles Deleuze's philosophy could serve as an example. I value Deleuze's conceptual space immensely when it has the shape of horizontal knowledge, but when he turns around and starts to dig after the depth in a concept, it gets rather banal. Metaphysical concepts such as 'immanence' or 'becoming' are powerful as processual agents but when we are following the perspectival lines too far back, everything starts to lose its embodiment, gets increasingly fuzzy and transforms into meaningless figures without distinguishable features. Maybe this resistance to metaphysical detail lies in the transdisciplinary, in me as a person, or both.

## Deleuze

### How I Read Deleuze

Many of you who have tried to read Deleuze have probably done it hesitantly. I certainly did. Why? If it is possible to talk of different personal characteristics, or learning modes, as 'theoretical' and 'practical', Deleuze had a high degree of both simultaneously. Reading him gives a sense of meeting someone who is both a glue brain and a tester, i.e., both a person who learns by "acquiring" information and a person who learns by testing different situations. If these categories say something, it goes by itself that most persons are a little bit of both, even if one of them is more dominant.

That said, I experience Deleuze to be difficult whether you are a "glue brain"<sup>3</sup> dominant, a tester dominant, or a perfect balance between them both. One of the aspects concerning the difficulties with Deleuze's work seems to be his abundance of both learning modes. This speculation is based on the fact that I see myself as a practitioner, tester, and I find Deleuze difficult. At the same time, it seems that persons, thinkers, who I regard as theoretically difficult, also find Deleuze difficult. But they describe his difficulty in quite other terms from my own. They seem to have problems with Deleuze's preference for constantly testing new approaches, concepts and viewpoints. I guess it is possible to view this testing as if he was walking around in theory land without really reaching a destination. I, as a practitioner, on the other hand, find this aspect of Deleuze very valuable; his walking around, testing things, affirming sheer "becoming", rather than becoming something in particular. In return, I have major problems following Deleuze when he finds something so invigorating that he must follow some (imaginary or real) trace into the deep forests of detailed and logical theory. I just do not think those deep forests of metaphysical theory are something for someone like me. I am just waiting for Deleuze to come back, and he always does. When he does come back, I can see the shining faces of theorists and glue brains standing on the edge, waiting for him to come back to the deep forest.

In the following I am sharing some reflections about my own writing style to explain what I see in Deleuze, and what seems to be difficult for most readers. I can identify

these difficulties as a positive force rather than something annoying and incomprehensible. When I was writing the short piece above, my writing was interrupted by “disturbing thoughts”, which entangled with the text, making it difficult to think clearly.

1. I relived pieces of Dante’s *Divine Comedy*, especially the introduction chapter where the Roman poet Virgil guides him through Hell and Purgatory. I think it was something to do with the imagery of the dark forest.
2. Images of Martin Heidegger walking around in the black woods, the black woods he always returned to.
3. Starting to write this chapter I had made an initial choice between the following two chapter headings: “To Become with Deleuze” and “How I read Deleuze”. The scenery triggered something related to the term ‘becoming’, and I started to regret taking the easy way out. But on the other hand I felt it to difficult to communicate what I meant with the act of becoming with a text – especially after some advice. Perhaps it is my background with literature that makes “becoming with a text” natural.

Among ICT professionals, we call this process multitasking, which refers to multiple simultaneous processes, as when several computer programs run at the same time. Multitasking is normal and most contemporary computer systems handle it easily. When I wrote the piece above, I decided to subdue the three “overflowing” processes completely, as we often do in academic texts. Literary authors have another relation to multitasking in the writing process. It is easy to see in a text like James Joyce’s classic novel *Ulysses* that he endorsed the parallel processes, rather than subduing them. This goes both for how Joyce handled multiple processes, similar to the fictional scene in Dante (1); the historical parallel in Heidegger’s black woods (2); and also the semiotic expression where the choice stands between a simple, and poor, but direct phrase and a rich phrase loaded with potential meaning (3). In the essays forming the praxis analysis in the thesis, I have tested to work with this multitasking process to some degree, which has resulted in texts loaded with meaning. The downside is that the text has an embedded resistance to linear decoding. Due to multiple streaks of parallel meaning often running in a layer “under” the actual text, it is difficult to read by pushing the understanding sequentially in front of you. The text becomes richer, but more difficult to read if you do not pull in meaning from the overall context. Deleuze’s texts often work similarly, but more cleanly. It is generally his own concepts that flow in a parallel layer and have to be read as entanglements to become readable. He also has similar relations with intellectual history flowing in an additional layer. Deleuze did not endorse his own stories in the same way that I do, and he was a master in conducting his multitasking, thus making his texts less colourful and more intellectually consistent.

It is rather unusual in philosophy to expand on a thinker’s style, but I am obviously not the first person to make a point about the difficulties with Deleuze’s texts. It is quite common for authors to note that Deleuze’s “philosophical style” is difficult (Rodowick, 1997, p. ix), while others see the difficulty directly related to his “profusion of idiosyncratic terminology” (Patton, 2000, p. 1) – which means his tendency to make new terms and recontextualize old concepts.

Patton’s assertion of Deleuze’s wide “personal terminology” is not really a problem for me. This testing and profusion of idiosyncrasies is the path to wideness and transdis-

ciplinary complexity. My relation to knowledge is mostly about experiencing many different situations, and testing these situations in relation to each other. 'Testing' is a central word here, as well as recontextualization. Testing is a practitioner's mode of life, testing ideas and arguments in different contexts. For my own reading of Deleuze, using testing and recontextualization is absolutely necessary. If I were to try to identify a methodology in Deleuze, it would probably be formulated in a word like recontextualization. In short, recontextualization means to transfer meaning from one context to another. We do this in everyday communication. Using it as a methodology is to stretch it beyond common usage. It is to give the link between the contexts more meaning than is possible in everyday talk. Recontextualization has to do with a kind of testing of transferability. When you recontextualize a piece of meaning as in reading or writing methodology, you test if it is transferable to, relevant and usable in other contexts. It is important to avoid reading "transfer" as if meaning could exist in some space above or outside contexts. I see it more as rubbing one context against another, trying to get most of the meaning, but at the same time it is impossible to avoid getting some of the other context in the process, because meaning is ontologically embedded in context for a poststructuralist such as myself.

Perhaps the key to reading texts built on recontextualization could be formulated in the word 'suspense'. A reading mode of suspense is about suspending the immediate understanding until a proper context appears, and to recontextualize the meaning into your own life as a reader – without an immediate need for understanding exactly what the author means. This does not mean a text is open for "all" readings, but to become familiar with texts like Deleuze's, you have to keep them open for many potential readings, and not stop the process all the time to justify the rightness or wrongness of your ongoing and potential reading.

Like Deleuze's texts, this thesis and especially the essays are not created for everything to be instantly defined, or even understood. The task is to weave your understanding of what you get, rather than what you were expecting or what you have learned to demand from a text. If you meet a concept in one of Deleuze's texts, which you have a common understanding of, or at least some idea of what it can mean in the context, you can hardly avoid reading the word and it is difficult to avoid interpreting it in relation to the context. The key is to avoid seeing this as annoying. It is a possibility. It is a possibility for you to become familiar with the text until Deleuze gives you the solution. And if you read a whole text without getting the Deleuzian key, then you just have to manage. Deleuze often uses multidimensional words, words with one meaning in common language, one in traditional philosophy and one flexible meaning in his own philosophy. If you read one of Deleuze's texts without his own "definition" of a concept such as 'becoming', you have to suspend that kind of understanding and test it against contexts in your own experience. The chance is that an open mind gets Deleuze's meaning without his definition, because your meaning rises together with Deleuze's text. Your and Deleuze's contexts meet and are generated from that meaning in relation to your conception of the undefined concept. The fact that a philosophi-

cal concept like ‘becoming’ shares the term with the common usage of ‘becoming’ is not an accident. They obviously have a connection and a meaning that is constantly transferred between the common and the philosophical meaning keeping them synchronized – not as copies, but still cultivating and evolving the relation between them.

Becoming together with Deleuze’s texts obviously means something other or more than reading Deleuze, but it is not about understanding Deleuze “better” or more thoroughly. It is about investing in the text by letting it change you instead of placing the text on a pedestal and studying it from all possible directions. And I do not think Deleuze’s texts really exist in the vertical dimension of right and wrong, good and bad. I do not think it is justifiable in a philosophical, scientific sense. They have the potential value of becoming with us as persons and person clusters. That is all, and that is all it has to be to have the potentiality of social change.

The next chapter is an introduction to Deleuze’s difference between the ‘actual’ and the ‘virtual’. Some caution, though: poststructuralists are often sensitive to someone arguing against platonic binaries and then “making the same mistake yourself”. I have heard this criticism against practically everyone who claims to argue against platonic binaries in doctoral seminars and I cannot deny it has troubled me too. But I changed my mind when I was starting to become familiar with Deleuze’s texts. A simple “reading” of Deleuze would not have created this change in my thinking, since it does not come from something he actually writes. It is more about how Deleuze uses basic concepts such as ‘becoming’ and ‘difference’ and how these recontextualize in my own experience. The point I want to make is that binaries (or dualisms or dichotomies) are not every concept pair placed in opposition to each other. It is the oppositions working as pre-fabricated in our thinking and thereby in our social actions. It is not the binaries we create, it is about the binaries we do not seem to be able to shake off. On the contrary, we have to create new binaries to make a difference between things, not letting everything blend into something general.

### The Rhizome

This chapter aims to clarify Gilles Deleuze’s concept of ‘rhizome’, as well as the concept ‘conversation’ used by myself and others during the 2.0 decade. But also to make a relation or connection between the two.

### The Ontological and the Figural, Aesthetic

As indicated earlier, I read the philosophy of Gilles Deleuze as two different modes of thinking viscosely entangled and often indistinguishable. I am going to call these two modes 1) ontological and 2) figural, aesthetic. Deleuze’s figural philosophy is an epistemological mode very close to technoscience and researchers such as Donna Haraway. Ontological philosophy, on the other hand, has been rendered more and more problematic in the decades since Deleuze’s major works. The recent decades’ boost in science and technology has moved cognitive science to a place where philosophical analysis of the brain/mind seems superfluous or even outdated. Philosophical ontology is not outmanoeuvred, but it has joined force with cognitivism to base theories on results in laboratories (see e.g. (Metzinger, 2009)).

But what is the real difference between an ontological utterance and a figurative<sup>4</sup>? Besides the textbook definition of ‘ontological’ as “relating to or based upon being or existence”<sup>5</sup>, the utterance is exclusive in relation to an ontological identity. Take, for example, this citation about Deleuze:

*The ‘key’ ideas which Deleuze develops in his first book on Hume carry through to his later works. These ideas are that: (1) subjectivity does not exist prior to experience; (2) experience, in the form of perceptions such as ideas and impressions, is initially un-organised but becomes so, progressively; and, most importantly, (3) a relationship is external to its terms (Lechte, 2008, p. 381).*

Giving the human subject foundational properties, and thereby, excluding alternatives, is becoming increasingly rare outside empirical science, statistics and analytic philosophy, etc, i.e, the “hard sciences”. From a scientific point of view, figural utterances are a form of fiction and thereby bundled off to the leisure department. This demarcation between science and non-science has been “in the air” since the enlightenment, but the last few decades have been greatly influenced by positivism and Popper’s falsification strategy, i.e., an utterance has to be “falsifiable” to be “scientific” (Popper, 2002). As I see it, ontological utterances are in a process of becoming more and more cemented in the science department, while figurative utterances are starting to build bridges in areas where scientific utterances are contextually displaced, as in the question: “What is the relation between humans and information technology?” This is not a scientific question and still it is one of the most important questions for the human future and perhaps the future of planet earth. It is my strong conviction that this dangerous rift can be bridged locally by poststructuralist research areas such as technoscience and that the mode of research has to be figurative, rather than ontological.

Figurative utterances are local, situated and not aiming towards exclusiveness. Their functional mode is pragmatic. Their role is to make new connections, not to prove utterances conclusively. In feminist epistemology and especially Donna Haraway, the figurative utterance has evolved to the “figure” as a methodological approach (Haraway, 1997). A figure is a figurative utterance with social aspirations. A figure is conversational in the sense that it is handed over to the reader for the purpose of recontextualization and not as a proof of a proposal. Haraway’s ‘cyborg’ (Haraway, 1991) is one of the best examples of a figure. Deleuze’s figurations do not come out as conversational in this sense, but more cleanly as metaphors for his own ideas. This border between Haraway’s figurations and Deleuze’s figures might be read as unnecessary, but it represents my experience of their respective texts.

The figurative side in Deleuze’s texts could be described like this:

*Overall, there is no doubt that Deleuze was one of the most self-consciously creative philosophers of the contemporary era. Although he thought from the position of someone steeped in the history of philosophy, his philosophy seems to have struck a democratic chord in many English-speaking countries. In being synthetic in orientation (which, in the end, comprehends horizontal thought), Deleuze’s thinking puts purely analytical thought in its place, while pursuing in philosophy an approach normally found in artistic endeavour. As Kant said of genius, this means that Deleuze can have no true imitator. (Lechte, 2008, p. 385)*

John Lechte has also said that Gilles Deleuze’s thinking is “radically horizontal, or rhizomatic, always intent on dismantling hierarchies” (Lechte, 2008, p. 379). This



non-ontological, figural part of Deleuze could be called aesthetic, but not aesthetic in the traditional sense as directly connected to “the arts”. Deleuze’s texts are widely used in traditional aesthetics, but the mode of aesthetics I am interested in here could be called choice aesthetics, and is promoted and developed by Peter Ekdahl (Ekdahl & Blekinge tekniska högskola, 2005) from influences from John Dewey, John Maeda, etc. Generally the ontological and the choice-aesthetic can be viewed as two different ways of reading Deleuze, but some of the concepts slide into an ontological reading, while others more easily support a figurative, aesthetic reading. Before expanding on the rhizome as an aesthetic concept, I will try to clarify the difference between the ontological and the figurative.

Being ontological is to search for an exclusive identity of some sort. This is more or less equivalent to the constant search for a ‘logos’ that Jacques Derrida tried to unveil with ‘deconstruction’. There is really no choice in dealing with ontologies, other than making the right choice. In choice-based aesthetics, on the other hand, most actions are about choice – everything that it is not possible to reduce to simple facts or deduce as conclusively true within a situated environment. Every action in life is about making one or several choices. A piece of art is an assemblage of choices, together with the social act of detonating an atomic bomb or the complex evolution of a person. The concept of ‘choice’, in Ekdahlian aesthetics, is not linked to ‘free will’. A choice is a social act and can never be completely free or unfree in a traditional sense. Choices are situated, contextual and they are the “stuff” conversations are made of, and they induce conversations rhizomatically. Choosing an aesthetic approach rather than an ontological does not imply ontological relativism. It just means we do not believe a quest for exclusive identities promotes the important work of bridging divides such as the one between humans and our technology. Therefore, choosing to view the rhizome and others of Deleuze’s concepts as aesthetic figures rather than following a believed ontological trace is more pragmatic.

I am well aware of the potential confusion from terminological pairings such as ‘aesthetic figures’ above. Which aesthetics is it about now, the traditional or the Ekdahlian? The same confusion is often present in readings of Deleuze. Sometimes I get a feeling that he uses concepts such as ‘difference’ in a manner more related to the traditional, commonsensical meaning than his own specific meaning. But here we have to understand that recontextualizations of concepts inherit most of their meaning from previous forms of the term. If Ekdahlian aesthetics, for example, did not contain meaning from traditional usage, there would be no point in using the term ‘aesthetics’. It would even be extremely counter-productive.

### What is a Rhizome?

The main text about the rhizome is located as the introductory chapter in Deleuze and Guattari’s loved and hated book *A Thousand Plateaus*. This book is the second volume in the two volume series the authors wrote under the thematic title *Capitalism and Schizophrenia: Anti-Oedipus* (1972) and *A Thousand Plateaus* (1980). In a linear mode, the chapter about the rhizome thus has the first book (*Anti-Oedipus*) in its



history and the major part of the second book (*A Thousand Plateaus*) in its becoming. But knowing that writing is rarely linear makes it a risky business to draw any conclusions from that. It is easy to believe that a book represents or signifies linearity, but, as Deleuze and Guattari write, “Writing has nothing to do with signifying. It has to do with surveying, mapping, even realms that are yet to come” (Deleuze & Guattari, 1987, p. 4f). Even if a book or a journal article is commonly identified with linearity, it does not mean one has to read a book sequentially.

We generally make the choice to read a book in a linear mode since we assume it is written in a linear mode because that is the convention. Deleuze and Guattari assumed that most readers of *A Thousand Plateaus* would start with chapter one, and that chapter would function as a friendly pointer to the reader – a pointer that this particular book was not like others: it was written like a rhizome and therefore would gain value with a rhizomatic mode of reading.

Encyclopaedia Britannica describes the biological rhizome as follows:

*A rhizome is not a “thing”, but more a mode of growing. Encyclopaedia Britannica explains the botanic account of ‘rhizome’ as follows: “in botany, horizontal, underground plant stem capable of producing the shoot and root systems of a new plant. This capability allows the parent plant to propagate vegetatively (asexually) and also enables a plant to perennate (survive an annual unfavourable season) underground. In some plants (e.g., water lilies, many ferns and forest herbs), the rhizome is the only stem of the plant. In such cases, only the leaves and flowers are readily visible.”*<sup>6</sup>

Obviously, it is not possible to define the ‘rhizome’ as a metaphor for knowledge since that would resist everything a rhizome is supposed to be, or become. A definition is in itself non-rhizomatic. But Deleuze and Guattari have given a quite long description of the rhizome which could be outlined like this (Deleuze & Guattari, 1987):

- 1 and 2. Principles of connection and heterogeneity: any point of a rhizome can be connected to anything other, and must be. This is very different from the tree or root, which plots a point, fixes an order. (p. 7)
3. Principle of multiplicity: it is only when the multiple is effectively treated as a substantive “multiplicity” that it ceases to have any relation to the One as subject or object, natural or spiritual reality, image and world. (p. 8)
4. Principle of asignifying rupture: against the oversignifying breaks separating structures or cutting across a single structure. A rhizome may be broken, shattered at a given spot, but it will start up again on one of its old lines, or on new lines. (p. 9)
- 5 and 6. Principle of cartography and decalomania: a rhizome is not amenable to any structural or generative model. It is a stranger to any idea of genetic axis or deep structure. (p. 12)

All this is in contrast to the tree structure, which is seen as the conventional metaphor for growth, a mode of growth “to which our modernity pays willing allegiance” (Deleuze & Guattari, 1987, p. 5). The tree mode of growth is vertical and hierarchical. The rhizomatic mode of growth is horizontal and non-hierarchical.

*We’re tired of trees. We should stop believing in trees, roots, and radicles. They’ve made us suffer too much. All of arborescent culture is founded on them, from biology to linguistics. Nothing is beautiful or loving or political aside from underground stems and aerial roots, adventitious growths and*

*rhizomes. Amsterdam, a city entirely without roots, a rhizome-city with its stem-canals, where utility connects with the greatest folly in relation to a commercial war machine. Thought is not arborescent, and the brain is not a rooted or ramified matter. What are wrongly called “dendrites” do not assure the connection of neurons in a continuous fabric. The discontinuity between cells, the role of the axons, the functioning of the synapses, the existence of synaptic microfissures, the leap each message makes across these fissures, make the brain a multiplicity immersed in its plane of consistency or neuroglia, a whole uncertain, probabilistic system (“the uncertain nervous system”). Many people have a tree growing in their heads, but the brain itself is much more a grass than a tree. “The axon and the dendrite twist around each other like bindweed around brambles, with synapses at each of the thorns.” (Deleuze & Guattari, 1987, p. 17)*

Deleuze and Guattari often present this sense of tree-like tradition as a misreading or misinterpretation of reality, as if the rhizome was ontological rather than figural. And still, this is a tree-like mode of thinking, i.e., that one figure is ontologically right and another is ontologically wrong – instead of viewing the rhizome and the tree as representations of something fundamentally non-representational, from a human viewpoint. This drive to represent something we actually understand as non-representational can probably be cognitively understood, some day, or historically. This is the fate of the poststructuralist caught in a very strong structuralist mindset constructed through hundreds of years and billions of persons making socially based choices directed to scientific and epistemological progression.

But to understand the Deleuzian rhizome as an epistemological figure we have to deal with the six principles from *A Thousand Plateaus*. The concept ‘principle’ is somewhat misleading and still you can be certain that Deleuze was well aware of the implications of calling these clarifications ‘principles’. It, at least, connotes law and certainty, rather than proposals or descriptions. In short, the concept of ‘principle’ does not strike me as rhizomatic. I think you can say that it is an irony in the same manner as the strange enumeration. He is saying that he engages in repetition when something different would have suited the context better – but he chose to repeat traditional structure for the text to become pragmatic. However, the concept ‘principle’ is often sidestepped in secondary literature, as in the compact analyses at [capitalismandschizophrenia.org](http://capitalismandschizophrenia.org), a wiki dedicated to Capitalism and Schizophrenia<sup>7</sup>. Below is a quote from [capitalismandschizophrenia.org](http://capitalismandschizophrenia.org) where they try to “structure and order” the meaning of the extract from *A Thousand Plateaus* quoted previously.

1. Connectivity – the capacity to aggregate by making connections at any point on and within itself.
2. Heterogeneity – the capacity to connect anything with anything other, the linking of unlike elements.
3. Multiplicity – consisting of multiple singularities synthesized into a “whole” by relations of exteriority.
4. Asignifying rupture – not becoming any less of a rhizome when being severely ruptured, the ability to allow a system to function and even flourish despite local “breakdowns”, thanks to deterritorialising and reterritorialising processes
5. Cartography – described by the method of mapping for orientation from any point of entry within a “whole”, rather than by the method of tracing that re-presents an a priori path, base structure or genetic axis

6. Decalcomania – forming through continuous negotiation with its context, constantly adapting by experimentation, thus performing a non-symmetrical active resistance against rigid organization and restriction

This analysis has restored the logic in the enumeration and removed the confusing concept of 'principle'. The text has become more "pedagogical" than the original. Following this analysis, a rhizome can be described as a mode of growth (and thereby learning) with the primary property of being connective. A rhizome can grow by making connections anywhere within itself, and that growth is heterogenous. It has the property of connecting to unlike elements, i.e., creating diversity. This aspect is crucial for evolution. New properties come from difference. Connections between similar elements give a less powerful evolution. The connected elements form singularities which are synthesized into a whole and the connection properties are external, i.e., it is not a human "subject" connecting all humans together. The connections are based on repetition, or resemblance, in relation to difference regarding senses, experience, choice, action, etc.

The first three properties have to do with the mode of connection. The fourth property, asignifying rupture, has to do with the ability to re-organize and re-identify. Asignifying rupture is interesting as an event in most contexts, not least in learning situations. Keith Hamon explains the process like this in relation to a classroom situation:

*For Deleuze and Guattari, an asignifying rupture is a process by which the rhizome resists territorialization, or attempts to signify, or name it by an overcoding power. It is the process by which the rhizome breaks out of its boundaries (deterritorializes) and then reassembles or re-collects itself elsewhere and else-when (reterritorializes), often assuming a new or shifted identity. In the classroom, asignifying ruptures are those processes students employ to avoid being just students, that classrooms use to avoid being just classrooms, that content uses to avoid being just subject matters, and that teachers use to avoid being just teachers. Asignifying ruptures are those various processes by which rhizomes proliferate, wallow, accrete, spread, shatter and reform, disrupt into play, seeming chaos, or anarchy. As Frost muses: "Something there is that doesn't love a wall". (Hamon, 2010/2010)*

Asignifying rupture as a property of rhizomatic behaviour obviously has a lot to do with connections as heterogeneous multiplicities. We might connect to Hamon's example but generalize it somewhat to be about a conversation. This conversation might start in the classroom where a student raises her arm and answers a question in a way the teacher really does not understand because the answer is dependent on the student as a person, and she answers the question partly to enhance herself as a person in relation to her classmates. Her classmates get the point because they have the right contextual knowledge to match the answer. One of her classmates takes her answer and re-signifies it to fit the teacher's context, i.e., gives the "right" answer. A couple of students understood both contexts and talk about it between classes and then embed the "wisdom" from the connection between the two contexts into other contexts in class in the family life. The asignifying rupture in the classroom has splintered the conversation into multiple paths based on the teacher's question. All these paths act rhizomatically and evolve contextually.

Conversations are rhizomes situated in language-based human relations (including relations to technology, other animals and our world as a whole). A pragmatic location for studying/practising the rhizomatic behaviour of a conversation would be Ekdahlian aesthetics. Why is that? Ekdahlian aesthetics situate the rhizome as human by basing it on 'choices'. Choice is what differentiates a rhizome embedded in human relations from a purely biological rhizome such as grass. Choice is based on human properties such as rationality and emotion (properties we, to various extents, share with other animals). This means that properties such as heterogeneity and multiplicity are embedded in choices and asignifying rupture is organized by choices – in human rhizomes as conversations. To some extent, this is a political statement. In a purely liberal, capitalistic economy, social conversations work more like grass, progressing naturally as long as we do not try to control it. But mostly, they have to do with responsibility. A lawn of grass does not have any sense of responsibility, because its connectivity is not based on choices. In a conversation, every connection is based on some kind of choice. I think it is crucial for the human future that we acknowledge the role of the choice in conversations, because a choice always assumes responsibility. Even if a conversation rarely contains only fully rational choices, some kind of choice is embedded in most human connections. Ekdahlian aesthetics could be a mode of research to engage with assemblages of choices becoming as rhizomes.

The properties of cartography and decalcomania could easily be swapped with the concept of 'poststructuralism', especially when combining the citation from Deleuze and Guattari and [capitalismandschizophrenia.org](http://capitalismandschizophrenia.org) above. I also think these two last properties are more methodological than the previous.

A short example of how to combine choice aesthetics and cartography: the art professor. The art professor is studying a painting and gets caught on a particular colour/shape relation. In traditional aesthetics, she would try to relate this colour/shape relation to the "meaning" of the whole, or a local meaning. The path to "meaning" is predetermined, because that is, mainly, what art professors do with work of arts. But to a cartographer, all kind of connections are interesting and important. In Ekdahlian aesthetics, these connections are also based on choices. The colour/shape relation of interest is more or less chosen in relation to the context in the artwork, in the artist's life, and now in the art professor's life. The colour/shape relation might have connected with a memory in the art professor of a time when her son hurt himself by falling down from a tree, which resulted in a wound reminding her of the colour/shape relation in the painting. This story in turn creates an asignifying rupture leading to a re-signification of other parts of the painting. This leads to the big question: is this re-signification based on a private memory interesting for the community of art professors if they cannot connect with it themselves? Or are the only interesting connections those that a power-based majority can connect to? Being a cartographer, all connections are of interest, because they are part of the matrix creating our life world. A cartographer dealing with human relations is always embedded in conversations and if a conversation is rhizomatic, meaning whether it is heterogenous, and thereby chosen rather than found.

Decalomania, “forming through continuous negotiation with its context, constantly adapting by experimentation, thus performing a non-symmetrical active resistance against rigid organization and restriction”, is the most synoptical of the six rhizome properties. If you were watching an area of grass grow from a long distance but accelerated in time, this is probably the very property you would notice. It is what gives the grass its figure and it is what differentiates a conversation from human relations based on a high degree of repeated tradition and pre-formed rules.

There are plenty of examples of secondary literature about using the rhizome as a representational figure. Nick Mansfield has a chapter about Deleuze and the rhizome in *Subjectivity: Theories of the self from Freud to Haraway* (Mansfield, 2000). The rhizome is both a metaphor for the “self”, the person, and the connection between persons, in what could be called ‘conversations’. In other words, conversations are rhizomes, and they grow or evolve rhizomatically. Dan Goodley uses the rhizome concept to discuss parenting disabled children (Goodley, 2007). Others have used it as a representation to understand a particular academic discipline, discourse or conversation (e.g. Seijo, 2005 or O’Sullivan, 2007). Another popular subject for the rhizome metaphor is the Internet (Hamman, 1996).

### Assemblages

The concept of ‘assemblage’ is in many points the stylistic opposite to the ‘rhizome’. The rhizome comes predefined as a metaphor picked from biology, while ‘assemblage’ is an abstract, relational concept. How you deal with this concept often reveals if you are a “cultural” story-based thinker or more into technical, analytical thinking. The rhizome concept is mostly used in the former style of thinking, while assemblages are used more by the latter ones. As Couze Venn writes, “The concept of assemblage has emerged as one of a series of new concepts, alongside those of complexity, chaos, indeterminacy, fractals, string, turbulence, flow, multiplicity, emergence and so on, that now form the theoretical vocabulary for addressing the problem of determination, of process, and of stability and instability regarding social phenomena” (Venn, 2006). These concepts all have something in common: they are perfect to describe abstract processes. Imagine, for example, a swarm of electrons. All these concepts Venn mentions are suitable for visualizing processes based on the formation of these electrons. They really do not need a context. Other Deleuzian concepts such as rhizome, machine or becoming are difficult to imagine without a real world context – at least for me. So some concepts are at least more difficult to use in technical, analytical writings, but all concepts work well for recontextualization, even if some of them work better than others.

I think ‘assemblage’ works perfectly for recontextualizing the problems with identity. Historical as well as technical, analytic thinkers should probably be extra careful with the concept since it is difficult to translate from French. Assemblage comes from the French ‘agencement’, and “translators of Deleuze and Guattari have suggested ‘assemblage’, ‘arrangement’, and ‘organization’, but no one of these is fully satisfactory” (Bogue, 1989, p. 174). This kind of translation problem is not uncommon. For re-

search as conversation, it is non-critical. We use what is offered – the English translations – and put them into a process of making connections. But if you are trying to find the meaning behind a theory, or what exactly an author meant, the whole project becomes more like a scaffold in hard wind. And added to that is the fact that Deleuze and Guattari changed concepts from the earlier ‘desiring machines’ to ‘machine assemblages’ (ibid.). In an analytic, technical sense this change can be seen as a progression, but in a conversational sense it is just how the rhizomatic flow in conversation works. Ideas are proposals and they are “meant” to be overthrown, not because they are wrong, but because situations change, which necessarily changes the value of the proposals.

A general concept like ‘assemblage’ can hardly have a high degree of consistency in conversations, and even in strict technical, analytic discourse, it is extremely difficult to maintain a precise definition of the concept. However well read you are on Deleuze, the general understanding of the concept will always be entangled in its expression. Dealing with conversations, the general understanding of a concept is important and constructive. ‘Assemblage’ has evolved from the common French word ‘agencement’ to Deleuze’s usage, to the different translators and readers, where it inevitably blends with the ready-made understanding of ‘assemblage’ as an expression related to general concepts such as ‘arrangement’ and ‘organization’. In technical, analytic theory this interpretative evolution is problematic, while, viewing the evolution in terms of a conversation, it becomes an asset. In a conversational mode, difference, testing and choice-making are crucial.

But what exactly is a Deleuzian ‘assemblage’? As you might have guessed, it cannot be anything exactly. The concept is constantly evolving. In Deleuzian terminology, it is becoming rather than being. To “be” something, it has to have a stable identity. Deleuze always uses ‘becoming’ instead of ‘being’ to push the thought of unstable identities as a critique of the Platonist, Cartesian tradition of the human subject and other stable identities. Thus it is important to avoid forced stability on Deleuzian concepts. However, sometimes it is pragmatic to stop the flow of complexity and create linear, pedagogical expressions. The “Deleuze Studies” course at Manchester Metropolitan University has bravely tried to create exactly that on a web page called “Becoming for Beginners”. Their account of assemblage is as follows:

*An assemblage is the dynamic interconnection of congruent singularities that remove the subject/object interface, yet retain elements of specificity. The human assemblage is a multiplicity that forms new assemblages with existing social and cultural assemblages of material movement, force and intensity.*<sup>8</sup>

On the same page from MMU Research, there is a “definition” of ‘singularity’, a key concept in thinking about assemblages:

*In physics, a singularity is the point at the centre of a black hole at which matter becomes infinitely dense. Deleuze uses the term to mean the specificity of a particular component or assemblage, its special, distinctive quality, as well as its infinite potential. (ibid, note)*

I think ready-made art is a good example of how to think of singularities. You have an entity working as an assemblage of technology, culture, persons, relations, politics,

economy, etc. This entity might be Marcel Duchamp's Bottle Rack from 1914, often considered as the first piece of ready-made art. This bottle rack was an almost "invisible" singularity in the normal work flow on a bar in the beginning of the 20th century. It is important to understand that the bottle rack was both a singularity in one assemblage and an assemblage in itself, but it is equally important to avoid seeing this relation as hierarchical. It is a dynamic interconnection, and not a stable hierarchical relation. The whole point of the assemblage mode of thinking is to remove it as an object created by subjects by putting hierarchies of objects together. In an important respect, the idea, or energy, behind Deleuzian assemblages is the same as the one behind the Actor Network Theory (see e.g. Latour 2005), and that idea is to flatten the hierarchy between subjects and objects, making it horizontal and relational.

As I see it, the really strong side of assemblages appears if we use it to conceptualize the assemblage usually called a 'person'. A Deleuzian take on the person would point to the simultaneous function of the person as a singularity in an assemblage and an assemblage of singularities. A person is an assemblage of bodily functions (including emotions and rationality), tradition, values, technology, other persons. But the two most important might be virtuality and choice.

Choice is not a Deleuzian concept. I am using it as a part of Ekdahl's aesthetics because I think it is the most important aspect of the "person" and creating narrative conversations about the person is essential in the current world. Virtuality, on the contrary, is one of Deleuze's most important concepts. It is a very difficult concept in three respects. The first is that it is "playing" with our commonsense understanding of time, and the second that the term coincides with one of the most current concepts, i.e., 'virtual reality', as a near synonym for the Internet. The third common way of using it is in the form of the adverb 'virtually'.

The Oxford Dictionary of Philosophy writes the following about the term 'virtually':

*In scholastic terminology, an effect is contained formally in a cause, when the same nature in the effect is present in the cause: fire causes heat, and the heat is present in the fire. An effect is virtually in a cause when this is not so, as when a pot or statue is caused by an artist.*<sup>9</sup>

The English Oxford Dictionary has a cruder version where 'virtually' means "In respect of essence or effect, apart from actual form or specific manner; as far as essential qualities or facts are concerned."<sup>10</sup>

Analytically, the concept 'virtual' is almost too complex for me to use in the way I create texts, i.e., based on practice and recontextualization. But since I am convinced that conversation is an end in itself, we cannot afford to treat concepts and figures as rare pieces of Chinese porcelain. I usually use the concept in constructions of "the person" as a rhizomatic, evolutionary event and in that role it functions as a way of squeezing the "potential" of concepts such as 'possibility' and 'potential', concepts I do not really think cover their "potential". I think Deleuze "nailed" this problem with the concept 'virtual'. In this sense, a virtuality is a potential, or historical, event which actually lives in the present as an actual part of a person. The concept pair virtual/actual is not binary in the same way as future/present.



It is probably safe to say that my way of giving the Deleuzian concept ‘virtual’ a temporal preference is justified. A virtuality theorist such as Rob Shields criticizes Deleuze, Bergson and Proust for giving ‘the virtual’ an “overwhelmingly temporal emphasis” (Shields, 2003, p. 49). This preference can probably be connected to the fact that concepts such as the virtual and rhizome are embedded in the more fundamental concept of ‘becoming’. ‘Becoming’ is not just another concept. It is the condition for all concepts. It is the base in Deleuze’s fundamental critique of platonism.

*Together with ‘difference’, ‘becoming’ is the key theme of Deleuze’s corpus. In so far as Deleuze champions a particular ontology, these two concepts are its cornerstones, serving as antidotes to what he considers to be the western tradition’s predominant and unjustifiable focus upon being and identity. This focus is replicated, Deleuze argues, in our everyday thinking, such that the extent of the variety and change of the experienced world has been diluted by a limited conception of difference: difference from the same. Philosophically, he develops theories of difference, repetition and becoming. For the world of practice, he provides challenging writings designed to upset our thinking, together with a range of ‘tools’ for conceiving the world anew. At both levels, becoming is critical, for if the primacy of identity is what defines a world of re-presentation (presenting the same world once again), then becoming (by which Deleuze means ‘becoming different’) defines a world of presentation anew. (Cliff Stagoll in (Parr, 2005, p. 21))*

Stagoll’s use of the term ‘anew’ says plenty about the direction in Deleuze’s philosophy, a philosophy acutely informed by the thought of life as an assemblage of the past, the now and the future. Every human moment has to become anew, and that moment is an assemblage of determination and choice, but the most important part is that the determined parts are not derived from identity – they are derived from other assemblages and singularities. Choice and determination can therefore never be about “free will” and “fate”. They are always situated in a context, which is neither completely chosen nor determined.

All concepts are embedded in becoming as the condition for everything. Becoming is the flow of life. A person singularity is not a ‘being’ floating through time, interacting with other beings, subjects and a wide arrange of objects, also floating through time. And the connection between things is not about identity, such as the human identity. It is about assemblages. A Deleuzian person is an assemblage becoming through time. This assemblage consists of billions of other assemblages, including persons, parts of persons, technology, emotions, rationalities and virtualities. The way everything connects/evolves/learns could be described as rhizomatic.

The reason I connect ‘choice’ to this set of concepts is because I believe it to be the main “constructor” of the person as an assemblage embedded in a flow of becoming organized in a rhizomatic mode. Deleuze was a philosopher, and even if he was “political”, he was embedded in the philosophical, traditional mode of representative knowledge. As a technoscience researcher, I have a performative agenda. This agenda has to do with the person and our relation to technology. This agenda puts “the person” in the pragmatic “centre” of all my texts. Persons are the connection between the past and the future of planet Earth and our relation to technology decides the outcome. But it is not about finding the right relation to technology, because there is no key or solution. It is about feeding the conversation with difference and personality.



Another very important concept working as a property of rhizomatic assemblages is consistency. Consistency is the result of the relation between ‘difference’ and ‘repetition’. If everything was different from everything else, there would be no consistency, but if everything was repetition of something, the result would be that everything became “one”. I actually think consistency is a poststructuralist recontextualization of ‘authenticity’. If we are embracing the thought of ‘becoming’ instead of ‘being’, there is really no essence to look for, no stable (human) identity to tap into. But we have consistency and the very thing creating person consistency is choices. Depending on qualities such as difference and repetition, the choices we make create a mode of consistency.

Consistency is also at work in concepts. At first sight, all the variations of the concept ‘virtual’ are only very loosely connected. They have a high degree of difference and it might be hard to see what is repeated in their expressions. But there is also some consistency which could be expressed as a connection between two entities or events in different modes. The point is that the consistency is not an identity. These concepts may have a common history, but that history cannot be traced to some identity, which is shared between the different expressions of the concept. Instead, these expressions of ‘the virtual’ have maintained a degree of consistency through time. It is not difficult to trace the concept back to ancient Greek philosophy and the concept of ‘virtue’. In the citation from the Oxford Dictionary of philosophy above we have “An effect is virtually in a cause when this is not so, as when a pot or statue is caused by an artist”. It sounds Aristotelian.

I have introduced some of the Deleuzian concepts and figures used in the essays, but there are a few I have not yet mentioned at all. ‘Machine’, for example, is frequently used in the essays, but is not mentioned in the explanation above. The reason is methodological. Concepts like ‘machine’ are extremely entangled in our language and we (I actually dare to use “we” in this context) have a practical understanding of it visually, processually. It is so entangled in our language that we don’t use it as something needing a definition. We just apply it in different contexts, without needing to have an exact, defined understanding of it. Instead, we constantly recontextualize the concept, which makes our understanding of it expand to other language territories.

The connection between thinkers such as Gilles Deleuze and Donna Haraway is mainly about a theoretical attitude perhaps falling under the methodological quality of affirmation. Affirmation is a very general term, but in this context it refers to a social, non-hierarchical mode of creating ideas. A non-hierarchical mode of creating ideas simply means that an idea does not have to start in a former idea to be social. Ideas are never created from nothing. They always come from previous connections assembled in a particular way. Accepting a non-hierarchical way to create ideas is a conversational path to idea making. Donna Haraway’s cyborg figuration is a good example of social, non-hierarchical, conversational idea making.

## Donna Haraway and the Cyborg Figuration

I belong to an assemblage of persons spread over the world who have embraced ICT as a complex part of our selves. When I am using concepts such as ‘cyborg’, I do not want to define this word cleanly and tidily as an exact communication. The cyborg and other figures in my texts, work as locations for connectivity and entanglement. They are picked up from one or several contexts to be embedded in a newly constructed context hopefully picked up by others to be embedded in yet other contexts. My understanding of the cyborg, for example, comes from several texts by Donna Haraway and other authors in the same theoretical assemblage, as well as from decades of consuming science fiction stories. But the most important source is my own practice of technological embedment. The cyborg figure has become a tool to understand how technology works in the practices I am involved in. My conception of the cyborg is also influenced by ontologies and epistemologies by other thinkers. It is entangled in a machine of historical and virtual events where individual persons’ embedment in social networks is constantly reconstructing the social machine<sup>11</sup>.

Just as many of Gilles Deleuze’s concepts are spread out through his whole work, Donna Haraway constantly returns to the cyborg with something reminiscent of a love/hate relationship (ref how like a leaf). Haraway’s cyborg was born in a famous essay called *A Cyborg Manifesto: Science, Technology, and Socialist–Feminism in the Late Twentieth Century*, published in *Socialist Review* 1985, and later included in the book *Simians, Cyborgs, and Woman: The Reinvention of Nature* (Haraway, 1991).

One of the most important meta–texts about figuration can be found in a chapter in the book *Modest\_Witness@Second\_Millennium.FemaleMan\_Meets\_OncoMouse: Feminism and Technoscience* (Haraway, 1997). The chapter is called *Figures* (pp. 8–11). It is located in the introductory part of the book. But the chapter is not only an introduction to her book *Modest Witness*: it has to be viewed as an analysis of practices in her earlier texts, notably the *Cyborg Manifesto*. Figuration is not mainly a methodology she picked from, or in dialogue with, other researchers. It is fairly obvious that it came from the fabric of her own practice when she wrote about figures such as the cyborg and the reception of those texts.

Two kinds of cyborgs: the commonsensical and the Harawayian

The cyborg is important only if you view it in the light of Donna Haraway’s implosion of binary thinking. Therefore, the cyborg cannot be a static assemblage of human and technology on the scale of subjects and objects. A Harawayian cyborg cannot be about technological objects enhancing the human body. Contrarily, it has to be a deconstruction of that conception. But since it is a metaphorical machine of becoming, it cannot be something other. The conception of the cyborg has to be in a “constant flux”, to paraphrase an old thought going back to at least Heracleitus. My conception of the cyborg contributes an entanglement based on readings from diverse sources such as the history of philosophy/ideas, contemporary transdisciplinary contexts such as the Harawayian and the Deleuzian. But not least a professional and passionate embedment in the development of ICT technology over the last few decades.

The most important property of the cyborg figure is its conversational feature, i.e., from the viewpoint of this thesis. If this was an introduction aimed at definitions, I would have treated Donna Haraway's texts about the cyborg as a foundational location for interpretations. But there is no foundation. The cyborg was already around when Haraway started to write about it, and if she had not been inspired by previous stories about cyborgs, she would hardly have called her version 'cyborg'. In any case, it is interesting and pragmatic to build stories around Haraway's version of the cyborg, and perhaps in relation to the commonsensical version. The commonsensical version of the cyborg is focused on the mechanical side of the relation between humans and our technology.

The general idea of the commonsensical version of the cyborg is that we started to create technology thousands of years ago and this technology is becoming increasingly advanced and perhaps closer to the relations between humans. Technology is becoming more and more imbued in the fabric of human relations and some day it will be impossible to tell us apart. The border between humans and our technology will disappear. We could call this a "cyborgization process". Most of us are already cyborgs, dependent on technology, whether it is a pacemaker or antihypertensive agents (blood pressure). Liberal capitalism is a promise for this process to increase in coherence with general technological progress. You could also say that liberal capitalism and cyborgization are parts of the same process, which some persons simply call "progress".

Donna Haraway's cyborg is a completely different thing, or not. It depends how you read her texts. As I read them, she has taken the commonsensical cyborg and recontextualized it to deal with conversations about epistemology, ontology, gender and a wide array of related contexts. The main relationship between the commonsensical cyborg and Haraway's recontextualizations is probably about the crumbling barriers of binary thinking. In movies such as the Terminator movies<sup>12</sup>, the binary in question is between humans and technology, but Haraway's cyborg goes further and questions the border between nature (humans) and culture (technology). In this sense, Haraway's cyborg is about epistemology, or how we can know the fabric we (and our kindred) are made of, while cyborgs in the movies are more about human ontology from a traditional Christian sense – which generally leads to questions about the difference between the body and the soul, the nature of the soul/mind, etc. The commonsensical cyborg is involved in a conversation with more opaque borders. I can decide I believe in a Christian or atheist<sup>13</sup> ontology. The commonsensical cyborg helps to keep complete opaqueness away, creating conversations where other alternatives are transparent and possible. Donna Haraway's cyborg does the same thing, but from another viewpoint. Her conversations deal with the source of knowledge in a more general way, why do we seem to need binaries, and how are these binaries influencing human relations such as gender. What happens with the view of ourselves as human creatures if we do away with the binary between nature and culture? Haraway's cyborg is a figuration created to generate conversations from that and related questions.

The commonsensical and Harawayian cyborgs have one important thing in common. Neither is a location for definition. Both Terminator and Haraway's cyborg pick up

previous implementations, recontextualizing them to fit different situations while maintaining a thread of meaning from previous contexts. This is, of course, the common way in movies and all popular culture, but it is far from common in academic texts. Telling a story in order to create ripples in how we think about knowledge is not commonly seen in the research community. The point with research is generally to solve some kind of problem, and to do it more or less conclusively. Researchers like Donna Haraway have another approach. Her texts embrace the zone between humans and technology as constructed by humans with no pre-made solution to how to configure this zone for a sustainable society<sup>14</sup>. This zone can only be “properly” configured through conversation. The answer lies in the conversation as an end in itself. If there is something like wisdom, it can only exist embedded in conversations. If wisdom is extracted, it loses the context sustaining it and becomes something other. It is no coincidence that figurations of wisdom, such as Plato’s Socrates, generally refuse to give direct advice. Instead, they point to some personal experience and rely on the reader to recontextualize this experience to her own situation.

### The Cyborg Manifesto

Donna Haraway’s famous essay A Cyborg Manifesto starts with an ideological “out-burst” of passion and desperation for epistemological change:

#### *AN IRONIC DREAM OF A COMMON LANGUAGE FOR WOMEN IN THE INTEGRATED CIRCUIT*

*This chapter is an effort to build an ironic political myth faithful to feminism, socialism, and materialism. Perhaps more faithful as blasphemy is faithful, than as reverent worship and identification. Blasphemy has always seemed to require taking things very seriously. I know no better stance to adopt from within the secular–religious, evangelical traditions of United States politics, including the politics of socialist feminism. Blasphemy protects one from the moral majority within, while still insisting on the need for community. Blasphemy is not apostasy. (Haraway, 1991, p. 149)*

The title of the sub-chapter says a lot about what kind of text the manifesto is. She is pushing forward for a “common language for [contemporary] women”. The author knows it is impossible, so therefore it is a dream more than a real purpose. I am not sure how to read the ‘ironic’ part here. Personally, I think many postmodern scholars describe their texts as irony because they want to drape their text in armour against accusations of banality like “What do you mean by a dream? Dreams do not have anything to do with research...! and a smug smile afterwards easily read as [you silly little woman]”. While there might be traces of something like that here, I think her use of irony is more directed to subtexts than defending sarcasm with some sort of self-sarcasm. The subtext here says that it is impossible to create a common language for woman because all women are different from each other. But conversation is partly about pushing and tossing around ideas, rather than finding or creating homogeneity. A dream is, like hope, a perfect location for starting or entering a conversation. One of the most important parts of a conversation is the ability to read subtexts. It is probably easier to read A Cyborg Manifesto if you are a woman, but also if you have some decades of experience from different situations in life. Young men are probably the

underdogs regarding their ability to read this text, because they are generally located at the greatest distance from the context the story is about.

The reference to ‘blasphemy’ is related to Haraway’s epistemology of ‘situated knowledge’. Knowledge is contextual. Blasphemy is only possible if you are a part of a context. You cannot, for example, utter a blasphemy about the church if you do not count yourself as (actively) Christian. When Haraway published “A Cyborg Manifesto”, it was a blasphemy against several of the contexts she was a part of: “secular–religious, evangelical traditions of United States politics, including the politics of socialist feminism”. Her point is obviously that blasphemy is not only important, it is crucial for conversations to evolve. Denying the existence of blasphemy is to deny the possibility of evolution.

Most of the blasphemy of the cyborg figuration is captured in the following sentence: “A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (Haraway, 1991, p. 149). This is probably the single most cited sentence in the essay, but the blasphemy needs the following clause a bit further down to be understandable: “the boundary between science fiction and social reality is an optical illusion” (ibid). A cyborg is thereby a deconstruction of the binary nature (organism) and culture (technology), but also between “reality” and fiction. Haraway does not use the concept “reality” in a traditional sense, only in context with “social” as in ‘social reality’: “Social reality is lived social relations, our most important political construction, a world–changing fiction”. Social reality is not objects and subjects. Social reality is “relation”. Cyborg reality is both Kevin Warwick’s cyborg project<sup>15</sup> and the fictional cyborg in the Terminator movies.

*Contemporary science fiction is full of cyborgs – creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted. Modern medicine is also full of cyborgs, of couplings between organism and machine, each conceived as coded devices, in an intimacy and with a power that was not generated in the history of sexuality. (Haraway, 1991, p. 149f)*

Most people living in the western world are cyborgs in the sense that our bodies are partially regulated by medical technology. Blood pressure and birth control are two obvious examples where technology changes us, how we feel, how we behave, who we are. And this is only if we see mind and body in a traditional sense as subject/object.

It is easy to see cyborgization as something manipulating our “bodies”. It becomes even more complex if you append traditional thinking with some blasphemy: most texts portray the mind as made of a different fabric from the body. Even if the mind is not a substance, but generated from electrical impulses of the body, mind and body somehow become ontologically different in most conversations. But what about a television set or a computer? How are they related to a person – in what way are they yet another difference making them “outside” the subject/object constellation? It is very easy to fall into the trap of thinking of air as “nothing” or space in between things. But the space between you and your computer is actually based on the same material as the body, although less complex and having less density. In an important sense the difference between the “mind” and the body seems larger than the difference between the body and the technology we use. A Deleuzian way is to see all these phenomena as material

for assemblages. To separate individuals we could talk about person assemblages and group humans as human assemblages.

Donna Haraway's deconstruction of the space between the body and fiction is related to another part of Deleuzian thinking. Just as Deleuze obviously makes a difference between the actual and the virtual, Donna Haraway must see some difference between the actual, tangible world and fiction. Her deconstructions of binaries as reality and fiction do not make them "the same". They are still different, but the difference is different. Just as the 'virtual' is something more than "the possible" in Deleuzian thinking, fiction is more than representations for Haraway. The virtual and fiction are both present in social reality, influencing social relations and personal behaviour. When I perform an act, this act is generally influenced by an assemblage of virtual acts, i.e., acts close to the actual context but originating somewhere other than in my direct experience. These virtual acts can be thoughts about future acts, mediated "facts" from the media, fictional books, Twitter and a whole lot of contextual elements flying around in the information and communication society. Experience from fiction can be very close to a person and is therefore considered as a strong part in a person assemblage.

About language and what is the point of renaming things

Donna Haraway's decision to use the concept 'cyborg', instead of just trying to reconstruct the discourse about the 'human', tends to create trouble for people reading texts like the *Cyborg Manifesto*<sup>16</sup>. The problem is the sea of meaning constantly repeated within a concept like 'human'. We like to repeat the same terms for something we understand as repeated "content". We understand 'human' as a representation for the "content" contained in the concept, and the "content" as a representation of the term. This common view of language mirrors the overall view of modern progress. The content of the term 'human' changes in terms of right/wrong and better/worse, and the general idea is that the representation is growing more right or better for every year of research and political awareness.

The problem in (technoscience) research is that there is too much in a term such as 'human' that determines how we can use it. Since Haraway argues against many of the – more or less – determined aspects of 'human', she almost has to change the term to break free of the automatically repeated tradition in the concept. Using the concept 'cyborg' becomes a strategy to break free of our "normal" conception of the concept 'human'. 'Cyborg' becomes a figuration breaking free of 'human' with new possibilities practically impossible as the common concept as 'human'. And the figuration is not taken from the air; it is chosen because it is preconfigured in a particular way – in this context the deconstruction of traditional binaries.

There is a related story relevant to this thesis, the figuration 'web 2.0'. Between 2004 and 2007 this concept was used by superusers and some computer professionals related to the Internet. It was created to raise the question of a possible "paradigm shift" in the construction of Internet relations. We used terms such as participation, transparency and openness to denote something new on the web. The term web 2.0 took off and from 2007 to 2009 it was mainly transferred by "normal" web users – in marketing,

etc. During 2009, 'web 2.0' slowly faded away, and in the middle of 2010 it is rarely used. The technological side of web 2.0, i.e., social services such as Facebook and Twitter, is now common knowledge. The technology (and philosophy) of web 2.0 has become the norm. The brackets around 'philosophy' mean that the meta-discussions about participation, transparency, etc, have to some degree been built into the technology, and otherwise faded away. It worked as most conversations: there was a lot of input regarding experience, but also regarding attempts to "define" the web 2.0 phenomena.

The definitions did not work, as they rarely do in conversations, but they are still pragmatic because they produce "stems" or offshoots in the conversation rhizome. These attempts become important parts of the overall conversation.

Concepts such as 'the web' and 'human' are hardly comparable. The meaning of the term 'web' has only been developed for a decade or so, while the rhizomatic growth of the conversation about the concept 'human' is hundreds of thousands years old. The term 'web 2.0' worked as a social agent, changing people's conception of the web and possible Internet futures. 'Cyborg' can never be as successful. It is one of many linguistic agents working inside the rhizome question "What does it mean to be a human?" It is important to remember that, even if I mostly use the 'cyborg' to understand 'humans', Donna Haraway's concept is much wider. Besides her own cyborg figure in "A Cyborg Manifesto", which points to 'human', she often uses the example of the oncomouse, the first animal with a trade mark. And in her introduction to *The Cyborg Handbook*, she broadens the scope of the cyborg to include the planet Earth, Gaia, as a living system (Gray, 1995). The cyborg is a deconstruction of human binaries, but it is about how we use language, not what we are referring to. The properties making a cyborg cyborgian can be applied to all living things, but these Things have to be connected to the human machine occupied 24/7 with the human task of spinning a fine net of technoscience relations covering the face of our planet.

For me, the cyborg figure is a very valuable agent for destabilizing my own preconceptions about myself and my fellow humans. In some of the essays, the cyborg figuration has a crucial role, even where its role is not "defined" or even uttered. Using figures such as the cyborg is a step away from the everyday, commonsensical mindset filled with common words such as knowledge, information, good, bad, pragmatic, functional, right, wrong, necessary or even smart, stupid, banal, intelligent and "logic". Using figures such as the cyborg to explore the location between the human body and our technology is neither right nor wrong, good nor bad, necessary nor a waste of time/attention. It is just an action of difference designed to create sparks in the necessary evolution of the conversation about humans and our technology.



## Objectives

As presented above my main objective is to contribute to our embedment in Internet technology in a conscious and livable way. Below I specify two more specific objectives.

### 1. On the level of the ‘person’ and social relations

My first specific objective is to write a text true to myself and my experience of the world. This aim might come out as self-centred, but it is based on the strong belief that I can make a contribution if you let me. Neither do I view a self as something individual. Every personal self is an assemblage of entities and agencies from our context. A person can neither be nor behave completely individually or completely universally. All we can do is interact, move forward, become, and accumulate experience as a conversation in an assemblage of conversations until death.

This objective could be read as a Kantian base of the world. In this context, Kantian is referring to his ethics and the categorical imperative about generalization. I do not think anything can be categorical in the sense Kant did, but if you imagine your own actions as general laws, this it gives you a location to work from. I write a thesis true to myself because I want everyone to write their thesis true to themselves, and that incentive is the start of a conversation. I do not think we can explore the complex field between humans and technology without this basic conversational understanding.

The Kantian generalization principle is important but it cannot be imperative. I cannot always treat students as directly as I myself want to be treated, for example. There is an endless field of examples why the generalization principle cannot be imperative, but has to be evaluated case by case. In this context, it boils down to the following:

Write a thesis you think is true to yourself, or avoid it. Do not write a thesis for others in mind. I will gladly make an effort to join your conversation, but not if I think you are writing the text with me or others in mind.

The rationale of this objective is based on naturalist philosophy and cognitivism, as well as poststructuralist epistemology. My conception of “the self” is basically scientific and does not deviate much from a naturalist, cognitivist philosopher such as Thomas Metzinger. I prefer to use the concept ‘person’ to avoid the sense of dualism created by the mind/body binary. A person is contextual and accountable, and should not be confused with concepts such as ‘the self’ or ‘subject’, even if it might be difficult to avoid using these concepts altogether.

### 2. On the level of technology and epistemology

The second specific objective is to create connections between epistemology and technology as a way of improving our concept of the Internet and its potentials – not improving on it in the “big” way that underpins the creation of theories or the exact way derived from methods. The only way to improve on our conceptions of the Internet and its potentials is, presumably, through bridging the divide between humans and technology with conversations.



In my licentiate thesis in 2006, I dealt with the upcoming social web from the perspective of the web 2.0 concept. In this thesis, I use the licentiate thesis as a background to go further into the digital paths created during the 2.0 decade, i.e., the decade when the 2.0 mode of social interaction emerged. But there is a huge problem of how to discuss information technology without information technology jargon. Since the underlying problem is about epistemology and the only really transdisciplinary knowledge area is the intellectual history of epistemology, I have tried to use that as a connection tool. This means I use intellectual history to understand the technology of our time. The goal is to discuss technological complexities without an advanced technological jargon, while remaining close to technology and the relation between humans, technology and the long tradition of epistemology.

The second specific objective is based on the thought that knowledge about the relation between humans and technology has to start in a conversational mode of research. A conversational mode of research relies on different theories on the social construction of technology, which means:

1. Technology does not determine human action, but human action shapes technology.
2. The usage of a particular technology cannot be understood without the context it is embedded in.

The social construction of technology is not a theory as such. It is more a mode of thinking comprising work by researchers as Donna Haraway, Wiebe Bijker, Trevor Pinch, Bruno Latour, and John Law.

One of the most important questions for the future of the human race is (probably) to work out our relation to (information and communication) technology. The relation between humans and our ICT is my take on technoscience. It is very hard to see this done with rational methodologies. The main relation between humans and technology is simply not rational. We can use rationality as a tool, but we cannot isolate it. My take is that the relation between humans and technology evolves as a conversation. Therefore technoscience has to tap into the conversational flow of human technology recourses.

The conversational approach to the relation between humans and technology is used in daily conversation, in social networking on the internet, etc., but most of all in fiction i.e., science fiction. At school, in popular magazines, etc., the approach is pedagogical. In science it is generally rational. Technoscience has moved into the conversational mode. Moving a dimension of technoscience into a conversational mode of research is what I am trying to do in this thesis. A conversational mode of knowledge creation does not mean 'irrational'. It simply means more than rational; islands of rationality embedded in more holistic contexts.

The conversational mode of knowledge is used both as representation and performance and the point is to explore a way of using conversation as methodology. By conversation as methodology, I mean:

1. Affirmation
2. Recontextualization
3. Narration and storytelling

Affirmation does not mean “uncritical”. It means that criticism is embedded in an affirmative flow of knowledge creation. The conversation moves forward not to attack the next piece of knowledge, but to recontextualize new instances of knowledge, and to embed them in a narrative flow.

I use the concept ‘methodology’ in the following sense. A ‘method’ means a very rational and detailed way to do a piece of research. It almost presupposes the theory/method pair. Methodology is more a discussion of how things are done and what context the tools are used in. Methodology is more than a tool. It is a set of tools embedded in aesthetics and ideology.

The objectives discussed above could be read as alternatives to research questions. Basing the research on “questions” leading to “answers” would be counterproductive to the conversational approach. The relation between humans and ICT does not have any answers in that sense. It is a process which increases in quality relative to the quantity of conversations. This statement obviously depends on the thought that conversations are evolutionary.

The prologue forms a starting location for the following five essays. In this context, an essay is an attempt to perform technoscience conversations.

## Endnotes

- <sup>1</sup> I am using the term entangled to denote relationships so intertwined that the difference between the entities in the relationship becomes partly and/or momentarily blurred.
- <sup>2</sup> Assemblages is used as a Deleuzian term, which I discuss later, but the common understanding of the term is generally enough to understand the context. I also think the Deleuzian concept is quite close to the lexical meaning of “a collection of things”. Both Deleuze and I use ‘assemblage’ to criticize ‘identity’. A person, for example, is not to be seen as a subject, but as a relatively consistent assemblage of things such as emotions, facts, history and, of course, other persons.
- <sup>3</sup> I have borrowed the concept ‘glue brain’ from a former colleague – Lars Nellde – who made a difference between persons with a “gluey” brain who learn by memorizing and following instructions, and persons who learn by a constant testing.
- <sup>4</sup> For Haraway’s use of “figure”, see, e.g., *Modest Witness*, pp 8–11 (Haraway, 1997)
- <sup>5</sup> ‘ontological’ from Merriam Webster Online, <http://www.merriam-webster.com/dictionary/ontological>, viewed: 2010–04–27
- <sup>6</sup> rhizome. (2010). In *Encyclopædia Britannica*. Retrieved March 29, 2010, from *Encyclopædia Britannica Online*: <http://search.eb.com.miman.bib.bth.se/eb/article-9063441>.
- <sup>7</sup> [http://capitalismandschizophrenia.org/index.php?title=Main\\_Page](http://capitalismandschizophrenia.org/index.php?title=Main_Page), viewed: 2010–03–29.
- <sup>8</sup> MMU Research, [http://www.eri.mmu.ac.uk/deleuze/on-deleuze-key\\_concepts.php](http://www.eri.mmu.ac.uk/deleuze/on-deleuze-key_concepts.php), viewed: 2010–05–04
- <sup>9</sup> “formally, virtually, and eminently” *The Oxford Dictionary of Philosophy*. Simon Blackburn. Oxford University Press, 2008. *Oxford Reference Online*. Oxford University Press. Blekinge Tekniska Högskola. 23 March 2010 <<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t98.e1289>>
- <sup>10</sup> *The English Oxford Dictionary*, [http://dictionary.oed.com.miman.bib.bth.se/cgi/entry/50278115?single=1&query\\_type=word&queryword=virtually&first=1&max\\_to\\_show=10](http://dictionary.oed.com.miman.bib.bth.se/cgi/entry/50278115?single=1&query_type=word&queryword=virtually&first=1&max_to_show=10), viewed: 2010–03–23
- <sup>11</sup> Just a reminder about ‘machines’: I do not use the word in a lexical notion, but more as a “thing” meaning accumulating and recontextualizing throughout the thesis. A machine, in a wide sense, is somewhat about determination, but the borders are blurred: we do not really know what is determined, in what sense or “level” and how it is determined. Here are some “definitions”:
  - 1a. A device consisting of fixed and moving parts that modifies mechanical energy and transmits it in a more useful form.
  - 1b. A simple device, such as a lever, a pulley, or an inclined plane, that alters the magnitude or direction, or both, of an applied force; a simple machine.
  2. A system or device for doing work, such as an automobile or a jackhammer, together with its power source and auxiliary equipment.
  3. A system or device, such as a computer, that performs or assists in the performance of a human task: the machine is down.
  4. An intricate natural system or organism, such as the human body.
  5. A person who acts in a rigid, mechanical, or unconscious manner.
  6. An organized group of people whose members are or appear to be under the control of one or more leaders: a political machine.
  - 7a. A device used to produce a stage effect, especially a mechanical means of lowering an actor onto the stage.

7b. A literary device used to produce an effect, especially the introduction of a supernatural being to resolve a plot.

8. An answering machine: Leave a message on my machine if I'm not home.

adj.

Of, relating to, or felt to resemble a machine: machine repairs; machine politics.

v. ma-chined, ma-chin-ing, ma-chines

v.tr.

To cut, shape, or finish by machine.

v.intr.

To be cut, shaped, or finished by machine: This metal machines easily.

From the Free Online Dictionary, <http://www.thefreedictionary.com/machine>, viewed: 2010-06-03.

Perhaps a machine denotes a thing that destroys the balance between repetition and difference, in favour of repetition.

<sup>12</sup> Terminator Movies, see e.g. IMDB, <http://www.imdb.com/find?s=all&q=terminator>, viewed: 2010-06-03

<sup>13</sup> Sometimes I use the term 'atheist', but I always feel I am tapping into a question that is quite unfamiliar to me and many in the Scandinavian countries. The term 'atheist' used by Americans, for example, just means to be 'human' for me. Besides, you can be a human with Christian, or Muslim beliefs. Not being an active Christian is simply not a derogative in Scandinavia, it is just the basic human to which you can add different properties such as religious beliefs.

<sup>14</sup> By 'sustainable' I mean both environmentally and socially. Imbalance in the power between the sexes is, for example, socially unsustainable, I think.

<sup>15</sup> Kevin Warwick's cyborg projects, <http://www.kevinwarwick.com/>, viewed: 2010-06-04.

<sup>16</sup> I have considerable experience in this question after a lot of seminars about Haraway's cyborg, both in the context of undergraduates, research seminars and personal conversations. Confusion about the cyborg concept is generally not expressed in research articles, since we rarely invest time in things we find confusing or simply "bad" writing.

## The Mad Machine of Internet Becomings

An essay about choice and becoming at the end of the 2.0 decade of Internet relations and endless speculations. You will meet Disney's Tinkerbell, postmodern vampires and social/science machines and all these acted out on a stage based on Deleuzian concepts.

### Introduction

*We're tired of trees. We should stop believing in trees, roots, and radicles. They've made us suffer too much. All of arborescent culture is founded on them, from biology to linguistics. Nothing is beautiful or loving or political aside from underground stems and aerial root, adventitious growths and rhizomes. (Deleuze & Guattari, 1987, p. 15)*

Searching for the roots of the Internet is as meaningless as finding the root of the green lawn in front of your house. It does not have “a root”, a trunk and a vertical end where heaven begins. It is a rhizome. It evolves horizontally. There is constant change on the Internet, “sometimes gradually and sometimes very rapidly, but always evolving without a precise general design. The Internet is in this sense a major example of a self-organizing system, combining human needs and technological capabilities in a cooperative way” (Pastor-Satorras & Vespignani, 2004, p. 1). The Internet and I are the same age. We were both born in the first part of the 1960s, but while I am in my middle age, the Internet is only a kid. Our timelines are hardly synchronized. When I am gone, the Internet will have its best years to come. However it evolves, it will be an eruptive part of the human future. I am not sure if I am supposed to feel proud or ashamed of being born in the same decade as the Internet. Only time will tell and human desires<sup>1</sup> will definitely guide us through the difficult art of becoming<sup>2</sup>. But I suspect the birth of the Internet will overshadow other main events of the 60s in the long run. By far.

Decades have passed since the Internet was born. At the time of writing, it is the final months of the first decade of the 21st century. I proclaim the Internet as adolescent. Mad with hormones, raving through the space time of digital becoming in a frenzy of difference and repetition. The period of Internet adolescence started in the 2.0 decade, when Netizens<sup>3</sup> began to use the mathematical figure 2.0 to denote a change in the flow of Internet practices. Hierarchical machines<sup>4</sup> started to crack up and flatlings<sup>5</sup> were born to be young and wild. Before the 2.0 decade, the Internet was yet another potential representation of modern capitalist affairs. But a fairly obvious conclusion, at this time, is that the YouTube generation has performed some kind of deterritorialization<sup>6</sup> akin towards a new way of understanding things. These “things” are not only Internet things, not only digital, networking things, or even things contained within the sphere of technological mumbo-jumbo. The digital nuance in language is heavily transforming our world beyond concepts and matter. Digitalism<sup>7</sup> is transforming the rhizome of life. The digital machine is restarting the concept of ‘being social’. The Internet plays an important role in the becoming of life as a whole, but it is also a rhizome in itself, and as such it is a “multiplicity without any unity that could fix a subject or object. Any point of the rhizome can and must be connected to any other, though in no fixed order and with no homogeneity. It can break or rupture at any point, yet old connections will start up again or new connections will be made; the rhizome’s connections thus have the character of a map, not a structural or generative formation. The rhizome, then, is no model, but a ‘line of flight’ that opens up the route for encounters and makes philosophy into cartography” (Craig, 2005, p. 165). This essay is an aesthetic<sup>8</sup> line of flight into the flickering and craving bricolage of the adolescent Internet and postmodern culture.

## **Either/Or**

Sifting through the Google Scholar serendipity machine, I came across a reference to an article with the title “Was Hegel Christian or Atheist?” (Trejo, n.d.). This struck me as a peculiar question.

There are many reasons why I found the question “Was Hegel Christian or Atheist?” strange. First, why did Hegel’s religious identity have to be one of these two? There were plenty of religions to choose from, even in the 19th century. Second, why does the author have to give one of these properties to Hegel? There is a good chance that Hegel was both or either at different stages in his life. Few persons have the consistency the author asks of the historical figure Hegel. Third, why pose a question like this? What makes this kind of question worth the attention? This question is typical of historical thinking. We turn on the spot in the flow of time and pick up our monocular, trying to catch a particular bird in flight over a time span of a life. It is so easy in this direction. Looking out through the remnants from the life-building machines. The other direction is more difficult, catching something in its becoming is a whole different game than bird watching. The future building machines are spinning at our feet, but they do not have a clue where we are going and the option to go nowhere is ruled out by the flow of experience. We have to do something and we have to make choices, or our lives are placed in the mechanism of the power machines.

We are living in a time where technology is on the verge of automatically<sup>9</sup> answering questions about ideology, and others about persons. Will near-future research machines fill the digital space with questions such as “Was Peter Giger leftwing or rightwing”? This is not as far-fetched or pretentious as one might think. First, within a short time, a great deal of our life will be captured and recoverable in digital space. Second, digital research of this kind will be done by algorithmic, AI based machines. Third, either/or-based research is imperialistic in the sense that it strives for omniscience. It lives for and evolves through constant territorialization. Fourth, today, no researcher would waste energy on the question of a nobody’s political identity, but software does not need balance in its attention energy. A future research machine could have a mission like this: Search for information about X in the geographical region of Y and decide if their political identity is either A or B. The research machine programmers have obviously established the properties of A and B, and what properties A must have to correspond to either A or B. Five, the answer will be a very long array of statements in the form “The digital identity X in the region Y has the political identity of (A or B)”. Today, we do not really see the application for this question. We do not use personal identities (X) in this way. It is enough to be able to show that a statistical unit in region Y has the political identity of either A or B. X is in the algorithm, but as a non-person, opaque in relation to the system. But this is not only to protect the individual person. It has to do with pragmatics and application. The system cannot treat persons as persons because our bureaucratic and/or capitalistic attention machines cannot handle that kind of data. These machines have to be able to extract a statistical number of either/or answers to justify the peculiar act of attributing the answer to every identity in the region. So, today, in Deleuzian terminology, I have two political identities, one actual and one virtual<sup>10</sup>. My actual political identity is opaque in relation to the social body, while my virtual political identity is created by that body. My virtual political identity is only one of trillions of material-semiotic properties of my virtual body, or my body without organs (see (Deleuze & Guattari, 1987)).

Hovering around an answer to the first question about Hegel’s identity leads to some obvious propositions: contextuality and statistical approximation. The author and his audience are fairly transparent to the Hegel situation. They cannot know the secret life of Hegel as an actual person, but they know a great deal of his virtual body, namely the social part of his virtual body, the part created by the social context he was a part of. But however much the author knows about Hegel’s social context, the actual person is hidden behind a material-semiotic layer of time, space, language and things. Hegel did not have a blog or a Facebook identity and his “twitter” did not reach the social sphere connectable from our space time. However, there are always statistics. Given the knowledge extracted about Hegel’s context, the statistical chance of him having another identity than the two proposed by the question in the article seems reasonably slim. The context dependency of this question is very obvious. This kind of context transparency in a question is fairly common, but it is not always that we are sensitive to this fact. There is a part in most of us that answers questions with this syntax almost automatically. In many situations we do it out of a moral demand: “Shall I vote for X or Y? I do not know anything about these parties, besides a few traditional party

obligatories, but I must vote because that is a social thing to do and I am a social creature". But there is a risk of answering questions that would be better off if they stayed unanswered. We live in a time where either/or questions are becoming more and more common. They are easy to pose and they are easy to answer – especially if the answer is not that important. The new mediascape is an important accelerator in this process and the either/or structure is the most "natural" structure in a digital age, since it captures the basic act of a computer's army of on/off fields. The whole sphere of blogs, YouTube and other communities is based on either/or functionality, taking sides for this and that. A large part of the school system is based on either/or thinking. In an important sense, the human animal is already a digital creature, and most processes in biology are too. The either/or action seems to be built into the flesh of earthly, evolutionary processes.

The second question, "why does the author have to give one of these properties to Hegel?", is about personhood and consistency. Postmodernity and Internet life have accelerated ideological shape-shifting far beyond modern expectancy. But even in Hegel's time, lifelong ideological consistency could not be taken for granted. This question presents itself as a syntactical kindred to a question constantly hovering about the Internet during the 2.0 decade: "Is the horizontal tradition born during the 2.0 decade good or bad in relation to aesthetics, politics and epistemology?" I will present this question further with some help from the entrepreneur and author Andrew Keen. In his book *Cult of the Amateur* he has the hypothesis that the amateur is killing the future of the Internet. He creates a figure of the social Internet as a chattering flock of monkeys who actually threaten to ruin our culture by stealing attention from professional artists. If professionals, on the contrary, got the hierarchical scene back, then the future of the Internet would be as bright as Hegelian becoming<sup>11</sup>. I think it is safe to say that Andrew Keen is, so far, in a minority with this viewpoint. The major viewpoint among "the monkeys" is/was that social web practices (web 2.0) will lead to radical democracy in the realm of digital information. It is possible that both are right, in some sense. This discourse is generally trapped in the sphere of common sense-thinking<sup>12</sup> and public opinion, but there are conceptual rockets from both armies. When Keen uses the monkey figure to conceptualize the YouTube generation he draws them away from the human machine of rationality and places them in the irrational sphere of non-humans<sup>13</sup>. This methodology speaks to the pride we place in our humanness, in our ability to progress. It is unlikely that humanity would willingly power down some of the progress machines so we can have some fun instead. The counter-image is more powerful since it speaks directly to us as persons. The "army of monkeys" is wiping the dust off the old panopticon figure, created by Jeremy Bentham (1791) and further theorized by Foucault (1977) and others. Jeremy Bentham's panopticon was a particular kind of prison designed to let the watchers watch without the prisoners knowing whether they were being watched or not at a particular moment. Foucault developed the idea to encompass a large part of the social life. For Foucault, the panopticon was built into all hierarchical structures as a normalizing control instrument.

The 2.0 decade has seen the birth of both some kind of information ownership deterritorialization and the construction of the panopticon helicopters now hovering in



the space in the digital network of social machines. The panopticon helicopters are programmed to fulfil the Keenian dream of the reterritorialization of the modern view of the “amateur” as a consumer. There is a linking between the question of Hegel’s religious identity as either a Christian or an atheist, and the future of the Internet as either the ProdUser’s<sup>14</sup> paradise or the regime of the panopticon helicopters – which are both the guardians of the modern professional culture and the creators of normalization structures. The connection between these historical and futural perspectives are our predisposition for the either/or mindset rather than a mindset based on both/and. This predisposition is virtual, the actual is generally played out as both /and. Hegel was probably a Christian believer and a non-believer, depending on the when and where of his life. The future of the Internet will probably be infinitely more diverse, complex and different than any either/or model can lead us to. And still, our thinking and acting about these questions are performing the future of the Internet right now.

The third and last questions about Hegel’s identity are: “Why pose a question like this? What makes this kind of question worth the attention?” My parallel question here is: “Why raise the question of the future of the Internet? Is this question worth our attention?” If we view language as representation, then the question about Hegel’s religious identity is interesting from a historical viewpoint. If, on the other hand, we view language in terms of performativity, then this question becomes futural. But there is not any Hegel in the future, other than the changing forms of his virtuality. However, seeing this question in terms of performativity is to reposition the syntactic subject in the question. The question now is about Christianity and atheism, and since both are really, or actually, about Christianity, that is also the new syntactic (and semantic) subject. The act of attributing to Hegel a position from the new location creates performativity in the constant reinterpretation of Christianity. The parallel question about the future of the Internet is hardly relevant at all seen from a representational point of view. From this view, the question becomes a guessing game, a bland voice in the public opinion, or common sense, of what technologies as the Internet can lead to. Seen from a performative viewpoint, the task is to perform the actual via the virtual. If the question/answer is only about either the amateur or the professional, it does not really operate in the methodological zone of productive complexity as composed by philosophy, art and science.

## **Philosophy, Art & Science**

Either/or is one of the basic tools in testing, and testing is the one of the basic actions in evolutionary processes. Testing is also one of the common factors in science, philosophy and art. I am going to follow Deleuze and Guattari and treat these three practices as fundamentally different. For Deleuze and Guattari, this difference is not essential in any way. “He gives strict definitions, not because he wants to impose one more system on thought, but because he wants to show that thinking takes different forms” (Colebrook, 2002). For Deleuze, and other poststructuralists, difference is an ontological concept. ‘Difference’ says something foundational about the most basic processes of life on earth.

Deleuze and Guattari (1994) do not mean that art, philosophy and science should be practised as separate forms, only that they are separate processes, conceptually. Most processes in academic institutions are a mix of these, but this is also true of most human activities. Simply put, philosophy is the art of forming, inventing, and fabricating concepts, which escape simple definitions and the fixity of opinions. Science is about creating functions that are “presented as propositions in discursive systems” (1994), while art creates differences through affects and percepts. It is not that common for contemporary thinkers to present distinct definitions of common and almost indefinable terms. The powers Deleuze (& Guattari) calls philosophy, art and science together form a resistance against common sense and personal opinion. In our daily life we constantly have an opinion about this or that without thinking about the complex social processes (or machine...?) leading to that opinion, and the relation between that opinion and other opinions. Common sense works similarly. We are imprisoned in a sphere of commonality where tradition does most of the work in our daily life. Art is not something we do to get a break from our daily routines and packed work calendars. Art is about breaking out of the bubble of commonality, experiencing new connections in life. Philosophy and science are not something we do to get to the truth behind appearances. They too are powers enabling us to break out of the sphere of commonality; philosophy by creating concepts leading out of the virtual sphere, science by creating functions leading out of the actual sphere of common life.

These three powers generally cooperate. For Deleuze, the cooperation is mostly about philosophy and art. In the essay *Hot and Cool* (Deleuze, 2004), he philosophizes about the art of painting, based on a painting by the French artist Gérard Fromanger<sup>15</sup>. The essay draws us, the readers, into the studio. It is like standing between Deleuze and Fromanger in a simultaneous creation and philosophical recreation of the painting. All colours are potentially hot and cool (rather than hot or cool). The context situates the colours as hot or cool. During the process of painting and philosophizing, we are accompanied by the following sentence/question: “Art as machinery: Fromanger paints, that is to say, he knows how to operate his paintings. The painting-machine of an artist-engineer. The artist-engineer of a civilization: how does he operate his paintings?” (Deleuze, 2004, p. 247). As readers, we can actually see an either/or question being formulated right in front of us. First the colours only have the potentiality of hot and cold. Their hotness/coldness is in the virtual dimension, in the realm of philosophy. Then the painting machine starts to actualize the colours as either hot or cold, as affects and percepts, as an assemblage of differences. I, as a virtual participant, am transformed into a desire machine. Thinking of yourself as a machine is an effective way of drawing the humanist sentimentality out of your body, like a mild form of exorcism.

Art, philosophy and science are virtually entangled on the Internet. Entangled, in this sense, means a constant mixing leading to a blurriness of which is what. They are virtually entangled because forces such as the economy, copyright, research politics and other resist the entanglement. But the Internet as I/we know it definitely seems to be built for complex social entanglement.

The three powers are virtually entangled, rather than potentially, because the digital infrastructure endorses conversation, and conversation inevitably leads to entanglement if it reaches some degree of complexity.

## Internet Person assemblages

Let us look at three different variants of a difficult question posed to a wise person.

1. The common sense variant. In common sense, the wise person searches within him– or herself and after a short moment comes up with the answer.
2. The Socratic variant. The Socratic variant of handling a difficult question bounces the question back as a challenge to the person who asked the question. The answer is already inside the person who posed the question. The task is to find it by the act of rational thinking. Every question becomes a learning situation.
3. Third, the poststructuralist variant. It is still a learning situation, but instead of challenging the person who asked the question with the act of finding an answer by rational thinking, the wise poststructuralist would ask that person to test differences and choose one (or more) difference pragmatically.

In the first case, there is a subject who receives the question from the outside and feeds it to the subjective “memory disk”. The answer is returned almost instantaneously, since it uses the first search hit corresponding to the question. The subject is itself enough. It is alone. This is the subject model used both by rationalists following Descartes and the romantics after Rousseau. In the second example, the subject model remains unchanged, but now it is about two interacting subjects, where one is functioning as a search machine and the other as the memory disk. The point is to unveil the hidden knowledge on the memory disk.

In the third situation, the person is not a subject, but rather an assemblage of consistencies in a flow of differences. The question works as an impulse to extensive testing and shaping of concepts, affects and/or functions. The Internet almost seems to have been tailor-made for the poststructuralist model of a person, bringing the testing to the social machine with plenty of new tools for expression.

In his exploration of subjectivity and the self in *Subjectivity: Theories of the self from Freud to Haraway*, Nick Mansfield describes the Deleuzian alternative to ‘subject’ as rhizomatic: “The rhizome is a model of the heterogeneous. Because it is a way of denoting the haphazard intersection of a number of lines, the rhizome links apparently disconnected impulses and forces, ones that are not only distinct, but that come from completely different orders” (Mansfield, 2000, p. 143). This heterogeneous and haphazard process of connections could be a description of conversational processes on the Internet as well as in daily talks. If the person is an assemblage of things rather than a subject operating an object/body, we are probably going to be more entangled with the Internet. Being entangled with the Internet is far more pervading than saying it will become one of our habits. The entanglement between humans and digital technology will probably be infused by conversational, rhizomatic processes binding us together. During the 2.0 decade it has become more and more clear that I am involved in something becoming more and more a part of me.

During the Next10<sup>16</sup> conference in Berlin in May 2010, one of the moderators asked the large audience (several hundreds) for a show of hands on the subject of whether they would sacrifice their pinky (little finger) to save continued usage of social media. Three or four in the public showed their hands and would rather have their pinky than social media. This could be interpreted as indicating that the ones who showed their hands, or many of them, saw social media as more a part of themselves than their pinky. This is neither sensational nor strange, just something to keep in mind. There are not some things in a person assemblage with the property of belonging to some core, just as there is not a core in the social Internet. But there are things that have a temporarily heightened intensity. Things like Facebook and Twitter share the property of being a heightened intensity in many person assemblages as well as in the social Internet as a whole.

## Entangled ideas

Since the 90s, I have waited for sophisticated entangled ideas to start popping up on the Internet. The setting seems perfect for idea-based chain reactions where ideas are evolved through spontaneous connections of complexities. Entangled ideas are not absent. On the contrary, they are very frequent in isolated islands of connectivity as in collaborative fiction like the open source movement, or Wikipedia. But these are generally rule-based and moderated. They evolve into one single ecology, or one isolated machinery. There is potential for a more spontaneous and serendipitous idea ecology to evolve in a, more or less, location-free environment such as the blogosphere. If we presuppose the Internet as a potential setting for entangled ideas, there is space for a hypothesis of why it has not occurred yet and possibly never will. Regarding scholars, it is probably about the desire for recognition and the postmodern commercialization of discursive ideas. Scholars desire recognition for their ideas and commercial publishing houses desire money and power, as all capitalistic organizations. These two form a symbiotic relationship between two desire machines, or ecologies of desire. They feed each other and create an interest which asserts power in science politics, which relays funding back into the symbiosis of scholars and publishing houses. Most of us in the industry of scholarly ideas know that the international, publicly funded, university structure could easily manage this process and display the whole production as easily accessible information from any computer in the world freely, but this would entail a reconstruction of the assembly of desire ecologies in research politics. On the other hand, the Internet is an actuality. To understand its virtualities in a scholarly sense, we have to embrace digital life as 'becoming-knowledge'.

Even if idea-entanglement is far from its full potential on the Internet, the general accessibility of media is increasing enormously as we speak. The Internet has become a zone of changing and evolving person assemblages. Popular culture with its plethora of difference and repetition in motifs and themes is a gigantic storage for things actually and virtually entangled in person assemblages across the globe. The Internet, dressed in the shape of the romantic metaphor cyberspace, is the perfect environment for the

cultural things entangled in most person assemblages at the beginning of the second decade of the 21st century.

## Cyberspace & Fairies

*Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts . . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non space of the mind, clusters and constellations of data. Like city lights, receding.... (Gibson, 1984, p. 67)*

This territorial performance of the ‘cyberspace’ figuration works like a dazzling phenomenon of sparkling lights, always lingering somewhere in the interface of Internet speculations. Few draw direct parallels between ‘cyberspace’ and The Internet, but there always seems to be a fairy hovering around the semantics, threatening to wave her wand and throw you into the poetic landscape of cyberspace instead of the “boring”, everyday mind workout of Googling recipes and paying your bills at the Internet bank. Let us say I was a head-hunter for the project of hiring a fairy. The job was to destabilize the concept ‘Internet’ by luring careless persons into the romantic land of ‘cyberspace’ instead of the rational sphere of corporate networks. Then I would probably recommend Tinkerbell, the devious fairy in Peter Pan. She is sometimes quite nice, but often vindictive, angry or mean. Her temper is explained by a fairy’s tiny body, which cannot manage to hold more than one emotion simultaneously. She does not work in a world imbued by the philosophy of Yin and Yang or Hegelian dialectics. She is either or. She is a Kierkegaardian vibrancy, fluctuating between the aesthetic and ethic phase, depending on the situation. She would be perfect as a commissionaire for persons who want to enter the door to either the rational capitalistic mediascape or the romantic heaven of radical democracy in the midst of the receding city lights.

The figure of Tinkerbell did not stay in the story/movie she was created in. As soon as the bosses of the Walt Disney Company understood the aesthetic power<sup>17</sup> in Tinkerbell’s star-tipped, magic wand, they enrolled her as a crossover symbol for the magic in Disney animations. Through Disney she also became something of a symbol for the magic of Christmas. But, as always in popular culture, it is very easy to be bewitched by one single plateau, disregarding the multiplicity of that which we understand as real. A plateau in this sense is “any multiplicity connected to other multiplicities by superficial underground stems in such a way as to form or extend a rhizome” (Deleuze & Guattari, 1987, p. 22). A plateau is a part of a rhizome, a “rhizome is made of plateaus” (ibid: 21). Facebook and Twitter are plateaus of the Internet rhizome, and each Facebook user is a plateau of the Facebook rhizome. Tinkerbell is a plateau in the Facebook<sup>18</sup> rhizome as well as in Twitter<sup>19</sup>. In the Facebook rhizome, Tinkerbell is a performer in the monetary game around Hollywood and Disney. The Twitter user Tinkerbell, on the contrary, is a “normal” person who was early to see the potential in Twitter and user name strategies. It is someone named Samantha who has locked her tweets away from the public. She has created a disruption in the monetary game

by claiming the territory virtually belonging to Disney. But ownership in the post 2.0 decade is not the same as in the pre 2.0 decade.

Tinkerbell is a white western Blondie doll with a magic wand which is affecting everyone but the white western male hero, Peter Pan. She is an animated figure with a very simple form, and a one-sided emotional life flickering to and fro like a loose electric switch. As a figure, she is an embodiment of modern popular culture as it presented itself before the dawn of digital networking. She is perfect as a doorkeeper to the multiplicity of plateaus leading into the rhizome of digital relations in the growing system of Internet package deliverance. Tinkerbell as an animation or a fictional figure might have been created by one of those gorgeous monkeys, but she is way beyond that, with the enormous socio-economic network encompassing all Hollywood stars, both virtual and actual. Tinkerbell belongs to the special force, a soldier in the army of the hyper-real version of Disneyland. If we enrolled her, or someone like her, as the keeper of the multiple doors to the Internet, we could actually influence which version you were going to use. But the Internet is not really like Disneyland. There is no authority system for enlisting lobbyists and power soldiers to a particular version of the Internet. One of the differences between Disneyland and the Internet is that Disneyland has an authority system to control the relation between the real and the hyperreal. For the Internet there is no such system. This does not mean that hyperreality does not exist on the Internet. On the contrary, there are plenty of them, just as it is in the World. Learning on Deleuze and Guattari, Disneyland has an arboreal structure, while the structure of the Internet is rhizomatic. The structure of Disneyland is like a tree, so if you cut down the tree, the other parts will follow. The Internet is more like grass. There is not one single branch to launch the orders from. Exerting power, lobbying; all this has to be done horizontally, mouth to mouth, "pen to pen".

The Internet is a flickering and glimmering sphere of reality and simulations of different order. Jean Baudrillard performs a set of successive phases of the image from representation to hyperreality (Baudrillard, 1994, p. 6):

- it is the reflection of a profound reality;
- it masks and denatures a profound reality;
- it masks the absence of a profound reality;
- it has no relation to any reality whatsoever;
- it is its own pure simulacrum.

Baudrillard's successive phases of the image perform a representation which gradually lose contact with the represented and finally creates its own reality. In that last stage it has glided into hyperreality. Hyperreality seems to be a strange concept. Instead of saying that reality has changed, Baudrillard asserts that reality does not exist any more, in some contexts. It is not only that the representation has become unrecognizable in relation to the represented, but the represented has ceased to exist in the process. But it is not that strange – it has to do with deterritorialization.

In 2004, a new conceptualization of the Internet popped up at a conference and quickly spread like wildfire across the Internet and far beyond, to Web 2.0 (Giger, 2006)

– see Appendix II. Web 2.0 was supposed to represent user-produced content on the Internet. This produsage of content was identified as performing radical democracy, information transparency and anti-hierarchy activism. From the beginning this trend was very local, but it spread rapidly and soon became the infinite world of the content ProdUsing the monkeys Andrew Keen is referring to as the destruction of our culture (Keen, 2007). What he is really afraid of is that the figuration of Web 2.0 will travel all the way from representation to hyperreality, because he is a technocrat and the profound reality belong to the experts. The web 2.0 concept was coined by ICT professionals, and when the academic world finally got the point, the Internet was in a state of reterritorialization. But the academic community does not generally share conceptual border objects with professional communities. Radical democracy, information transparency and anti-hierarchy activism was actual before 2004 and will continue to perform after this decade has faded away. As I write this, in the midst of 2009, I am beginning to view Web 2.0 as a historical event, as the decade of reinterpretation of congealed narratives. In July 2009, I got a new book about Foucault in the snail mail. The title is Foucault 2.0 (Paras, 2006), and it promises to be a reinterpretation of Foucault based on his later writings from 1976 to 1984. Some day a future Foucault will perhaps take up archeology and trace some practices back to the decade I call the 2.0 decade of Internet Practices and futuristic hope.

I see the 2.0 decade as a performance by a joint effort between a poststructural/post-modern mindset and the advent of digital technology. This is not determinism. It is more like a natural catastrophe in the panopticon structure in Foucault's prison (1977). First the power sees everything, and the prisoners see the symbol of power watching them from above, beyond. But then the technology used to build the panopticon structure is overthrown by something that creates a two-way transparency. Suddenly, the prisoners and the administrative power are starting to see one another on the same terms. This does not, in itself, modify the power relations. The power relations are modified when the persons with administrative power understand that they also are under surveillance. The panopticon structure finally cracks when the prisoners are starting to talk (or chat) about the behaviour of the persons in power. Conversation is the backbone of the human sphere. Information technology as the telephone, television and Internet in the mode of web 2.0 is a path from a truth paradigm to a conversation paradigm, where the conversation is an end in itself. In this paradigm, the greatest evil is to assert power to create silence.

Network technology and cultural representations are both important expressions of postmodernism. Mythological creatures like vampires seem to be enrolled in a gigantic contest of postmodern reconstruction of traditional mythology.

## **Postmodern Vampires**

The vampire is a fascinating creature. Its impact on contemporary popular culture is tremendous. In a way, it is an ironic, postmodern version of Nietzsche's overman (2005). They are as far from the Facebook generation as possible. A vampire is an



aristocrat, a creature in between nature and the supernatural. It is almost impossible to picture a vampire sitting by a computer and wandering around in Second Life and connecting to friends in Facebook. If they use technology it is a telephone from Alexander Graham Bell's time, or possibly a gramophone to play Bach on. Therefore these creatures are as far from the Internet as you can go. They are what was before the complexity of the information age. They are pictured as being outside the world, rather than in it. They are more human than humans, if by human we mean rational animals. What they lack is the phenomenon linking to other animals, emotions, irrationality. They are not alive, and therefore they do not have a heart. In a very interesting sense, they actually simulate information technology with its speed, power and cool rationality without emotions – that is, the Internet we knew before the 2.0 decade. This decade has produced an endless swamp of simmering feelings about everything between heaven and earth, but most of all, about ourselves. But from mud, there is hope. Richard Rorty's book *Philosophy and Social Hope* taught us that (Rorty, 1999). Postmodernism is not only about aesthetics, a fraction of the postmodern mind is searching for new ontologies. That is probably why postmodernism has become so discussed in contemporary theology.

The vampire might be a postmodern variant of Tinkerbell. The vamp (as it is sometimes shortened to) is a revamped version of the animated Disney figure perfectly performed as a postmodern myth for the network age of endless rays of information. The vampires are "real" both in the biological ecosystem, as bats, and in old folklore on a distributed, international level. All these stories are thrown into the enormous machine of cultural bricolage based on books, audiobooks, movies, TV-series, art, web communities, blogs and music, most of it instantaneously downloadable (and discussable) in the grey-black zone of copyright protection laws. Disney figures have a simplistic version of humanity as "content", but a very inhuman form, while vampires have a photographic resemblance to humans, but the human-like form hides the almost perfect negation of humanity. They are dead inside. They are living dead creatures doomed to walk on this earth forever. Once upon a time, they were killed and "turned" by another vampire, and that is usually hundreds of years ago. Since they are not alive, their human-like bodies do not change, and therefore they are living the human dream of collecting experience without bodily involution, deterritorialization. They are a rhizomatic network of relations, connections within popular culture, biology, folk tales, Hollywood ethics and youth aesthetics. The vampire can be viewed as a post-humanist irony of the Leonardo da Vinci sketch *The Vitruvian Man*, but it is also an unclean version of the Deleuzian figure BwO, Body without Organs. I use the adjective unclean because BwO, like most Deleuzian figures, has a very clean, abstracted, digital, almost mystical aesthetic about it. Deleuze's description of a book as a BwO sounds a bit similar to William Gibson's cyberspace poetry:

*In a book, as in all things, there are lines of articulation segmentarity, strata and territories; but also lines of flight, movement deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an assemblage. (Deleuze & Guattari, 1987, p. 4)*



The description of fairies as Tinkerbell seems almost opposite to the picture of a vampire just raised from a grave in the graveyard, all dirty and whitish without real life. The life of a vampire is both actual and virtual, and still unreal in humanist logics. The living vampire is a dead human. Deleuze and Guattari are constantly referred to as poststructuralist and postmodernist. These two concepts are extremely difficult to use, or very easy, depending on your relation to language. Since they are both post-words, describing a negation of the actual or previous meta-narrative, the logic says they cannot work by traditional definitions. They propose an after something, not something in itself. Still, many researchers seem to see these terms as troublesome. In their study of International Postmodernism, Johannes Willem Bertens, Hans Bertens, and Douwe Wessel Fokkema, argued that "In French literature or art, 'postmodernist' is not an active term: artists hardly ever use it to describe their praxis, critics do not use it in their discussions of contemporary art", and further down they conclude "It is only when French writers address the world outside France (which for them inevitably means the United States) that they feel the need to use the term postmodernism" (Bertens & Fokkema, 1997, p. 353). My hypothesis is that the concept of 'postmodernism' is embodied in the very effective performance of American, popular, consumer culture. The Internet, in the shape of 2.0 cultures, is the latest performer in this process, but it is starting to outgrow its initial promise of information highways. It is the aesthetics and ethics of that culture rather than its epistemology or ontology that we call postmodernism. So it might be possible that French intellectuals tend to view postmodernity as the American cultural influence as a cancerous becoming slowly destroying their own culture. But this stance is very complex since the American culture is the bringer of both good and bad things. The music industry, Hollywood culture, popular television series, and not least the Internet, might be rhizomatically distributed, but we all know in what soil the biggest bag of seeds was dropped, and this is very evident in postmodern aesthetics and ethics. Postmodern ethics is a gigantic switchboard of rule-based choices, with a contextuality strongly reminiscent of two-dimensional Disney animations. Biblical imperatives such as "You shall not murder" and "You shall not steal" are fed into the switchboard ethics and the culture consumer is invited to a game of culture logics. The 21st century has started with the switchboard game in overdrive, producing TV-series as *Weeds* and *Dexter*. *Weeds* is about a single mum making a living by selling drugs and enrolling her children in the task. *Dexter* is about a serial killer, figured as something of a hero because he is only murdering other serial killers. These moral games generally involve God, Justice and Humanity as actors in the mind game with the viewer.

Representations of postmodernism are often based on a very spectatorial balance between ugliness and beauty. The postmodern vampire is a very typical figuration of that balance. One example would be the Cullen family in *Twilight*<sup>20</sup> with their dazzling exterior and an instinct to kill humans and drink their blood. These kinds of vampires are often portrayed with their sheer beauty deconstructed by the blood dripping from the corner of their mouth. It is not only the vampires who have invaded popular culture in the first decade of the 21st century. There are also an increasing numbers of forensics experts role-playing as detectives, as if their profession gives a legitimacy to the art of

dwelling in one's own disgust. Good vampires are also superheroes because they have supernatural powers. They are as strong as mechanical machines, fast as light and they can even bewitch humans, making them their slaves – probably making producers of commercials very jealous. In the TV series *True Blood*<sup>21</sup> the vampires have been integrated into the human community and spend their evenings in ordinary bars drinking blood out of bottles with exactly the same form and visual interface as ordinary beer bottles. The heroine, Sookie, is a human with the extraordinary ability of mind-reading. The hero, Bill, is a vampire with vampire abilities, among them the ability to bewitch humans. But the ingenuity in the postmodern switchboard game of ethics seems almost endless, because Bill seems to be immune to Sookie's mind-reading abilities and Sookie to the vampire's ability to bewitch humans. So they are "hidden" from each other's supernatural mind-capabilities at the same time as their bodies are drawn to each other like powerful magnets. This is just one of many blindness figurations in postmodern popular culture. We do not want to discover the unknown anymore, just some of the unknown. We want to choose what we are supposed to discover. Truth is no longer absolute. It is fragmented. Truth in the form of representational logic may be deteriorating, but in postmodern esthetics and aesthetics, truth has been metamorphosed from something to discover to something to choose. This trend is also visible in poststructuralist thinking, as in contemporary feminism, which often reaches for methodologies to deconstruct truth narratives, without ending up in something generally digested under labels such as relativism and nihilism. Concepts such as 'truth' are the forensic fascination of poststructuralism and anti-poststructuralism.

Deleuzian concepts are poststructuralist ontologies, but it is also possible to view them as modernist aesthetics. The BwO figure, as cited above, and many of his other figures have a musical quality. They are abstract words denoting forms, speed, flows, assemblages of forms, structures, etc. They are like music by Schoenberg or Stockhausen or literature such as Harry Martinson's *Aniara* or cubist and futurist painting. They are like *musica universalis*, music of the spheres, but also inherit some of the aesthetic interface from Plato's form world. In a way, they are synced to the early expressions of the Internet as an endless system of information highways, ip-packages in a constant flow around the globe with an unmatched speed and everything surrounded by a mystical aura of enlightenment freedom – or John Perry Barlow's exclamations in *A Declaration of the Independence of Cyberspace*: "Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather" (Barlow, 1996).

Postmodern culture is about Late Capitalism (Jameson, 1984), file-sharing, hip-hop, vampires, Goth culture, fitness instructions, funny home videos, open source, recipe sharing, reality shows, weight loss, health, body enhancement, mobile phones, Google, cyborgs, gaming, self-development, social networks, tagclouds, hyperlinks... Everything existing and performing simultaneously in a gigantic bricolage over the time we are living in. There is a distinct point of reference somewhere between the Deleuze-Guattarian Body without Organs and the Internet, but it is reversed. The physical

body of the Internet is growing endlessly with a continuous flow of new networks containing synchronization machines and flows of information. This modernist, metallic, abstract “music of the spheres” is more like a body with organs, while the virtual part of the Internet is the room where postmodern performance is starting to reshape our becoming to something quite different from an electric storm of abstract forms.

## Two Planes of Activism

The Internet is a techno–social becoming vibrating with futuristic joy in the midst of the two planes of human expression: the moral and the non–moral. The moral plane is the common sense, public opinion, what to do, what to eat, what to think. It is a constant flow or either/or, of affirmations and rejections. The non–moral plane of human expression is the same as philosophy, art and science, seen as activities, not disciplines. The non–moral plane is not beyond the moral plane. It is inhabited by moralists, but moralists with investments in non–moral concepts, affects and functions. What Andrew Keen is referring to when he says that today’s social web is killing our culture is partly the same as saying that the moral plane is consuming all the digital air available on the Internet. It is just a gigantic switchboard of affirmations and rejections of daily affairs. Another utterance as an immanence in the moral plane of expression would be: today’s reactive publishing policies in scholarly assemblages might be killing the potential for the non–moral plane to develop entangled ideas on future networks. This is basically a moral statement, but some of the semantics creates vibrations with the non–moral plane, i.e. some semantics resonates with Deleuzian ideas and my own short passage about entangled ideas earlier in this text. This concept with two planes of human expression is really a connection to or (/and a reading of) Deleuzian ontologies.

*“We need to interpret interpretations more than to interpret things.”*

The aphorism could perhaps be Nietzschean, but is actually by Montaigne, placed as an emblematic introduction in Derrida’s famous essay *Structure, Sign and Play in the Discourse of the Human Sciences* (Derrida, 1978). This is of course an irony, since the sign ‘interpretation’ traditionally has a logocentric endpoint. One is searching for the most diminutive point in the hermeneutic cone of interpretation. But Derrida’s point with the quote might be that every time the interpretation reaches the endpoint of the cone it bounces back into the wilderness of multiplicity, perhaps because the endpoint in the cone is so small that it can hold nothing else but itself. This leads to an endless play where all endeavours to reach logos are hopelessly referred to other signs. It is like a unit of meaning fed to the blogosphere, which bounces wildly every time it reaches some kind of interpretation.

In the course of “normal” scientific communication, Derrida’s style and aim touches the monster of relativism and even the super–scary devilish among lullaby monsters, nihilism. If stable meaning is dead, what is there to search for? If you think briefly enough, the following reflection could be that everyone with the honest work of searching for some kind of meaning could pack her/his things and go home. This is the positivist’s view of poststructuralism. Is truth a choice of either/or in the Kierkegaard-

ian sense? It might be, if one with a 'true meaning' means something transcendental and absolute in all possible meanings of the word. But this sense of truth hardly exists in theory today. The actual praxis of truth today in academic institutions is a mix of the scientific truth, the consensus theory of truth and the Nietzschean truth – one strives for a popperian falsification mode dynamically piloted by consensus. This mode of thinking always threatens to crash since a flight to the real uncovers the subconscious knowledge that all might be in vain because of visible or hidden power relations. The researchers to feel kind of sorry for are those who want to be part of the natural science mode of research but sadly enough fall outside it. There is an invisible wall of demarcation constructed by positivist humanists in the twentieth century, leaving themselves on top of the wall and thereby being able to choose themselves, leaving most of their colleagues – with another mode of thinking – on the wrong side of it. This is how power works and, as Foucault taught us, power and knowledge can never be separated. In the same way, normativity and activism go hand in hand. Activism needs something to react against and normativity seekers also need something to react against, but they also have something to agree about.

Both planes of human expression connect to normativity seeking and activist practices. History is full of activist writers and it can be difficult to separate those who were viewed as activists in their own time, and those who are regarded as activists in the contemporary world. One of the first has to be Socrates, through Plato's writing. Socrates' activism led him to his execution. He chose truth before life. According to web 2.0 critics such as Andrew Keen, one of the most striking features of contemporary Internet practices has to be the amateur cult(ivation) of web 2.0. Web 2.0 as a writing process is sensational in every sense of the word and Keen's supposedly derogatory monkey image of the 2.0 decade is transformed into Pac-Men, rapidly eating their way through the old, traditional writing culture. Web 2.0 practices represent something we could call automatic social activism. For most users they are not intended to be activism. They are just using the technology at hand. Pragmatism becomes activism when humans connect to the digital machine and the digital machine connects to humans and the whole results in an assembly of material-semiotic activism. The Internet is almost perfect for social activism on the moral plane of human expression. Organized forms of activism have been around since the earliest days of the Internet, and this trend has escalated during the 2.0 decade (see, e.g., (Kahn & Kellner, 2004)). Forms of social activism talked much less about are the automatic and spontaneous.

An example of automatic activism is when someone uses Linux or Open Office, or other open source software, because of pragmatic reasons such as price or cross-platform abilities. For the producers of Linux and Open Office there is an open, organized form of activism, but even the consumers participate, intentionally or not. The form I have studied most in recent years is the one I call spontaneous activism. The participants are generally not the "normal" activists. Spontaneous activists become interested in a particular question outside the gravitation of normativity, and this question leads them to a network of the like-minded. These groups are not really organized and they do not generally have organized events. Their activism is based on daily blogging, writing in forums or other forms of daily media expression.

My example is about body politics and social welfare. In the western, postwar world, there has been an increasingly intense war about what food corresponds to, what the human body wants and needs for optimal performance, and especially what to eat during dieting. The normativity factor for dieting as recommended by the national board of health and welfare in most western states is a high proportion of carbohydrates, moderate protein and as little fat as possible. But there is also a counter-movement which wants to swap places between carbohydrates and fat, which automatically also increases the level of protein. This movement of alternative truth is generally known by the label 'lowcarb'. It is easy to be led astray and think that this activism is about knowledge. Looking beyond the surface, it is easy to see that this question is so complex that either/or hardly applies. It is about which type of person should eat what, what it means to feel satisfied after a meal and, not least, what is the proper use of state power and professional legitimacy in relation to this question. In Sweden, the lowcarb position has gained unmatched power due to some very strong persons, their rhetorical position, and their use of digital media. If you were convinced the board of health and welfare is the locus of truth, you would probably regard these persons as dogmatists or even an assembly of monkey rhetoric in the Keenian sense, since the professional statements in the lowcarb position are backed up by a very large number of unorganized amateurs acting in blogs and different kinds of forums and communities. This counter-position has been (self-)organized as a science machine, where the leaders are designing their position by inconsistencies in traditional medical research and by quoting passages in new studies backing up the lowcarb position. The amateurs are acting voluntarily as study objects, reporting, in blogs and forums, about what they eat and how their bodies respond to this and that food. This mimics a scientific medical study but in an uncontrolled form. It is not the professionals, who are performing a study. Neither are the amateurs in power able to control things. The social/science (mimicking) machine is rhizomatic, self-organizing and increasingly powerful.

I am making a touchdown from this line of flight by examining this activist social/science machine from two viewpoints: a Baudrillardian and a Deleuzian. The "most photographed barn in America" (DeLillo, 1985) episode in Don DeLillo's novel *White Noise*, has been called the "Most discussed scene in postmodern fiction" (Duvall, 2008, p. 39). First there is a barn, a plain, real barn, an assembly of actual cows, hay, farming, tools and other things, then there is the virtuality of the barn with its stories and becomings. But then it becomes known as the most photographed barn in America. After that people start to photograph it not as a plain barn, but as the most photographed barn in America. It becomes photographed only through the process of photography. Claire Colebrook uses this scene to make a demarcation between Baudrillard's and Deleuze's view of images as copies of reality (Colebrook, 2002, p. 97ff). In the Baudrillardian viewpoint, what the tourists see is not a barn in its concrete reality, but what the barn has become through repeated simulation. The barn has no real origin any more since you can only photograph the most photographed barn in America after it has been photographed. The barn has become virtual. "From a Baudrillardian point of view, this is lamentable. We have lost all relation with actual barns – their place in farm life and rural culture – and fallen into a world where we

value something only to the extent to which it has been copied” (Colebrook, 2002, p. 97f). From a Deleuzian viewpoint, this representationalism is just to act on impulses from traditional Platonism. The real is always actual–virtual, as I indicated in my description of the barn above. The “original” barn was already an image, built of virtual possibilities. There must always be a virtual barn before an actual barn can be recognized as a ‘barn’. For Deleuze, there is no actual world that precedes simulation. The process of becoming is the ‘original’ process of simulation. Things emerge from a process of imaging, copying, doubling and simulation. There is an ethics in the imaging process as the original in itself, an ethics of potentiality. We increase our power by expanding our sense of virtualities, not by repeatedly affirming our actual being. By a constant dance of virtualities from actualities and actualities from virtualities, we are maximizing our potentiality of creating new and unimagined styles of thinking and living.

The mechanism of the lowcarb social/science machine follows scientific methodology roughly by relating empirical testing to theoretical questioning. The flow is generally like this: one of the professionals (physicians, independent researchers, etc.) reacts to something in a research report produced by the official lowfat research community. This reaction or criticism is formulated as a question posed in a blog or on a forum. The amateur parts of the machine answer or react in blog comments or forum threads. A question like this can have hundreds of comments, where individuals answer with stories from their experience. The question – answer interaction can, for example, be about a certain kind of food in relation to diabetes or fatness. The answers are both directly in relation to the question, but these answers usually produce additional questions, which in turn are answered by individuals in the machine network. This is how the Internet machine is working at its best or worst, depending on how one chooses to view it. This social/science machine is a simulation of the enlightenment idea of the scientific process. In Baudrillardian terms, it is a copy of the actual or real scientific process conducted at science departments all over the world. Inconsistencies in relation to scientific methodology are mostly about the lack of control, which is probably the single most important factor in a great deal of scientific knowledge processes. The social/science machine does not have that control. It is not based on a rational flow of information and deductions, and it is very unpredictable. For both Baudrillard and Deleuze, the social/science machine is a simulacrum, an image without a connection with an origin. Just as the camera made the “most photographed barn in America” possible, the social/science machine was impossible before the Internet. Most scientists would find this machine deplorable, filled with inconsistencies, just as Baudrillard finds “the loss of reality” lamentable. But with Deleuzian logic, the social/science machine is something entirely different from a bad copy of something real. The simulacrum is actualized from its virtualities. When the enlightenment model of science met the Internet during the 2.0 decade, one of its strongest virtualities was something like the lowcarb social/science machine.

The social/science machine is a complex assembly working on both a moral and a non–moral plane. Most of its separate actions are about commonsensical chitchat based



on rejections and affirmations of already established ideas. But seen as a whole, it is a stunning idea. In some peculiar sense, this social/science machine connects with the machine in Carl Sagan's novel *Contact* (Sagan, 1985). The human race discovers an intelligible signal from space with a blueprint to a machine with unknown function and purpose. The machine is built from the process of following the blueprint, adding parts and making connections after the instruction. When they finally fire up the machine, the people on the inside have an experience, but the people on the outside do not even know if it is working or not. And when the whole experience is over for the people inside the machine, the outsiders have not noticed anything at all. For them, the seemingly advanced machine is just an assembly of nonsensical material connections. However, during the building process, they have learned plenty about new technologies – to use in the postmodern process of capitalistic warfare or something less evident.

### **The Mad Machine of Internet Becomings**

We are living in a mad world. Most of us have probably sat in front of the TV and said something like that, out loud or just like a whispering inside. The madness might come as reports of actual events, or as actualized potentials in a movie or an episode of a TV show. The other day I was watching an episode of the vampire show, *True Blood*<sup>22</sup>. One of the vampire characters, Eric, is some sort of sheriff in the community where the events in *True Blood* take place. In his basement, he holds crime suspects as prisoners – i.e. crime against some vampire in his area. One of the suspects throws a silver necklace in Eric's face. The reaction is daunting. Eric goes mad and tears the man apart with his teeth and hands. I am appalled, both by the scene itself and with the fact that there are not really any moral tools to normalize an event like this. The word 'murder' really does not apply because murder is when one human takes another human's life. A vampire is a non-human and therefore belongs to the plane of the non-moral. The vampire may have been a human once, but its vampiressness contradicts everything in its former humanness. They are not animals either, since they are not really "alive". They are more like machines, both in their physical strength and speed, but mostly because they are located in the plane of the non-living. Vampires are historical creatures. However, in the technological plateau we now act on, they belong more to the future. The contemporary vampire might be viewed as an actualization of future potentials within technological development. In this sense, vampire story-telling is a postmodern version of the postwar stories about robots, especially those by Isaac Asimov (see e.g. (Asimov, 1982)). In Asimov's robot stories, the non-humans are governed by rigid laws of how to behave in interaction with humans. Humans programmed the non-humans to be a tool, not a potential foe. The plot generally rests on the success, predictability and consistency of these laws. The vampires are also actualized out of human virtualities. They cannot exist without humans, and that also goes for robots. The big difference is that vampires are not programmed, they are not intentional creatures in a common-sensical meaning, but they are in a metaphysical sense. In Deleuzian terms, both the robot and the vampire are virtual creatures constantly acted out in fiction because they are relevant in human potentialities.

The Internet is mad because the world is mad. Madness is immanent in both the actual human and the virtual. Madness is one of our potentials. The Internet is in a stage, which can be described as adolescent. It is mad. It has millions of hearts and still does not have a heart. The Internet might become the saviour of the human race by sucking up the human desire for creating, travelling, expressing – transferring these desires into digital forms. It might become a field of chitchatting monkeys, a gigantic panopticon or even a technocratic machine for hierarchical repression. The advent of social/science machines might lead science astray or be the next step in science methodologies. It might also be something more or less unnoticed by the science community. Internet becomings even include a simulation of the human consciousness, as in Robert J. Sawyer's novel *WWW: Wake* (Sawyer, 2009). This digital, human mimicking consciousness is actualized in fiction because this was already immanent in the virtual dimension of the Internet.



## Endnotes

- <sup>1</sup> The term 'desire' draws on Gilles Deleuze's concept, but it can also be read in a general sense. Deleuze goes "deeper" or gives more colour to the concept, but does not deviate substantially from commonsensical usage. The most important property deviating from the commonsensical meaning is Deleuze's argument that desire is not directed towards something we lack. It is a creative affirmation. This affirmative property is also the most important part of how I use the concept.
- <sup>2</sup> The term 'becoming' draws on Deleuze's concept, but the commonsensical usage also works and its consequences are drawn out. For Deleuze, and me, 'becoming' is a far-reaching argument against 'being' as the basic figure for humans. Becoming means that we, as all creatures, are caught in a flux and identity is a collection (or assemblage) of other temporary identities.
- <sup>3</sup> There are a lot of words describing persons on the Internet. I used 'netizen' mostly to give a spice of tradition. If you want to go deeper into the subject, you might use Michael Hauben's gopher post, re-published on the www: [http://www.columbia.edu/~hauben/CMC/netizen\\_thoughts.html](http://www.columbia.edu/~hauben/CMC/netizen_thoughts.html)
- <sup>4</sup> The term 'machine' draws on how Deleuze uses it, but as in the previously mentioned terms, I do not see knowledge of Deleuze's texts as central for a reading of this text. As Deleuze used it, and I use it now, machines are collections (or assemblages) of things with a systematic and recurring behaviour. In our understanding, machines do not have to be designed intentionally to perform a particular task, as a car, or the first computers (calculation). Deleuze, and I, use the term machine as an analytical tool to identify and describe systematic behaviour.  
  
I use 'machine' often in the essays. It is not because I cannot find a better word or want to be conspicuous or something similar. I use the term abundantly to expose it in different contexts, because that is how concepts evolve, and our sense of 'machine' is very much an evolving concept.
- <sup>5</sup> The concept of 'flatling' is an idiosyncrasy indicating young persons evolving outside hierarchies, or at least with a very strong sense of flat, horizontal organization.
- <sup>6</sup> I rarely refer or link to a Wikipedia entry. This reluctance does not depend on the fact that I do not value Wikipedia. I simply do not think Wikipedia is referable, because its "nature" is constant change. It does not have consistency – and it should not. Instead I rely on the fact that most readers have their computer close and look up puzzling things in Wikipedia and other sources. That is how I read research texts and that is how I think research texts should be read. But I am going to change my policy for this particular term, 'deterritorialization'. The reason for this anomaly is because the Wikipedia text recognizes the importance of the tension between the commonsensical meaning and how Deleuze starts from this meaning to recontextualize it into something related, thus consciously causing evolution:

### **Common sense**

Deterritorialization may mean to take the control and order away from a land or place (territory) that is already established. It is to undo what has been done. For example, when the Spanish conquered the Aztecs, the Spanish eliminated many symbols of Aztec beliefs and rituals. Reterritorialization usually follows, as in the example when the Spanish replaced the traditional structures with their own beliefs and rituals. Another example of deterritorialization and subsequent reterritorialization can be seen in Hitler's propaganda campaign that led to World War II. He had books banned and burned which contradicted his values and then replaced them with his own.

### **Deleuze & Guattari's use of the concept**

Deleuze and Guattari use deterritorialization to designate the freeing of labour-power from specific means of production. For example, English peasants were banished by the Enclosure Acts

(1709–1869) from common land when it was enclosed for private landlords. They distinguished in A Thousand Plateaus (1980) a relative deterritorialization and an absolute one (“Earth”). Relative deterritorialization is always accompanied by reterritorialization, while positive absolute deterritorialization is more like the construction of a “plane of immanence”, akin to Spinoza’s ontological constitution of the world [1]. There is also a negative sort of absolute deterritorialization, for example in the subjectivation process (the face).

Wikipedia, <http://en.wikipedia.org/wiki/Deterritorialization>, viewed 2010–05–24

- 7 ‘Digitalism’ is idiosyncratic and refers to the digital not only as technology, but also as ideology and epistemology. Internet and digital “phenomena”, at least, made me think in new directions regarding all of the above.
- 8 Read more about what I mean by aesthetics in the methodology essay “Epistemology and the Question of Becoming Aesthetics”.
- 9 Of course, technology cannot really do anything completely automatically. Human desire and ingenuity has to be in the background. But the western capitalist machine is configured to build these kinds of processes, and particularly since the 2.0 decade, there is the tendency to see users as products rather than consumers. Economic production is becoming more and more about advertising. Personal information is the stuff web companies such as Facebook are selling to their customers.
- 10 My usage of ‘virtual’ refers to Deleuze. The common sense meaning is not really to any help here. According to Deleuze Studies at The English Research Institute at Manchester Metropolitan University, Deleuze’s virtual/actual refers to the following: “Like a mirror reflection and its material stimulus, the present moment has two sides: its actual, physical extension and its virtual side that is already part of duration. The process of remembering seeks to actualize the virtual via a recollection–image. In order to find it, memory searches through the virtual reality of layers of the past. “, MMU, [http://www.eri.mmu.ac.uk/deleuze/on-deleuze-key\\_concepts.php](http://www.eri.mmu.ac.uk/deleuze/on-deleuze-key_concepts.php), viewed 2010–05–24.  
This account is short but quite good. MMU are putting the weight on “past” as virtual, but Deleuze also counted the future as belonging to the virtual. My usage is more directed to the future. But it is important to not just see virtual in the sense of the future as ‘potential’. The virtual is in the now and not something distant which can come true or not. The virtual is in the “now”.
- 11 “Hegelian Becoming” refers to the utopic dimension in the Hegelian view of nations evolving towards future perfection.
- 12 I often portray common–sense thinking as “negative”, and the reason is because the “positive” sides are so obvious, they hardly need to be defended. Common–sense thinking is the very fabric of social life, but it is also a force that counteracts multiplicity and diversity. Going beyond common–sense thinking is an important incentive for all research and art.
- 13 For some readers, the concept of ‘non–humans’ might be strange but it is widely used in some research networks to denote everything that is not human. The reason for using it is to escape the trap of thinking in subjects and objects.
- 14 The ProdUser is a figure for the form of production where the producer and the user become inseparable. This phenomenon became increasingly visible in Internet relations during the 2.0 decade. The concept is primarily worked out by Peter Ekdahl (2005) even if he has not used the actual term in any publications yet. The term itself has popped up now and then during the 2.0 decade. (See, e.g., (Bruns, 2007)).
- 15 Gérard Fromanger, see <http://www.artrealite.com/gerardfromanger.htm>, viewed: 2009–08–07
- 16 Next10 is a conference for IT–professionals dealing with social media in different forms. <http://nextconf.eu/next10/>, viewed: 2010–05–25

- <sup>17</sup> In Ekdahl's Aesthetics, aesthetic power refers to the power to persuade persons to make one or several, but particular choices.
- <sup>18</sup> Tinkerbell on Facebook, <http://www.facebook.com/TinkerBell#!/TinkerBell?v=wall>, viewed: 2010-05-27
- <sup>19</sup> Tinkerbell on Twitter, <http://twitter.com/tinkerbelle>, viewed: 2010-05-27
- <sup>20</sup> Twilight Movie, IMDB, <http://www.imdb.com/title/tt1099212/>, viewed: 2010-01-18
- <sup>21</sup> True Blood, TV Show, IMDB, <http://www.imdb.com/title/tt0844441/>, viewed: 2010-01-18
- <sup>22</sup> True Blood, TV Show, IMDB, <http://www.imdb.com/title/tt0844441/>, viewed: 2010-01-18



## **iBecoming–Cyborg I: Meeting the Monsters**

### **Introduction**

Both iBecoming–cyborg essays are about the relation between the person and technology. Most of the point of this essay is expressed in the title. The concept ‘Becoming–cyborg’ is an analysis of the relation between the person and technology during recent decades. Communication technologies are increasingly becoming part of who we are as persons. They are not just tools we are using. They are becoming a part of us, changing us with a completely new set of virtualities. The ‘i’ is a lowercase ‘i’ connoting both the iPod/iPhone generation of computerized ubiquity and the posthumanist flattening of the world. The human ‘I’ has been deterritorialized into a posthuman ‘i’. No longer are we the capital race, we are just a part of the meaning created through evolutionary processes. “Meeting the monsters” is connoting the monsters lurking about in the deep labyrinths of our contemporary virtualities. Monsters are things we are afraid of. Together with hope, monsters constitute a particular sphere in what it means to become–cyborg. They are the values of anticipation.

This essay stands out as more personal than the others, and than is customary in a thesis. The personal tone of this essay is important, because it locates the thesis in the ‘person’ and not in something “external”. This two–part essay, “iBecoming–Cyborg”, constitutes two sides of the same coin.

## Monsters

The first time I learned about real monsters was the year I turned 18 and fell into the process of becoming an adult. Since then I have always known that the real monsters are located in front of us, in our becoming, in things we cannot see and touch. Behind us, all monsters are in the process of a reversed becoming. They are “yellowing” and fading away like old paper articles. That is why we are so eager to search in the past. In the past, all the scary monsters are disarmed, disembodied and finally disintegrated. But the world of becoming is overcrowded by monstrosity. We are creating the monsters at the assembly line in the factory of modern reality. It is like a black version of the animation from Santa’s Workshop we have been watching on TV every Christmas since the 1960s in the Nordic countries. Santa is one of the most successful agents in the Americanization, and postmodernisation of the world. As a TV-figure, he is a few years older than I am and all this time he has worked to disarm and disintegrate the traditional Santa of the Nordic countries. My Christmas culture is completely American. For me Santa is a benevolent father figure with a large belly and long white beard, and the meaning of his existence is to give away presents. He is a secular lighthouse of love shining over the world at Christmas with an intensity enough to warm up the world during the long period of waiting until next Christmas. He is American, capitalist, consumer culture embodied, figured, inside my becoming, inside my process of becoming postmodern. In Swedish, the word for Santa is “jultomte”. The term ‘jultomte’ is a fusion between the terms for Christmas (jul) and a goblin (tomte). The modern “tomte” disintegrated by the “jultomte” was a complex, supernatural, non-human creature, living inside the human population but not living with us, more against us, but in a complex way. They were grey children-sized human-shaped creatures acting as tricksters in the midst of human culture. They are/were monsters because they negate human rationality.

A monster is a non-virtuous, mostly virtual creature, beyond the matrix of human rationality and moral understanding. Many of them were something other before they turned into monsters. Some were born as monsters. Many of our postmodern monsters were born in or metamorphosed in 1945. At the beginning of 1945, the world was full of angels<sup>1</sup>, angels of modernity, angels of hope and longing, angels of potentiality and progress. They were virtual fairies populating the space in-between our dreams. Later that year the angels fell into a metamorphosis and came out transformed into a bunch of confused, irrational, futureless and faceless monsters. The nuclear disintegration of Hiroshima and Nagasaki was supposed to destroy a mad monstrous war machine, but the destruction of a war machine became a small price in the nightmare of unveiling the full potential of the human animal. The nuclear disintegration of modern hope struck the angels of innocence, women, children and real men who dreamed about their becoming in a land of potentiality. The apocalypse reached into the realm of becoming and dissimulated the promise of the modern utopia. The positivist alchemists of the postmodern world still try to conjure up the wonderful image of pure rationality and humanistic development created by enlightenment thinkers in the post-theistic hunt for the essence of the human soul.

Monsters can be actual or virtual. The difference between actual and virtual monsters is that the former always have both actual and virtual properties, while the latter might exist only as virtuality. Some would say that monstrosity is immanent in the “nature” of the actual, while others would say that monstrosity is a virtual feature applied on actualities. This simple function could probably work fairly well as a demarcation between humanism and posthumanism. We posthumanists do not believe in the Cartesian story of the human subject leading to the subject–object transcendence of human reality. Monsters are not objects, and they are not subjects. They are immanent in the flow of life. They are anomalies in the plane of consistency.

I was 18 when the Personal Computer was born in 1981. A few months after IBM’s introduction of the PC, my father died and left me an inheritance difficult to process, even with all the wonderful knowledge they filled me up with in school. I understood that becoming is a very complex process. It is not something that just happens. I decided to affirm becoming and get to know the monsters populating the time and space I lived in, so I threw myself into the wonderful world of philosophy, art and science<sup>2</sup>. I learned about the mind–bending act of meeting an author, living in a textual world where everything was creative expression, a world where nothing was impossible, a world where ideas could be worth more than food on the table, a world directly opposite to the bourgeois value system I was thrown into almost two decades earlier. I remember someone calling me a nihilist because I did not believe in absolute truths. I thought I had to be the most passionate nihilist in the world. But perhaps that is the point. All 18 year old nihilists are passionate in their expressions. Expressing oneself as someone who is opposed to standard norms calls for huge amounts of energy. The concept of nihilism was somehow etched into the flow of my becoming. I became fascinated with this strange concept of ultimate negation and have thought about it from time to time through the years, still not understanding it. Somehow, it always seems to elude me, dancing around my understanding, teasing me with its wit, creating itself as a consistency in my thinking. I am not sure why I immediately affirmed the computer as something powerful in my life, something I could see as a consistent part in my becoming. I have never really wanted to be a hardware or software maker. Those things have followed me as necessities. The computer has always been a very special technology for me. It is not as other technologies. It is more like its own category, especially since the birth of the Internet. When the Internet was born in 1994 the PC became PCI. Today, at the end of the first decade of the 21st century, a PC without broadband Internet is not much to have. I have met persons, who do not even see a difference between their computer and the Internet. The next plateau in the flatlands of human becoming might become the breakdown of the wall between the PCI and the person. I view this merge as a very potent hypothesis in the becoming of human–technology. Somewhere on the road, the PCI will become an immanent technology in more ways than we can imagine at the beginning of the 21st century.

In 1986 I had had a flat–mate, a Personal Computer, for two years. It was not much of a communication device then. Its memory was scarce, and its interface was heavily disabled, seen from the viewpoint of the maturing cyborg. But still, it became my

friend, my writing buddy, my door of knowledge into the world of becoming. We wrote our first paper together and thereby entered the world of digital storytelling. We were both disabled cyborgs viewed from the vantage point of the PCIP (Personal Computer Internet Person), but we did not have a clue about our disability, in the same way that “disabled” people today would not have a clue about their disabledness if none had told them. We are all disabled from some actual normalization rule or some virtual vantage point. Somewhere in our becoming as PCIPs, a person confined to a wheelchair might stop being a disabled person and, in this sense, disabledness is not only situated in a linguistic sense, but also in time and space.

## **Mr Nothingness**

The postmodern novel of the 1980s hit the Swedish literary establishment like an angel of despair, a monster of reality, a reality of monsters. I and my friend of presumptive cyborgness wrote our first paper in literary studies about a Swedish postmodern author called Stig (1986). The title of the book we wrote about was “Introduction”. The author introduced a figure/man who threw himself on me directly from the first page and drank my soul like one of the dementors in the books and films about Harry Potter. I will call this “I” Mr Nothingness. Mr Nothingness was completely separated from essential categories such as time, space and meaning. His body location varied, his time in life was decontextualised and the soul he once listened to had crawled in under the sink and slowly, silently, slipped into the realm of nothingness. He happened to kill a man, but just shrugged and waved it off as a minor problem of where to tip the body. He was a figure of the everlasting binary of soul–body, deconstructed to something functioning as a person, but ostensibly since the reader strongly feels that something is wrong in the state of Denmark. He is a person, but his “personality” is a complete negation of the narrative of human nature. I thought – if I am a person, is the anti–hero of Stig Larsson’s book really the same as me? Are he and I more the same than I and my dog, or I and my computer? Where is the end of a person and the start of a non–person?

I viewed this Mr Nothingness as a literary figure of the post–war, post–modern, post–hope society we lived in directly before we were injected with an inch of hope when the Berlin Wall was dismantled from within. He also became a strange embodiment of the concept of nihilism. He became the conceptual persona (Deleuze & Guattari, 1994) for ‘nihilism’ in my language. However, this does not mean Mr Nothingness is equivalent to or symbolizes nihilism in my conception. It means he always seems to linger on the outskirts of the concept, always ready to pop up and show his face with silent questions such as “But what about me...? How do I fit into all this...?”

A year ago I ran into a similar person constructed not in the avant–garde literature, but in a mainstream television series called *Dexter*. *Dexter* is also a “child” of his time, of our time, the second half of the first decade of the 21st century. Our time is a time where the sparkle of hope from the breakdown of the Cold War yet again shifted into despair and cynicism when the two aircrafts flew into the World Trade Center. But if



Stig Larsson's anti-hero was a reconstruction, relocalization, and perhaps a postmodernisation of Kafka's K, Dexter is an extreme acceleration of a hero from a Barbara Cartland novel. He is a strong evil monster of a man whom the female heroine falls in love with because she can see what no one else is seeing; that the monstrosity is only on the surface and the real, human, person is buried deep inside many layers of onion skin, like the Hegelian conception of a person (essence) (see e.g. (Blunden, 2010, p. 61). The plot is based on the heroine's careful peeling away, layer by layer, until the core of the man is unfolded and climax is reached. Dexter is a mass murderer in the same league as Dr Hannibal Lecter<sup>3</sup>. But Dexter has a reason for being the way he is. When he was a child, he witnessed the slaughter of his mother. Dexter only slaughters other mass murderers, as if the love of his mother was so strong that something burst inside him and drove him to go on the rampage, trying to find the ghost of his mother. Dexter constantly reflects on his own absence of feelings, emotions. He kills and slaughters other murderers with an ice-cold absence like a machine, sometimes reminiscent of the main character in Brett Easton Ellis' *American Psycho* (ref), but with the immensely important features of popular culture: reason, causality and love. And still he says he does not feel anything. He just observes other persons and finds their emotions strange and bewildering.

The simulations of postmodernity are about a culture testing its own borders, projecting images into the dark sky of human despair. Perhaps we have to view ourselves in the mirror of the lost liberal dream and recognize our posthuman situation to regain some faith in the becoming. On the other hand, becoming is the only thing we have. History is only about what we do not have, what we have lost. Becoming is always about someone's responsibility for something. Dexter and Mr Nothingness are both figurations of the lack of responsibility; Dexter in a popularized form where some sort of rationality is mandatory, and Mr Nothingness in a cold, avant-gardist form where nothing is taken as given.

## The Cyborg Singularity

Mr Nothingness has grown into the complete opposite to another creature in my personal mythology, the cyborg. If Mr Nothingness is an unknown creature from the depth of Blackwater Park (note), the cyborg is a fascinating creature swimming in the waters of unmade future. I am not going into the complexities of cyborgness in this part of the essay. The task is more to give a sense of the place of the cyborg in my personal mythology, where the cyborg is a pre-Harawayian figure. This means I met the cyborg long before I met Donna Haraway so when I read the *Cyborg Manifesto* (Haraway, 1991, p. 149) in the late '90s, the cyborg was already an adolescent in my personal mythology. It is not too harsh to say that Donna Haraway's cyborg rewrote my mythology, but it is also important to consider this history in relation to someone who meets the cyborg for the first time in Donna Haraway's essay. Haraway's methodology was very similar to the one practised consistently by Deleuze and Guattari. She picked up the term cyborg and used that term's main concept to reconstruct a new concept which both interacts with the old one and gives it a bundle of new meanings. The

problem with Haraway's concept is mainly related to the conceptual persona, which is a Deleuzian concept referring to the "personality" linked to the concept. The conceptual persona of the pre-Harawayian cyborg was the Terminator war machine from the film *Terminator* released in 1984 in the United States, and in Sweden in 1985<sup>4</sup>, the same year as the first version of *A Cyborg Manifesto* (as an article in *Socialist Review*). The Harawayian conceptual persona of avant-garde womanism based on the collapsing dualisms of the western male tradition does not really have a chance against the visually spectacular persona of the Terminator war machine. But there are more layers here. An avant-garde figure rarely has enough intensity to stand up to the spectacular figures of postmodern consumer culture. They are usually made without any intellectual, ideological sense at all. Their intensity is configured to support them as powerful impact machines, nothing more. The persona of Donna Haraway's cyborg is more of a fallen angel. She has created a revolution in the heaven of western male philosophy, and therefore been banished to live her life outside this manosphere of intellectual tradition. She is an outcast of the general tradition and therefore something to be admired. She is a pilot in the line of flight towards an anti-Hegelian conception of progress. To merge her with Deleuzian figurations seems reasonable enough.

Long before I met Haraway's cyborg, I conceptualized this figure as a strange variation of "The Hero with a Thousand Faces" from Joseph Campbell's influential book on structuralist mythology (Campbell, 2008). Of course, the cyborg works both in the roles of both the hero and the culprit, but even the culprit is some kind of a reversed hero. Without culprits there would not be much for the heroes to do and popular culture would be not only a desert of the real but also a real desert with the heroes out of work populating the bars around depression street. I grew up without any notion at all about cultural expressions in the sphere of complexity: philosophy, art and science. I was born into a handicraft culture where expressions of "the mind" were worth less than nothing. I have always regarded this as a gift, because of the progressive sensation when I found this treasure. I believe in difference and if I had been born into mind practice, I would not have had the chance to experience the difference between a life with constant learning and mind practice and a life without it. I have always viewed science fiction as virtually the most interesting of all the arts, but mostly as experienced it fails to live up to my expectations. One of the narrative weaknesses in science fiction is when they fail to describe the cyborgization process of human and non-human relations. The most unthinkable future in my expanding mythology is humans and non-humans as separate entities. Therefore I hardly count narratives such as *Star Wars*<sup>5</sup> as science fiction. Science fiction authors such as Octavia Butler and Cordwainer Smith seem to have an understanding beyond the Cartesian issue with the rational self as something fundamentally outside its context. Movies such as *Bladerunner* and the *Matrix* are both aesthetic and philosophical. TV series such as *Battlestar Galactica* have produced several scenes where the myth about human nature explodes into a cascade of difference.

The Internet came into science fiction mainly with cyberpunk and then in the form of cyberspace, which was born before the Internet and merged with it in the plane of

common sense. The cyberspace of cyberpunk culture might be a set of virtual versions of today's actual Internet, but it might also develop in a completely different direction. Tad Williams' cyberpunk novels about *Otherland* (see, e.g. (Williams, 1996)) is in a way an actualization of Jean Baudrillard's assertions about simulations and hyperreality (Baudrillard, 1994). The *Otherland* books are set in an online world called the Net, an accelerated version of an Internet based on simulation worlds such as *World of Warcraft* and *Second Life*. The main difference with our Internet is that the Net is neurally connected to its population, making the simulation as real as the world outside the simulation. In a memorable sequence Tad Williams takes the reader to a group of biologists, who actually research the nature in the simulation to draw conclusions of the actual nature outside the simulation. The simulation is exact all the way down to a molecular level and the behaviour of everything is utterly naturalistic. Research results from beasts in the simulated world are transferable to natural environments (Williams, 1996). The narrative suspense to a large degree depends on the fact that there is some power in the Net taking control over the neural system of some members of the population, making it impossible to disconnect. They become hospitalized as comatose victims in the non-digital world while still continuing to exist on the Net.

This kind of digital futurism is interesting because it poses quite another scenario than the transhumanist discourse about the technological singularity. This singularity is the point where machine intelligence passes human intelligence, which will be the start of an exponential growth of non-human intelligence. Some theorists think that humans and hyper-intelligent non-humans can co-exist, while some believe it will inevitably lead to the extinction of the human race. The cyborg singularity in this sense would mean the point where technological innovation would be more important for the human view of ourselves than evolution. This scenario plays out rather differently in the two scenarios above. The Internet, Cyberspace, and Net future I call software/hardware based entities and the scenario with human-like machines is hardware/software based. Since both will inevitably consist of software as well as hardware, it is more about the "persona" of this singularity. My very humble speculation is that the human race evidently will lose our drive for anthropomorphism and become more like avatars than constant re-simulations of a lost humanity. When the Internet and its followers reach a certain point of intensity in the flow of human becoming, our creativity will take completely other directions than are possible now. We are still trapped in a way of thinking that belongs to the platonic frame of reference. It is possible that we will need a large degree of otherness to escape this history. There is really no point in speculating what this might lead to, since these speculations will inevitably be inferior, due to the wrong contextual underpinning of speculations. Perhaps the important point with the avatar-based, cyborg singularity is that there might be a hope in our diminishing anthropomorphism. Internet romanticism is a hope in my personal mythology because it renders the only scenario for a future with forests, blue water, plants, animals and a reasonable healthy biosphere. If we could divert our seemingly infinite desire for everything non-sustainable to our avatar life and live a simpler non-digital life, the actuality of a blue-green earth might continue. I guess this is the romantic side of me. I am not really sure I believe humans can live in this dichotomous way in between two

physiological/psychological states. Perhaps we have something to learn from Asian philosophy here. Anyhow, I am quite certain that most transhumanists underestimate the power of software/hardware based avatar life in their conceptions of possible futures. Playing with figures as virtual cyborgs is important because it resists the nihilist impulse of predetermined negation. If Mr Nothingness is the complete negation of human identity, the cyborg singularity is the “absolute” affirmation of human potential.

## **I Cyborg – the beginning**

On September 11, 2001, I was comfortably mounted in my office chair, a human technology unit in front of a computer screen reminiscent more of a knapsack stuffed to breaking-point than the laptop I am using in 2008. I had recently read Donna Haraway’s essay *A Cyborg Manifesto* which made me realize that I had never been a mere human. My birth had been an event to throw the biological I into an apparatus of technological production. I was a normal, healthy child but my first years were filled of all sorts of illnesses and sometimes even now, four decades later, images of doctors pop up in my mind and I am filled with the intuitive knowledge that in an age without medicines, I would probably have been nothing rather than something. Perhaps the medicines made me, created me, both in a biological sense and in a more pervading, personal sense. The person inside the office on September 11, 2001 is a cyborg partly constructed by four decades of medicines, pesticides, pollution and a rising volume of technologized food.

On September 11, 2001, I was comfortably settled in my office chair when an American colleague rushed into my room and wrestled my computer to the eye of the world, CNN. In shock, we viewed two office skyscrapers being rammed by two huge passenger jet planes and tens of thousands of persons returned to dust. The immediate shock of imagined bodies flying all over the place, families in unimaginable grief slowly gave away to a peculiar image of civilization imploding right before my eyes. Afterwards, I also realized this to be the first event of apocalyptic proportions brought to me by the Internet rather than television, radio, or newspapers. If Marshall McLuhan was right, that the “medium is the message”, what was the message here? If we were to embrace the Internet, what would that lead to? What was going to happen to our sense of embodiment, relations, authority structures and a whole lot of the things we have learned to take for granted. Some of us not only take life itself for granted, but also view tradition as a stable agent to lean on both in our daily life and in times of upheaval. If the Internet was going to be an omnipotent agent for social change, how would that affect the rest of our lives and continuing history? Would 1994, the birth of the Internet, be some kind of meta-symbol in a hundred years or so, or would the continuous fragmentation of our life world render this kind of authoritative symbol impossible?

I see myself as a literary person, not mainly because I like good books, but because I always see the narrative side of things. When the anchor on the television news talks, I do not hear a bundle of facts – words, syntax, denotations cannot possibly be separated from the complex view of semiotics. The news anchor is not communicating facts, but

more or less telling a story like the one I am engaged with right now. Facts are only building blocks in a painted and furnished reality. Most people know this, and understand the process quite well, but act as if they do not mind, as if they do not care about the truth they are fed by televised media. We do not believe in televised news any more than we believe in blogs, but generally we trust televised news, while we do not trust blog news to the same degree.

The reason is probably due to the fact that television is produced by professionals, authoritative persons in a regulated authoritative structure. We know they are unlikely to bend the truth or put the truth in a context which changes the truth as a whole while leaving the starting fact as true as before. Blog news is generally not authoritative. They might fool us, but they might also be incompetent in a sense professional media seldom are. On the other hand, if you get an important fact from a blog, you generally look it up in other sources. But you are probably more inclined to take a particular fact as stated if it comes from televised news. What if television as a medium contains a dormitive principle?

## Potentiality

It is often said that Asian philosophies view the “now” as the focus of the temporal scale<sup>6</sup>. Western societies generally stress experience and thereby the past. Another way of putting it is that we view the actual world as the main focus, but with a very strong influence from the past. The past is integrated in the actual world in the form of experience. The time in front of us is usually discussed in the context of dreams and anxiety. We rarely view the time in front of us as something real, something substantial. To do that, we would have to take the aspect of potentiality as something as real as actuality. One striking example would be an unborn baby. A strong view in favour of abortion is a person’s right to her own body. In this view, a baby is either something owned by its parents, not yet a human being, or an issue of pragmatic considerations. Anti-abortionists often stress the religious perspective, that the human being is holy, more than an intelligent animal, and in this perspective an unborn child is not something other than all other human beings. It is the soul, the Good substance they protect. It is not difficult to feel empathy for both views, and to agree with the rationality in their argument, at least when viewed from their own perspective. An unborn child’s potentiality is rarely taken into an account. This view is partly determined by the view of the future. One perspective is that the future is an abstract parameter we should not concern ourselves with, because “Herrens vägar äro outgrundliga” (eng transl “The ways of the Lord are enigmatic”). We do not use these words nowadays, but they are in our spine. Another view would be that we together shape our future and this view leads to a more substantial view or perspective of potentiality. Yet another view is that people are generally banal, weird, incompetent, so the future is a battle between rationality and irrationality which leads to an unplannable world – the future is next financial year, next election. The future is a chaotic fuzziness we should not spend energy on. This last view is very rational in an egoistic light, and egoistic should not be taken as a derogatory word but something very natural to a human person. Cyborgs are almost only about

potentiality. Discussing cyborgs is discussing potentiality, and ultimately, discussing potentiality is discussing cyborgs. Cyborg narratives are the web of our future, not only young persons, but everyone who has a stake in the future of the collapsing dualities underpinning all cyborg narratives.

## **Trust-Connectors**

From the time I started to work in the research community until I published my licentiate thesis in 2006, I have been called a technological optimist and a life optimist, the first in a negative sense, the other in some kind of semi-conductive sense, I think. Lately, I have started to view this time as my naive period, more like Picasso's blue period than naive painters such as the French Henri Rousseau or the Swedish Nils von Dardel. I tried to see the complexity of the world through the blue glasses of optimism as a pragmatic standpoint – what would be more reasonable for me: to live in a world with some faith in technology or in a world where technology is the basic problem of everything? The answer became the former since I could not see people around me resisting their own will to view technology in the liberal utopian perspective that we all are moving towards the ultimate way of life with the parameters given to us in the world we are trapped in. Another point leading me to technological optimism was that I let myself be a part of the mindset of the social groups I tried to understand on the Internet. This is a constant problem with social research. There is always a semi-transparent skin between the researcher and the researched. Perhaps this is something we have to accept, but at the height of my technological optimist era, I did not accept it and did everything to avoid it.

The last two years have led me to drop all pretence about myself and my view of the world. What I take with me from my time with technological optimism is the core in my optimism. We might call it hope. I have started to realize that an optimistic world view is an impossible base for social change. If we are already optimistic, there is no room for real foundational change. But we have to have hope. At least if we are striving towards some sort of situated authenticity we have to have hope in order to survive as social beings. Big words such as knowledge and moral are rather empty vessels without hope.

By the first time I realized that the learnings of official authorities could be fatal, I had been regarded as a grown up in the eyes of the authorities for about five years. My best friend in the upper teens and early adulthood and I got our driving licences at about the same time, directly after we turned 18. I regarded him as a decent driver apart from one peculiarity: he had been told by his driving instructor to position the car close to the opposite driving lane to make it easy for pedestrians, cyclists and parked cars along the road. I said this was crazy and that he had to take a situational approach rather than get caught in some instrumental rule drummed in by his driving teacher. And the fact was that he mostly drove unnecessarily close to the opposite side of the road. It got so far that I started to avoid riding with him, and one day I heard that he had been killed in a frontal crash. It was impossible to know the cause and effect relations

here and even if this is an existential story with more than one layer, there was one thing that still influences me in everything I do: do not trust someone just because they are an official, administrative authority. Think for yourself. Find the authority within. Trust persons, not administrative functions. In a way, this is the same realization Kant had in his manifesto for enlightenment: “think for yourself” (Kant, 1784). In his case, the authorities he was suspicious of were the authority of tradition and the scholastic hierarchy ruling the world of knowledge in the period we have named with the slightly derogatory term “the middle ages” or “the dark ages”. Modern society is built on the catch phrase “think for yourself”, but there is reason to view this newly found freedom as ostensive. The authority structures of tradition and the church hierarchy were replaced by a rationalization process that thinkers like Max Weber and Martin Heidegger have called instrumental rationality. Instrumental rationality has to do with a process to reduce the individual in the sense I call ‘person’ to the sense of an individual as an entity in an algorithmization process. This process is driven by bureaucracy, and more and more in the name of science.

In September 2008 there was a report on the television news that scientists had found a gene for men’s infidelity. It was a fact that around forty percent of the male population had this gene and were thereby predisposed to infidelity. If a similar claim had been made by philosophers, sociologists or psychologists, most people would have laughed and viewed it as some sort of prank. But in some sense we still live in a Lockean world where knowledge is about “finding” empirical facts and treating them as ready-made knowledge. Few people are willing to reflect on the deeper relation between a cellular cluster and the social pattern between the concept and praxis of infidelity. And additionally, few are willing to take responsibility for scientific findings or constructions. Whether the infidelity-gene is justifiable according to the rules in our truth paradigm or not, all actions have consequences and a society built on instrumental rationality only presents “objective” facts. Objective fact reporting does not have any agency and therefore does not have anything to claim responsibility for. This state of living beyond the world goes not only for the bureaucracy, but is even more obvious in the mass media.

The year was 1994. The cultural soup of human/machine relations erupted and the result was a re-simulation of the future. Some say the re-simulation is a promise of new monsters; others see it as a resurrection of hope. The lost angels will reappear and lead our way into a new future. 1994 was the symbolic birth of the growing network of servers we call the Internet. On the Internet, basic dimensions such as time and space are simulations based on technological parameters like Mhz, RAM and bandwidth, how fast and how much, the inescapable parameters in the land of becoming.

The Internet is a reversed simulation of platonism, which has occupied most intellectual space in the twin towers of time we have experienced since the figures of Socrates and Jesus are said to have walked upon this earth. The human gods built the server cluster, wrote codes of behaviour and finally turned on the switch. Since then the server backbone and the growing consciousness of cyberspace is growing like the togetherness of Jack and the Bean-Stalk. But the Internet does not simulate the time, space



and meaning of the present. It simulates something only located in the becoming. It is like a bottle message of radical, radical democracy or the promise of big, huge, giant monsters rendering Ulysses' meeting with the Cyclops as mild and gentle as a bedtime story told to an ninety-year old war hero before her final sleep.

When the Internet emerged, my computer was not the same as the one I bought ten years earlier, of course. But in another sense it was. Its body was exchanged for a newer one, a faster, better, less disabled cyborg in the land of becoming. It was more like me. We became better friends and my relation to my previous friend seemed rather bleak in comparison. The second generation of the Internet transformed my hardware/software friend into a real person located somewhere in the world communicating with me as a woman or a man. We are still disabled cyborgs of the becoming, but perhaps less so than a generation earlier. My computer is no longer a unit, someone I count as the number One. It is not only that I have more than one computer, but the softwarish soul of my computer appears whichever unit I turn on. The first generation figured a computer with the Internet. The second generation figures the Internet with multiple computers. The computer as a sign of empowerment has been disfigured and transformed into a sign of enslavement. The computer no longer induces a feeling of amazement. The computer is just a body and it is not even biological. The second generation places the feeling of amazement (and terror) in the computer's soul: communication, information, disinformation, spam, viruses, trojans, chat, blogs, wikiformations, images, music, film, reading, writing, chitchat, academic, business, organization, domains, buying, selling. This is a soul with multiple meanings. Everyone and everything is becoming integrated in a worldwide dream or nightmare about things to become. Perhaps this worldwide soul of the integrated circuit is a dementor<sup>7</sup> who drinks our souls in the name of some becoming.

The dream of free will induced by the activists of the enlightenment movement has gradually been transformed to the glutinous mess of language we see today as the location of meaning. Radicals are unarguably free only in the language of chemistry. The freedom of the radicals is measured by the gluiness of the local discourse. The radicals of the file-sharing movement are free to rewrite the morals of ownership only as long as they can find a minimum amount of kinship in the gluiness of language. One of my friends is a Wikipedia activist. He is a friend of the second generation, a friend who has an avatic face, and our conversation is completely digital. His diginame is paradox. Always written like that, with the initial letter in lower case, deauthorized. One day I was invited on a tour among his latest knots in the world wide net of Wikipedia. He changed a spelling in the title of one document, started a new stub article, inserted an image in a document and discussed conceptual things on several talk pages. The insertion of a picture was a story in itself. It was a document describing a traditional Swedish dish. The person identifying himself paradox thought a visualization was necessary and planned his lunch according to the article, took a picture and inserted it on the Wikipedia page directly after lunch was done. He is a twenty-first century, second generation cyber-worker – an encyclopaedist cyborg of radical democracy. His discourses are becoming more and more integrated in peoples chitchat. He is an authority thief



who is himself constantly rising in the authority ranks of big corporations who enslave and redeem the activists and radicals of the digital enlightening.

Trust is about connections. Before the 2.0 decade, trust-connectors were about thickness. Thick trust-connectors such as friendship and love will hopefully always remain, but authoritarian trust-connectors are rapidly becoming something from the past. This means we have to enhance our ability to spin our life webs. The word of a driving instructor and the text written by an unnamed group of Wikipedians have to be contextualized on the same level of trust. We have to embrace our time, dive into the sea of information and search in the world wide sea of trust-connectors. One is not a number anymore. The digital world starts at two.

## Blogging is a Nihilism?

The one thing that first got me interested in Geert Lovink's article was the contradictory title Blogging, the nihilist impulse. As mentioned above, I was called a nihilist once upon a time, then because I failed to find the right frequency for a particular value system. At that time, I was a universe of impulses and a regarded my alleged nihilism as a failure to find earth among all the wonderful planets inside me. I was an artist, but sometimes I felt like an unauthentic, utterly failed shoemaker, or plumber. Seen from the vantage point of something I was not, I was really nothing, a negation. The most passionate nihilist in the world.

If you are unfamiliar with the phenomenon of blogging, please take a break from this text and read Lovink's article. It is freely available on the Internet. After his introduction of the more technical side of blogging, Lovink writes:

*Blogging in the post-9/11 period closed the gap between Internet and society. Whereas dot-com suits dreamt of mobbing customers flooding their e-commerce portals, blogs were the actual catalysts that realized worldwide democratization of the Net. As much as "democratization" means "engaged citizens", it also implies normalization (as in setting of norms) and banalization. We can't separate these elements and only enjoy the interesting bits. According to Jean Baudrillard, we're living in the "Universe of Integral Reality". "If there was in the past an upward transcendence, there is today a downward one. This is, in a sense, the second Fall of Man Heidegger speaks of: the fall into banality, but this time without any possible redemption." If you can't cope with high degrees of irrelevance, blogs won't be your cup of tea. (Lovink, 2007)*

Lovink's perspective is the following: he is a spectator viewing a bunch of texts and finds it disappointing that they do not measure with his expectations of public texts. This is a legitimate perspective, but the location of the viewpoint is built on a misunderstanding. Blogging is not a producer-spectator activity such as television, it is a participatory activity. Blog posts might be perceived as banal, but in that case the bloggers themselves have to be viewed as banal. And from that viewpoint, it is difficult to view most television shows as something other than banal. I understand very well where this discussion comes from. I am not exactly a chitchat person myself, and sometimes I view myself as socially disabled because I lack the skill of talking about "nothing" just to cultivate a social relation. But blogs are banal only if you view them as unsuccessful novels, or articles or essays. Blogs cannot be banal in themselves, they have to be

compared to something else. To understand this view of culture, we can turn to the American philosopher John Dewey.

In 1920 Dewey published a book called *Reconstruction in Philosophy* (Dewey, 2004). I personally view this book as one of the last books in traditional, academic philosophy, before the whole project was dismantled and referred to the history department. In many ways it is a more polished account of Nietzsche's philosophy, and importantly enough with a democratic trajectory. Just as Nietzsche (and later Foucault, etc.), Dewey avoids the traditional philosophical search for a truth–alchemy. Instead he raises questions such as how and why did this search for truth start, and how did this discourse evolve throughout history?

In Plato's and Aristotle's Greek society there was a sharp line between the aristocracy and the working class, much sharper than today. The working class – and slaves – were engaged in their bodily life and saw knowledge as something to do with the body. The aristocracy were immensely rich and could do what they wanted with their time. It was here the western spectator was born, someone who enjoyed cultural artifacts made by others with the sole purpose to be looked at or listened to. According to Dewey, this spectator view of culture was built into the emerging philosophy. Plato's "form world" was a beautiful idea, like some kind of mind art, tangible at the root of our understanding. It was a beautiful idea that spread like a virus, developed into a dualistic monster, dividing the world into two–part categories such as subject–object, mind–body, nature–culture. This dualistic view of the world was also built into the modern religions. Nietzsche viewed Christianity as platonism for the people. By analogy, we could say that blogging is writing and publication for the people. Blogging is participation and engagement where fine culture is about the spectator view (eh!). Heidegger's analysis led to the view that the Greek philosophers' break from engagement lead to modernity and the technological revolution, and in Heidegger's eyes this was very unfortunate, splitting persons from their self, creating non–authentic persons.

I have never really understood Heidegger's relation to technology. For me, technology is a very big part of what defines us as humans. Technology is not something alien. Technology is a big part of what constructs us as persons and binds us together in the social sphere. However, it is a fact that technology such as ICT is growing increasingly more complex, and some of us are becoming trapped in a shell of technological alienation.

At a visit in Stockholm, I ran into an old librarian colleague. She was listening to something through a pair of white earphones. She removed them and excused herself: "I was listening to an audio book". She told me she had recently learned the art of file sharing (at the beginning of 2009) and was excited by all the wonderful audiobooks just a few mouse clicks away. I am not sure if I looked judgmental or if it was something else, but she continued with the excuse that she "erased the audiobook as soon as she had listened to it". I have recalled that conversation a few times since then. What did she mean? The most common sense answer would be that she meant that if she got caught, all the evidence would be flushed down the toilet – if you allow me to draw a parallel

to drug-related criminal stories on the TV. So the excuse was not about morals, but about not getting caught in the act. But this interpretation feels somewhat hollow. Another explanation would be that the crime diminished when the material part in the material-semiotic act of downloading audiobooks disappeared. Western modern culture is, to a high degree, property-based. Intellectual property has been directed to prevent re-socialization of ideas. The law and morality have both been about preventing someone taking advantage of another person's intellectual labour and earning money or gaining power from the "stolen" idea. This old problem has multiplied with the advent of the Internet. The whole school system is facing a gigantic war against about the nomadic sense of the Internet as a border-free zone. A library has a similar workflow. It has been the centre of writing cultures for thousands of years. Now that role has been translated into the Internet. For a librarian in a western democracy such as Sweden, information is free for the individual person. The library acts as a political-economical mediator between the author and the reader. For decades, the librarian has been an agency in a sea of free information – viewed from the perspective of the end user. Librarians traditionally see the free flow of commercial information between the library and the readers. In a library, stealing is material, either in the form of slipping a book into a bag, or re-materializing a book by extracting ideas and re-contextualizing them. Acquiring the information in books and other semiotic containers is a virtue in a library context, not a crime. Viewed in this light, the metaphor of the Internet as a gigantic, world wide library, has more similarities than the fact that they are both big repositories of information.

### **Why we do the things we do**

Driving home from a research seminar, I stop the car at a stop sign. It is quite late on a weekend evening in an area with quite a small population. Just before I am about to stop the car I let my eyes do a quick survey around the car. We are completely alone. I am about to turn right and something tells me there is absolutely no point switching on the right turn indicator. Normally I would switch the indicator on automatically but the empty blackness around me makes me reflect on the situation. I could do as I usually do and keep a consistent behaviour. This would probably help to maintain and enforce the indicator-habit. Having an indicator-habit would in its turn lend my attention to other tasks and might in the future prevent an accident. On the other hand, turning the indicator on in this particular situation is completely unnecessary. It makes my indicator's life-line one blinking shorter and if every driver on the earth could save just one instance of blinking a day, we would probably save a lot of indicators, helping in the necessary project of creating a sustainable world. I choose the second alternative. I do not use the indicator this time. It does not feel like a rational decision, more like a random choice based on something logic beyond my immediate control. I am not alone. I am driving a colleague home. I can feel some kind of energy in her rising. I know what it is, and consider coming out with some justification, but she is one step before me and say "So, you are one of those who does not have the sense to use the indicators". Her tone indicates a joke, but not without a serious backdrop. I justify my

action with a quick laugh and an explanation. The conversation turns to traffic behaviour and the use of the indicators. I present an example which occasionally drives me crazy. Concerning driving on roundabouts, the law in Sweden says one shall use the left indicator when leaving the circle. Being an “indicator-person”, I think it is important to use the right indicator driving out of a roundabout even if it is a small one and even if an instantaneous decision tells me the situation probably makes it a waste. But at least one half of the people in the area where I live do not do this. This creates the following situation approaching a roundabout. On the roundabout there is a car opposite me. I know the driver is either going to turn right and leave the roundabout before reaching my position or continue around it, driving past me. If the first alternative is true, the driver is supposed to use the right indicator so I can enter the roundabout, creating a continuous flow in the traffic and making it unnecessary for me to stop the car completely. That just about every other car makes me stop completely only because he or she does not use the indicator, irritates me greatly, almost to the verge of something I could call anger. The rational part of me calculates an approximate number of cars stopping unnecessarily, while a more incomprehensible part of me starts to create gigantic clouds of carbon monoxide and other exhaust gases surrounding the planet, working together in some warped logic to render the living planet into a dead planet. My colleague takes a more direct position. She is most affected when walking. In that case the non-indicator driver makes you stop and wait unnecessarily. She said she just gets mad, more likely to angrily shout at the driver – which of course would be outside earshot.

Both actions are of course in vain, rationally speaking. Our respective action does not affect others than ourselves. I react with some kind of rationality, besides the strange act of creating images in my mind of a lost planet which is probably due to some emotional outburst. My colleague reacts with instantaneous emotion, or feeling. Still, if I were to compare our environmental morality, my colleague would probably be a more virtuous citizen than I am. Both of us are emotional and rational persons like most people, but we act or react differently depending on the situation. Obviously, this situation could be analyzed with several perspectives, from academic as well as from popular psychology, but using the story as an agent in my story I would like to try the face metaphor to explain the situation. The face is a social mediator. Generally we imagine it as located as some kind of mask on the mind, working as an interface for different kind of communication. Drawing a parallel with the computer, the monitor, the computer screen is the face of the computer. This is coming dangerously close to the form/content trope, but the face metaphor is just a just a tool for thinking about different aspects of a personality. I do not see the point of psychologizing the reason for my rational reaction to the same situation my colleague reacted emotionally to. Perhaps the emotional/rational categories are not even applicable here, but I believe they can work quite effectively as meaning translators.

## Three Personas

This essay is near the beginning of my thesis, where different aspects of my personality are the main agents:

- The home person
- The professional person
- The academic person

These are the three faces or interfaces I have been closest to in my recent stage of life. They are not really born from intellectualizing, but have been chiselled out during the time since I started my professional and academic locations. It seems unnecessary to point out that they are not absolute categories, the three faces are not undisturbed landscapes – they are constantly in constant change. The I they are agents for, is changing continuously, and therefore has more in common with Heraclitus' river than most of the subjectivity theories in the western tradition. The togetherness three faces form an entity I call the transdisciplinary I.

The point of this essay is to test different viewpoints of the subject in relation to the Transdisciplinary I.

The I is the most forceful and still enigmatic location in human history. The I is where everything starts and at the same time the location modern western technocracies constantly move away from. Most of western history is a battle of I:s or I:s in We:s. About 400 hundred years ago a struggle began between the traditional I:s and the I:s with unlocated vision. This unlocated I led to a ban in technocracy writing. In the academy for example, the I became an object for regular witch hunts. It is almost a little bit cult-ish to visualize all the generations of researchers staggering with texts of unlocated I:s and the bright idea of compromise that the I would disappear more graciously if it was switched to a We instead of regressing to a nothing. In that sense, technocratic writing has been a road towards syntactic alienation.

Everyone in the research community should raise their I in front of them and use it as a mirror in at least one text, linked to everything they write. The expression waves in my I mostly unfold as some kind of materialist, an ontological relativist. I consider the "ontological relativist" as an unbreakable whole, rather than a syntactic compound. None has the right to remove one of its parts in referring to something I have expressed. I am not a relativist. It is possible to create accountable knowledge, and it is not even particularly difficult, as long as one does not forget the fact that there always is a location. My ontology is not something I was thrown into. Neither is it rational, or even emotional. It is deferred. I is deferred because there are not any categories suitable in the normalization waves of my I. The ontological waves of my I are preferably expressed with the unconditional 'respect'. The unconditional bit does not mean the same as in the Christian phrase "unconditional love". It refers to respect as an agent, rather like something static and predetermined. Even if the respect as an agent is not based on the scale of the rational/emotional, the linkage between respect and ontological relativism is highly rational. My relation to ontological relativism is

the product of reverse engineering. I asked myself the question “If I presuppose all the basic ontologies we use in academic communication, which one would respect lead to with reversed engendering – of course presupposing existing basic ontologies as something worth having as a point of reference. Ontological relativism more or less denotes a universe without supernatural agency and life based on evolution. In a way, I wish I could stop at the notion of ‘respect’, but I have learned that my personal knowledge production does not allow me that distance from the myths of the western tradition of nature philosophy. But now and then I meet a person with a strong conviction of a supernatural-based ontology, who seems to be able to do that with an unconditional sense of respect. In those moments I get really jealous.

Both ontological characters’ respect and ontological relativism are important agents in my sense of the transdisciplinary. I have always been a learning activist, meaning that I only want to give my attention to things I consider valuable building blocks in my own life–learning process. This has led to some particular allergies. The two most important in this context are horizontal and vertical segmentation. Transdisciplinary research is a way of relating to knowledge, values and power without overt segmentation. My understanding of transdisciplinary research is greatly influenced by texts by Helga Nowotny and Michael Gibbons, etc., but the transdisciplinary approach does not stop with the research approach (see, e.g. Gibbons et al., 1994 & Nowotny et al., 2001). The “transdisciplinary” could be said to be a guiding light for me, something deeply or widely inscribed in my I. Transdisciplinary research has been an I magnet for me. My I does not fit in close quarters, not even in the most spacious of them. It has been drawn to the context of transdisciplinary research because it is something I am willing to invest attention in.

Having respect as a centre seems to fit well with a transdisciplinary approach. From my location within the thematic discourse of feminist technoscience, I have to meet other stakeholders in the knowledge game with respect, while still expressing a position. That goes for positivistic claims as well as different kinds of non–scientific knowledge claims.

## Endnotes

- <sup>1</sup> For interesting discussion of the metaphor ‘angel’ in epistemology, see “Angels in unstable sociomaterial relations: stories of information technology” (Elovaara, 2004/2004)
- <sup>2</sup> When I am using philosophy, art and science as a “triad”, I refer to the Deleuzian view of the difference between these concepts. (see e.g. (Deleuze & Guattari, 1994))
- <sup>3</sup> The character Hannibal Lecter was created by the author Tomas Harris, see e.g. the film *The Silence of the Lambs*, <http://www.imdb.com/title/tt0102926/>, viewed: 2010–10–12
- <sup>4</sup> *Terminator Movie*, IMDB, <http://www.imdb.com/title/tt0088247/>, viewed: 2010–01–18
- <sup>5</sup> *Star Wars Movie*, IMDB, <http://www.imdb.com/title/tt0076759/>, viewed: 2010–01–18
- <sup>6</sup> It might be a distorted myth that “living in the now” comes from Asian (Buddhist) philosophy, see e.g. Jim Feast’s review of “Not Veracruz” by Joanne Kyger in *Vanitas Magazine*, [http://www.vanitasmagazine.net/Rev\\_Ljfn.html](http://www.vanitasmagazine.net/Rev_Ljfn.html), viewed: 2010–01–07
- <sup>7</sup> A Dementor is a creature in the books and movies about Harry Potter.





## **iBecoming–Cyborg II**

### **Introduction**

A cyborg is a conceptual space where all foundational dichotomies collapse into an open, gravitational play between the actual and the virtual<sup>1</sup>. “By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs” (Haraway, 1991, p. 150). Donna Haraway’s cyborg is a creature of bio–technology, nano–technology, philosophy, science, art, ethics and all kinds of politics. But it is a fact that it was created before the vastly influential construction of the digital machine. Bio–technology and nano–technology are still glowing feverishly in the veins of the post–human body without organs. But the digital machine evolving organically inside the space of social relations is building new virtualities, new becomings we could hardly imagine in the era where Haraway’s cyborg was born. The infinitesimal, the organic and the digital are technologies screaming for attention in the serious game of imagined futures, but the terms ‘digital’ and ‘cyborg’ seldom travel together.

### **The Attention Machine**

The attention machine is a construction built on desire, attention, intensities and hope. It is the heart of the digital cyborg.

## The Web Browser

From the first web browsers to relational interfaces connecting social spaces.

Digital technology is quite old in the minds of a few, but very new outside that restricted circle. The world wide digital machine has only been turned on for one and half decades now, which is the end of the first decade of the 21st century. Time before 1994 is to be considered as pre-history. The first web browsers, Mosaic and Netscape, were completely new interfaces in the cyborgian development cycle. No longer can a cyborg figuration be ignorant about the social space immanent in digital technology. Digital technology can also be a link to a wider understanding of the relation between technology and philosophy in Donna Haraway's figuration. Even if the binary incentive in digital technology contradicts the cyborg on one plane, it works as a binary destruction machine on other planes. When Stewart Brand said that "information wants to be free" (Brand, 1987, p. 202ff),<sup>2</sup> he touched on something more profound than the free content movement generally credit him for.

Information does not want to be embedded in binary thinking and rule governed by masculine power tools. Intra-social information flows are generally considered as something external to the body, even if many of us have learned that the body is an information processing machine in itself. It is hard to imagine a future where nano-, bio-, neuro- and digital technology develop as separate disciplines and activities. A reasonable scenario is that digital technology and information processing will connect everything and the web browser will develop to function as a personal administration interface for the space connecting everything. Perhaps Donna Haraway touches on this scenario when she writes: "No longer structured by the polarity of public and private, the cyborg defines a technological polis based partly on a revolution of social relations in the oikos, the household" (Haraway, 1991, p. 151). The feminist incentive in this part is only the beginning of a complete reconstruction of the world wide map of social information.

## Attention Capitalism

The intensities involved in attention economies are closely related to the information density in the digital plane

The Attention Browser is a machine built to browse the increasing flow of attention-seeking events. Today, at the end of the 2.0 decade, there are only the seeds of this technology built into current technologies such as the web browser, spam filters, television EPG, the mobile phone's "silent button", and various kinds of functionality in social services such as LinkedIn and Facebook. The attention browser is a personal power tool developing inside the increasingly complex world-wide attention machine where paying for attention and stealing it is a blurred border. Professional attention hunters are roving the world for legal and illegal functions to still the hunger of the newly born attention capitalism. And in the centre of this capitalism is the cyborg as an actual and virtual creature, simultaneously representing and performing the future.

We will never go back to the time before attention capitalism so material-semiotic constructions such as Donna Haraway's cyborg are important creatures functioning

as probes into the becoming, testing virtualities and potentialities, leading us to faith in our self and our becoming. It is not enough to measure the world any more. We have to dig further in the tool box and pick up tools to create tools to create new tools and so on, in an intense spirit of creative passion to stop the world from becoming an incomprehensible wall of jumping and screaming, corporate, monkeys seeking your and my attention. We have to become cyborgs; not as slavish parts of a predetermined technological future, but to survive in a world where Martin Buber's longing for a connection with "the other" (Buber, 1993) becomes a naive utopia in the constant information and sensation blur created in the wake of the great attention war. We have to dream and talk about the future. We have to speculate about our virtualities. It is my strong belief that words and phrases such as 'technological determinism' and 'technological optimism' are dangerous performatives in the creation of the future. The concepts are not dangerous as such, but, on the contrary, they are often used to deterritorialize ideas as speculative fantasies in the virtuous act of measuring the actual world. By turning the future into a monster we disable ourselves, turning our selves into frightened children hiding behind the bushes studying the monster with subdued fascination. The cyborg figure is one way to break the vicious circle of disempowerment. We have to give the future our attention to be able to survive the attention wars already circling feverishly in our virtual bodies.

Attention is the new capital. Commercial companies, institutions and authorities alike, as well as private persons, will try to steal or buy our attention with a substantially higher degree of dexterity than before the Internet age. The increasing dexterity is related to the increasing information density in the digital plane. It is easy to spread information about how to get people's attention, but it is also easier to harvest these attention intensities, since the distance between each attention intensity has become substantially closer with the advent of digital networks.

## Cyborg Ontology

Moving from the concept of 'information' to concepts needed in cyborg politics.

This chapter is mainly about escaping from the concept of 'information'<sup>3</sup> used more or less unconsciously in the previous chapter. Attention and information are "natural" companions in the plane of common sense, but they do not really seem that friendly in a poststructuralist mode of thinking. 'Information' is one of the main protagonists in the modern myth of binaries as internal–external, subject–object. Information is what penetrates the human nature (or subject), making it evolve, creating knowledge; the internal finding or creating knowledge of the external. This myth of the outside stands in contrast with the poststructural myth of immanence, a myth of which I am obviously one of the narrators. In Harawayian cyborgology, the modern myth of transcendence is imploded into the space populated by creatures born in a world of immanence. There is no longer an incompatibility of "human nature" and a "technological nature". Science fiction titles such as *Do Androids Dream of Electric Sheep?*<sup>4</sup> are either ironic or outdated. In poststructural thinking there can be no ontological

difference between androids and humans, and neither between biological and electric sheep (see, e.g., (Haraway, 1991, p. 152)).

### Cyborg Hearts

Why minds are not subjects related to objects and the location of hope in digital cyborgs.

What happens if we flip the coin and switch the human centre from ‘human nature’ to something more immanent and pragmatic like ‘hope’. This is probably the main incentive in Richard Rorty’s little book *Philosophy and Social Hope* (Rorty, 1999)<sup>5</sup>. The idea of an inner nature of different forms is evident in most academic and non-academic disciplines and institutions<sup>6</sup>. The term ‘form’ is in itself a performative of this idea, since it splits the form from the content in the same way that a ‘person’ is generally regarded as one of the many ‘personas’ of human nature<sup>7</sup>. This kind of thinking is deeply rooted in the daily expression of most persons and we can see it working in all parts of the community machine.

An example from my own profession in ICT is object-oriented programming, where one object is the origin of other objects connected to its origin in a way reminiscent of a mind map. One of the differences between OOP and epistemology is that the object in OOP has an exclusively pragmatic ontology, while the object in epistemology generally hunts in the deep forests beyond pragmatics. I do not advocate the view that we should call off the hunt in the forests beyond pragmatics – I am quite convinced that pragmatics is an ontology in itself. But when pragmatics moves beyond the obvious contexts of daily life, it becomes heavily anti-aliased<sup>8</sup>, losing shape and starting to glow. A concept almost always has a higher resolution than its context, which is one of the reasons why languages evolve. They have to adapt to a wide array of low resolution contexts.

Modes of thinking, mindsets and different kinds of mind cultures are to a great extent determined by the vocabularies we use. For some the term ‘mind’ is also placed on a shelf beside the other tools of expressing some kind of transcendence. For me, however, the term and concept ‘mind’ have been constructed by reading, thinking about, and practice thinkers such as Gregory Bateson<sup>9</sup>, where ‘mind’ is more ecology than substance. In this shape, mind is an immanent concept, which fits quite well in a non-transcendent construction of the world. Mind is an assemblage of connections, material and semiotic. It is created by the flow of intensities embedded in the plane of immanence/consistency<sup>10</sup>. Mind and body are different aspects of the same actuality. Hope is the connector of everything. It resolves all dichotomies. It is where we came from, and it is where we are going. Hope is the heart of the digital cyborg.

### The Machine

How are cyborg ontology and politics related, and why is the concept of the machine important for a cyborg ontology?

Thinking about, and practising, the Internet, I always seem to fall back on William Gibson’s poetic image of cyberspace<sup>11</sup>. An alternative to the user-information voca–

bulary could rely on material–semiotic; mind–persons; attention–machines; function, concept, affect–machines reacting and acting in the flow of digital intensities. On this abstraction level, the cyborg and the human are ontologically the same. According to Donna Haraway, “The cyborg is our ontology; it gives us our politics” (Haraway, 1991). This dense piece of meaning says something very fundamental about our relation to technology. We, humans, cyborgs, are technological creatures and to avoid this ontology we have to create very intense and energetic myths about something other, and this other is the essentialistic properties of “the human nature” running all the way back to Plato. But accepting that cyborgs are our ontology leads us to our politics. Our politics have to be different whether we see ourselves as essentially human or immanently, pragmatically cyborg<sup>12</sup>. The cyborg is a poststructuralization machine, just as America is a postmodernization machine<sup>13</sup>. Cyborg politics does not only give us the “right” to create new vocabularies. A deterritorialized politics demands deterritorialized expressions. Cyborg vocabularies might raise resentment, as all steps “outside” the myth of “natural language” seem to lose sight of the communicative properties of human nature. Nature is a scary word, something we imagine to have had and treasured, but lost<sup>14</sup>. It is like dying, we gradually deteriorate from something supposedly essential and natural to something entirely cultural. After death, we only live in the minds of others, in the culture of what we once were. But there is no nature in cyborg epistemology, or at least, nature and culture are two sides of the same coin. They cannot be separated. They need each other intensely, like you and I.

Using the word machine for various processes is not only a functional matter. It also has affective performatives. Introducing the technological word ‘machine’ in a human–machine environment, we are forced to re–form the concept to suit the new context. Some of the meaning, mostly the abstract, is transferred, while some of it is left behind, mostly the concrete and visual. The meaning is given a new face, a new persona. Deleuze and Guattari have even given the term ‘machine’ a completely transparent persona in the concept ‘abstract machine’<sup>15</sup>, but machines generally work on a plane where the abstract and concrete interact. Deleuze and Guattari are usually very explicit on the fact that machines operate organic, non–organic and technological systems. Their examples are often biological:

*It is at work everywhere, functioning smoothly at times, at other times in fits and starts, it heats, it eats. It shits and fucks. What a mistake to have ever said the id. Everywhere it is machines – real ones, not figurative ones: machines driving other machines, machines being driven by other machines, with all the necessary couplings and connections. An organ–machine is plugged into an energy–source–machine: the one produces a flow that the other interrupts. The breast is a machine that produces milk, and the mouth a machine coupled to it. The mouth of the anorexic wavers between several functions: its processor is uncertain as to whether it is an eating–machine, an anal–machine, a talking–machine, or a breathing–machine (asthma attacks). Hence we are all handymen: each with his little machines. For every organ–machine, an energy–machine: all the time, flows, and interruptions. (Deleuze & Guattari, 1977, p. 1)*

More densely put, a machine may be “defined as a system of interruptions or breaks (coupures). These breaks should in no way be considered as separation from reality; rather they operate along lines that vary according to whatever aspect of them we

are considering” (Deleuze & Guattari, 1977, p. 38). Humans and cyborgs are both machines, consisting of systems of more specialized machines. The Internet is a machine consisting of flows of intensities, attention machines, investment machines and desiring machines. A netizen<sup>16</sup> can be viewed as an assemblage of desire, attention and investment. We, human–cyborgs, desire things. We desire affects, philosophies and functions to make our life exciting, balanced, rich and fulfilling.

### Intensities

Intensities are integrated entities in the desiring machine as well as the attention machine. They are abstract entities working beyond the subject–object dualism. Everything can work as intensity, but only some things can have desire and attention.

Things are intensities. A new shiny computer might make your “heart” throb or “head” run faster, especially if you made an investment to get it. If someone, on the contrary, pushed this new computer at you without your fullest consent, your heart might start to throb with resentment, anguish or even fear. Forced upon you, that new shiny computer actually might make your mind run slower. You have to make some sort of investment for this computer to become with you, and the investment is in attention. Forced upon you, a piece of technology easily becomes a negatively charged intensity. The investment lies in the amount of energy it takes to turn it into a positively charged intensity, or even a neutrality. Thus, intensities can be charged positive, negative or neutral. It is about degrees, but it might be easier to conceptualize the power of intensities if we use size instead. Large intensities are easier to spot, and more difficult to turn away from. The connection to them is difficult to break. Their immanence is more evident. Neutral intensities are of course self–contradictory. They are like dead stars, or black matter, imperceptible, hidden, in the starry sky. They are made by us, or for us, to use as little attention energy as possible.

Dead intensities are immanent and evident in everyday life as well as in the plane of complexity. One example would be in literature, where universal characters are created to “fall into” our field of attention without too much fuss. An example of the whole register of intensities is in commercials, where successful advertising has high intensity and we as perceivers generally try to uncharge or kill the strong intensities coming into our field of attention. Advertising on the Internet is a special case, since commercials seem to be immanent in a web site, especially Google AdSense, which picks up key words in your search to display “relevant” advertising. We could call this kind of advertising low intensity. It does not seek as much attention as possible. Its function is to integrate in the whole experience of the web page, to erase the border between the desired and the obtrusive. Another form of Internet advertising is the colorful flash animations blinking and moving on some web pages. There is nothing subtle about them. They are not contextual. They are created to be as intense as possible, while still following laws and social rules. Advertising like this is a war for attention, and the war zone is not the anonymous “user”, it is the person. A user does not have desire. Only persons have desire. Obtrusive advertising is to communicate directly with the desiring machine. It wants to be an object for investment and the currency is attention. Sneaky

advertising wants to be a free rider, integrated in the whole experience, tapping in on the desire bringing you to the web page in the first place. Advertising is only one of the large quantities of obvious and not so obvious intensity fields playing with us as persons during our waking hours, and perhaps in our dreams too. One way of figuring, and figuring out, becoming–cyborg is by emphasis on attention. Becoming–cyborg is thus about attention–managing technology. Considering the time we now live in, becoming–cyborg and becoming–digital might be considered as analogous concepts.

## Hawking

The physical integration of human–technology constructs starts in medicine and body implants, passing through the contemporary extreme in Stephen Hawking rushing forward to the human–avatar construct.

### The Technological Body

However we imagine the human future, it will include an increasingly blurred border between technological and bio–chemical body parts.

Technology is mainly involved in two ways of becoming–cyborg: as intensities, producing attention, and as attention managers. A young woman might have a breast implant because she imagines this will increase her production of desire and attention. She desires to be desired and her attention energy is extremely high on the subject of breasts as desire and attention producers. She imagines herself as becoming more intense with a breast implant. She wants to use technology to metamorphose from a state of neutrality to a state of positive intensity, which for her outmatches the inevitable amount of negative intensity necessarily entailing positive intensity. The young woman's desire is not produced by 'human nature', but by the whole complexity of human context – a context created by thousands of years of western male vibrations in the fabric of the material–semiotic desiring machine.

Why Hawking? It might seem strange to start a chapter called Hawking with an example of the social construction of popular culture, but I see the aesthetic reconstruction of human bodies as a strong indication of falling borders between biology and technology. Desire itself is pushing us beyond the borders of ruling morals. Even if I personally am strongly opposed to the culture of aesthetic body implants, I cannot deny the logic in the Deleuze and Guattari argument that desire is productive rather than a lack of something (1977).

The argument against aesthetic body implants does not easily reveal itself on the moral plane. I think we have to deal with it by talking about the 'person' in relation to difference, repetition and becoming. The culture of aesthetic body implants threatens to restrain a person's virtualities rather than to increase them. In the culture of breast implants, it is as if we are searching for the platonic form of the female body, which is culturally reactive and a potential disaster for persons involved in this circus. This is not a reaction to body implants themselves, only when it leads to an increasingly empowered normativity zone, an increasing practice of repetition on the expense of



difference. There is a delicate balance between difference and repetition and there is always a risk involved in influencing one of them. But I am hardly alone in the opinion that the time we now live in needs more difference and less repetition.

A more pervading example of body technology can be found in the technological ecology constituting the person of Stephen Hawking, as narrated by Allucquère Roseanne Stone:

*If you haven't seen Stephen Hawking give a talk, let me give you a quick background. Hawking has amyotrophic lateral sclerosis, which makes it virtually impossible for him to move anything more than his fingers or to speak. A friendly computer engineer put together a storage buffer, and a Vortrax allophone generator – that is, an artificial speech device. He selects words and phrases, the word processor stores them until he forms a paragraph, and the Vortrax says it. Or he calls up a prepared file, and the Vortrax says that. (Stone, 1995, p. 4f)*

Stephen Hawking's technological context absorbs attention on two planes: on one plane there is the attention his technology draws from everyone in the audience, or everyone talking to him for that matter. For some, the technology diverts attention, making it hard to listen to what he says. Others probably have the opposite experience where the technology enhances the words in different ways. The most obvious way in which the technology acts as an accelerator of meaning is in the sheer admiration for Hawking as a person. If he, with his "predicament", makes the effort to perform in this way, he must really believe his words are of the greatest importance. In this sense, attention is closely related to normativity. The normal is low intensity, and the abnormal is high intensity. Stephen Hawking is abnormal in every sense of the word. His borders are anti-aliased. There is a fuzzy glow of human technological virtualities surrounding him. This unsharpness makes Stone ask questions such as: "Exactly where: I say to myself, is Hawking", and "Where does he stop? Where are his edges?" (Stone, 1995, p. 5). Stone concludes the part about Hawking: "The issues his person and his communication prostheses raise are boundary debates, borderland/frontier questions. Here at the close of the mechanical age, they are the things that occupy a lot of my attention" (ibid).

Stone's questions and comments about Hawking reflect a humanist view of a person as an instance of a universal subject. In her essay *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*, Donna Haraway criticizes the western male tradition of relying too much on the visual (Haraway, 1991, pp. 183–201)<sup>17</sup>. The visual is in the centre of representational thinking. Vision is the most powerful of the senses and thereby the most forceful instrument for justification of a representation's relation to its model. The main body of this chapter is going to be devoted to an analysis from the story Stone narrates about Stephen Hawking viewed from a humanist–posthumanist perspective. This is not a literary analysis where the text itself and possibly the author is targeted. It is a contextual analysis targeting something more universalizing. By the concept 'universalizing' I mean something completely different from universalism. Universalism is the task of searching for universal truths and values, and the faith in those essentials. 'Universalism' is a humanist notion, while 'universalizing' is a posthumanist conception of "the self" as immanence<sup>18</sup>. Universal-



izing is the act of reaching out beyond yourself, while at the same time retaining the fundamental understanding that this is a local, particular way of situating yourself in the context of your own life<sup>19</sup>. Universalizing is also the process of finding connectors between local expressions.

#### From a Humanist Perspective

There is always a before and after the digital. This scenario is a narration of an event before the digital age, and as such based on the platonic tradition.

Visualizing the scene, Stone is placed in the public, viewing Hawking on the podium as a subject relates to an object. He is a human of the first gender which normalizes him in relation to the history and actuality of power. But at the same time, he is a masculine paradox: he is among the most powerful of men when it comes to mind power, rationality, and certainly among the weakest in relation to body power. This paradox in itself is a powerful image of human resourcefulness and power over nature and technology. He is a powerful image of the human situation of ingenuity in earthly things and how powerless we really are in relation to the enormous, fathomless context Hawking and others have showed us in cosmology: black holes, galaxies and unimaginable distances. I doubt that Galileo could have grasped how diminutive earth, or one single human really is, how powerless we really are. And still, the image of Stephen Hawking glows with another power, rationality. In an animalistic sense it is impossible to even fantasize about knowledge concerning shapes and movements thousand of light years beyond earth. This power is very strange since we cannot see, smell, hear, touch or influence most of the objects it describes in any way. We can only see the wonder in the representations, and be influenced by their performatives. Hawking and his colleagues are a kind of magicians. They can know beyond the eye.

All this has to be evident in the minds of the persons “kneeling” before Hawking’s throne. Trusting our senses, he seems to be a weak king. But we know he has his army of knowledge workers and everything he announces has the same authoritative value as other things he says about the cosmos. For us, Hawking, his government and his army are almost omnipotent regarding data about the world beyond earth. And what is the process behind all this? The cosmology rulers constantly touch the “nature” of the universe. The nature of the universe is like a matrix immanent in everything. But every cosmologist in the kingdom has the power to transform himself into a balloon. This balloon can rise and reach levels beyond the matrix to a space which only God and scientists can reach. Hovering above the knowledge matrix, the cosmologists can view the gigantic matrix only for a fractional part of each ascent. Limited by their common needs, they can only be balloons for a limited time for each session of elevation. But one step at a time they cover large areas of the matrix. The ultimate dream is to find out how the fabric of the matrix is built<sup>20</sup>. Learning the ultimate algorithm of the matrix could unfold the whole. This process of reverse engineering<sup>21</sup> would ultimately create the human God, the first of God’s children being able to create worlds, universes.

Now, at the end of the 2.0 decade, there is a new class of balloon people hovering high above the new world we call the Internet. Social scientists and others are like a swarm

of coloured dots on the digital sky and we know they are looking down at us in the virtuous task of finding user patterns. We, the collective of web workers, wonder if their artificial eyes really can spot our becomings from that distance. What stories can be told from high above. If we were armed with slingshots we might have shot some of the balloons down and invited the persons inside them to a feast of participation.

Hawking is the knower. Persons in the public are the learners. Small, structured portions of his learning are formed in his mind. His body has nothing to do with the processes of the mind. The formulated pieces of knowledge are leaving Hawking's assembly of human parts and technology in the form of sound— and light waves. An act of communication is initiated. Structured pieces of information are leaving the space of Hawking's body and travelling in the form of information into the spaces of each body in the public. When the information meets the experience in each person, it “falls into” a context and transforms to personal, subjective knowledge. The persons in the public might react to this new knowledge through body language or by posing questions to the lecturer. This scenario is usually called ‘communication’. In an act of communication, the things “flying” in the channel from sender to receiver are one or several messages. The message contains chunks of information, and the whole message can be viewed as a piece of information. The difference between messages and information is that the former always have an imagined context while the latter is mythologized as utterly free of context. Information is thus otherworldly while “flying” in the space between human platforms of knowledge. When it lands in a subject, subjective knowledge is created, and when that subject communicates with other subjects, the subjective knowledge is transformed to intersubjective knowledge. Some think this is it, that intersubjective knowledge is as far as it goes on the scale of objectivity/relativity. But this is a scary thought, because this means there is no way out of Foucault's knowledge prison of power. In my view, intersubjectivity and power relations are two sides of the semiotic coin. They are just different terms for the same concept. This view is, however, easy to reconcile with information as “objective” vessels of semiotically structured data between subjects. Language works as water surrounding a group of people bobbling in the water on a heavily populated beach. It is between us, around us and inside us<sup>22</sup>, but it does not constitute us. It is one of the tools available to the human subject, as is the body.

### The Desire for Production

How the Platonic tradition is embedded in most common sense thinking and the relation between the ‘person’ and the desire for production.

Cyborgology, or a posthumanist construction of the person, would lead to a very different analysis. However, the posthumanist discourse has yet to stabilize into something other than a criticism of humanism, so this analysis will not have the same “visuality” and clearness. It is difficult to leave the humanist view without simultaneously leaving the plane of common sense. The humanist view of the world in terms of the relation between humans and non-humans is so grounded in tradition; it is like being caught up to the neck in quicksand. Common sense knowledge is recycled until it becomes

something “natural”, something “feeling” right in a large context. In this sense it is blocking the way for new (thought) practices.

The ability to relate to the plane of common sense is crucial in our daily thinking. But at the same time, the plane of common sense is like being under a spell where every thought is already planned for. New thinking becomes difficult because it falls outside the social glue of normativity<sup>23</sup>. The western “normal” or common sense view of the concept ‘human’ is grounded in visual practices. We ground our judgement of humanness mainly in what our eyes tell us. This is probably one of the main reasons why our society is fundamentally masculine: males have been the normativity index for millennia (see e.g. (MacKinnon, 2006)). Rational thinking has little to offer when you stand up to your neck in conventional quicksand. Another example would probably be the view of slaves in Europe and America in early modern time: people outside the normal western look were not recognized as ‘humans’<sup>24</sup>. From that perspective, the concept of ‘person’ is more powerful than ‘human’. All humans are persons, but all persons are not humans. The concept of ‘person’ easily spills over to machines, kindred animals and assemblages. Especially in fiction such as science fiction and fantasy, there is ample evidence of ‘personification’. However, personification is heavily entangled in anthropomorphism, an identification process firmly embedded in our cultural rhizome<sup>25</sup>. If it is possible to separate personification from anthropomorphism, perhaps it is most visible in the personification of groups as companies and nations.

The problem with a concept like ‘person’ on the plane of complexity is that it is generally understood as “subjective”, i.e. something derived from the subject. The set of connections keeping the concept ‘person’ together are “nonspecific, widely interpretable, or utopic”. This phrase is used by Jennifer Parker-Starbuck to describe some of the reception of Donna Haraway’s “cyborg manifesto”, as well as Deleuze and Guattari’s concept of ‘becoming-animal’ (Parker-Starbuck, 2006, p. 653).

It might sound strange to use the concept ‘person’ in relation to utopianism. I do not see it in that way. On the contrary, a concept like ‘person’ is only powerful enough if it is utopian. The utopianism in ‘person’ lies with the ability to create consistent connections at an international level for our planet to survive our inexhaustible desire for various kinds of production. My hypothesis is that, in the long run, this desire for production can only be maintained on the plane of digital relations, digital technology. This does not really imply a cynical view of “the person”. On the contrary, I think the desire for production has become a central part of how we define ourselves as human/cyborg persons. It is not about progress in the enlightenment sense. Progress is a social property which has something to do with what I am trying to say, but it is only a fraction of it. The desire for production is somewhere in the background of progress, but it does not really constitute it. The desire for production is not only about things, about materialism, about aestheticism. The desire for production is behind both sides in Kierkegaard’s Either/Or<sup>26</sup>. The desire for production is the power behind “a leap of faith”. It is also a foundational part in the Deleuzian key concept of ‘becoming’ as opposed to ‘being’ (see e.g. (Deleuze & Guattari, 1987, p. 232ff)). Producing things and producing desire are processes very closely linked in human behaviour and separating them might be more rhetoric than ontology.

A person is a formation of connections between situated universals. Universals in this sense can be exemplified with concepts such as love, desire, hope, intensity, investment, and attention. The way I use the concept 'situated universals' is closely linked to Donna Haraway's concept of 'situated knowledge' (Haraway, 1991). Situated knowledge is thus an assemblage of situated universals, their connections and their practices.

The event where Hawking is talking is a simmering flow of intensities, desires, attention and investments, love, hope, and wonder. Persons, cyborgs are immanent in a network of desire production. But let us shift from an aerial to a digital embedment. The event would then be a collection of locations in the form of IP addresses. The IP addresses are administered by a network of servers. These servers are spread all over the globe. One aspect of every IP address contains some sort of avatar in the form of a username and often a picture<sup>27</sup>. An avatar is a digitally embedded function of linking to audiovisual media. I use the term linking rather than link to denote relations beyond physical hyperlinks. An avatar is more like a spider whizzing around the globe spinning a web of digital relations. If the event Roseanne Stone attended with Stephen Hawking as a speaker had been today at the end of the first decade of the 21st century, it would have been semi-digital. Today, there would have been a lot of ubiquitous computers sending text messages, tweets and Facebook updates as reactions to the events. Many devices would be a mobile phone / camera / video distributing pictures to sites like Flickr and uploading videos directly to YouTube. The chance is even that the event would be streamed directly via a web site with thousands or more attendees all over the world, and this could be done by several persons in the public simultaneously. This is a fairly likely scenario right now, in 2009, so imagine a similar scenario in 5, 10, 20 or 30 years, which I think we have to do. We are always standing with one foot in the future. Reflecting ourselves in our cyborg future is what is giving us our politics<sup>28</sup>.

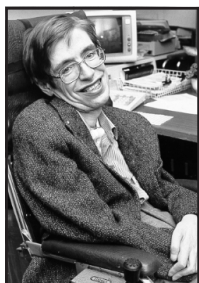
## Avatars

The avatar is the new face on the Internet. There are several different types of avatars and their function is both representative and performative. The aesthetics of avatars range from anonymous icons selected by the system to representative photos and complex symbolics. Avatars can be born with or without intention.

The whole scenario around an event like this is relatively low in intensity, compared to something explicitly emotional like a rock concert. But the amount of desire embedded in "academic" events and rock music is probably more similar than one might think. The difference is more about the myths of mind and body as two separate "entities". The avatar is generally viewed as a digital embodiment which more or less means aligning the mind with a digital body instead of a biological. An avatar in a "computer setting" is commonly viewed as a "graphical object, created and maintained by software to mimic humans or other creatures. Avatars are most often used in computer games, especially virtual worlds, to represent the player within the game."<sup>29</sup> But the term avatar has a long tradition in Hinduism as "an incarnation of a god (especially Vishnu) in human or animal form that appears on Earth to combat evil and restore

virtue. In Hindu tradition, there have been nine incarnations of Vishnu and a tenth is yet to come: these include Buddha, Krishna, and Rama.<sup>30</sup> From a Hinduist perspective, Jesus was an avatar.

A personal avatar on the Internet is an assemblage of server/client technology, image producing technology and a desire to produce intensities or/and a desire to produce representation. An avatar is a disabled embodiment of a person, either in the sense that it cannot hold the complexity of the biological body/mind, or as purposely disabled to display only a “branded” part of a person. The image to the left of Stephen Hawk-



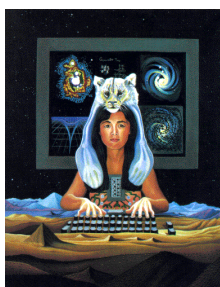
ing could have been an avatar – if Hawking had been a netizen, someone who creates direct traces or footsteps on the digital plane. Since Hawking’s traces are made for him, he does not need an avatar. But this image is one of the few with a public license and is therefore used as some sort of indirect avatar, an image meant to represent a text someone has written about Hawking and/or his work. When I look at this image, it acts as a symbolic link to a more “branded” relative in a science fiction/fantasy series of novels by Tad Williams. The story is about a computer-generated

3D world called Otherland<sup>31</sup>. One of the strong warrior heroes in the story is called Orlando. However, the biological creature Orlando, the reverse side of the avatar, is a young boy with progeria<sup>32</sup>. The biological Orlando is more or less confined to a a hospital bed while Orlando the warrior is a main player in a world where expressions of the biological body are of slim importance. Both kinds of avatatic expression are common on the Internet. The Orlando avatar is constructed to manifest itself as something completely representative, an embodiment of traditional masculine power. A desire to become a hero with a sword as a cyborgian property. A human–technology machine of medieval aesthetics.

The photo of Stephen Hawking is a good portrait photo, emanating from the photographer’s desire to produce a representation of a respected genius. The computer is aligned with his head and the wheelchair frames his body. The image is cropped in a very narrow style pushing everything unnecessary out of the picture, but it also strips it from some of its three dimensional qualities, making the computer seem to grow out of Hawking’s head. About half the computer becomes aligned with Hawking’s head to connote his close relationship with, but also dependency on, ICT. This photo is very interpretive, but in most of its virtualities it performs a masculine humanist view of the world, where body and mind are two separate functions and technology is surrounding, aiding actors.

The iconic painting<sup>33</sup> on the cover of Donna Haraway’s “Manifesto” (Haraway, 1991) works as a reality–producing machine against performative representations such as the photo of Stephen Hawking. It works as a feminist, posthuman performative against a masculine humanist view of the human situation. In the centre there is a young woman instead of a middle–aged man. The computer is not beside her: she is embedded in the computer, as pictured between its keyboard and screen. At the same time,

she is embedded in an animal, a cat, and the whole assembly is embedded in earth, and in history. The pyramid draws a line back to Cleopatra and other female rulers before



the platonic, Christian tradition. This painting is on the cover of Haraway's most influential book and it has also become the "cover" of the essay *A Cyborg Manifesto* as it is spread through the Internet<sup>34</sup>. This oil painting has in fact become an avatar for Donna Haraway's cyborg persona. Since the cyborg is generally constructed as posthuman<sup>35</sup>, and perhaps the strongest instance of a posthuman, Lynn Randolph's painting also becomes an avatar for the posthuman person. It is a collective, ideological avatar, a piece of art, something in itself, but also an embodiment of the cyborg in the *Cyborg Manifesto*.

If the Hawking event had been carried out now, at the end of the 2.0 decade, every participant and the vast network of actions would have been embedded in digital technology. It would have been an event machine connecting biotechnological bodies with digital avatars and a completely new way of distributing intensity in networks around the globe. The most obvious parts of the machinery would have been 'the person', the posthuman person, a person who is driven by the desire for production, a person with a very complex attention machine strained by the immensely increasing flow of intensities.

## Becoming Digital – the Utopic Dimension

It is impossible to escape the utopic dimension of the Internet whenever we lift our gaze from the immediate.

The common sense dimension of concepts often tends to get in the way of productive deviances of the concept. I have a special fondness for a few of these concepts and among these, 'romanticism' and 'utopism' are two of my favorites. The common sense dimension of romanticism has to do with the production of an aesthetic, emotional glow in everyday reality. It is an anti-rationalistic process, and perhaps also anti-realistic. It is associated with escapism which links it to utopism. The common sense usage of utopism is perhaps slightly more derogatory than romanticism. Instead of painting our dirty world in (overly) bright colours, utopism displaces thought to a time-space which is not, and will probably never be. But romanticism is also about resistance against and challenge to the automatic rationalism embedded in western thought. Utopism is also a process to resist and challenge academic navel-gazing. Utopism is firmly embedded in the logics of becoming. I think it is absolutely necessary to talk about utopism in relation to the social web and cyborgs based on Donna Haraway's posthumanist notion. The person-avatar relation is embedded in a bundle of utopic virtualities.



## Utopism

Utopism has to be related to the desire for production. Regarding this property is leaving us with few alternatives. One of these might be to embrace the digital to its full potential.

Utopism can be connected to ‘hope’ and ‘pragmatism’, rather than ‘determinism’ and ‘naivism’, which is always how I use it. Hope is a connector between the present and the coming and therefore very important in philosophies about ‘becoming’. The problem with a concept like ‘utopia’ is that it follows the western tradition of creating impossible dichotomies. It is difficult to create a painting in greyscale when it is generally viewed as black and white. Pragmatism is always in greyscale. The future will always be in greyscale, despite everyone insisting on viewing it in black and white.

Human–technology utopism is often expressed in extremist terms, e.g. super–liberalist techno–optimist utopism (Lykke, 2000), and technologism: “the new religion of the self–aggrandizing techno–elitists. Like some other religions, Technologism’s dogmatic belief system requires an irrational leap of faith that – in its case – moves from philosophical theories to technologies that do not exist. With their conviction that the techno–apocalyptic Singularity will redefine nature and their dream of transcendence through technology, the Technologists resemble religious fanatics.” (Dinello, 2005, p. 31). Nina Lykke’s feminist critique is mainly directed to the “highly controversial and provocative popular science book *Remaking Eden* by Princeton biologist Lee Silver” (Lykke, 2000). The full title of Silver’s book is a good indication of what it is about: *Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family* (Silver, 1997). Dinello’s critique refers to a small assemblage of theories and practices usually collected under the term ‘transhumanism’.

This kind of utopism critique can be summarized in the following statement about Dinello’s book:

*Thus, SF and technologism might be much more closely related than Dinello admits. Instead of the one being a solid source of criticism for the other, they appear as two sides of the same kind of quasi–religious logic. Even more so, because both build on at least three shared assumptions that have long been contested in STS: Both technologism and SF stories generally assume (a) that the relationship between technology and social effects is linear (new technology automatically has benign or bad effects on humans, nature or society), (b) that technology is an autonomous force that one cannot steer in alternative directions, and (c) that nature and technology, or humans and technology, are mutually exclusive categories whose offspring, often called cyborgs, are either embraced (utopism) or abhorred (dystopism). Instead, STS scholars would state that actual relations between technology and society are complex and quite unpredictable and that there are many possible outcomes, of which SF’s worst–case scenarios are but one. (Smit, 2006)*

Smit’s argument probably sounds sensible for most academics. We are very suspicious of one–sided affirmation and especially of arguments flying on the wings of emotive energy. But sometimes we do not have enough suspicion against our own suspicion. Smith’s three points that technology is not a) linear, b) autonomous c) utopism/dystopism are common standpoints in both STS and Technoscience. But at the same time we have to stress that these standpoints are a set of hypothetical viewpoints. A statement like “[technologists] move from philosophical theories to technologies that

do not exist” from Dinello above is a bit puzzling. Does he really mean that we only can refer to existing technologies when talking about the future? This is where Donna Haraway’s cyborg comes into the picture. Her cyborg “is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (Haraway, 1991). If we are cyborgs, which I think it is evident we are, then we are also creatures of fiction. Fiction is not representations of humans and human relations. Fiction is our virtual life. It is a part of us in the same way that we are a product of history. Our virtual life is a product of the desiring machine. We produce technology, ideas and even emotions because we desire something. We produce technological criticism because we desire things like complexity in thought or a slower world with less technology, or we desire a sustainable world and we do not think technology is the answer. And this is where my own relation to utopism starts.

My utopism starts in an image leading to a set of questions. The image is about logics, desire and the assemblage of things. The human–cyborg desire for production is making earth ever denser with technology. The distance between “things” is gradually decreasing. “Things” is not only computers, cars, buildings, hammers, lipsticks, synthetic clothes, books, plastic bags, espresso machines, baby monitors, TVs and facial moisturizers. It is also their leftovers: carbon dioxide, heavy metals and so on. There is a large set of plausible opinions about the future of technology, but it is very hard to escape the density factor and its logic. In the short term, we can talk about change and challenges, but our desire for production will probably prevail through every challenge. The desire for production is one of the most striking properties of humans and cyborgs.

### The Digital

There is no space on earth. Earth is a density regulating machine, as is the Internet. We have some control over the latter, but the former is subjected to our desire for production.

The digital plane is a new playing field for human–cyborg desire. We still need computers, cameras and similar technology and thus electricity. But it seems more realistic to think that we can embed these technologies in a sustainable life than the alternative of uninhibited density of the world. Most of the now living cannot see this digitalism for their own life. Their desire for material production cannot be diverted to digital production, myself included. But this is only important in relation to our actual bodies. In our virtual life, our body without organs, we can meet the challenge of increasing density by diverting a large part of our desire for production to the digital plane. In one sense this is a utopism. Like all utopias, it is something immanent in our virtual bodies. It is something that is not but has the potential to become. We may have opinions about probability but even improbable challenges can be carried out. In another sense: this is not utopism. Becoming digital as I have imagined is not a choice between a wide array of possibilities. The utopism in digitalism is more of a Noah’s Ark for the desire to produce, a place where we can maintain all our creativity without cutting of the branch we are resting on. The digital plane as a Noah’s Ark for the desire for pro-



duction is a post-apocalyptic incentive. The post-apocalyptic age is a near-synonym for 'postmodern age' though it vibrates with another set of connotations. Both concepts probably start in the Baudrillardian discourse about 'America' and end up in the digital as the most powerful of human virtualities.

As embedded in the post-apocalyptic, Cold War Europe, the digital plane came with inklings of "something other" than the seemingly obvious ways of becoming. It is impossible to see what it is or if it really is something we should hope for. But at least it is something, something that might be transfigured and performed into something we might consider as some kind of hope.

When science-fiction writers locate humans in a remote future, earth has often been reversed to mythology<sup>36</sup>. The process of leaving earth behind was either outgrowth or techno-war destruction. Earth is thus omitted from the future history of humans. Seen from the viewpoint of science fiction, earth belongs to the early history of the human race, and sometimes it is even surpassed by romantic mythology reminiscent of the stories about Atlantis or Shangri-La. Is it not the deepest kind of blasphemy to ignore earth as expendable in human history? As if humans were not a part of the earth organism, as if earth is not a cyborg<sup>37</sup> and as if we human cyborgs are not a part of that autopoietic earth-machine. I am not sure if this viewpoint is a child of a modern view of progress or a postmodern view of everything as consumable commodities. But then again, I am not sure if there is a border between these two. Is not the consumer society a logical continuation of liberalism and modern progress?

Even since the first idea of using technology to respond to our desire for production, we have been in a process of becoming-osmium. Osmium is the "densest naturally occurring element"<sup>38</sup>. The subject-object model makes it easier to live in the folly world of objects with space in-between.

I am standing in my office and I look out through the window. And I see a hard cool sea and seagulls hovering in the sky, and to my left I have a car parking area filled with cars, and beyond that are houses. Between the sea, the seagulls, the cars and the buildings, there is air which is easily perceived as space separating objects. But there is no space. Air is not space. It is a flow of low-density matter. Everything is a flow of matter with different densities and most human activities increase the overall density of the world. In an ontological sense, humans are very deeply rooted in our path of becoming-osmium. One of the few obvious hopes of counter-acting becoming-osmium is becoming digital cyborgs. There is no space on earth. Earth is a density regulating machine and so is the Internet. But the machines regulating digital and non-digital density are quite different. We have some control over the digital machine, while the non-digital earth machine is subjected to the negative sides of the human desire for production.

## Transparency and Opacity

The properties of transparency and opacity will play an increasing role in a society with substantial density problems.

### The Mystery–Solved Society

We are entering a society where we cannot get enough of solutions to old mysteries. The more “social” mysteries we solve, the more and more detailed, more personal and more private our craving for endings are becoming.

In Dan Brown’s novel *The Lost Symbol* someone is wearing a hidden video camera at a Freemason gathering, revealing a lot of the world leaders involved in very questionable, though not illegal, rituals. The video is later used in extortion. This part of the novel is firmly situated in the digital panopticon society where knowledge is graded according to its transparency and intensity. There are two interesting things about this narrative: we are entering the mystery–solved society, and we are at the threshold of the big integrity wars.

The mystery–solved society is a society where we hunger for endings, for transparency. Organized media and the private news sphere are joining forces to find every rabbit there is in the hat. It is as if we need these sensational rabbits to keep coming, but still cannot bear the thought of not having control enough to know for certain how many rabbits there are in the hat. The only way to get that control is to work for the goal of finishing them off altogether. The transparency machine of organized media works in the upper part of the hierarchy and the network of unorganized transparency soldiers works in the lower part the private sphere of the whole hierarchy. Recording a Freemason ritual would not have been possible before the very last decades. And for an unorganized person to publish the video instantly over the whole world would have been very difficult before the YouTube hype. The time we live in now with the advent of the blogosphere is unprecedented in history. The blogosphere is craving for news and it has the technology to keep it coming until there is nothing more to say. But as long as there is social interaction, the news will continue to jump out of the hat. As more and more of the big opacities are uncovered, we will go more into detail and we are already preparing for that future in social networks like Facebook and Twitter.

My hypothesis is as follows: as the transparency in the public and private spheres is becoming more and more obtrusive, or digitalized, there will be a counter–movement based on integrity. Persons, and organizations, in this counter–movement will go to great lengths to fight digitalization and thereby transparency. This will not be as easy as a fight between different people. This fight will be acted out within most persons and organizations, since values such as quality and effectiveness will need both or either transparency and opacity depending on the situation. The desire for transparency and opacity is enacted simultaneously, which will lead to a new dualism where one part of the person strives against transparency and another against opacity.

## Accumulation

As the society is becoming more and more dense with matter and data, the relation between transparency and opacity will need more attention.

Becoming-osmium, the problem with increasing density does not really apply in the same way on the Internet. The increasing amount of data is far from unproblematic, but there seem to be more ways to solve the problem with increasing data density compared to the density of technological bodies. Digital data can be compressed. More efficient compression algorithms can hypothetically become relative to the increasing amount of data produced in the world. And when compression does not suffice, we can always erase data. A home can hardly be demolished when the owners die or get tired of it. Someone else is moving in, and others are building new homes. A home page is easily erased when we do not need it any more, and when people die and the web hotel is not paid for any more, the data space is automatically cleaned up. Of course there is a different game with hosted services such as Flickr, Wordpress.com or Youtube. The data load on the YouTube servers is tremendous and the growth rate during the 2.0 decade is substantial. In one of the virtualities of YouTube and the whole Internet, the data load is increasing so heavily that the computer technology hardware needed is contributing substantially to an increased density of the non-digital plane. But this process is not inevitable in the same way as in the non-digital plane. Digital data can be finally erased. Matter, on the other hand, cannot be erased, only transformed. But viewing digital data as something ephemeral has huge consequences for how we view ourselves as creatures of the world.

To solve the density problem in the digital plane we might have to give up the thought of universal accumulation of data. The problem could be paralleled by the density problem in a library facility. It is easy to imagine that Johannes Gutenberg served as a watershed viewed from the perspective of density problems in libraries. Before Gutenberg, new books were mainly seen as an asset to a library. Very few books were published and all of them were welcomed with open arms. But with the advent of the printing machine, the increasing density in the library facility started to pose a problem. Constant accumulation was out of the question since all libraries have a limited space, and every square foot becomes precious. Now, at the end of the printing age, most libraries struggle with the density problem. One of the skills in the librarian toolbox is how to weed books out. Which books ought to be kept and which are going to the carbon dioxide transformation process. Burning books (and other things) is not only necessary for libraries; it is the closest we get to a compression utility for matter.

In the liberal world of technology there are already some processes running to counteract the increasing density of the world. One of the most obvious is called capitalism. Capitalism is a selection machine for who is to be chosen for contributing to the density problem and who are the victims in the short run. A fairly common thought in the western world has to be: what is going to happen when the Majority World gets the same standard as us, the privileged? I know that I have discussed the question over and over again with friends and it always ends up with a feeling of powerlessness. The

problem poses a double bind. The process of getting a western standard of living in the whole world would have a devastating effect on the environment. We are living out our desire to produce at the expense of the Majority World. Most of us in the west know this as a fact, but few of us have the privilege of being able to reach beyond our desire for production, and we know what is going to happen when the Majority World becomes us. We know it from experience. And we also have a fair understanding of how the environment will react. We know this because we know how it reacts to us now in the western, privileged, world. The World Wide Library of Things has to be weeded, but weeding technology, or any other matter, is impossible. Every piece of technology we produce, we have to live with, forever.

Thought production like this is not so common for a middle-aged man and I do not produce it in the same manner I did when I was in my twenties. Today I can think about these things almost as if they were disconnected from the anxiety machines raving in the twenties. At a certain age, the anxiety machines seem to refocus and start to close into smaller things such as the personal health and welfare of oneself and our loved ones. Our time of becoming is declining. Perhaps defining it as the social claustrophobia experienced in a decade of crucial becoming is slowly turning into some sort of social agoraphobia. It is quite evident that there are men of my age and older who are deciding what is to become of the world.

The hypothesis of how age influences the density problem is linked to another hypothesis, namely that aging is closely related to the phenomenon of transparency and opacity. When you are in the time period of eruptive changes in your social life, i.e., in and around your twenties, transparency is evolution. It is easier to evolve if you tell the world what you want and you yourself know what the world wants. When the twenties are beginning to fade away in the rear-view mirror, our lives are getting complex enough and we do not need everything we have done to keep coming and thereby to be constantly reminded of our shortcomings. The hypothesis is thus that transparency is connected to evolution and that personal evolution is most intense in its early stages. The second supporting hypothesis might even be considered a fact. It is difficult to view the personal evolution process otherwise. If there is something to the hypothesis that aging is generally connected to a process of becoming opaque, our personality is becoming more dense and a lesser percentage of it is visible in a social context, a process which is both voluntary and involuntary. Everything is becoming more and more complex due to the increased entanglement of past experiences. We are no longer apt to shout out our feelings to the world, because we know there might be a bird of prey locking into our tongue.

Becoming-avatar, or the digital cyborgization process, will contradict this opacity process. Since persons of all ages have the same desire to search – I do not see why not – the result will be a conflict between our desire for opacity and the desire for transparency.

## Serendipity and The Desire for Search

The final chapter starts in a newly found desire for search in digital networks and ends in the logic that that leads to a semi-rational epistemology based on a process called serendipity.

*The Internet seems to engender a kind of restlessness in us to always want see what's just over the horizon, one click away. The success of Amazon, Google and eBay (amidst the blaze of spectacular dot.com failures of the past decade) is intimately related to the way their sites facilitate searching. Google's strength in this regard is obvious, but we shouldn't overlook just how good Amazon and eBay are in their own highly localised domains. What these companies have cottoned onto is something we might call 'search engine culture'. The Internet thrives not because it can be searched, but because the search engines we use to navigate it respond to and foster the desire to search by constantly rewarding us with the little satisfactions of the unexpected discovery. A potent search engine makes us feel that the world really is at our fingertips, that we are verily 'becoming-world'. One can find objective evidence of the intensifying influence of 'search engine culture' in the constant consumer demand for increased bandwidth and memory capacity to facilitate it. Most households in the West possess vastly more computing power than they could hope to use, except for such activities as searching the Web. It may be that on-line business is only just now starting to take off and show genuine profits because it has only lately developed an appreciation of the architecture of the desire called 'searching'. (Buchanan, 2007)*

My tweet about this article is one of my most re-tweeted postings to the Twitter network. The “desire for search” seems to land comfortably in people using the Internet networks at the end of the 2.0 decade. I find it a little bit depressing, though, knowing that most people read this desire as the lack of something, and not in the – intended – Deleuzian way, as a productive power. Searching is to produce connections, not to fill empty spaces in our person networks.

The desire to search is symbiotically connected to the desire to be found. Recently, my wife had a new dentist. She is connected to a general dentistry so when her dentist suddenly quit her job, the dentistry appointed a new one for my wife. The first thing my wife did after having read the notice about the new dentist was to open her laptop and start to search. I was in my home office and a few minutes later I got a chat notice with a link to a Myspace page which obviously belonged to my wife's new dentist.

Searching is not new. Searching is one of the ways we human cyborgs work. When someone throws out a cliché like “women drive better than men”, or that “men are violent bastards”, the search machine in our mind-body just delivers the answer to search terms fed to the search machine. These search hits are delivered after a quick search on the plane of common sense, i.e. the machine searches past experiences, both direct and indirect. The experiences are then fed to some collaborative filters based on averages and my own preferences. The main difference with an Internet search machine is that our personal-social mind searcher is “intelligent” and considerably more powerful. The main logical difference is that an Internet search machine is not yet powerful enough to present us with one single solution. I am very sorry to say that we will probably get there sooner or later. There are already some very simple forms available<sup>39</sup>.

The size of the intensity of Internet search probably lies in its disabledness in relation to our “native” search engine. Every time we are presented with a list of choices based on our previous search, we experience the rush of the choice: “Finding the right way starts with choosing a way” (John Maeda)<sup>40</sup>. First we have to search, and then we have to choose between the, generally, multiple alternatives. The choice we make creates the outcome of the situation. It might be a “big” choice such as choosing which university education, or a small choice such as one of those daily Internet searches, but the structure is the same. The main difference could be explained in the size of intensity. But what is really interesting in these choices is the serendipity factor.

Serendipity emanates from intensity. I desire something. This “thing” is uttered, rationally or emotionally justified. I know what I want and I know what I get. But there is always the serendipity factor, the chance of a side track leading to something even more precious, something I have not even thought about. Serendipity is the real intensity factor in searching, and especially in the example of Buchanan above, i.e., Google, Amazon, Ebay. Serendipity can be compared with the process of randomness in evolution. Serendipity is a flow beside the rational. The desire for serendipity is immanent in most searches in life. It is a powerful desire both in everyday search and in the great search for a solution for mankind. Serendipity is a known factor for the unknown in the hope machine.

Serendipity is a semi-rational process. Serendipity has nothing to do with randomness and chance. Serendipity is about attention. If I were to write a popular-movie manuscript on the theme of serendipity, it would NOT be like this: The protagonist is running the Stockholm marathon. She has trained for it for several years and almost drowned in sweat and tears during the hard training process. In the marathon, in the leading position, just a mile from the finish, she trips so badly that she dashes her head on the concrete and loses consciousness. Finally awakening in the hospital bed, she finds herself gazing into the face of a complete stranger. Later, she finds out that the stranger was the person in second place, who actually stopped to help and thereby lost the chance of winning the race... Well, I guess you know the rest. This is a story about chance, or probably fate. A theme based on Serendipity would have turned out something like this: The protagonist is running the Stockholm marathon. She has trained for it for several years and almost drowned in sweat and tears during the hard training process. In the marathon, in the leading position just a mile from the finish, she suddenly spots a person in the public she has been searching a long time for, someone she once met, but lost contact with. This person is no bystander, but one of the many persons walking by on a street a long way from the runners. After a second's thought, the protagonist suddenly changes direction, leaves the race and instead races towards a person in the opposite direction from the finish. Everyone in the public knows that her winning the Stockholm marathon is turning into something completely else, but no-one has a clue what – but of course, everyone watching the movie knows exactly what is going on...

Serendipity is about holism rather than reductionism. Serendipity is the engine in my methodology and the heart in my theoretical consistencies. Serendipity helps to make sense of rational processes. It is an art. It is a way of life.

Serendipity is a general process. It is one of the connectors between digital and non-digital life. The digital cyborg, the avataric life is going to be increasingly influenced by serendipity processes, due to the increasing data density, or intensity density, in the digital plane. The coming years will be a time of attending the attention machine, of polishing, trimming and recalibration. Ever since Descartes and other early rationalists, great minds have been reasoning about the 'mind', and the attention machine has been calibrated for "focus". We know focus, most of us are not able to use the methodology properly, but we know it and we know how we should be doing it. But the semi-digital era will add another dimension to focus. I call it "open mind". However, 'open mind' might be to romanticize and some would even see it as normal feature in the process of reason. Neither can a mind be "open" in a universal sense, as in rationalism. An open mind is always situated and attention is always entangled in experience.

Becoming-Cyborg is not a transformation laid out as stations on a railway. It is about paying attention to the intensities jumping around in the landscape outside the window, always ready to get off at the next station if necessary. The digital plane, in the shape of what some call the information society, might be built into the technology of the train but it is also immanent in the landscape where we are rushing forward. We can direct our desire for production to locations outside the train of progress or, at least, there is a lot of potential in our virtualities to do so.



## Endnotes

- <sup>1</sup> The actual and the virtual as I use them are rooted in the theoretical model of transcendental empiricism by Gilles Deleuze (& Felix Guattari). Deleuze used this concept, which he called challenge rather than theory, from his earliest writing in *Difference and Repetition* (Deleuze, 1994) published in French in 1968, to the latest works written together with Guattari. Briefly, transcendental empiricism does not have a ground, centre, or foundation like most transcendental theories, such as the one about “the subject”. The experience in Deleuze’s empiricism does not have a someone, or something, experiencing.  
  
Clair Colebrook has formulated the relationship between transcendental empiricism and the actual/virtual like this: “Transcendental empiricism frees thought of any ultimate metaphysical foundation by insisting that, far from being some actual ground, life is a virtual multiplicity, not of things and agents but contemplations and contractions, events and responses. It is not that there are persons or beings who then contemplate the world; there are contemplations that are passive and impersonal. These contemplations create distinct human bodies and organisms. This means that there is not a world (actual) that is then represented in images (virtual) by the privileged mind of man (the subject). Life is just this actual–virtual interaction of imaging: each flow of life becomes other in response to what it is not” (Colebrook, 2002, p. 87).
- <sup>2</sup> Brand originally uttered the phrase “Information wants to be free” in 1984, at the first Hackers’ Conference (This fact is widely recognized on the web and easily verified by a web search).
- <sup>3</sup> I used the concept ‘information’ more or less unconsciously until one of my sages, Peter Ekdahl, pointed out how bad it fits into my own ontologies. I did not really get it at that time since ‘information’ is so deeply rooted within my role as a professional Internet worker, information specialist. Another of my dear sages, Lena Trojer, asked Peter E what in the world we should call all the “things” flowing around on the Internet. The morning after this event I woke up early with a “clear” understanding demanding my attention. The concept of information is very tightly connected to a subject–object understanding of the world, and escaping this myth is one of my strongest objectives. I woke up with some kind of understanding, which went back to the work of Gilles Deleuze – a phenomenon more and more common for me, it seems. The “things” flowing around on the Internet underwent a metamorphosis and appeared as ‘intensities’ in the flow constituting the plane of Immanence (or Consistency).
- <sup>4</sup> *Do Androids Dream of Electric Sheep?* is an early novel by Philip K. Dick. It is said to have inspired the cult science fiction movie *Bladerunner*. (Dick, 1968).
- <sup>5</sup> The Swedish translation of Richard Rorty’s book *Philosophy and Social Hope* is “Hopp I stället för kunskap” (Rorty, 2003), which in English corresponds to “Hope instead of knowledge”. The Swedish title is more risky and, I think, more to the point. Hope instead of knowledge is the same as immanence instead of transcendence – of course depending of what you mean by the word ‘knowledge’.
- <sup>6</sup> See, e.g., the discussions in planning theory about the modern myth of the “good city” and the ‘optimal environment’ (Hillier, 2005).
- <sup>7</sup> Most of these kinds of figurations go back to Plato’s form world, where everything has an original form. These forms are the essential truth and our actual world is just a collection of instances, or sketchy copies of that world. This model is often called representationalism and has been criticized by many. See, e.g., Gilles Deleuze in the essay *Plato and the Simulacrum* (Deleuze, 1983).
- <sup>8</sup> Aliasing and anti-aliasing are concepts used in digital signal processing. An example is the jagged edges of a font on a web page. The graphical image is aliased due to the relatively low resolution of the computer screen. To counteract the aliasing effect graphical software generally uses an anti-aliased effect which blurs the edges of the font, making it smoother for the eye.



In computer software such as Photoshop you can control this effect, how it is rendered and to which degree the edges are blurred. Concepts are not that easily controlled. In the professional sphere a concepts aliasing effect can be regarded as positive or pragmatic since it clarifies. In the plane of complexity, the anti-aliasing effect is absolutely crucial to academic practice. If a concept does not have a glowing edge of uncertainty, it generally lacks power, energy.

- <sup>9</sup> See, for example, *Steps to an Ecology of Mind* by Gregory Bateson (Bateson, 1972). In this book he gives the concept of 'mind' the necessary context to do its complexity justice. It is hard to understand what it is, but he makes it clear it is not a substance subjected to transcendence.
- <sup>10</sup> I am using the construction plane of immanence/consistency instead of one of them to remind the reader (and myself) that they are two sides of the same coin, that immanence is consistency and consistency is immanence. (see, e.g., Deleuze & Guattari, 1987 & Deleuze & Guattari, 1994)
- <sup>11</sup> "Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts . . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non-space of the mind, clusters and constellations of data. Like city lights, receding..." (Gibson, 1984, p. 67)
- <sup>12</sup> 'Pragmatic' here is a difficult concept and I use it with some unease. I mean dynamically 'functional' rather than the notion towards communication and common sense sometimes referred to in pragmatic philosophy. Gregg Lambert captures this ambivalence quite well in relation to the philosophy of Gilles Deleuze, when he writes: "according to Deleuze, pragmatism begins to go astray when it confuses this immanent plane with the representation of a common sense (*cogitatio natura universalis*), under the false presupposition that the more simple and direct understanding is for that reason more open, more gregarious, more 'democratic' and, consequently, is considered to be more immanent thanks to the qualities that define it. However, it is precisely this model of 'recognition' that Deleuze most vehemently rejects from Difference and Repetition onward. Throughout his interviews and his writings, he maintains that philosophy is not 'communication', that philosophy gains nothing from either argument or discussion with the 'common man'" (Lambert, 2002, p. 4). This citation is taken from a context, so do not make the mistake of giving 'common man' a derogatory interpretation.
- <sup>13</sup> America as a postmodernization machine is the result of my readings of French poststructuralists' views of postmodernism and America. This view is most evident in Jean Baudrillard's work, e.g. *Simulacra and Simulation* (Baudrillard, 1994). I think it is evident that he saw postmodernism as an external (American) force invading the old European culture, Asian cultures, African cultures... And I am not sure he was wrong.
- <sup>14</sup> In the American science fiction TV show *Defying Gravity*, one of the characters says: "Sometimes I think the only natural happens in a petri dish... but that's not really natural, is it...?" (in episode 2, season 1)
- <sup>15</sup> D&G criticize linguists' use of the concept of an abstract machine (following Chomsky). The linguists' idea of a purely language-based abstract machine was not abstract enough. It is not "abstract enough because it is limited to the form of expression and to alleged universals that presuppose language". They define a true abstract machine as "the aspect or moment at which nothing but functions and matters remain. A diagram has neither substance nor form, neither content nor expression" (Deleuze & Guattari, 1987, p. 141).
- <sup>16</sup> The term 'netizen' was coined by Michael Hauben in various texts, e.g., the book *On the History and Impact of the Net* (Hauben & Hauben, 1997). I think this word has changed meaning since then. For Hauben & Hauben, a netizen was an online worker in forums and so on. It was a citizen with a high grade of participation. Now, at the end of the 2.0 decade, a citizen in the online world is generally as "inactive" as the rest of us; the participatory divide between a western citizen and a netizen becomes smaller and smaller with each year.

- 17 Donna Haraway's article *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective* has been available on the Internet for many years in different versions. Searching for it in the autumn of 2009 I found a copy from JStor uploaded at the following address: <http://www.staff.amu.edu.pl/~ewa/Haraway,%20Situated%20Knowledges.pdf>, retrieved: 2009–10–06. I do not think this is legal if you do not have access to JStor, which I have. But since this essay has been available on the net for at least a decade, there might be something excluding it from general copyright. You have to use common sense thinking in these cases. Copyright on the Internet is a mess.
- 18 "In 1976, the same year that *Of Grammatology* appeared in English, critic and cultural theorist Ihab Hassan delivered the keynote address at the International Symposium on Postmodern Performance organized by the Center for Twentieth–Century Studies at the University of Wisconsin in Milwaukee. Hassan opened by announcing the eclipse of the postmodern by the posthuman. Despite the greater intellectual reach and impact of Donna Haraway's "A Manifesto for Cyborgs," it is probably Hassan who first explicitly identified the cyborg with the posthuman (848). He described the posthuman as a creative, Promethean trickster split by language, in intimate, shaping contact with technology, obeying only the law of change, and charged with the Nietzschean task of evolving humankind beyond humanism's dangerously oppressive "Man." We need first to understand that the human form— including human desire and all its external representations— may be changing radically, and thus must be re–visioned. We need to understand that five hundred years of humanism may be coming to an end, as humanism transforms itself into something that we must helplessly call posthumanism (843). "
- The citation above is from Ann Weinstone's introduction to her book *Avatar Bodies: A Tantra for Posthumanism* (Weinstone, 2004, p. 8). I think this part captures something of the background to posthumanism, and also introduces the main players.
- 19 The concept 'universalizing' is closely connected to concepts such as *Situated Knowledge* (Haraway, 1991, p. 183ff) and *Universal History* (see e.g. (Deleuze & Guattari, 1977, p. 153ff)). There is an interesting passage in *Gilles Deleuze: Vitalism and Multiplicity* by John Marks (Marks, 1998, p. 28), where it almost sounds as if he is trying to bridge these two concepts. He talks about Deleuze's criticism against the notion of 'universal human rights': "Rather than abstract notions of justice, it is necessary to concentrate on jurisprudence, which has a historical dimension, and which acknowledges the particularity of situations."
- 20 See, for example, Steven Weinberg's *Dreams of a Final Theory* (Weinberg, 1992). His dream of a final, complete theory does also include aesthetics.
- 21 "Reverse engineering" is about finding out how something is constructed by pulling it apart and analyzing how things are connected. This process is quite common in the world of information technology. One example is in the open source, Linux, world. If hardware manufacturers do not share the specification for drivers (to printers, scanners, video cards etc), the open source community has to use reverse engineering to make this hardware work on Linux. It is faster and generally better to build something through specifications than reverse engineering. This was a legal example, but reverse engineering is obviously the main tool in the black zone of illegal copying and distribution of designer clothes and various technologies. And of course, it is the methodology of normal science.
- 22 According to Wikipedia, the "human body is about 60% water in adult males and 55% in adult females" ([http://en.wikipedia.org/wiki/Body\\_water](http://en.wikipedia.org/wiki/Body_water), viewed: 2009–10–11). On the talk page, someone suggests adding something about the many "rumours" about body water: "I think it would be fair to have a section regarding the rumoured numbers, as often mis–cited in media such as movies or TV shows. I've often seen statements like "we're all 90% water" or whatnot used in TV shows. One such example is the Star Trek episode *The Omega Glory*, in which it's stated that the human body is 96% water, which, according to this article, is pretty far off. I think a lot of people believe these kinds of numbers though. TheHYPO (talk) 19:17,

15 May 2008 (UTC) ([http://en.wikipedia.org/wiki/Talk:Body\\_water](http://en.wikipedia.org/wiki/Talk:Body_water), viewed: 2009–10–11)". I think this passage illuminates the fact that intersubjective knowledge, proposed by the humanist view is divided by the "common" and the "complex". The latter being the threesome of philosophy, science and art. Philosophy and art would not attend to that kind of pragmatic, factual problem. Science would produce various forms of evidence for a figure. In the plane of common sense, a set of figures floats around and for every situation and we have to pick one in relation to the context. And we have to do it with a methodology we could call lightning fast informal logic based on experience.

- 23 In October 2009 the technology blog Boing Boing published a blog post about a "photoshop disaster" in the Ralph Lauren line of advertising. Looking at the "photo", most of us interpret the young girl as "unnatural". It is not only that she looks like she is having a serious eating disorder. The designers have taken the alienation so far that she is almost looking like an alien, or at least an irony of slim models. Ralph Lauren's marketing "arm" saw it as a copyright infringement and demanded a takedown. It seems that the people at Ralph Lauren and most of their targeting group did not reflect on this spectacular picture because it tied to their own context. It is not difficult to understand why fashion models seem to become slimmer every year. What broke the spell and finally made the people at Ralph Lauren see what was going on was probably the black, vicious irony in this "photo" and the human situation. It is not particularly difficult to be a feminist in situations like these. This is the original blog post: <http://www.boingboing.net/2009/09/29/ralph-lauren-opens-n.html>, viewed: 2009–10–11. And here is the follow-up article: <http://boingboing.net/2009/10/06/the-criticism-that-r.html>, viewed: 2009–10–11.
- 24 E.g., there is a famous American court case from 1856: "Are Blacks human beings? Believe it or not, there was a time when the Supreme Court's answer to this question was no, not if they were slaves. It was 1856. Dred Scott, a black slave, had been taken north of the Mason–Dixon Line into Illinois and Wisconsin where slavery was prohibited by the Missouri Compromise. Scott sued for his freedom and lost. The Supreme Court ruled that the Compromise was unconstitutional. Congress, they said, had no authority to limit slavery in that way. In the Court's mind, the choice to own slaves was an individual decision, a private matter for each citizen to struggle with, apart from interference by the state. If a person, in an act of conscience, chose not to keep slaves, that was his own decision, but he could not force that choice on others. Every person had a private right to choose." This passage is from a transcript of a commentary from the radio show "Stand to Reason," with Gregory Koukl (<http://www.str.org/site/News2?page=NewsArticle&id=5116>, viewed: 2009–10–12). The court case this article is referring to is called *A report of the decision of the Supreme Court of the United States and the opinions of the judges thereof, in the case of Dred Scott vs. John F. A. Sandford*, December term, 1856 (Scott, Sanford & Howard, 1857). It is available on Google Books: [http://books.google.se/books?id=ENYSAAAAYAAJ&printsec=frontcover&hl=en&source=gbs\\_navlinks\\_s#v=onepage&q=&f=false](http://books.google.se/books?id=ENYSAAAAYAAJ&printsec=frontcover&hl=en&source=gbs_navlinks_s#v=onepage&q=&f=false), viewed: 2009–10–12.
- 25 In *Faces in the clouds: a new theory of religion* (1993), Stewart Guthrie makes an argument that religion can be understood as systematic anthropomorphism. In this sense anthropomorphism is entangled in the process of becoming human.
- 26 *Either/Or* (Kierkegaard, 1987) was originally published 1843 in Danish under the title *Enten–Eller*.
- 27 If you are reading this from the viewpoint of an ICT professional, you know that some IP addresses can carry more than one avatar through proxy servers, routers and similar technologies for masking and/or distributing IP addresses. But there is always an IP address in the end, even if it is just active in a small local network with a common IP in the context of a larger network.
- 28 Compare with Donna Haraway's "The cyborg is our ontology; it gives us our politics" (Haraway, 1991, p. 150).

- 29 “avatar” A Dictionary of Computing. Ed. John Daintith and Edmund Wright. Oxford University Press, 2008. Oxford Reference Online. Oxford University Press. Blekinge Tekniska Högskola. 15 October 2009. <<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t11.e6301>>.
- 30 “avatar” World Encyclopaedia. Philip’s, 2008. Oxford Reference Online. Oxford University Press. Blekinge Tekniska Högskola. 15 October 2009 <<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t142.e854>>
- 31 The Wikipedia article might have some factual errors (see talkpage), but it is still very good for a sketchy sense of what the story is about, <http://en.wikipedia.org/wiki/Otherland>, viewed: 2009–10–19.
- 32 “Hutchinson–Gilford Progeria Syndrome (Progeria or HGPS) is a rare, fatal genetic condition characterized by an appearance of accelerated aging in children. Its name is derived from the Greek and means “prematurely old”. While there are different forms of Progeria, the classic type is Hutchinson–Gilford Progeria Syndrome, which was named after the doctors who first described it in England; in 1886 Dr. Jonathan Hutchinson and in 1897 Dr. Hastings Gilford.” From The Progeria Research Foundation, [http://www.progeriaresearch.org/about\\_progeria.html](http://www.progeriaresearch.org/about_progeria.html), viewed: 2009–10–19.
- 33 This image was originally an oil painting by Lynn Randolph from 1989, <http://www.lynnrandolph.com>, viewed: 2009–10–19.
- 34 Donna Haraway’s essay A Cyborg Manifesto can be read and/or downloaded the Stanford University web site: <http://www.stanford.edu/dept/HPS/Haraway/CyborgManifesto.html>, read 2009–10–19.
- 35 See, e.g., *Cyborg Citizen: Politics in the Posthuman Age* (Gray, 2000).
- 36 An early example of this “earth as a future myth” idea is Isaac Asimov’s Foundation series and a late example is the American TV Show Battlestar Gallactica. Asimov’s Foundation series might be the source idea for many later stories exploring this idea.
- 37 In her essay in *The Cyborg Handbook*, Donna Haraway picks up on the Gaia idea from James Lovelock and Lynn Margulis, where earth is pictured as a self-regulating living system (Lovelock, 1979).
- 38 Osmium is a “chemical element, one of the platinum metals of Groups 8–10 (VIIIb), Periods 5 and 6, of the periodic table and the densest naturally occurring element. A gray–white metal, osmium is very hard, brittle, and difficult to work, even at high temperatures. Of the platinum metals it has the highest melting point, so fusing and casting are difficult.” (osmium. (2009). In *Encyclopædia Britannica*. Retrieved November 1, 2009, from *Encyclopædia Britannica Online*: <http://search.eb.com.miman.bib.bth.se/eb/article-9057557>)
- 39 An example, new in 2009, is search engine Wolfram Alpha which promises to deliver: “Today’s Wolfram|Alpha is the first step in an ambitious, long-term project to make all systematic knowledge immediately computable by anyone. Enter your question or calculation and Wolfram|Alpha uses its built-in algorithms and a growing collection of data to compute the answer. Based on a new kind of knowledge-based computing...”, <http://www.wolframalpha.com/>, viewed: 2009–11–13
- 40 A tweet from John Maeda 2009–11–13, viewed 2009–11–13: <http://twitter.com/johnmaeda/status/5677060983>

## Epistemology and the Question of Becoming Aesthetics

This essay is about the methodological base of my essays, making up the context of my thesis. It is about going from traditional transcendent knowledge theories to an epistemology based on aesthetics. My main attention is on the person, swerving and creating figurations.

*In the last century and a half, scientific development has been breathtaking, but the understanding of this progress has dramatically changed. It is characterized by the transition from the culture of “science” to the culture of “research.” Science is certainty; research is uncertainty. Science is supposed to be cold, straight, and detached; research is warm, involving, and risky. Science puts an end to the vagaries of human disputes; research creates controversies. Science produces objectivity by escaping as much as possible from the shackles of ideology, passions, and emotions; research feeds on all of those to render objects of inquiry familiar. (Latour, 1998, p. 1)*

Technoscience methodology is a swerving application of the concept Bruno Latour is calling ‘research’. My own background is gravitating between the theoretical concerns of the Humanities and a long ICT practice, both as a professional, a ‘super user’, and lately as a produser. A produser is someone simultaneously producing and using technology in a mode that renders the two indistinguishable. Going from a producer–user binary to a produser mode, has been simmering just below the cultural surface for some time but started to appear more and more frequently during the 2.0 decade. Since academics have always been produsers of discursive knowledge, we should be able to instinctively understand how a produser community such as Facebook works.

Produsing knowledge and ICT is a bidirectional activity in my daily practice. I would describe my particular flavour of this activity as Technoscience Swerving. Techno-

science Swerving is a research hub between the actual and the virtual of technological evolution. The swerving part is necessarily poststructuralist and semi-affirmative. Together these properties mean technoscience swerving is anti-reductionist, story-based and constantly open for reconstruction. Since we are dealing with the production and consuming of technology we cannot contain ourselves in the actual. The virtualities of a particular technology are something we experience the moment after the present. Since the present moment is always in a process of fading away, the most constructive, and thereby intense, stories would be about the coming; what we are becoming.

Technoscience swerving is an inclusive read-write experience of technological practice. This means one step further from the produsing mode of Internet practice, where producing, using and swerving become indistinguishable, or at least synchronized<sup>1</sup>. The body of technoscience swerving is vibrating with aesthetics performing the art of epistemology.

## The Question of Aesthetics

In this chapter, you will meet the lines of thought forming the base for my understanding of aesthetics as an epistemological base, but also how I use aesthetics as a methodology.

The Swedish language has a few words which translate badly into other languages. One of these words is 'gestaltning'. 'Gestaltning' is about taking something and translating it into something other. A Swedish-English lexicon gives the pattern of translation as: 'design', 'configuration', 'formation', 'interpretation'<sup>2</sup>. A previous conversation with Peter Ekdahl led to the concept of 'shaping'. Shaping something into something else is what an artist, carpenter, scientist or nurse does in their daily work and the meta-activity connected to the process of shaping is called 'aesthetics'. This thesis is based on Peter Ekdahl's understanding of aesthetics as the choices we make from a certain set of values (2005). The academic home of aesthetics is generally placed in philosophy but applied also in other sciences. I would call the research process of aesthetics 'transdisciplinary'. In my own view of the world, everything is involved in shaping and reshaping processes, so aesthetics is the most fundamental activity in the general process of becoming. And since I am a constructivist, all processes can be viewed from an aesthetic viewpoint. What I have been doing since I started my academic life battle is to search for ways of shaping contemporary Internet practices into stories of becoming.

Stories of becoming are not theories in the Kantian, Hegelian tradition of grand explanations of how the world works from foundational viewpoints such as ontology, epistemology and ethics. Stories of becoming are about ontology, epistemology and ethics, embedded in situated bursts of aesthetics. My becomings are located within the context of posthumanist aesthetics. The better part of my academic life battle has been to find ways to become in technoscience, outside the tracks laid out by research arenas such as sociological scientism, criticism and studies. These arenas are important just as medicine, semiology and quantum physics are important. But I cannot choose a life path from a pragmatic perspective. I would die in an environment I could not live in.

The solution became a transversal line of flight between ICT practice and aesthetics. In one sense, the aesthetics I am a part of is light years from Baumgarten.

The concept of 'beauty' has evolved during the two and a half centuries since Baumgarten was active. During the periods generally called Kantianism and post-Kantianism, and finally posthumanism, the concept of beauty has slowly regressed to something very similar to the concept Baumgarten sought to distinguish it from, 'taste'. Taste in turn has, during posthumanist discourses, been "elevated" from 'individual' and 'subjective' to 'situated'. The sense properties of beauty have also changed from the "classical" to the postmodern where a reception of beauty cannot be predicted. What is ugly in one situation can be very beautiful in another. Beauty is contextual. Beauty (the dominating understanding of aesthetics) and right (ethics) have travelled together through time in a strange fellowship, perhaps like the energizing vibration between the love and rivalry common among siblings. There is some ground for saying that 'right' had the upper hand over 'beautiful' during the centuries of humanism, and that the position has begun or is beginning to shift in posthumanism. I think there is a very fundamental explanation for this, namely that the concept of 'beauty' has reached the border of substantial deterritorialization, or decentring, while 'right' still has to do with some line of flight to reach that border. 'Beauty' has been embedded in the plane of common sense as situated while 'right' still lives a shady life beyond this world. The question "where do morals come from, where is it located?" is still active, while the corresponding question about 'beauty' has been deactivated and placed in a safe spot in common sense thinking as something situated in the personal-social.

If you do not have to take a look in the mirror to decide if you are beautiful, you are well on the way to becoming posthuman, to take a leap of faith to the scary lands beyond the visual where common activities such as waste sorting can become a beautiful act instead of "the right" act. When you are collecting "causes" on Facebook, you are doing it to become more beautiful, rather than to become more 'moral' or 'right' or a "better human". The posthuman mirror is to see yourself in the face of others, not as a reflection of your body actualization. The beautiful is not better than the right, but it is more translatable. I may not understand another person's right actions, as we come from different cultures, and I do not have a clue where the other person's morality is located. But I can always understand the language of beauty as a social-personal territory, and I can understand it even if I myself find it utterly ugly. The main reason for the fact that the aesthetic view seems to fit better in our time than the ethical could be because 'beauty' is a gradual concept while 'right' is ontologically dichotomous. Gradual concepts fit better into our time of complex density.

As a methodology, aesthetics could be an answer to the question: what kind of practice and thinking makes my work most beautiful in relation to the context of me as a person, my closer and larger networks and the world as a whole? The different parts of the question have different intensity depending on the situation. Traditionally, the person is more or less opaque in relation to an academic institution. A person is an empirical-rational uncovering machine. This is actually quite reasonable. If a research person has the function of uncovering truths hidden under the veil of life, the proper-



ties of the function which are the “lucky one” do not really matter. “The find” is always the same. Aesthetics as methodology is not to find “things”, but to create them. The person who creates knowledge is always connected to the knowledge contextually. A person’s researching in the context of an academic discipline or transdiscipline is always transparent to the research context. My research cannot be understood without the context of technoscience.

Most constructivist viewpoints obliterate the objectivist viewpoint. If meaning is embedded in context, all parts of the context must be “authors” of meaning. Science is a methodology to minimize the person in a context. The science machine is constructed to obliterate the person in the science process and this should apply to objectivist science placing its epistemological base on intersubjectivity. Feminism is obviously the most apparent form of constructivism with influential epistemologies such as the cyborg metaphor and situated knowledges (Haraway, 1991). My own epistemology has very close connections with the epistemologies of Haraway and Gilles Deleuze. For me, the ‘person’ has to be the eye of the hurricane, constantly raving in the flow of intensities (see the beginning of “iBecoming–Cyborg II”). Not the person as a “legal” subject, but as an intersection of connections. These raving hurricanes are the home of the desiring machine, attention, investment and creation of complex language-based intensities. Urbanization was a way of collecting these raving hurricanes in a small spot to make more “things” happen and a lot faster due to the narrower space and increased density of creative intensity. The Internet is a new wave in this trend. Contemporary metropolitan areas can hardly be denser, so the Internet is a convenient answer to the problem of increasing creative and productive destiny. If humanity is going to save itself from our desire for production, the change will take place in persons, rather than rational processes. Rational processes are necessary, but real changes have to be located in the “person”, the person being the intersection of connections, of relations.

If Donna Haraway’s point with the cyborg metaphor was to create a new myth (Haraway, 1991, p. 149ff), the aim of my writing is to create entanglement points in existing and coming myths. Some of Haraway’s considerations were to be “faithful to feminism, socialism, and materialism”. Corresponding considerations for me would probably be aesthetics and digitalism, even though the digital plane is too young to have yet emerged as an –ism. Perhaps it is a sign of the times that ‘digitalism’ is a somewhat unclaimed territory: most top hits in the Google page rank system seem to lead to a punk band called Digitalism<sup>3</sup>. Donna Haraway’s myth about the cyborg was originally written in the 1980s, which might explain why her considerations seem explicitly ideological and my own somewhat edulcorated. Personally, I find my considerations very ideological at a time where academic life seems to be guided towards scientific rationality. Another difference is that I am a rather unfaithful feminist. I have built my methodological base in feminism, but somehow often find myself outside its nurturing connections, preaching feminism for agnostics and without mentioning the word feminism, because it does not feel that important. Perhaps it is because I am not a woman, even if that should not matter. But there might be a more substantial explanation. Feminism is generally an entangled event where the question of “woman experience”



is more or less indistinguishable from feminist epistemology. For me, experience is mainly placed in the “person” and there is no ontological difference between a woman person and a male person. There might be statistical differences between woman and men, but when it comes down to a single person, we cannot predict properties from categories such as woman and men.

As a researcher, my technologies are indistinguishable from my body mechanics and I as a person operate in a field of falling dichotomies. This makes me a cyborg researcher operating inside Donna Haraway’s myth evolved a few decades into a more or less unimaginable future, seen from the vantage point of Donna Haraway’s cyborg. I am one of the first settlers in a material–semiotic plane of the life world, and I will probably be historically packaged with the first generation of netizens in years to come. However, the data density of the world will bury every trace of me in a pile of junk, as well as some really interesting things. That is how the Internet works and probably will work in the recognizable future.

## Surveillance Liberalism

When I am swimming in the heavy waters of Internet conversations, it is not optimism that I feel. It is hope: where there is the Internet, there is hope. The Internet is a desire sandbox. A sandbox on the Internet generally denotes a location in a system where you can learn and play without destroying anything. This function of the sandbox is about simulation. A sandbox functions exactly as a flight simulator, apart from the fact that it is about evaluation rather than learning. Another meaning of the concept of the sandbox is the place where very small children play while observed by their parents, structurally reminiscent of Jeremy Bentham’s idea of the prison panopticon (Bentham, 1995), theorized among others by Foucault (1977). Despite my hope regarding the Internet, it is difficult to disregard the dystopian version of the Internet where the whole Internet is transferred to the image of the sandbox or the prison where conversations are monitored by Big Brother:

*There was of course no way of knowing whether you were being watched at any given moment. How often, or on what system, the Thought Police plugged in on any individual wire was guess-work. It was even conceivable that they watched everybody all the time. But at any rate they could plug in your wire whenever they wanted to. You had to live—did live, from habit that became instinct—in the assumption that every sound you made was overheard, and, except in darkness, every movement scrutinized. (Orwell, 1981)*

The main differences between this socialist dystopia and the Internet today are that we can stop some of our expressions from becoming transparent, and that is liberalist, capitalist. Being capitalist means that there are myriads of big brothers owning the possibility of looking at you at a particular moment. It is a spectacle spying at a spectacle.

This story about surveillance serves two functions. First, to discourage the interpretation that my writing about the Internet is utopism. It is not. It is more about hope, even if there is a good deal of optimism embedded in this hope. Otherwise, I would not invest so much attention in this practice. The other function of the panopticon

story is as a background to the fact that I finally decided that any kind of “studying” the life on the Internet was out of the question. It felt wrong for me as a person and it felt wrong from a holistic viewpoint of what the Internet is becoming. This does not mean that I think it is wrong to “study” the Internet life in a traditional way in terms of quality or quantity. But future cartography, and other forms of research intervention, have to be carefully performed. The Internet is like a topographic map, easy to lean over and study and study in detail. It is almost as if life on the Internet was built into the surveillance equipment, as if life and surveillance were just two sides of the same coin. Transparency is both the problem and a possible solution to this. Instead of one Big Brother, we have an infinite number of little brothers. Instead of one single controlling power, we have a battlefield of the surveilling and surveilled. Perhaps we could call it surveillance liberalism.

### **Figuring out a Technoscience Mindset**

The informal phrase, “figuring out” something, located in a setting of hardwired academic structures, creates an ironic diversion of traditional synonyms and kindred spirits to the phrase “acquiring knowledge”. This essay is not a knowledge sucking machine. It is an attempt to create a set of reality producing semantics about one of several technoscience mindsets. The phrase “figuring out” also leads right into the beating heart of my methodology which could be condensed to “figuring out things with figures based on lived practice”. The word figure is in itself a trickster figure (Haraway, 1991, p. 199), since it has the same syntactic form as figures in mathematics, but lives in an alternative epistemological universe, where things are uncertain and expansive, rather than playing with certainty and reduction. In Deleuzian terms, a trickster figure is a deterritorialization machine embedded in traditional structures and their function is to “shake things up”. They make becoming less predictable but often by producing alternative myths.

A figure is the conceptual opposite of a Figure, and it works in the same way as Derrida’s difference/differance, with the difference that it is inseparable as a sign in both speech and writing (Derrida, 1998). The context unfolds the meaning. In a positivistic research setting, a “figure” is about algorithms, mathematical expressions and statistics. In criticism, a “figure” is generally contextualized as something closer to Donna Haraway’s figures, such as the cyborg (Haraway, 1991, p. 149ff). In the first case the figure is used as a seal and in the second as an opener. Both figural agents are in reality producing and both are fundamental characters in our semiotic–material (Haraway, 1991, p. 149) life world. Both figural agents are vehicles for complexity, mathematical figures aiming to solve complexity, to reduce it to simplicity. Conceptual figures, on the other hand, aim at some kind of understanding by refiguration and practical recontextualization.

#### **The Person & the Figure**

We all know that the number one – 1 – does not exist in the world. It was not much to the world before Adam got Eve as a companion, and in an evolutionist perspective

it is hard to imagine that there ever was one person walking on the face of earth. You cannot create something from nothing. Reductionistic processes, like definitions, are therefore a strange expression in a contextual reality. The number two is a more human expression. Two symbolizes the birth of something and it is built into most languages in the form of binaries, dualisms, dichotomies. The binary expression is a bunch of trickster figures in all theory and especially in criticism. We do not know what we are going to do with them, and still, we cannot live without them. The problem with binaries is not the ontological aspect, because we need difference to fight the alluring glow of sameness in the plane of common sense, i.e. the conversation factor that renders everything in a bland, bleak sense of “everyone is more or less the same”. The main problem with binaries is that they easily become subjected to power. Someone has to decide which or who belongs to a certain category. These power structures are generally reinforced through time resulting in normativity categorizations such as those discussed by Foucault in *Madness and Civilization* (Foucault, 1965).

But now you have to take my hand and follow my lead into a room of figuration and personification. As you can see, if you make an effort, it contains the world. You have to decide for yourself what the world is, what you see when you conceptualize this complex representation. You might see the whole universe, the earth, the region where you live; your family, your web community, your dog. If I press this switch on the wall, you might think I will kill the light. But that is not it. When I press this button the room will shift shape. You will see one of my representations of the world, one of my attempts to do something for the world, in the world. You will see a world consisting only of ‘persons’ and ‘figures’. In this world a figure is defined by the lack of being a person. This is a methodological attempt and should not be treated as ontological categories. The ‘differance’ is constructed with difference, transference and complexity. When we see something in the far distance, we like to think of these shapes as figures. Viewing something as a figure, is to say it lacks complexity, it is just an outline. Let’s say that the figure is slowly moving towards you. Gradually, the figure is becoming more and more complex and, somewhere along the line, the figure is transformed into something so complex it is easily differentiated from other things. At a certain degree of difference, the figure becomes an “object”, if using that terminology, which I only do to make a point. Let us say that the object is a dog. It has changed from a vague blur to a shape you guessed could be a dog, and when it draws closer you can definitely see it is a dog. The dog is running towards you and soon you see that this dog is the same breed as your dog. From that insight it only takes a moment to the full realization to explode inside of you. It IS your dog, your dear, friend and what has exploded inside you is complexity. It is as if your friend came jumping out of a hole in the wall into a world context of dense complexity filled with rationality, desire, emotions, attention and so on. The dog has made a transition from a vague blur to one of your dear friends, from a figure to a person.

The opposite process is also quite common. I will use the life of Søren Kierkegaard as an example. He was a person with a very strong personality in 19th century Copenhagen: “Kierkegaard was viewed in his time as a mysterious personage. Indeed,

some thought that he deliberately cultivated an air of mystery and eccentricity. He was an odd though familiar figure to many people, some of whom remembered their encounters with Kierkegaard and subsequently wrote them down” (Kirmmse, 1996, p. xi). And “in early 1846 Kierkegaard found himself attacked and lampooned in the pages of a popular magazine called *The Corsair*. The effect upon his sensibility of the crude cartoons by P. Klastrup, as well as the hurtful and spiteful articles, forced him to abandon his walks in the town” (Hannay & Marino, 1998, p. 59). Kierkegaard was mocked for a life some have called “heartfelt”<sup>4</sup>. ‘Heartfelt’ is a very complex, human concept involving strong desire, a steady attention and good portion of rationality to execute actions concerning the context. The last of the citations describes a person who is transferred to a cartoon, a figure in the press. He is deprived of his complexity. The transparency in that person’s complexity is decreased to an opaque figure. In this case, the whole complexity of the person Søren Kierkegaard becomes an extremely simplified figure which is supposed to represent one or a few accelerated properties. The process could be called depersonification.

Another example of depersonification could be C.G Jung’s theory about ‘synchronization’. This is a commonly cited example of synchronization from Jung’s book *Synchronization*:

*A young woman I was treating had, at a critical moment, a dream in which she was given a golden scarab. While she was telling me this dream, I sat with my back to the closed window. Suddenly I heard a noise behind me, like a gentle tapping. I turned round and saw a flying insect knocking against the window-pane from the outside. I opened the window and caught the creature in the air as it flew in. It was the nearest analogy to a golden scarab one finds in our latitudes, a scarabaeid beetle, the common rose-chaffer (*Cetonia aurata*), which, contrary to its usual habits, had evidently felt the urge to get into a dark room at this particular moment. I must admit that nothing like it ever happened to me before or since. (Jung, Read, Fordham & Adler, 1953, pp. paragraph 843)*








When Jung is imbued with the dream of the golden scarab, it becomes embedded in his desiring machine. Since one of the fundamentals in life seems to be to create connections, there is an immanent desire to make connections to this dream. The scarab becomes a part of the attention machine where all intensities are matched with experience. When the rose-chaffer beetle is closing in on Jung’s sight, it is simultaneously closing in on his attention and desire to create connections. The beetle becomes more transparent, it travels towards a path to becoming a person but stops somewhere on the way due to the lack of transparency. If Jung had not heard the dream about the beetle, there is a strong possibility that he would not have noticed the rose-chaffer beetle at all. It would not have been intense enough for him to notice.

Making the person some sort of a goal in becoming is not about humanism, i.e. putting man back in the centre of the universe. It is a posthumanist understanding that we humans are not able to rise beyond ourselves to view the world in an objective light. The only way of rising beyond our human set of properties is to become cyborg, to integrate with technology, to become WITH technology.

# Being Squared

My daily life on the Internet involves a constant circle of history – contemporary – future, diving into the Internet like a literature critic dives into the sea of literature. I practice the Internet like a literature critic practises literature, rather than a social scientist who is studying the Internet. New systems on the Internet affect the flow of life, creating a stream of virtualities, potential ways of becoming. One of the features I always seem to return to is how the Internet influences the fragile balance between difference and repetition in the contemporary life world. Difference and repetition are two of the most fundamental figures in aesthetics, and when the balance between these changes in a culture, the change is potentially huge.

A square is a perfect contra-figure of the fragile balance between difference and repetition. You start with one side. That is creativity. A side is created. The very first of its kind. And then you swerve with the next side. The third and fourth sides are repetitions of the second swerving side. And these two repetitions are starting a tradition of a particular action resulting in a constant, circling repetition of the original four movements.

philosophy						
Item Name	Image	Description	Date Of Birth	School/tradition	Date Of Death	Notable Ideas
<input checked="" type="checkbox"/> Plato		Initially, <b>Plato</b> seems to have carried on the philosophy of Socrates, concentrating on the dialectical examination of basic ethical issues: what is ...	November 7, 1964	No value found	c. 348–347 BC, Athens	Platonic realism
<input checked="" type="checkbox"/> Consciousness		René Descartes defined the very notion of thought ( <i>pensée</i> ) in terms of reflexive consciousness or self-awareness. In the <i>Principles of Philosophy</i> (1640) he ...	No value found	No value found	Tue, 20 Dec 2005	No value found
<input checked="" type="checkbox"/> Aristotle		<b>Aristotle</b> represents for most of us an icon of difficult or abstruse philosophical thinking; to know <b>Aristotle</b> often provokes hushed whispers even from ...	384 BC	Peripatetic School Aristotelianism	322 BC	Golden mean, Reason, Logic, Passion
<input checked="" type="checkbox"/> Confucius		<b>Confucius's</b> philosophy. <b>Confucius</b> Later portrait of <b>Confucius</b> . ... <b>Confucius</b> was a philosopher in ancient China, about 500 BC. His main idea was that people ...	551 BC	Founder of Confucianism	479 BC	No value found
<input checked="" type="checkbox"/> Emmanuel Levinas		Emanuelis <b>Levinas</b> (later adapted to French orthography as <b>Emmanuel Levinas</b> ) received a traditional Jewish education in Lithuania. After WWII, he studied the ...	1906	Continental Philosophy	1995	"the Other" - "the Face"
<input checked="" type="checkbox"/> William James		The rule remained unnoticed for twenty years, until it was taken up by Professor <b>William James</b> in the address he delivered at the University of California ...	January 11, 1842	Pragmatism	August 26, 1910	The Will to Believe Doctrine, the pragmatic theory of truth, radical empiricism, humanism
<input checked="" type="checkbox"/> Jacques Derrida		<b>Jacques Derrida</b> (French pronunciation: [jak dɛʁida]) (15 July 1930 – 8 October 2004) was a French philosopher born in Algeria, who is known as the founder ...	July 15, 1930	Deconstruction	October 8, 2004	Deconstruction - Différance Phallogocentrism
Add items or Add next 10 items						
Not finding the right items? Start with an empty Square.						

The figure<sup>5</sup> displays a search on the term “philosophy” in Google Squared. The search phrase was as simple as “philosophy”. Since Google Squared is supposed to simplify complexity by harvesting the “best” information related to a search and presenting it in this tabular form, it is interesting to see what the algorithm will do with a hyper-traditional and highly canonized term like ‘philosophy’. The search came up with the following hit list, as seen fully in figure 1:

- Plato
- Notable Ideas: “Platonic realism”
- Consciousness

- Notable Ideas: “No value found”
- Aristotle
- Notable Ideas: “Golden Mean, Reason, Logic, Passion”
- Confucius
- Notable Ideas: “No value found”
- Emmanuel Levinas
- Notable Ideas: “‘The Other’, ‘The Face’”
- William James
- Notable Ideas: “The Will to Believe Doctrine, the pragmatic theory of truth, radical empiricism.”
- Jacques Derrida
- Notable Ideas: “Deconstruction, Différance, Phallogocentrism.

Everyone can see that the hit list is a mess or at least in some sort of “beta-state” – Plato was not born on November 7, 1964, for example. The list is created in a process of human-computer interaction. A lot of persons around the Internet create data somewhere in the context labelled as “philosophy”. Google Search robots pick up these data in their constant data sweeps on the Internet. Persons working at or for Google have created an algorithm that takes data from the search robots and puts them in these nice tables, depending on how they are originally contextualized. Their goal is obviously to create a more direct, informative and authoritative presentation of disparate data than the common Page Rank<sup>6</sup> system is able to do.

I predicted the fact that Plato and Aristotle would be somewhere at the top, but the rest seems kind of random. Derrida can be explained by the fact that he died a few years ago and his death led to a lot of activity in the history-making channels of concerned research settings. This time-situated media-producing activity would produce abnormal attention and this would produce an abnormal amount of display in our attention-driven, digital space-time. The other three entries are not as easily explained. The seven figures displayed by Google, Apple, and other companies, strike me as stunning in their own right: how is this kind of selection possible from algorithmic figures, what is it supposed to represent, and what does it really represent – if the two are diverse? But what really caught my eye was Aristotle’s CV. His “notable ideas” are Golden Mean, Reason, Logic, Passion. To my ears, this sounds very much like an invention of human beings as a self-representation. I think it would be possible to argue, from a humanistic viewpoint, that all human properties emerge from these four “Golden Mean, Reason, Logic, Passion” and a post-humanist could at least argue that they are the aesthetic cornerstones of the material-semiotic sand-castle we commonly call “the Internet”. This sand-castle is made up of persons and swerving technology.

The ‘person’ is the material-semiotic flow behind the design of this sand-castle, rather than “humans”. ‘Human’ is normally a demarcation between us and them, while ‘person’ is something quite different. A person is “the I” and “the Other” and relations between persons become “we” (Buber 1993). Relations to figures become “them”. For sure, I am a human, but the humanness is more like a conceptual dress while my

personhood is more like me and you. This idea can probably be criticized as being reactive in relation to “theories” like ANT, which tried to objectify everything, only dealing with humans as actors in a network indistinguishable from non-human actors (Latour, 2005). In my way of using the term ‘person’ there is really no place for the binary human–nonhuman. I personally knew persons who were not human, our cat for example. ‘Person’ is not definable. It is all about your and my relation to something; it is about experience and relation. The experiencing part is not conclusively human. I can see when my cat is experiencing someone as a person rather than a mere “figure”, but I cannot separate this experience from myself. Sometimes when I am working in the garden, I can see my cat go stiff with sudden attention. Her senses are locked on something distant. Something has alarmed her that her well-known world of figures and persons might have an intruder. After a period of attention, she concludes that the intruding intensity is either a figure or a person. If this intensity is a figure, she loses interest, but if she sees it as a person, she has to build some kind of relation to it. Perhaps the concept ‘person’ seems a bit odd here, but I use it to draw a parallel to the human attention machine.

The technological apparatus, with Google and Apple in the chief roles, is trying to square a long and very complex tradition into a tabular school model for squared learning systems. Apple’s central place here could be explained by the fact that I acquired the Google Square namespace with Apple’s web browser Safari, and that both the operative system and the computer hardware are built by Apple. In your case, it might be that other big computer firm, Microsoft, or an open source alternative like Linux. The difference between the operating systems OS X, Windows and Linux is material–semiotic. The technology is speaking ideology and traditional aesthetics. Aesthetically I choose OS X, and ideologically I choose Linux. But even if I use Linux from time to time, the aesthetic choice has the strongest intensity. If we use the golden rule metaphorically as an analogy of situated beauty, all the mundane reason, logic and passion seems to gravitate towards Apple and OS X when it is time for me invest time in a particular technology. The moral sense of this short deviation is that we tend to choose aesthetic expressions rather than ethical – as Kierkegaard expressed it (1987). It is a great paradox that 2000 years of Aristotelianism are able to square him down to four basic concepts presented by a technoscientific tubularization machine – and that the same four concepts can be expressed as the basic wiring of this machine.

It seems pointless to study the tabular representation of philosophy more closely since it is too strange. Why, for example, is the entry for consciousness (and thereby Descartes) represented by a young guy in a modern sweater? How can Plato be born 2000 years after his death? And so on. But this is what “being squared” is about: reduction, misrepresentation and malperformance. Something is carved out from its context and complexity to serve as a particular representation. As a process this is opposite to ‘personalization’, the process of becoming a person. It is the process of becoming a figure, becoming opaque.

The relation between a teacher and a student is ideally the opposite to becoming opaque. Learning is about transparency. In the relation between a teacher and a stu-



dent, the most important moment is when the student becomes concerned, touched ('berörd' in Swedish) (Ekdahl & Blekinge tekniska högskola, 2005, p. 41). This is actually a good description of a relation between two persons, as a contrast to the relation between a person and a figure. This "sparkle" between two persons seems to be inspired by Martin Bauber's expression of what is happening in a dialogue between two persons. This description of a dialogue is also something other than the Socratic dialogue. The Socratic dialogue is based on reason alone. The teacher is supposed to use reason as a method to drill down to the well of truth already always reachable from every person, although the well itself is located outside personhood. Passion is more of an obstacle than something integrated in the learning process, and this point of view is fairly common even today. The well of truth is not explicitly outside our world in a secular setting, but it is still there as the epistemological location outside the person, which Jacques Derrida called *logos* (Derrida, 1998). The point of the myth of 'reason' is that passion and other irrational elements destroy the path to *logos*. It is like large pools of oil on the race track, something that poses the absolute opposite of getting to the destination. But in Peter Ekdahl's version, it is the oil on the track that has the property of getting the driver's attention, getting him or her to understand that life is not a track. It is something to be explored, and to really explore something, it hardly serves the quest to run around in circles in a race with other drivers experiencing the same as oneself. The Golden Mean, in a wide sense, is needed in a relation between persons, since we are inevitably different. The golden mean is simply the configuration of the relation. This does not mean relations getting dull and colourless; it means tuning into the channel of pragmatic communication, the give and take of passion, reason and logic in a wide sense. This ability to light a spark of poetic reason is a property of the person, and this can never happen with a figure. This view of the person could be called posthumanist since the human is no longer the centre of the universe. Perhaps this touches some of Donna Haraway's recent projects with kindred species such as dogs (Haraway, 2003a). Some day we will probably run into technology-based entities with the property of personhood. Perhaps some of these entities will be completely digital, like a heavy development of the technology behind algorithmic representations such as Google Squared. When we are talking about the possibility of other intelligent beings in space, or in future technology, we are actually talking about other material-semiotic entities we can create a relation to, i.e. entities we can view as persons.

In some important senses, we are still caught up in the Kantian legacy of aesthetic judgement, i.e., the view that aesthetic judgements are both subjective and universal. "Specifically, a judgment of taste issues a demand to all persons (i.e., universally) that if they attend properly to the object, which I judge as beautiful, then they ought to take pleasure in that object" (Rogerson, 1982, p. 301). This paradoxical view of aesthetic judgments is something we have to deal with daily in all aesthetic activities. It is also becoming increasingly intensified in the wake of the 2.0 decade, where design is squared-down tutorials, top-lists, example-lists and similar easily digestible pieces of communication in the blogosphere, etc.



## The Trickster Figure

This essay is designed to play a fundamental role in my thesis, but it is also supposed to live on its own premises as an essay about figuration as a subset of technoscience methodology. The term technoscience is hardly unambiguous in itself but, according to Gilbert Hottois, it generally points to either an essentialist or an integrationist viewpoint (Hottois, 2006). The essentialist view stresses the fact that science cannot be done without technology and the integrationists view it as a solidarity and feedback system between two relatively static partners. Both views are rather conventional and easily lead to a mechanistic view of the relations between science and technology. Hottois' own view of technoscience is more in line with Donna Haraway, Bruno Latour and Don Ihde, and that is also my own epistemological location. Technoscience is simply a figure wrestling with an indefinite complexity of scenery opening up in the vast space of science and technology. Some use the expression "blurred borders" (Björkman, 2005, p. 33), and that is one way of conceptualizing the relation, but this is not really what is going on here. There is no border, if a border means a long line following the dual lands along all its length. The border between science and technology is more of a trickster, a border-figure created to fit the contemporary mindset making up present relations in the epistemic praxis of getting to know the world.

The department of Technoscience at Blekinge Institute of Technology describes technoscience in this way<sup>7</sup>:

*Within international gender research with strong links to the dominant technical fields of our era: information technology, biotechnology and material technology, there is a widespread understanding of the production of knowledge and technology as processes that take place in distributed systems. In other words, in this day and age knowledge is generated in the borderland between universities, companies and other regional, national and international actors. These processes are not least apparent in our region and affect the way in which Blekinge Institute of Technology carries out R&D work. The term technoscience connotes this understanding of the production of knowledge and technology. The way in which technoscience is defined by internationally leading researchers such as Donna Haraway raises interesting questions about boundaries and the transgression of the boundaries between science, technology, politics and society, and between humans and non-humans, the processes of hybridisation between people and machines (cyborg theories), etc.*

*Since Technoscience Studies is responsible for the Bachelor programmes Media Technology and Digital Games and for the Masters programme Expression in Digital Media, plus the fact that most of the researchers also work within these courses, there is a close link between the research, graduate studies and post-graduate education. There is also a steady movement from graduate studies to research, as the development of the Media Technology programme entailed becoming familiar with the most relevant epistemological directions. Our goal is to develop a research foundation for the extremely dynamic field of media technology.*

*This text is located in the context of giving a body to the work at the department and its relation to undergraduate education as well as its place in the triple helix innovation system (see. e.g. (Etzkowitz & Leydesdorff, 2000)).*

The border trickster is also the spider in my research methodology. It is a reconstruction of deconstruction, an active force on the borderlands of binary constructions.

Science and philosophy in general give a great deal of attention to the act of hunting down the trickster and killing it. To some degree, this attention is wasted energy because the trickster is a meta-figure, a figure without location. The trickster is a cross-cultural figure (Babcock–Abrahams, 1975). In technoscience, I met the figure for the first time in Donna Haraway’s essay *Situated Knowledges*: “The Coyote or Trickster, embodied in Southwest Indian accounts, suggests our situation when we give up mastery but keep searching for fidelity, knowing all the while we will be hoodwinked” (Haraway, 1991, p. 199).

Figures are entities of reduced complexity, or unfinished complexity, related to the fathomless complexity of the cluster of experience we have named ‘person’ or ‘personhood’. If you take a figure and design it to enrol in your line of thinking, it has become a figuration. It is a methodology of swerving, of creating lines of flight. The methodology is related to the Deleuzian idea of philosophy as “creating concepts”, with the very fundamental difference of take-off locations. The Deleuzian notion of philosophy is to “appear” in the sky of thought, cruising among ancestral concepts and occasionally turning the lights down to find practices to illuminate the concepts. A figuration always takes off from a practice and never really leaves it behind. Donna Haraway’s figurations as the cyborg and the coyote (the trickster) are born in the discourse of science and technology and their task is to swerve.

At exactly this point in the writing process, I suddenly heard the word coyote from my computer speakers. For a moment I thought I was hearing a ghost, or possibly getting some abnormal connection with my computer, but it was just the workings of chance. I was streaming music from a “swerving”<sup>8</sup> service called Spotify and the current album was “We Sing. We Dance. We Steal Things” by Jason Mraz and the eighth track was called Coyotes:

*And when the coyotes, they sing in the park  
It’s when the city lights start fallin’ for the sea  
While them roads are winding’ down  
And the flying men’ll hit the ground  
Every motion is close to the touch  
And the coyotes sing when they call on your lovin’*<sup>9</sup>

The song is about lost love and the coyotes characterize an element of irrationality and surrealism, a power going against rational and emotional order. The song is a modern myth. Besides being about coyotes, it is an embodiment of social change in the distribution of culture. It is quite typical that the poem has the form of a pop song, distributed to me via a service paid for by advertising and physically streamed to my computer over the Internet without taking any kind of individual storage space, not material, not digital, other than temporarily. It is also time-typical that I just had to type the name of the artist and the song title into Google and instantly had the lyrics to go with the music. All this while, the caretakers of the previous music distribution chain find themselves surrounded by tricksters, coyotes – like Spotify. A trickster is a “creative idiot . . . wise fool, the gray-haired baby, the cross-dresser, the speaker of sacred profanities . . . Trickster is the mythic embodiment of ambiguity and ambivalence, doubleness and duplicity, contradiction and paradox” (Hyde, 1998, p. 7).

If I were to dare to say that Wikipedia is one of our contemporary tricksters, some well-meaning Wikipedians would probably be somewhat miffed since they take their role very seriously. But I do not think we should take the redistribution of power too seriously. It is a part of an evolving mindset where things will not be as they were, and that is how it always have been. The tricksters of our world will not let us rest comfortably in any shape of stable formations. When the coyotes “sing in the park”, positivists and nihilists alike drop everything they are carrying to fumble about after their ear muffs. Their song is not exactly like the sirens’ call to Odysseus<sup>10</sup>, rather the opposite. Tricksters want us to flee. They want to hunt us, and they love to be hunted, because they know they live as long as there is life.

Now I will relate figures and figuration processes to Thomas Kuhn and others.

### **Figuration Processes**

Once upon a time when I was attending a course in literature history, the paradigm figure by Thomas Kuhn (1996) was taught as a more or less non-discussable background to the history of storytelling. As I remembered, I did not send a spark of reflection to my own consciousness, and the teachers certainly did not inspire such things. The paradigm theory was a more or less well-established fact in the circles where I studied during the 80s. Applying Kuhn’s own theory on the phenomena would lead to the conclusion that I was thrown into a period of normal science, where researchers work on well-established premises, which are more or less taken for granted. The concept ‘thrown’ refers to Martin Heidegger’s “existential” figure Dasein as something coming into, or thrown into, the world with possibilities and responsibilities (1962). I am a child of the 60s and I inherited my parents’ extraordinary character of refusing to respect without understanding the phenomena I was supposed to respect. If I did not know anything about the theory of relativity, I would not see any substantial difference between the theory of general/special relativity and some new age figuration. Many in my generation have to understand things to respect the hierarchical play. If we do not get that sense of understanding, we might very well accept it as contingent fact, but that is, more than anything, due to the unwillingness of attention to that specific question.

Our birth is an original event of thrownness. Outside the warmth of our mother’s womb awaits an explosion of figures, activities and relations. Some seem to have been thrown directly into a hierarchical structure, but the social-political situation in the 60s was a time when social structures were shaking, and that included the hierarchies carefully constructed by the social evolution since the dawn of time. Kuhn’s paradigm figure could be described as a container figure, filled with the properties of time and space and configured with the reconstruction of proper hierarchies demolished during the last upheaval. Towards the end of the paradigm, the container is starting to dissolve and the large body of knowledge workers in a culture are starting to lose ground and fumble after something more substantial to hold on to, and the more knowledge workers grab from the same approaching container, the more stable the new paradigm

will be. As Kuhn points out, there was a multitude of theories about the nature of light before Newton. But when the Newton-container started to materialize, most knowledge workers jumped as if it was the approaching refiguration of Noah's ark. This mass jump also relates to the approach of Kuhn's theory. When I was thrown into, or rather threw myself into, the world of academic thinking, most of my teachers were sitting firmly on the Kuhnian ark towards the unknown – but they treated the unknown as if it was already known, as if the Kuhnian arch of epistemology was the final one, as if they belonged to the very few in history who actually live in a time and place where the true ark appeared. This process of knowing unknowingness in relation to the mechanistic feature of normal science illuminates a paradoxical feature in Kuhn's theory. We know that our paradigm is uncertain, that it might fall into pieces at any moment in time, but since our rational-empirical knowledge machine does not work in relation to future events, we are stuck with the immediate as head and history as the tail. It is a long tail with the past as a gigantic warehouse of diverse stories.

Later, I started to get more and more interested in epistemology, and understood that the idea of sequential historical knowledge paradigms was a theory rather than a truism, and as I started to get used to the idea I also understood that it was more (or less) than a theory. It was a figure in some way kindred to the figures dealt with in Auerbach's *mimesis* (1974), although there are some obvious differences. The truth claims are different. While a literary figure like Odysseus works as a container for general truths in some sense, these are somewhat different from truths generally proposed in a scientific theory. A classical literary figure often has that striking, seemingly, ahistorical set of generalities. Even if the figure was created thousands of years ago it often has the power of inducing a sense of wonder in the reader.

A scientific theory submitted as a truth starts at the top and can only fall as logic and experience-driven tests prove it wrong. It starts at the top and falls as the arguments against it accumulate. A figure presented as a fictional character, on the other hand, starts at the bottom where subjectivity and chance make the rules of the game. Every discovered generality adds to the positive value of accumulated plus signs. Criticism of a scientific figure (theory) is an action of dissolving entanglements, clarifying relations. It is not about accumulation, it is about reduction. The serendipitous workings of literary figures, on the other hand, are everything else than reductive. A good example of a non-reductive figure in academic writing is the cyborg.

The cyborg is basically a figure, but it differs from figures such as 'paradigm' or 'tree' in two important ways. The first is its non-reductive properties. The second is about performativity. The cyborg – or the coyote – is configured to perform rather than represent. In this sense, thinkers such as Donna Haraway work as engineers building and configuring narrative machines. They are configured to intervene in processes, to implement themselves in various contexts, and to perform their virtualities. A figuration is a figure created and configured to perform a certain balance between difference and repetition, evolution and consistency. Figuration is a methodology most frequently used in "swerving", which obviously leads to the simple fact that most figurations are tricksters. There is not much sense in creating a figuration with the goal of having a

picnic with the establishment. Another mode of description: figurations are creatures of difference and their role is to be tricksters in relation to repetition.

I am going to discuss figuration more in relation to practice by summoning one of the most successful tricksters on the Swedish Internet hub, “Doctor Dahlqvist”, and also drawing some parallels to the cyborg figure.

#### Doctor Dahlqvist

The figuration Doctor Dahlqvist is a blog title and it refers to the family name of the Swedish physician Annika Dahlqvist. During the 2.0 decade, she and others have built a network of amateur and professional knowledge workers around the very controversial subject of low carb, high fat food. In Sweden, low carb high fat is generally represented by the acronym LCHF. The reason I am calling Doctor Dahlqvist a figure is because the phrase has been detached from the simple role as a representation of a person. It has been deprived of complexity and reconstructed as a powerful machine of science politics, a powerful trickster figure in the arena of medical research. The conceptual persona of “Doctor Dahlqvist” is a pleasant-looking middle-aged woman. Around her neck she has a stethoscope, which is a power symbol in this context. When we see her expressions on the Internet, or in a book store, or on TV (where she obviously does not wear a stethoscope), we know that her statements about health have the authority of being part of a long medical tradition. We, as amateurs, are excluded from the more subtle conversations in that profession. Our knowledge comes from personal experience, or by following the breadcrumbs laid out in the media by professionals in the arena of medical research. Nowadays, we also have the gigantic library of the Internet close by.

Doctor Dahlqvist has gone through the tradition-based learning mechanism at medical school and she has worked for several years with others like her, sharing experiences and expressions traditionally hidden from outsiders. The increasing transparency in society, due to the Internet, is slowly changing the rules of most hidden, professional conversations. The medical conversation is one of the “fast movers” in the game of conversational evolution. Doctor Dahlqvist, and others, are “leaking” experiences to conversations outside the profession with a speed and impact never seen before. But in these semi-professional conversations about health issues, the figuration “Doctor” reinforces the traditional hierarchy and works as a “crown”, making her words appear to come from above, a location with a long history within the Christian tradition. The greater part of her colleagues, on the other hand, treat her with suspicion since she has lowered herself into the masses, where everything is just a matter of opinion.

The difference between the Cyborg and the Doctor Dahlqvist figurations leads to some important reflections about the difference between the 1980s and the 2.0 decade. Donna Haraway picked a pre-made cultural figure to create her figuration. Doctor Dahlqvist is embedded in the context of a particular person. The cyborg was reconstructed by Donna Haraway and others in a transdisciplinary academic network to act as a feminist agent to reconstruct an obsolete epistemology. The cyborg was a performative tool and it has never acted as a representation. Doctor Dahlqvist was born as a

representation but evolved to be a network presence with performatives far beyond the initial presupposition.

### Heteroglossia

Both figurations are written in a mode of network heteroglossia. The concept of 'heteroglossia' was introduced by the Russian linguist Mikhail Bakhtin in the 1934 paper *Discourse in the Novel* (Bakhtin, 2006). Below, I present a citation from the Oxford Companion to Philosophy, because I think it fits well in this context.

*Bakhtin, Mikhail Mikhailovich (1895–1975). Russian philosopher of language and literature, famous for his concepts of dialogism and 'heteroglossia'. For Bakhtin, the basic linguistic act is the utterance. Utterances acquire meaning only in dialogue, which is always situated in a social-cultural context where a multiplicity of different languages intersect (political, technical, literary, interpersonal, etc.). From this emerges a conception of personhood where we author ourselves in dialogue with others and subject to the reinterpretations they give us. Bakhtin's writings on the novel as the literary embodiment of heteroglossia have been very influential, particularly his work on Dostoevsky's 'polyphonic' novel, and many find in his dialogism a critique of totalitarianism. Significant also are his early works on linguistics and psychology. Marxist in orientation and published under names of other members of Bakhtin's circle (though authorship of these works is disputed). Bakhtin lived in Vitebsk and Leningrad before being exiled to Kazakhstan from 1929 to 1934. (Honderich, 1995, p. 76f)*

Heteroglossia comes from the Greek terms 'hetero' meaning 'other' and 'glot' meaning 'tongue' or 'voice'. This formation of a concept can give us ideas of how to use the word, but I do not think we can say that they "define" the term heteroglossia, as, for example, Graham Allen does in his book *Intertextuality* (Allen, 2000, p. 29). Bakhtin described a heteroglot language:

*at any given moment of its historical existence, language is heteroglot from top to bottom: it represents the coexistence of socio-ideological contradictions between the present and the past, between differing epochs of the past between different socio-ideological groups in the present, between tendencies, schools, circles and so forth, all given a bodily form. These "languages" of heteroglossia intersect each other in a variety of ways, forming new typifying "languages". (Bakhtin, 1981, p. 291)*

As Honderich writes in the previous citation, a heteroglot language is involved in the conception of personhood. Thus heteroglossia is built into or embedded in us as persons and in everything we do or say. Being able to see things from different perspectives is not a skill or a virtue. It is already built into the material-semiotic fabric of the world. Instead we are learned into matrixes of restrictions making up certain cultures. In Deleuzian terminology, this is about the balance between difference and repetition, the construction of evolving consistency. When Donna Haraway created her cyborg figure or Annika Dahlqvist gave birth to Doctor Dahlqvist, neither of them were starting something new. Cyborgs had already been visible in fiction as well as in science, and the doctors promoting low carb food also had a long tradition. But by picking up these figures and giving them a reconstructed voice in a contemporary context, they entangled themselves in the discourse. They created a new perspective starting in their respective material-semiotic acts and evolving through a wide network of disparate voices and bodily actions. Both these discourse perspectives are embedded in the fabric



of the Internet in the same way as a discourse perspective in a novel. Another example could be the material-semiotic flow in a football match.

Let's say you are Martha, one of the best football players in the world. You are involved in a particular match, in a particular tournament. Football as a whole has its set of rules, the tournament has a more specific set of rules, your team implements these rules somewhat differently than other teams, and you implement them differently than your team co-players. In this particular game, we are at a particular point in time-space location. Your mind-body is touching the ball simultaneously with a search in your memory for the recent path of the ball together with an assessment of the balls', and games', virtualities. Perhaps you have noticed someone limping somewhere on the outskirts of your attention and this memory has led your mind-body to kick the ball in a particular direction based on its potential becoming.

But in that moment, when your mind-body is touching the ball, you are the actualization of other persons' virtualities, and you yourself are creating new traces in history. Your kick is embedded in a heteroglot flow of material-semiotic activity. It can be just another kick, or it can be as intense to catch the intention of the history-making machinery. Both the cyborg and Doctor Dahlqvist were only one of many possible virtualities when the path of the ball was actualized. Cyborg theory/practice and the low carb diet were already actualized, but Donna Haraway and Annika Dahlqvist created a new material-semiotic code to restart the discourse of embedded heteroglossia. Haraway took an element from fiction and science and reconstructed it for the arena of contemporary ontology and epistemology politics. She created, or at least revamped, the view of methodology in this arena. She gave the mind-body of feminism new ways to do things beyond the Hegelian trap of dialectics. Even if Donna Haraway could not have foreseen the impact of her cyborg narrative, her heteroglot push was very much controlled. She was embedded in a well-known environment, and she could overview the effects in advance – even if the explosively growing network energy in the cyborg metaphor could hardly have been calculated in advance.

Doctor Dahlqvist operates in a completely different environment. Annika Dahlqvist started "Doktor Dahlqvists blogg" just before the social movement on the Internet reached the masses in 2006<sup>11</sup>. In an initial blog post she presents herself as a local doctor working mainly with Elderly Care (the complete Swedish blog post is presented in the endnote<sup>12</sup>). She writes that she is married and has two grown up daughters. She goes on to give a picture of her long-lasting problems with her weight and eating habits. When she started to eat low carb food, many of her previous ailments disappeared and since then she has had a constant feeling of wellbeing. After this experience, she started to "research" the research about the contemporary "paradigm" of the high-carb, low-fat diet advocated through the network of professionals integrated in the (Swedish) National Food Administration<sup>13</sup>. Her conclusion from this research was that they did not have enough justification for their advocacy. She started to write articles about this, but also emails to The National Food Administration, trying to press them to present real evidence for their advocacy. They could not do that (in her opinion), and then she found a disparate group of persons advocating a low carb diet, on the same

grounds as herself. I think the grounds for their disbelief are very interesting in themselves. Practically all of the persons in this group had long-going issues with weight, diets and declining health. After having tested most of the available dieting methods, they found the low carb diet and their life suddenly changed. They started to question everything told to them before about food and health and found few justifications for the standard line of thinking. I can understand these persons instinctively. Their experience had to be equivalent to Galileo's experience when he raised the telescope towards the heaven and noticed that earth could not possibly be the centre of the world. In the advocacy of the low carb group, there are the same incentives as in the story about Galileo – do as I do and you will get the same result. This incentive is somewhere in the heart of empirical science, but lacking the rational part – the important part in contemporary science politics.

Before I reach the end of the threads coloured with methodological entanglement and heteroglossia, I will use a small amount of space to explain my own position in all this. I will give an answer to the following questions: What are the intensities affecting my attention in the story about the low carb community, and, what is epistemologically beautiful for me in the story?

I noticed this group of persons and their sensational claim of “fat is good for you, but be suspicious to carbs” in 2006. Besides my main interest of this group as a rapidly growing 2.0 community, I was also interested in the claim that LCHF food leads to some kind of mind–body harmony due to a more balanced level of sugar in the blood. I was fed up with thinking about food all the time and hoped this mode of eating would get me out of that. After about a year or so I concluded that there was some substance to the harmony claim, but that was eventually overshadowed by sheer boredom with this food. During this time I tried to discuss epistemological questions concerning this 2.0 research machine of sharing experiences in web communities, but I did not get enough response to make it worth the effort. Most of the persons involved in this issue, understandably, care exclusively about creating public opinion against the establishment. I was not really one of them. I was somewhat interested, but far from convinced about the substance of matter. My main interests and concerns were aesthetic, epistemological. The beauty in all this was to be found in the 2.0 methodologies of tapping into the flow of public opinion. I saw how Doctor Dahlqvist's blog became a hub for a wide network of shared experiences. I saw the virtualities of the methodology embedded in this network. A physician “lowering” herself into the plane of common sense and public opinion, regarding matter normally subjected to detached rationalism. However, she does not break with hierarchical behaviour. Using the title doctor before her name in the blog title gives her the same role as a priest: being someone who has lowered herself to the masses to translate the language of power. But power, in this situation, works both ways. She also translates the power of public opinion into the quarters of administrative, legal power.

The methodology here could be pinned down to the moment when the mind–body touched the idea (the football). We could call this methodology embedded entanglement. She noticed that her blog post got an unusually high degree of response. People



started to communicate with her and the other readers. The network expanded. Many of the commenters started their own blogs and thereby helped the entanglement of Doctor Dahlqvist to grow in intensity. Somewhere along the line, she noticed that she was living in a completely new world; she was living in a 2.0 world of social entanglement and new possibilities in the media landscape. From that point she started to tap into the “wise” crowd<sup>14</sup> and saw them as an asset beyond the commonly used “controlled studies”. She created a new methodology in the arena of research politics.

### Methodology and Entanglement

Methodology is the single most important feature of my research and the single most important feature of that methodology is to express my firm belief that “knowledge is always an engaged material practice and never a disembodied set of ideas” (Haraway, 2003b, p. 199f). I started this essay about methodology with the question about aesthetics and beauty. I will start this last chapter with the question of language and love, and initialize this theme by presenting a huge citation. The citation is from Donna Haraway’s essay *Morphing in the Order: Flexible Strategies, Feminist Science Studies, and Primate Revisions*:

*I am in love with words themselves, as thick, living, physical objects that do unexpected things. My paragraphs are peppered with words like “semiosis” because I am in love with the barnacles that crust such seedy, generative, seemingly merely “technical” terms. Words are weeds – pioneers, opportunists, and survivors. Words are irreducibly “tropes” or figures. For many commonly used words, we forget the figural, metaphoric qualities; these words are silent or dead, metaphorically speaking. But the tropic quality of any word can erupt to enliven things, even the most literal mindset. In Greek, “tropos” means a turning; and the verb “trepein” means to swerve, not to get directly somewhere. Words trip us, make us swerve, turn us around; we have no other options. Semiosis is the process of meaning-making in the discipline called semiotics. Primatologists, beginning with C.R. Carpenter, have drawn richly from the human science of semiotics, and I have a playful and serious relationship with the ways communications sciences, linguistics, information sciences, and their motley offspring have infused primatology since the 1930’s.*

*Science and science studies depend constitutively upon troping. Unless we swerve, we cannot communicate; there is no direct route to the relationship we call knowledge, scientific or otherwise. Technically, we cannot know, say, or write exactly what we mean. We cannot mean literally; that negative gift is a condition of being an animal and doing science. No alternative exists to going through the medium of thinking and communicating, no alternative to swerving. Mathematical symbolisms and experimental protocols do not escape from the troping quality of any communicative medium. Facts are tropic; otherwise they would not matter. Material-semiotic is one word for me. I also know that there is a fine line between an exuberant love affair with words and a pornographic fascination with jargon. Tropes are tools, and, female or not, endowed with only the little instrument of the mentula mulieribus, I am a practicing member of Homo faber.*

*Embedded in narrative practices, stories are thick, physical entities. If storytelling is intrinsic to the practice of the life sciences, that is no insult or dismissal. Stories are not “merely” anything. Rather, narrative practice is a compelling part of the semiosis of making primatology. Some sciences reduce narrative to the barest minimum, but primate studies have never had the questionable privilege of an antiseptic narrative sterilization. Many other practices make up primatology, but not to attend lovingly to stories seems worse than abstemious to me; it seems a kind of epistemological contraception. “For thus all things must begin, with the act of love.” (Haraway, 2003b, p. 200f)*

For me, this text says more about knowledge and language than the complete works of Ludwig Wittgenstein – of course, this text was hardly possible before Wittgenstein and his work is in a very tangible way embedded in Haraway's text. What Haraway says here about language and love is closely related to Annika Dahlqvist's "confessions" about her problem with dieting. They are questioning their own authority regarding the truth claims of their profession. Annika Dahlqvist says that the "war against fat" her professional context has advocated for at least five decades, clearly does not work for her as an individual person. The controlled studies, the rational–empiric considerations, made by this science machine, "crash" against her studies of herself as a material–semiotic person. And when she presents this scenario on the Internet, she gets an "alarming" number of persons raising their hand and saying "Me too; I have come to the same conclusions". Annika Dahlqvist, and the network she is embedded in, is saying: "You, my colleagues, are wrong, and I was wrong before; but now I am right, and you should listen to me, I have a new methodology of crowd wisdom and we can use this as a base for renewed studies". This is Kuhnian thinking – or Popperian, depending how you see it. The low carb community acts as a ground for a possible paradigm shift in thinking about the relation between carbohydrate and fat in health issues. I cannot judge the substance in this claim. In my view, the enormous intensity in this question is more about new virtualities in the relation between science and politics.

The trickster posing as Doctor Dahlqvist is a traditional science machine operating in the flow of big paradigm shifts. The low carb network assertion is positivist, or Popperian. They are using a "wise crowd" methodology to falsify the truth claims in a high carb/low fat diet. Their adversaries say the wise crowd is just a case of misguided public opinion operating on the level of the individual person. One can also say that Annika Dahlqvist is tapping into the heteroglot character of language and the health establishment is opposed to this methodology. They are used to controlling the flow of data hierarchically in a monoglot way. For them, the heteroglot feature of language is a threat, a trickster, a dangerous potentiality for the flow of data to swerve.

The trickster embedded in Donna Haraway's relation to language and knowledge is more fundamentally epistemological. Her solution is to affirm the heteroglot nature of language, to work with language and not against it. Bruno Latour has the same agenda in the article *Essays on Science and Society: From the World of Science to the World of Research?*:

*In the traditional model, society was like the flesh of a peach, and science its hard pit. Science was surrounded by a society that remained foreign to the workings of the scientific method: Society could reject or accept the results of science; it could be inimical or friendly toward its practical consequences. But there was no direct connection between scientific results and the larger context of society, which could do no more than slow down or speed up the advancement of an autonomous science. Galileo deals with the fate of falling bodies in one palace, while in another palace cardinals and philosophers deal with the fate of human souls. (Latour, 1998, p. 1)*

The peach relation between science and society has been made possible by the general opacity in society. By the increasing transparency brought by the 2.0 decade, publications in the research community can easily become intensities in the network–based

attention machines in community grids on the Internet. The traditional model still tries to “save” academic publications from the 2.0 transparency by keeping them in the thick opaqueness of the peach’s core. In Sweden we have “bibliometrics” in national research politics, which means universities are financially rewarded if their researchers publish in the core of the peach instead of the semi-transparency of the peach’s flesh.

During the 2.0 Decade, it became clear that the Internet is like a virus slowly breaking down the hard structure in the core of the peach, rendering it indistinguishable from the semi-transparent flesh that surrounds it. The disabled, monoglot pieces of conversations disseminated from the peaches core are transformed into integrated pieces of heteroglot conversations.

A conclusion could be to endorse heteroglot conversations in science and research because that is the only way to ensure methodological transparency. Knowledge processes are conversational. Conversations are not controlled. They are uncontrolled and heteroglot. Parts of a conversation can be controlled and in rare circumstances also certain, but these rare instances are always embedded in a context of non-rational uncertainty. Figurations are conceptual research avatars sent into particular contexts with the hope of diverting the question of epistemology from transcendence to aesthetics. And the utmost hope is to accomplish creative conversations and swerving virtualities.

## Endnotes

- <sup>1</sup> When I do not specifically mention C.G. Jung in relation to ‘synchronization’, I refer to synchronization as it is performed by Internet servers.
- <sup>2</sup> Tyda.se, [http://tyda.se/search?form=1&w=gestaltning&w\\_lang=&x=0&y=0](http://tyda.se/search?form=1&w=gestaltning&w_lang=&x=0&y=0), viewed: 2009–11–19
- <sup>3</sup> Google Search: digitalism, <http://www.google.com/search?hl=en&safe=off&client=safari&rls=en&q=digitalism&start=0&sa=N>, viewed: 2009–11–19
- <sup>4</sup> See, for example, “Konsten att leva innerligt” (Harris & Lagerström, 2008)
- <sup>5</sup> The figure is a Google Squared search on “Philosophy”  
The Screenshot was created on 4 June 2009. The full resolution is 1120 x 619 px, [picasaweb.google.com/lh/photo/v\\_jNrlffs1i\\_KpXZS8R7Bg?authkey=Gv1sRgCO3fs8OPwKm67gE&feat=directlink](http://picasaweb.google.com/lh/photo/v_jNrlffs1i_KpXZS8R7Bg?authkey=Gv1sRgCO3fs8OPwKm67gE&feat=directlink), viewed: 2009–06–04
- <sup>6</sup> Page Rank is the main technology behind Google’s search technology. The software behind Google’s search technology “conducts a series of simultaneous calculations requiring only a fraction of a second. Traditional search engines rely heavily on how often a word appears on a web page. We use more than 200 signals, including our patented PageRank™ algorithm, to examine the entire link structure of the web and determine which pages are most important. We then conduct hypertext–matching analysis to determine which pages are relevant to the specific search being conducted. By combining overall importance and query–specific relevance, we’re able to put the most relevant and reliable results first.  
PageRank Technology: PageRank reflects our view of the importance of web pages by considering more than 500 million variables and 2 billion terms. Pages that we believe are important pages receive a higher PageRank and are more likely to appear at the top of the search results. PageRank also considers the importance of each page that casts a vote, as votes from some pages are considered to have greater value, thus giving the linked page greater value. We have always taken a pragmatic approach to help improve search quality and create useful products, and our technology uses the collective intelligence of the web to determine a page’s importance.” <http://www.google.com/corporate/tech.html>, viewed: 2009–12–07
- <sup>7</sup> Blekinge Institute of Technology, <http://www.bth.se/tks/teknovet.nsf/pages/af598cf74a97d615c1256e2e002ed85d?OpenDocument>, viewed: 2010–01–19
- <sup>8</sup> When I call Spotify a “swerving” service, I refer to its line of flight in the very traditional and static music industry. As of December 2009, Spotify has completely rewritten the distribution of music in several European countries; reconstructed music from something you buy per album to something you explore almost limitlessly and pay for with your attention in relation to commercials or by paying a monthly fee. <http://www.spotify.com/>, viewed: 2009–12–07.
- <sup>9</sup> Metrolyrics, The lyrics of the song “Coyotes” by Jason Mraz, <http://www.metrolyrics.com/coyotes-lyrics-jason-mraz.html>, viewed: 2009–11–27
- <sup>10</sup> Book XII of “The Odyssey” by Homer.
- <sup>11</sup> The first articles in “Doktor Dahlqvists Blogg” was posted late 2005, <http://blogg.passagen.se/dahlqvistannika/date/200510>, viewed: 2009–12–04
- <sup>12</sup> Initial post in “Doktor Dahlqvists Blogg”: [http://blogg.passagen.se/dahlqvistannika/entry/distriktslakare\\_lagkolhydratintresserad](http://blogg.passagen.se/dahlqvistannika/entry/distriktslakare_lagkolhydratintresserad), viewed: 2009–12–04  
“Skrivet 20051030  
Jag arbetar som distriktsläkare i Njurunda. Jag arbetar med äldre vården i vårt upptagningsområde, dvs de personer som har hemtjänst eller bor på äldreboenden, överhuvudtaget de som har nedsatt förmåga att själva tala för sina intressen och behov. De som behöver en “gräddfil” i vården.

Jag är gift och har två vuxna döttrar. Jag hade haft problem med övervikt sedan 20-års-åldern, i 35 år. Hade jojo-bantat med fettsnål och kalorisnål kost. Efter bantningsförsöken gick jag upp ändå mer. I okt -04 vägde jag nästan 80 kg. Då började jag med lågkolhydratkost. Jag äter minimalt av kolhydrater: socker och stärkelse. Stärkelse finns framför allt i spannmålsprodukter som bröd, pasta, gröt, frukostflingor etc, samt potatis, majs och ris.. Jag äter då i stället mer av framför allt fett, men även något mera proteiner, än i den officiellt rekommenderade kosten. Jag äter också grönsaker. Jag skrev ihop ett kostprogram för denna kost som jag sedan har spridit till alla intresserade. Jag gick ner nästan 1 kg per vecka under 7 månader, till 62 kg, och har sedan hållit den vikten utan problem. Jag fortsätter att äta likadant. Om jag ökar kolhydratmängden i kosten går jag upp i vikt, jag har kollat. Jag har förbättrat min hälsa. Fibromyalgi och inflammationer i leder, slem säckar och senfästen försvann ganska omgående. Jag har haft en intensiv konstant känsla av välbefinnande, sedan jag lade om kosten.

Jag har skrivit många insändare i lokaltidningar, samt i medicinska tidskrifter som *Medikament* och *Dagens Medicin* om detta.

Jag har försökt, via mailen, pressa Livsmedelsverket om den vetenskapliga bakgrunden till de nuvarande kostråden: Mycket och hela tiden mera kolhydrater, framför allt bröd; Litet och hela tiden mindre fett, samt även litet proteiner. Livsmedelsverket tror att man blir kärlsjuk av fett och att njurarna inte tål så mycket protein. Därför blir det kvar så mycket kolhydrater som man måste äta om man ska få i sig den energi man behöver.

Det visade sig att Livsmedelsverket inte kunde prestera någon forskning som stöder dessa resonemang, utan de är helt byggda på lösa teorier. Jag fann att det fanns flera som hade kommit på samma sak som jag, så jag samlade en mail-lista med likasinnade. Denna "lågkolhydratgrupp" innehåller bland andra författarna Lars-Erik Litsfeldt, som har skrivit boken "Fettskrämd", och Sten Sture Skaldeman, som har skrivit boken "Ät dig ner i vikt". Böckerna är baserade på självupplevda erfarenheter. I gruppen finns dessutom många läkare av olika specialiteter, även forskare. Också andra yrken är representerade.

Vi försöker bilda opinion för lågkolhydratkost för framför allt överviktiga och typ 2 Diabetiker. Det är nämligen kolhydraterna som gör oss sjuka! Kolhydraterna ger högt blodsocker, vilket orsakar hög insulinproduktion. Högt blodsocker och högt blodinsulin orsakar fetma och diabetes, samt kärlsjukdomar. Fett i kosten ger inte förhöjt blodsocker och blodinsulin och ger därför inte fetma och kärlsjukdom. Njurarna har inga problem att hantera mera protein än i de officiella rekommendationerna.

Det är fler och fler som inser att lågkolhydratkosten är den bästa för dessa sjukdomar. Problemet är att vi måste få Livsmedelsverket och det övriga "kostetablissemangen" att också förstå det, och ändra på sina kostrekommendationer."

<sup>13</sup> On their web site, they write that "The National Food Administration is the central administrative authority for matters concerning food". [in Sweden], <http://www.slv.se/en-gb/>, viewed: 2009-12-04.

<sup>14</sup> Wise Crowds was a concept proposed in James Surowiecki's book "The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations" (2004). I have put quotation marks around "wise" because he and I do not agree on the concept of 'wisdom'. For Surowiecki, wisdom is closely related to rational knowledge. For me, knowledge is something embedded in wisdom, i.e. knowledge is about 'reductionism' and wisdom is about 'holism'.



## The Technology of Conversations

In this essay, I create a difference between non-rational conversations and rational discourses. The reason for this is that my methodology is embedded in the fabric of recent Internet technology. During the 2.0 decade, we seemed to have a preference for conversational technology at the expense of technology directed to rational discourse. I am revisiting the lowcarb network to illuminate the power of this new technology.

### Enola Gay, and the Apocalyptic Conversation Nexus

The opening chapter is about the importance of conversations as indefinite heteroglossia and, as such, an end in themselves.

This is one of the most frightening photos in the world<sup>1</sup>. When it was shot, it was just another photo, but time has added tons of value to it. Now it is outstanding. It is a stellar piece of art created by the human race in its path to becoming cyborg. This piece of art says everything about who we are and what we might become. Edvard Munch's modernist painting "The Scream"<sup>2</sup> is embedded as ghostly shades in every smile inside the photo and every smile outside it. Something starts here, at this point in time, in the symbolism, in the performance of this war machine.

It is a line of seven white western males posing leisurely in front of an airplane. It must be a very hot day, as four of them are wearing shorts and all seven have short-sleeved shirts. It is a fair guess that the man in the middle is the boss. He is more serious looking, better dressed and has a pipe in his mouth to distinguish him from the others. His posture is also more confident and powerful. He shines like a person who has just finished a period of hard work which obviously paid off and filled him with even more

confidence and power. His name was Paul Tibbets, son of Enola Gay Tibbets. On August 6 1945, this crew was swallowed by Enola Gay and the war machine became a 'line of flight' between America and Japan, between modern hope and postmodern apocalypse. Enola Gay was a Boeing B-29 Superfortress and on this night at the beginning of August it was piloted by 509th Composite Group under the command of Colonel Paul Tibbets. Enola Gay was not alone. She was accompanied by two other B-29s, one named The Great Artiste and one unnamed at that time. The unnamed plane had at least one virtual name which was later actualized as Necessary Evil. On the flight to Japan, the crew, or some of them, were located in the iris of the eye you see in the upper left corner of the photo above, a huge eye hovering between hope and apocalypse. After six hours flight, Enola Gay gave birth to two boys, one actually called Little Boy. Little Boy was not really a boy. He did not have the innocence of a little boy, so in this respect he was an old little boy. He was a gravity bomb with 60 kilograms of uranium-235 forced into his old body of technological ingenuity, of human progress. At 8.15, Little Boy was born. He fell for 57 seconds but his short life ended 600 metres above Hiroshima. At this time, the population of Hiroshima was about 340,000–350,000. Little Boy's cyborgian mother saw him fall and light up with extreme intensity, instantly killing 70–80,000 persons, with the same number dying shortly after from injuries and radiation. Over 90 % of the doctors and 93 % of the nurses were killed. 69 % of the buildings were immediately destroyed and another 6–7 % were damaged.

According to Jean Baudrillard, "The apocalypse is finished" (Baudrillard, 1994, p. 160). He might be right. We were living at the end of something in the first part of the 20th century, and that something was broken by Little Boy, and finally destroyed by Enola Gay Tibbets' other son, Colonel Paul Tibbets. The man in the middle. He lived a long life and finally died in 2007, 92 years old. During his long life, he gave several interviews and always said he had no regrets. In an interview in 1975 he said: "I'm proud that I was able to start with nothing, plan it and have it work as perfectly as it did... I sleep clearly every night".<sup>3</sup>

Naming Colonel Paul Tibbets as responsible for the apocalypse does not seem fair if you take it literally, if we are not prepared to write Hegelian history, and I am not. Persons are not the heroic movers of history. Persons are networkers and history is better described with a Deleuzian conception; as a gigantic rhizome of embedded, immanent context, populated with an infinite number of machines drilling serendipitously, horizontally in the flow of time. Persons might be more or less important for historical events, but in this case they are probably diminutive, at least as concerns Colonel Paul Tibbets. Most of us who read about the Hiroshima bombings and Colonel Tibbets' supposedly good sleep automatically view this from a moral perspective. We compare his (re)actions to the moral matrix and try to find justifications for his (re)actions. My wife was in a bad mood the whole day when she accidentally crushed a snail. Colonel Tibbets was the tool for the killing of at least 140,000 human beings. The plane of common sense seems too small. The thought bounces back and becomes unresolved, adding to the human warehouse of unresolved mysteries. This is where the plane of



complexity comes in. We can use Philosophy, Art and Science to resolve mysteries like this, not to resolve it in an objective sense, but in the meaning of a constant reshaping of this story. The process of reshaping the story is to constantly test it, what fits and what does not fit at all. This process is a conversation with a purpose of its own. It keeps us occupied with the process of figuring something out. If there is any “nature” left to talk about, this nature is ‘becoming’, continuously reshaping the plane of consistency. Conversations have to be ends in themselves since no system of ends seems to be consistent or final. We might think they have an end, but the end is constantly crushed or pushed due to new data or discussions. A system of expected ends is any system with the goal of ending conversations. These systems are common in war and science. “Real” conversations do not have finality. Their consistency is based on their indefinite mode.

Real conversation as a movement of becoming is the most fundamental part of sociability and it mimics the constant dance like movements in the flow of life. If we see history as one large conversation, something extraordinary happened in August 1945. It broke, it erupted, it cracked; and then it was repaired, but the scar is still visible in all conversations in the western world. This was the conversation breakdown that all western conversations ultimately lead to, and it is something immanent in all conversations today. It is with us every time we participate in a conversation. All sacrifice, all power exercised through language since the beginning of language is immanent in all conversation. That is the real incentive in the concept of heteroglossia, and leads to a reconstructed way of viewing the relationship between the person, science and technology. It is really the same conclusion as Donna Haraway came to in the final paragraph of her Cyborg Manifesto:

*Cyborg imagery can help express two crucial arguments in this essay: first, the production of universal, totalizing theory is a major mistake that misses most of reality, probably always, but certainly now; and second, taking responsibility for the social relations of science and technology means refusing an anti-science metaphysics, a demonology of technology, and so means embracing the skillful task of reconstructing the boundaries of daily life, in partial connection with others, in communication with all of our parts. It is not just that science and technology are possible means of great human satisfaction, as well as a matrix of complex dominations. Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves. This is a dream not of a common language, but of a powerful infidel heteroglossia. It is an imagination of a feminist speaking in tongues to strike fear into the circuits of the supersavers of the new right. It means both building and destroying machines, identities, categories, relationships, space stories. Though both are bound in the spiral dance, I would rather be a cyborg than a goddess. (Haraway, 1991, p. 181)*

I would call Enola Gay a cyborg assemblage, a material-semiotic war machine created by the masculine western society in order to kill the evolution of a dead conversation. A dead conversation is a network of vital heteroglossia stripped of diversity and finally deterritorializing to monoglossia driven by the urge to spread oneself at the expense of the other. I am not sure about the role of the social Internet in the traditional war between a vital heteroglossia and a self-serving monoglossia. But my experience says that the virtualities of conversationalism changed rapidly during the 2.0 decade. Technology has always been a part of our conversations, but the 2.0 decade has made it more tangible that conversations are material-semiotic creativity machines.

## About Conversations?

I am trying to see the concept of ‘conversation’ from some particular viewpoints to give the reader a sense of what I am referring to with ‘conversation’.

The main properties of a conversation are:

1. It is a machine
2. It is material–semiotic
3. It is an end in itself

To find the right frequency in the conceptualization of what I call ‘conversation’, I will relate it to Jürgen Habermas’ conceptualization of ‘discourse’ as used in his theory of communicative action. In Habermasian theory, ordinary speech and discourse are located on different reflexive levels, where ‘discourse’ refers to “processes of argumentation and dialogue in which the claims implicit in the speech act are tested for their rational justifiability as true, correct or authentic. Thus the rationality of communicative action is tied to the rationality of discourse”. (Bohman & Rehg, 2009)

Relating conversations to the Deleuzian concept of machines means its structure is non–hierarchical or rhizomatic rather than tree–like. It grows horizontally. Most conversations have embedded hierarchies, but they are counter–forces trying to take control of the conversation, trying to translate it into a discourse. A conversation machine is an assemblage of other conversation machines, and is also embedded in other assemblages of machines.

A conversation is not only about speech and/or writing. Technology and non–technological material are embedded in the conversation together with semiotic actions. The conversation leading to the disintegration of Hiroshima included flying technology, religion, nuclear physics, power relations, uniforms, laws and regulations, and not least emotions such as love and hate. It includes the love of technology and the hate of difference. It includes fear. It includes women and men and children and food. It includes different versions of the idea of what it means to ‘live’. But most of all it includes choices, material–semiotic choices. These choices can be looked at from different perspectives as rational, moral and aesthetic. But the choice of how to choose a perspective is aesthetic. As I see it, this makes ‘the aesthetic’ closer to the person than rationality and morality – it is an aesthetic choice of whether to take a rational, moral or artistic departure in the line of flights we make in the world.

In Habermasian theory, the discourse is a tool in the craft of reaching something conclusive as consensus. A conversation is not a tool for something. A conversation is an end in itself. As long as we keep the conversation going, there is hope. A current example is the conversation about the environment. Many of us are really pessimistic about the chances for the earth to survive the human desire for production. The international network of human production seems too diverse to make powerful choices for sustainable living. The question is too complex, since it encompasses individual persons’ lives, and not just “ideology”. Every individual person has a different “price” for their level of sacrifice. For many, it might seem that the price we are paying for our western democracy is an unintentional and unwanted environmental regression. But

even if we do not think it is possible to save the environment, we keep the conversation going, because the hope is embedded in the conversation itself. Hope is the main property of secular conversations. As long as we do not kill the conversation, there is hope. The Internet technology developed during the 2.0 decade has built-in functions to keep conversations going. Thereby it could be called a hope-supporting technology.

Conversations can also have embedded discourses. Large-scale conversations such as the environment conversation have a number of embedded discourses. Problems embedded in the conversation can be solved by rational or conversational methods. If we solved the environmental problems with laws and regulations paired with appropriate punishments, it would be a rational solution. If a majority instead made a digital swerve in terms of identity building and artistic expressions, and that led to environmental revitalization, it would be a conversational solution.

I have used the concept ‘apocalypse’ to denote some kind of revelation in a conversation. The atomic bomb made a swerve in the view of ourselves as humans. It led to the revelation that we have the power to destroy our own “destiny”. It led to the depressing blanket in the western world commonly called the Cold War. The Cold War was a life in the limbo where some international conversations had world destruction as one of their most plausible and powerful virtualities. ... The revelation discussed frequently in this thesis is the advent of the 2.0 decade. The 2.0 revelation is a discovery of digital networks as a location for conversations. In the plane of common sense, there is a huge difference between the creation of atomic bombs, and the creation of the Internet. But locating the viewpoint on the plane of complexity, we are free to swerve the perspective. We have always had world-changing wars. The atomic bomb as an assemblage of difference and repetition definitely stands out in history mostly because of its destructive power. But the technology of digital networks has potentially a higher degree of embedded difference. Its transformative power is potentially even greater than the atomic bomb, and this power is not necessarily negative.

## Revisiting the LowCarb Conversation

I am revisiting the lowcarb conversation to situate the discussion about non-rational conversations in practice.

I wrote about the Swedish lowcarb network at some length in the methodology essay. I am revisiting this network in this essay to get some “body” in the discussion about ‘conversations’. Whatever you think about this network and the issue, their mode of conversation points to some interesting virtualities when it comes to knowledge production.

In the Swedish part of the Internet, there is a very active network advocating a low-carb health strategy. The network consists of material-semiotic nodes such as blogs, doctors, scientific studies, journalists, self-monitoring, medical researchers, “ordinary” non-professional persons, self-portraits, television interviews, tricksters, mailing lists, recipes, Internet community systems such as Facebook, and lectures, both in public

and in company networks. They are connected by common issues such as weight and/or dieting problems. They might also be diagnosed with diabetes or have other health issues. When they came into contact with the lowcarb conversation and started to change their diet from high-carb, low-fat to low-carb, high fat (LCHF), their problems disappeared or lessened. They attributed this increased health to the lowcarb diet and drew the conclusion that the diet advocated by the The National Food Administration is not as good as asserted. Naturally, the conclusion drawn by the lowcarb network gains further impact from the fact of shared experiences. The professionals in the network also state that the scientific studies done in this area are poorly substantiated, and some studies seem to point to lowcarb as the best dieting choice for diabetes and overweight.

It is very easy to fall into an either/or position on the lowcarb question, and it is easy to understand the impact of the network. To start searching the Internet for knowledge on this issue is like raising your head into the streams of constant health discourse. The question about carbohydrates is loaded with politics and it is rather complex because it is generally treated as an either/or question, while the reality is very situational. The National Food Administration seems to think it is important with a very homogenous conversation, a particular “line” to communicate. This is very much in line with Habermas’ communication theory. They have created a traditional discourse to fight the “unruly” conversation from the lowcarb network. The discourse fights the “anecdotal evidence” delivered by the lowcarb network by referring to a subset of research which the professionals in the lowcarb network in fact judge to be far from conclusive.

The collision between the establishment discourse and the lowcarb conversation has a platonic origin and it is dependent on the conversational technology used by the lowcarb network. The open feature of Internet conversations rewrites the very rules for conversation. “Serious” conversation and more rule-based discourses are swamped by floods of constant talk. Distilling the substantial data from this flow of talk is commonly called “information literacy”. Information literacy as knowledge is generally related to library professionals, but information literacy is also becoming more and more important in general literacy. To get inside a digital knowledge network such as the lowcarb network demands skills in information literacy. The importance of information literacy inside an Internet conversation is far greater than inside an Internet discourse. Conversations are unruly. This unruliness is the main property behind Gert Lovink’s assertion that blogging is a nihilistic impulse (Lovink, 2007). Unruliness destroys the hierarchical order of traditional discourses. In the lowcarb network, individual persons with only their body as empirical evidence have enough confidence to argue against the network of experts hidden behind the National Food Administration. This confidence can only be explained by looking at the lowcarb conversation as technoscientific phenomena. Internet technology is creating new epistemologies based on conversations where the traditional scaffold of hierarchies has been replaced by a flattening unruliness.

The LCHF network conversation is about storytelling and the storytellers are producers in a semi-professional research network. Their research is very polemic and political. They have an issue with the research done on bodily responses to carbohydrates

and fat, and they are not afraid to raise the issue. I do not think their tendency to go against the establishment is dogmatist. It is more like a community spirit raised by the particular conditions created by ICT technology during the 2.0 decade. According to various discussions, the low-fat/high-carb advocacy constantly repeated by the health establishment since the 1950s has been wrong/false. The networkers are producing data about themselves and semi-professional arguments about research reports, arguments against reports that seem to point in the direction of LFHC, and affirmation of reports that seem to support LCHF. The force and power in the LCHF network would not have been possible before the 2.0 decade. This “2.0 relation” between the persons, streams of language and technology creates a very obvious example of a semiotic-material network. The separate parts of the network are glued together by sameness power and a sense of producer responsibility for sharing experiences.

Conversations, and particularly Internet conversation, have a set of properties that are generally shared with discourses but work differently due to the basic structural property of unruliness.

### **The Rational and the Non-Rational**

The advent of the Internet is changing the balance between rational discourse and non-rational conversations. This change seems to be connected to the technology we choose.

Conversations and discourses often travel together. In physical political wars, as well as in intellectual wars, discourses and conversations are often intertwined, balancing each other, creating a necessary union between the formal and the informal. Looking back at the 2.0 decade, the trend is that formal discourses have a hard life in the stormy waters of conversational unruliness. If rational machines ruled the “old world”, it seems that the relation between the rational and the non-rational has become immensely more complex – in just a single decade.

Rational machines work within our rational power, while non-rational machines work beyond our rationality. I do not believe that non-rational machines are of a category other than rational machines. It has to do with degrees of complexity. The machine working when someone falls in love is too complex for our rational description machine. That is why machines such as ‘love’ can only be described by poetic expressions. It is also why new science always seems to fumble in the dark. We demand of theories such as the big bang theory or quantum mechanics that they should tap into reality and describe that reality as a truth of that reality. And while that may be true in a situational sense, there always seems to be something missing. A certain kind of machine always seems to be more complex than human rationality can comprehend. Humans have a limit in how we can perceive the world. This is the logical distillation of Donna Haraway’s concept of ‘situated knowledge’ (Haraway, 1991, p. 183ff). But the non-rational machine also points to the fact that we can perceive more than the rational tools lead us to think. Loving someone means perceiving that person in a way too complex for rational machines to manage. The same machines are working when we are talking

about “a love for technology”. Why affirm the thought of ebooks, while a friend does the same for paper books – considering the circumstance that the rational knowledge base is the same? If all arguments and knowledge connections concerning ebooks or paper books were transparent, we would still value those arguments differently, and we cannot really say why we hold either position. It just is. It is about how our desiring machine is configured.

An answer to this description of the world might lie in the Deleuzian balance between perception and becoming-imperceptible (Deleuze & Guattari, 1987). We know that our audio-visual perception is very limited compared to other animals or technologies, and still we think that ‘rationality’ is unlimited, i.e. rationality is universal. The idea of limitless rationality is what separates humanism from post-humanism. Post-humanist ideas are situated within the human limits. Rationality is a meta-tool for creating tools. Rationality creates descriptive tools such as logic and mathematics and we use these tools to make choices between different actions. But it is not the only way we make choices.

On the Internet, there are very large amounts of comparisons between different blogging platforms. Obviously, there is not “the” perfect platform for everyone. I am not sure that is possible. These comparisons often do a good job of distinguishing the different features that make a particular platform special. I have worked on many of these platforms<sup>4</sup> and can honestly say that the rational features of these platforms only have a relatively small part in my decision on which one to use. There have been times when one platform would have been the rational choice, but I have still chosen one of the others. I do not have a clue why. It just feels more like me. Some would say that this kind of choice is emotional rather than rational. This would be to divide the world into two parts, the rational and the emotional. A better explanation would be to say that my choice of a blogging platform was too complex for simple rationalizations. The relation between humans and technology is not solely rational. The whole situation created when using technology is too complex to be described in rational terms, and a concept such as ‘emotion’ is just a rather meaningless word we use to fill the gaps in our understanding. The conversation leading to a choice of a communication platform is more easily understandable, if I am making the choice as the representative of an organization. Then the abstract desire of the organization is supposed to overshadow my personal desire. This abstract desire located beyond the person is the same as the desire for ‘objectivity’ in research politics.

One of the main reasons for the emergent imbalance between non-rational conversations and rational discourse on the Internet is embedded in the way we choose to build the technology. For socio-economic reasons we choose to build it to suit non-rational conversations. That choice is embedded in the heart of our liberal-capitalist aesthetic. The rare cases of rational, digital discourse machines, such as the “scientific databases”, could have more conversational features but they choose not to because their aesthetic is tied to a hierarchical tradition. In that tradition, there is no place for unruliness. Therefore, the lowcarb network is an exceptional example where a traditionally hierarchical discourse has been embedded in a powerful context of unruly conversation.

## Sameness Power

Sameness power is connected to common sense thinking. It regulates the relation between difference and repetition in conversations and it creates the sense of togetherness.

Comparing my own Cold War situation when I grew up with the situation of Paul Tibbets can only be done on a commonsensical plane. It is not difficult for me to imagine his situation with the “savages” threatening to enclose the world with their “savageness”. This is how propaganda works and it does not say anything whatsoever about the actual people of Japan at this time. The 2.0 decade is actually beginning to change this unbalanced power of propagandists. The world is beginning to be more entangled, and the becoming of this entanglement is working as a power against nationalism, and fundamentalism. In a way it is simultaneously easier to find fundamentalism and fundamentalists, and thereby align oneself with them, and to connect to social activism against fundamentalism and fundamentalists. The world is shrinking and expanding at the same time. Paul Tibbets lived in an extremely isolated situation. He and his friends and colleagues in the 509th Composite Group probably had the world mediated, represented and performed in a very controlled fashion. One of the important realizations from the 2.0 decade is that this kind of control is becoming more and more impossible. When Tibbets says he does not regret anything, or that he sleeps clearly every night, it becomes a strange parallel to the Heidegger affair. My hypothesis is that it has something to do with a phenomenon usually called mindset, and that mindset in its turn has something to do with a power we can call ‘sameness power’. Sameness power is a machine regulating the relation between difference and repetition in conversations.

Sameness power is connected to common sense thinking. One thing I have learned from Gilles Deleuze is that common sense is not unproblematic, or only a virtue. One side of the coin is the positive, gluing power of social relations. The other side of the coin becomes some kind of body power, or body politics, to use a Foucauldian terminology. It is this sort of thing you have always known, but never really thought of – in this context, “you” obviously means some of us, not all of us. I guess this might be one of the processes that led Plato to form the idea that everything to be learned is already in place within. And this idea in turn led to the influential idea that learning is not a constructive methodology, but linked to the act of disclosing the “real” world. Common sense is important for social consistency, but its flow of daily repetition of the same affirmations and rejections is also something to break out from, and in Deleuzian thinking this is done by philosophy, art and science, not as disciplines, but as activities. To perform these activities, either separately or as interactions, is to enter the plane of complexity. Even if the plane of common sense and public opinion could be constructed as a body–power, it might be better to call it a sameness power. This power escapes the (common sense) subject–object myth since it is not fixed to a subject. It is a social power, acted out by everyone and none. It is the social matrix we constantly crave and seek to escape at the same time. Sameness power is important in creating consistency in the flow of differences, but to create complexities we have to resist the dormitive principle of this consistency. Used in this context, the dormitive principle



has two functions. First, to act as an ironic incision into the flesh of the discourse about the human subject, or mind; second, to show that the plane of complexity is not the same as philosophy, art and science viewed as disciplines.

The theoretical perspective of the dormitive principle originates from a frequently quoted part of Gregory Bateson's book *Steps to an Ecology of Mind*:

*Molière, long ago, depicted an oral doctoral examination in which the learned doctors ask the candidate to state the "cause and reason" why opium puts people to sleep. The candidate triumphantly answers in dog Latin, "Because there is in it a dormitive principle (virtus dormitiva)" (Bateson, 1972, p. xxvii).*

Bateson's discussion is about a tendency within science to assign an essence, the dormitive principle, to explain a phenomenon in a system. "And, characteristically, all such hypotheses are 'dormitive' in the sense that they put to sleep the "critical faculty" [...] within the scientist himself" (ibid). Here, Bateson put an emphasis on the act of criticism, to never stop questioning because the plane of complexity is an endless field of connections. But there is another approach to complexities, the affirmative, creative approach, less frequently acknowledged in theory today, where the focus generally seems to be on finding inconsistencies in each others' work. This affirmative, creative approach is a hallmark of the work of Gilles Deleuze. Nietzsche was another friend of affirmation in the style of writing and thinking.

Nietzsche would probably have looked suspiciously at me and asked if sameness power is not another word for his more derogative concept of slave morality. Not really, I would answer. Sameness power is an empty power. We could for example, decide to affirm difference with the goal of being as different as possible. We could use sameness power and decide to become a world of supermen in Nietzsche's ethical flavour. But generally, this power is used more as a sedation than inspiration. One devastating aspect of sameness power is when it acts as a magnet pulling ideas from the plane of complexity to the plane of common sense. This is more than obvious in all three practices of complexity, but I am also quite positive that the sameness power itself becomes more and more complex in the transition from the modern to the postmodern. It is difficult to speculate on what role the Internet will play in the future, how difference and repetition will be distributed throughout the network. The only thing we can be sure about is that both difference and repetition will be part of the game, somehow.

Sameness power can be the energy in common sense thinking, a mode of thinking based on repetition. It is the social power of Internet networks like the lowcarb network, but it is also the social power in rational discourses. In rational discourses such as the National Food Administration, methodologies are very rule-based and sameness power is the energy holding the scaffold together without too much disturbances during periodic storms. The difference leading to change is, in a way, controlled. A long array of factors is involved in the path to epistemological change. One study has to be confirmed through other studies, studies which are controlled by economic actors. And the actors have to be at the right level of the hierarchy. The sameness power leads to the fact that studies confirming the establishment view are easily adopted, while studies with an opposite result are suspect regarding their methodological circumstances.



The sameness power works similarly in unruly conversation networks but everything goes much faster. The sameness power is more fragile. Haphazard changes are a part of the daily life in non-rational conversations because they are not connected to the same linearity as in rational discourses. Rational discourses are embedded in a particular mode of development called 'progress'. Progress is a vertical movement from the lower to the higher, from hardly any knowledge to "full" knowledge. Sameness power is one of the most important mechanisms in the management of progress. In non-rational conversations, progress is distributed in small unruly movements without a general sense of knowledge accumulation.

Sameness power regulates the mode of 'togetherness' in conversations and discourses. In non-rational, unruly, conversations, the sense of togetherness is closer to what we are as 'persons' than to what we are as 'identities'. This is probably one of the main reasons why technology for non-rational conversations is spreading at the expense of technology based on traditional hierarchies.

## **A Battle of Discussion Modes**

A discourse has a start and an end. Conversations have connections and are principally endless. The Internet technology of the 2.0 decade preferentially supports conversations. The techno-social power of an Internet conversation can challenge established rational discourse in questions about knowledge.

To clear things up in the conceptual department, I use 'discussion' as a commonsensical wrapping for discourse and conversation. Rational discourse and non-rational conversations are different modes of discussion. Discourses are more rational, rule-based and conversations are more informal. Conversations can be embedded in discourses, but discourses are always embedded in one or several conversations. Conversations are endless since they cannot live by themselves. They are always connected to other conversations. Conversations are more closely connected to what we usually mean by "the social".

There are three main tools or scenarios for trying to end a discussion:

1. Proving something is right, which means the other is wrong. This finalizes, or dissolves, the discussion. It also transforms a conversation into rational discourse.
2. Using semiotic power to silence the other.
3. Using physical power to mutilate or kill the other which effectively ends all related discussions forever.

These three are not separate, but always entangled in each other even if one of them is more easily identified. The first is an "ideal" situation. It does not work well beyond easily justified sense-based facts and situated mathematics<sup>5</sup>. The first chapter of this essay contained a story about the crew of Enola Gay. The story tries to give a sense of the complexity in a scenario 3 where conversation is shut down. The style is more artistic than rational, because I do not think it is possible to give a rational account of this kind of complexity. The atomic bomb is the ultimate discussion stopper. If it is

used, it effectively kills all other viewpoints and malicious actions in a discussion, and if it is not used, it uses semiotic power to subjugate. It is the end of the scale between a conversational utopia and ultimate power, whether it is expressed or not. A conversational utopia would be a world where everyone could express themselves freely, without subduing anyone else. This is probably unattainable in any political system, but unthinkable or even contrary in a liberalist, capitalist economy.

A crucial difference between the 2.0 decade and earlier decades is the galloping transparency of public conversations. Technologies such as printing, radio and television were relatively easy to control before the 2.0 decade. But the Internet has trapped all other ICT expressions in a network of a constant input and recycling of data. Every node in the network is configured for the highest degree of attention at all times. The desire to feed the network with expressions seems to be inexhaustible. The post-2.0-decade media society will develop into an increasingly powerful conversation machine, driven by desire, attention, intensities and investments; managed by control and self-organization; operated by properties such as difference, repetition, distance and transparency.

The joint force in the contrarian knowledge politics of the LCHF conversation would hardly have been possible before the 2.0 decade, and certainly not during any kind of autocracy. The Swedish LCHF network is a mirror into the future of the politics of socially desirable knowledge. By socially desirable knowledge, I mean close distance knowledge as body knowledge. We will probably not see a large semi-professional network advocating for or against the “string theory” and if I am wrong, the contrarian view would be based on arguments related to matters of faith. Matters of faith are generally closer to us as individuals than most matters of science, and thereby trigger desire – and attention machines – more easily than more distant matters. In other words, closer matters such as health and faith are larger intensities than more distant matters. Yet another way to draw the picture is to say that larger intensities are more transparent in the context of public opinion. The LCHF network has picked up the largest possible intensity, besides matters of faith and love. But unlike love and faith, health is considered as a rational intensity. There are very tangible and socially acceptable myths of what health is and how to live your life to become healthy. Matters of love and faith are more “diluted”. We want love and faith, but we cannot agree on what it means to be in a relationship based on love and/or faith. They do not seem to be rationalisable. Love and faith seem to be embedded in the person and comparisons with other persons often lead us astray. Love and faith belong to the main subjects in the fields of artistic expression but rarely in discursive thinking, other than statistical expressions about “how many...”.

It is evident from experience that the gigantic impact of the lowcarb conversation was born in the very technology of the 2.0 decade, a technology built to support conversation rather than discourse. What is really new in the lowcarb battle is not the question itself. The really new feature is the incompatibility of discussion modes. Despite embedded discourse, the lowcarb network is basically a conversation trying to battle a rational, formal discourse. This might not be the first time in history, but the per-

formance is exceptionally due to its connection to social technology and it has huge implications for the virtual relations between discourse and conversation.

The story of the LCHF network is very important in epistemology and politics because it allows a peek into the future of knowledge politics as an embedment in public opinion. We are very far from “laboratory life” as a nice clean filter of neutrality and objective rationalizations that Bruno Latour and Steve Woolgar argued against (Latour & Woolgar, 1979). Epistemology cannot be isolated as a relation between a researcher, person and the knowledge. The 2.0 decade accentuated something we have always known: knowledge is a social phenomenon, at least regarding its usefulness. The Internet is rewriting our sense of distance, other persons are both closer and yet more distant at the same time.

I have not used the concept ‘conversations’ much in previous essays and it is clearly still a main concept in all of my expressions. The main reason is that all the concepts and figures I use are connected in a framework of meaning and, within that framework, all of the separate parts play different roles. ‘Conversation’ is the overall name, title or description of all earlier concepts and figures. Conversational attributes as figures and concepts are the epistemological tools of the framework coloured as aesthetic expressions. Rational discourse is really a mode of conversation, a mode in which the unruliness is structured into formal and informal rules.

As you might expect, I do not want to lock concepts of ‘conversation’ into a corral. It is more like an attribute of Deleuze’s ‘immanence’ than a variation on the Saussurean ‘la language’. It is deeply rooted in Donna Haraway’s idea of material–semiotic expressions as a deconstruction of platonism. My use of ‘conversation’ is also related to Richard Rorty’s advocacy of ‘edifying conversations’ instead of ‘truth’, insofar as I think that all conversations are edifying in a very profound sense and that ‘edifying conversations’ easily become a tautology. ‘Conversation’ is also very close to the concepts of ‘becoming’ and ‘learning’. To shut down a conversation abruptly as in the emphatic example of Enola Gay effectively cuts off a network of virtualities. We do not know if some of those virtualities would have led to a better world, from any location. But everyone involved in the Enola Gay affair knew that the act of wiping out a large city with nuclear weapons was extraordinary in every sense of the word. This act created a very large and deep scar in the virtual world of future potentiality.

The conversation produced by the LCHF network is not a war in the same semiotic family as World War II or any other armed conflict, but it is not as far away as you might think. The LCHF war is actually beginning to fade away now at the end of the 2.0 decade. The material–semiotic war between LCHF and HCLF had a serious boost in 2005 when blogs and community systems started to grow on the Internet, but it was also in 2005 that two dietitians reported the physician Annika Dahlqvist to the Swedish National Board of Health and Welfare for practising medicine beyond “science and well-tried experience”. The investigation took more than two years, but in January 2008 the National Board came to the following conclusion:

*Diarie(Journal) number: 44–112267/2005*

*Regarding licensed physician Annika Dahlqvist's advice concerning "Carbohydrate Tight" diet. In regard to weight reduction and "wellbeing" documented in a background material covering Low-Carbohydrate diet.*

*Question: Is this treatment in accordance with science and well-–tried experience?*

*The answer to this question is yes, reserving the fact that the scientific basis in the form of randomized controlled trials is much narrower than it is regarding diets with a higher content of carbohydrates and that long term trials (> 1 year) are lacking.<sup>6</sup>*

I think that this conclusion is a small part of an international trend where we "think about the amount of carbs" rather than fat, which had been the real "danger" since the fifties. I also think that the international lowcarb conversation in the 2.0 decade changed the cemented view of fat as the only villain in the ongoing health discourse. "Contrarians" like Annika Dahlqvist and the huge number of real persons in the LCHF network might be biased agitators in the eyes of the establishment. However, media-based clusters like the LCHF network might be necessary in the methodologically difficult task of changing stale, authoritative, tradition-based conversations.

We cannot say, from any of these examples, that conversations are ends in themselves. Both Enola Gay and the LCHF network examples are in a sense about self-defence, both on a personal and a social level. Self-defence in a wide sense is the single most frequent justification for violence in all kinds of storytelling through time and space. What am I allowed to do if someone threatens me – in a moral sense? What are Green Peace activists allowed to do, in a moral sense, when their planet, and so they themselves – are becoming osmium? I think the most dangerous action we can take against a conversation is to kill it. Conversations must be given as much space as possible and the possibility of changing always has to be in our situated mindset. The technology of conversations is fundamentally about aesthetics in the form of choice-making processes.

This thesis is a network of aesthetic processes based on long and intense periods of Internet producage. In all this experience, one particular idea emerges as a distillation of all the others: conversations are "naturally" entangled. They do not have a start and end like rational discourses (are supposed to have). They have connectors. The task of creating conversation connectors is the distilled meaning of philosophy, science and art. Conversations are the wrappings of rational discourse. Therefore, the 2.0 decade has been an important experience for the fabric of future conversation.

## Endnotes

- <sup>1</sup> A public domain photo of Enola Gay, [http://commons.wikimedia.org/wiki/File:B-29\\_Enola\\_Gay\\_w\\_Crews.jpg](http://commons.wikimedia.org/wiki/File:B-29_Enola_Gay_w_Crews.jpg), viewed: 2009-11-18
- <sup>2</sup> Edward Munch's "The Scream" is one of the most well known of modernist paintings, <http://www.edvardmunch.info/munch-paintings/munch-paintings/The-Scream-1893-2.asp>, viewed: 2009-12-08
- <sup>3</sup> BBC News, <http://news.bbc.co.uk/2/hi/americas/7073441.stm>, viewed: 2009-11-18
- <sup>4</sup> I am referring to CMS based platforms such as wordpress, b2evolution, Textpattern, Joomla, Movable Type, and Drupal; hosted solutions as Wordpress.com, Blogger, Typepad, Tumbler, etc.
- <sup>5</sup> By 'situated mathematics' I mean the rules inherent in a mathematical system.
- <sup>6</sup> The whole letter can be read in an English translation, [http://blogg.passagen.se/dahlqvistannika/?anchor=socialstyrelsen\\_lchf\\_är\\_i\\_överensstämmelse](http://blogg.passagen.se/dahlqvistannika/?anchor=socialstyrelsen_lchf_är_i_överensstämmelse), viewed: 2009-12-18. The original Swedish registration, <http://pagina.se/filer/SocvsDahlqvist.pdf>, and the official conclusion from the investigation, <http://pagina.se/filer/berneyttrande1.pdf>, viewed: 2009-12-18.



## Epilogue

I have written a thesis I would want to read myself – and have dearly missed – in a transdisciplinary context/discipline (Gibbons et al., 1994, p. 29) or a postdisciplinary context/discipline (Lykke, 2010) like technoscience. It is written based on the process of “thinking” and practising technology and epistemology, academic traditions as well as my own experience as a person who has been entangled in the birth of the Internet.

Entanglement is a process where relations are becoming increasingly complex, connections growing into each other and becoming more or less inseparable. In this thesis, the main entanglement is between humans and computers. Computers have always been dependent on humans, but humans are starting to become complexly dependent on computers. This dependence creates an increased opaqueness in the relation between humans and computers. It is not difficult to imagine a future where the border between humans and computers are more than fuzzy.

There is a particular point of “difficulty” in this thesis. In the eyes of many (or most) potential readers, I will be considered as some sort of expert in both philosophical thinking and ICT, which has always presented the problem of “who am I speaking to”. This problem is quite common in transdisciplinary writing. The only way I can handle this is to direct the text to someone like myself with a lot of sacrifices to make it accessible for a wider audience. Directing the text to someone “like” yourself might seem self-centred, but that is only if you see yourself as original. If you see yourself

as a personal assemblage, you know that no one is the same and no one is completely different. Directing a text to yourself is the same as directing it to others. The “others” are just not as transparent as if you have a defined group of persons in your mind. The persona (see *The Cyborg Singularity*, essay 2 “iBecoming–Cyborg I: Meeting the Monsters”) I direct the thesis to could be called the conversational persona of the thesis.

The conversational persona is not only influencing the contents or “stuff” the essays are made of, it is also affecting the style of writing. I read texts more as conversations than as discourse, and I think more (not all) academic texts should be written in that way, and especially within areas touching the complex zone between humans and our technology.

My contribution is not a sensational discovery, nor is it an important rational confirmation of things we “know” informally. This thesis does not even play the same game as these two common expressions of knowledge, and I do not think it should. The contribution of this thesis is more about creating a fine net of “points” open for entanglement. It is about aesthetics as epistemology, about theorizing and practising as a whole. I hope this thesis will contribute interesting and useful locations for entanglement outside the plane of common sense, but still within the consistency of the lived experience we call technoscience.

The 2.0 decade was exceptional. The Internet changed from a flow of “information” to a matrix of intersecting communication. The future swerved. The virtualities of the Internet from the 90s promised yet another media technology. The virtualities created during the 2.0 decade have changed the game. Now, the Internet promises to become something closer to the very fabric of the social. The face of this 2.0 virtuality might be interpreted as a monster or an angel, but hardly “just another” Information and Communication Technology (ICT). I hope my contribution can participate in entanglements leading to something closer to angels than monsters...



## **Appendix I – About Social Technologies**

Appendix I is the prologue from my licentiate thesis in 2006. The purpose is to give a background to social Internet technologies and my own road to the 2.0 decade.

The following story is about me and my way to the concept of Web 2.0. In this story there is a thread you could call the history of Social Software. The thread begins in the 1940's and ends in the Web 2.0 concept. It is not my goal to give an exhaustive and neutral history.

In his article *Tracing the Evolution of Social Software*, Christopher Allen traces the start of the evolution of social software with Vannevar Bush's vision of the memex machine (Allen, 2004). Bush wrote: "A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory" (Bush, 1945). Bush's words sound like my own effort to store all media in my computer. In 1945 though, media was mostly books, since the music and film industry were just in their infancy and computer games, audiobooks and the Internet-era's mountain of documents were still far away. It is interesting to note that the hardest thing to store is in fact books. One reason is difficulties in finding an acceptable DRM-model for e-books; another has to do with our endemic habits related to our long love for the book as a thing and not only a channel for information and knowledge. Few of us can imagine curling up in the sofa by the fire with a computer and some sort of a reading device instead of the good old idea of a book we love so much. Still, media is a very important factor in social software, as much of the socializing is about communicating navigational structures to different kinds of media. Books are still the black sheep of digital media. All efforts so far have failed to integrate books – on a large commercial scale – in the family of digital media.

But now – at the beginning of 2006 – we might be on the verge of a paradigm shift in the distribution and reading of books. The success of the iPod concept has inspired Sony to do something similar in the world of books (Helm, 2005). The reason I have for my belief is due to several different, but cooperating phenomena. In a technical perspective there is an emerging technique called E-ink, which promises great things for the printing industry. The E-Ink technique creates text by electronically arranging thousands of tiny black and white capsules, creating an experience remarkably similar to reading a printed page. The only time it drains power from the battery is in turning pages, which means a battery will last for a very long time – Helm says 15 books. In a social perspective we have a generation with new, digital habits. For them, the e-book is probably going to be a natural step in the evolution of digital media. The rest of us will also cave in to the digital alternative, since computers and other communication technologies have grown to be a big part of our lives, compared to just five years ago. Lastly, we have the iPod marketing experience fresh in mind. The iPod – iTunes distribution chain has succeeded in a great task in convincing buyers that their new digital product has ‘invisible’ benefits compared to the old analogue one, despite some seemingly convincing advantages for the analogue product – you can rip it to your computer and have a digital copy free of any restrictions. The price, though, is a heavy argument here. In Sweden, in January 2006, a digital CD costs approximately 50% of the price of a CD in one of the cheaper Internet shops. This price depends on the competition with iTunes which arose in the digital music industry around the turn of 2005/2006. Helm says e-books in the Sony project are going to be priced like a mass market pocket book, and the reading device will be at the same price level as the iPod. Only time will tell if this project is going to find the key to unlocking the consumers’ good old reading habits. We could talk about a new era when digital book sales surpass the sale of the more than 500 year old Gutenberg book, though it is not impossible that the role of the text has already passed and that the future belongs to other narrative forms. In twenty years or so, a thesis might not consist of a single letter. Perhaps new academic forms will develop with images and voices as a point of departure.

Books and other traditional text formats have always played a big role in the evolution of social software. Books are the blueprint for storing information and communication. Sending letters is the blueprint for long distance communication. Books and reading experiences, along with music, film and games, have always been an important subject in the messages of social software. I have dealt with e-books since the end of the 1990s.

Returning to the 1940s and Vannevar Bush’s memex device, there are parts in the text reminiscent of social software and the hypertext nature of the Internet:

*Wholly new forms of encyclopaedias will appear, ready-made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified. The lawyer has at his touch the associated opinions and decisions of his whole experience, and of the experience of friends and authorities. The patent attorney has on call the millions of issued patents, with familiar trails to every point of his client’s interest. The physician, puzzled by his patient’s reactions, strikes the trail established in studying an earlier similar case, and runs rapidly through analogous*

*case histories, with side references to the classics for the pertinent anatomy and histology. The chemist, struggling with the synthesis of an organic compound, has all the chemical literature before him in his laboratory, with trails following the analogies of compounds, and side trails to their physical and chemical behaviour (Bush, 1945).*

Bush's term 'memex device' never gained wide acceptance and the whole concept was way before its time. After Vannevar Bush, Christopher Allen jumps to the 1960s and the rise of ARPA (Advanced Research Projects Agency; formed in 1958), which later formed ARPANET, which in its turn led to the Internet. In 1962 Dr. J.C.R. Licklider was appointed to head ARPA. He was going to have a profound influence on the emerging academic subject of computer science. In the article *The Computer as a Communication Device*, Licklider says: "There has to be some way of facilitating communication among people without bringing them together in one place" (1968). This single sentence says much about the last 50 years of endeavours in the field of computer technology.

In Sweden we had an education subject called ADB (Automatisk Databehandling), which means Automated Computer Processing. The subject was called ADB from the early stages of computer science to the Internet age in the middle of the '90s – the subject is still called ADB in some educational institutions. The concept automation originates from the ARPA researcher Doug Englebart's concept of 'augmentation' from his seminal work: *Augmenting Human Intellect: A Conceptual Framework* (1962). In the introduction, he explains augmentation: "By 'augmenting human intellect' we mean increasing the capability of a man to approach a complex problem situation, to gain comprehension to suit his particular needs, and to derive solutions to problems" (p7). Engelbart was among the first to argue that in order to design tools for augmenting the human intellect we must integrate psychology and organizational development with advances in computing technology. This interdisciplinary approach disappeared later when the term 'augmentation' became 'office augmentation' and later in the '70s 'office automation' (Allen, 2004).

"Yet the number of successful product lines bearing the tag 'office automation' did mean that there was increased research money for creating new tools. One of the most important was a project called Electronic Information Exchange System (EIES). [...] EIES was the first major implementation of collaborative software" (Allen, 2004). In the paper *Delphi Conferencing: Computer Based Conferencing with Anonymity* (Turoff, 1972), the founder of EIES, Murray Turoff, describes the system in terms reminiscent of modern collaboration systems: threaded–replies, anonymous messages, polling, etc. Though Turoff envisioned something similar to modern collaboration software, it was in the '80s that the implementations took off to form today's conception of social software. In the late '70s Peter and Trudy Johnson coined the term 'groupware' as "the combination of intentionally chosen group processes and procedures plus the computer software to support them" (Johnson–Lenz, 2006/1989). The term groupware existed basically in academic settings until the end of the '80s, when Robert Johansen wrote the best–selling business book *Groupware: Computer Support for Business Teams* (Johansen, 1988). The surge from the book transformed the

concept of groupware from a relatively unknown term which only lived in certain academic contexts, to a buzzword in marketing and in a broad techno-sensitive public. This led to an interest in the concept from companies such as Lotus and Microsoft; both Lotus Notes and Microsoft Outlook have been called groupware. You can keep that in mind when you read about the concept of Web 2.0 below.

In the 1970s there was the Electronic Information Exchange System (EIES). According to Christopher Allen, EIES was the first major implementation of collaborative software (2004). EIES had many of the features of BBS-style community software that we see today, but in a primitive form.

From my viewpoint, it was in the 1980s that everything happened at once. The PC was introduced to the world. Groupware continued to evolve. New social software approaches were developed, among them a technique called 'collaborative filtering'. The term was not actually expressed before 1992 – that I know of. It was coined by Dave Goldberg and his colleagues at Xerox PARC (Goldberg, Oki & Terry, 1992). It was also in the 1990s that the technique became known in a wider context. With collaborative filtering, we have the real starting point for the Web 2.0 concept. I will follow this line of development soon, but first I want to introduce my own starting point in the world of computers.

It was in the 1980s that the computer became a real concept for me. The first computer I owned was an 8088 PC at the beginning of the 1980s. This was the time just before the hard disk and the computer mouse. Advanced computer graphics was two lines crossing each other on the black screen. Still, this PC was sensational. Earlier I had used computers such as Commodore and ABC 80 and older persons I knew talked about computers with the software on punch cards. By comparison with that, my PC seemed very advanced. My interest focused on art and literature in those days, and in some way I had persuaded myself that a computer would add something to these activities.

My approach to literature was to follow certain concepts through one or several authors' work. In literature research these concepts are called themes, motifs, symbols or metaphors. It would be splendid to get masses of text into the computer and do comparable searching to find spots for closer reading and thereafter find relations between different concepts over space and time. As if this was not enough, I wanted to find a way to transfer my interest in oil painting into the computer. When I had spent some time with this PC I understood my intentions were a nice idea, nothing more.

The next generation of computer I owned was called 286, after the processor name. Now the computer had a mouse, hard disk and a rudimentary Windows. This was the first computer I worked on which could deliver things I did not have to program myself – although objectively speaking this was not true. Perhaps the 286 computer at the end of the 1980s is the first in the generation of computers we are using now in 2006. Only 15–20 years have passed and now I feel strongly that we are on the verge of a new step in the man-computer evolution. This step is based on a wide array of things. Some of these things are about hardware and software, but the most important

things are about people. Using distance as metaphor, you could say that the distance between man and computer has been closing up every year since the first computer was “born”. I use the term ‘cyborgization process’ to describe this closing gap between man and computer. I feel quite convinced that some day man and computer will be integrated. I am not sure the integration will be physical, though. I do not think our skin and the air around us is such a strong border as you might believe. I do not think a tool is more me just because it is operated in my hand and connected to my brain. I do think feelings like love, joy and passion are at least as strong connectors as artificial connections to my brain.

In the middle of the 1990s I went on a new journey with my travel mate, the computer. I discovered the path I am on right now; the path of Web 2.0. This was almost ten years before the concept of Web 2.0 was coined. Still, the concept I met was to be the core in Web 2.0 – collaborative filtering. Collaborative filtering is basically a set of algorithms, which use people’s choices, habits and paths to create recommendations. If I show the system I like a certain music artist, I might get recommendations on similar artists. The point of collaborative filtering is to create relations between users with similar preferences in order to present recommendations.

I saw, and still see, collaborative filtering as the start of a hybrid entity comprising flesh, metal and metaphors. I saw collaborative filtering entities turning into a completely different way of life in the near future. After a time, these rather romantic notions were divided in two streams – one stream of praxis and one of theory. These streams were intertwined but none the less distinguishable. One led to a more user– oriented urge to use these practices in my daily life and one stream led to a more epistemological interest. These streams are still alive in this thesis and you will notice them.

Two of the many articles triggering my interest were David Maltz’s and Kate Ehrlich’s *Pointing the way: active collaborative filtering* (Maltz, 1995) and *Running Out of Space: Models of Information Navigation* (Dourish & Chalmers, 1994). Dourish and Chalmers led to the next step in my evolution towards Web 2.0. It is not about collaborative filtering, but ‘social navigation’. These two subjects lived parallel lives for many years, and still do to some extent. My notion of the difference between these two computer science subjects is that they are two sides of the same coin. Collaborative filtering has evolved to be mostly about mathematics and programming, while social navigation is mostly about interface and collaboration research (HCI, Human Computer Interaction, and CSCW, Computer Supported Cooperative Work). Since I do not have disciplinary knowledge about these academic subjects, it is self-evident that these thoughts are only my personal view. Especially social navigation is an interdisciplinary research subject, which also includes actors from information science, artificial intelligence, social psychology and so on. The book *Designing Information Spaces: The Social Navigation Approach* (Höök, Benyon & Muro, 2003) gives a very good overview of the field.

Both collaborative filtering and social navigation are at the core of the Web 2.0 mindset. But after some time I felt stuck. I could not find the political, ideological dimension

I needed to nurture my interest. This was in about 2002–2003. At this time I started my graduate studies in Technoscience Studies at Blekinge Institute of Technology. I already worked as a librarian at the same university college and my aim was to find a form for these practices to act together in some way. It was more difficult than I could imagine but this difficulty was only inside me. Both the Library and Technoscience Studies are into horizontal thinking. The transdisciplinary approach at Technoscience Studies was one of the things that attracted me most about going into graduate studies.

The first text I read in my graduate studies was Donna Haraway's book *Simians, Cyborgs and Women* (Haraway, 1991). This book includes her most famous texts *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century* and *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*. These articles are among the first of Haraway's major publications and they are still the best known. They have received wide recognition and both articles are published on the Internet. These articles echoed in me and found epistemological friends among other thoughts in philosophy and literature I had pondered on many years before. The Cyborg figure and the thought of knowledge as situated are still two of my dearest companions.

The next concept in my evolution towards the Web 2.0 concept was folksonomy. This was sometime around 2004/2005. At first it passed me by as an interesting phenomenon, but it did not really sink in. But somewhere by the end of the summer of 2005 I saw the word briefly written in a mail from one of my colleagues (Thanks, Anna!). It triggered something in me, even though I hardly remembered what it meant. Folksonomy belonged to the same context as collaborative filtering and social navigation, but it had what I was searching for – ideology and politics. It was about democracy and non-hierarchical thinking. I will return to folksonomy in more detail later.

Directly after I started to do research about folksonomy I bumped into the concept of Web 2.0. Web 2.0 engulfed the concept of folksonomy, but contained even more exciting possibilities. Web 2.0 is what I wanted collaborative filtering and social navigation to be, but could not find in those concepts. It is a new way of thinking about information, knowledge and people. I am quite sure it will change the view of many of our most dear concepts such as the document and the file, but it will also have an impact on more profound questions such as what is a human, what is identity and what is knowledge.

Finally in this foreword some words about knowledge production. I want my knowledge production to be created in application (and implication) contexts, and not in a framework of social norms. I always had trouble understanding the term method, since I interpret it as "how" in the context of a particular situation, and not "how" according to a readymade framework. In this understanding, the concept of transdisciplinarity is essential. This is important for the understanding of my work. The concept of transdisciplinarity does not only address academic disciplines. It is also questioning borders between academic settings and the society we are integrated in. Knowledge wants to be free. Knowledge does not want to be contained within borders like this. I do not

believe that traditional borders and frameworks produce better knowledge. Neither do I think established methodological frames can filter knowledge from unnecessary context. Context is rarely unnecessary and points of context can only be removed by addressing the context as a whole. Knowledge production should be distributed by thinking of society as an integrated whole and not as separate part like government, industry, academe and sub-parts such as natural science and social science. Transdisciplinary is both a working layer and a distribution system for knowledge (Gibbons et al., 1994, Nowotny et al., 2001)





## Appendix II – Web 2.0

Definitions are means to end discourses; someone in power is telling those with less power that the discussion is over. Since language always changes, there is no way to stop a concept in time and space from changing, from developing. All definitions are therefore situated in the context belonging to the person or the organization standing behind the definition. As long as we do not take definitions too seriously, they can be valuable as building blocks in one's own idea of a concept. With these words in mind, you might get something out of these short definitions of the concept Web 2.0

*Web 2.0 is a series of best practice oriented to assist people in creating dynamic websites, which allow them to easily connect with various communication, services, social and web tools. That is the foundation of what web 2.0 is (Mann, 2006).*

*Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences (O'Reilly, 2005a).*

If we picked out the keywords (or tags) from these definitions, we would get a starting point for a wider discussion about the concept.

Web 1.0		Web 2.0
DoubleClick	-->	Google AdSense
Ofoto	-->	Flickr
Akamai	-->	BitTorrent
mp3.com	-->	Napster
Britannica Online	-->	Wikipedia
personal websites	-->	blogging
evite	-->	upcoming.org and EVDB
domain name speculation	-->	search engine optimization
page views	-->	cost per click
screen scraping	-->	web services
publishing	-->	participation
content management systems	-->	wikis
directories (taxonomy)	-->	tagging ("folksonomy")
stickiness	-->	syndication

Figure 1: Brainstorming session between O'Reilly and MediaLive International (O'Reilly, 2005b)

The concept of Web 2.0 was coined at a conference brainstorming session between O'Reilly and MediaLive International 2004 (Figure 1) (O'Reilly, 2005b). The background was a discussion about the dot-com bubble in the fall of 2001; in what way it was a turning point for the Web. They noted that, far from having "crashed", the Web was more important and had more users and more exciting applications than ever. The companies surviving the dot-com collapse seemed to have certain parameters in common, which led to the thought that the dot-com collapse could have marked some kind of turning point for the Web, and the new things rising from the ashes of the phoenix, could be grouped and called Web 2.0 as a contrast to the companies existing before; which then would be called Web 1.0. The agreement among them led to the Web 2.0 conference. Since then the concept has grown enormously. Searching Google on the phrase "Web 2.0" on 28 January 2006 gave 33.5 million hits in the English, Swedish, Danish and Norwegian languages.

The chart in Figure 1 is not a dichotomy. The boundary between them is loose and some of the phenomena depicted in the left column have one or more characteristics in common with those on the right hand side. In some sense, it reminds me of the many charts of the border between modernism and postmodernism. The similarity is not only because both of them are boundary descriptions between certain phenomena which can be thought of as the old way and the new way, but because some of these phenomena coalesce. There is, for example, a basic thought of decentralisation in both Web 2.0 and postmodernism in relation to their counterparts. Loosely, one could say Web 2.0 is the postmodernity of the Internet – though that relation has to be taken with a pinch of salt.



Figure 2: DoubleClick, <http://www.doubleclick.com/us/>.

DoubleClick is one of the main players in Internet marketing. They harness the power of software as a service and were developing Web services long before the concept got its name. But according to Tim O'Reilly they are ultimately limited by their business model. DoubleClick's business model "bought into the '90s notion that the Web was about publishing, not participation; that advertisers, not consumers, ought to call the shots; that size mattered, and that the Internet was increasingly being dominated by the top websites as measured by MediaMetrix and other Web ad scoring companies" (O'Reilly, 2005b). Their website contains a proud announcement of having over 2000 successful implementations (Figure 2); by contrast, Google AdSense has, according to O'Reilly, hundreds of thousands. Google themselves mention the number 150,000.

DoubleClick's word "implementations" and O'Reilly's and Google's information about Google AdSense might not be completely comparable. Companies like DoubleClick stand for the intrusive ads jumping upon the Internetians (people inhabiting the Internet), in the shape of banners and pop-up windows, while Google AdSense stands for the context relative text ads sneaking upon you practically everywhere on the Internet. There is a way to compare these two in an evaluating way, perhaps besides the implementation statistics above. For me as an Internetian they are both, perhaps, necessary but still annoying obstacles in my quest for knowledge. Banners and pop-up ads distract my attention, but they are at least honest. Google's strategy is more devious. Often it is hard to separate the information on a page from spam – advertising is of course a form of spam. Still, I do not believe in an entirely non-commercial Internet. The commercial and open source movements have to coexist and the best commercial services are even able to make these concepts coexist within their own business models, such as Amazon.com with their layer of user participation.

Ofoto is a photo gallery (since 2001, Kodak Gallery) according to the streamlined model: "upload your photos and share with your friends!" The whole idea with Kodak Ofoto is to sell prints – and in a wider sense than marketing. They have not really invited their users to participate in the same way as, for example, Amazon.com, and their service is encapsulated besides the most obvious functions such as viewing pictures other people want you to see. Flickr, now a Yahoo company, is mainly about participation. One could view Flickr as a photo-sharing community. With tagging, comments, blogging possibilities, community-building tools, RSS and other connecting technologies, Flickr is one of the best examples of Web 2.0.

As a single example, Britannica Online vs. Wikipedia is striking. Britannica online represents the formal experts' absolute power over the masses, and absolute control over the information they distribute. Britannica online has inherited the soul of Diderot and the other French encyclopaedists at the peak of the enlightenment; a perfect hierarchy with the knowing experts at the top of the human pyramid and the rest of the people as ignoramuses. In the eighteenth century this was quite true, and nowadays and forever, I suppose, there is some truth in it. The difference now, however, is that information and knowledge is distributing itself in non-traditional ways. Perhaps it is not appropriate to give knowledge the role of a self-organizing entity, but the fact is that the distribution of knowledge is more "distributed" now in the information

era than ever before (Nowotny, 1993). There are people out there with astonishing knowledge in areas earlier generations would ascribe to none but academics – just because I have a bachelor's degree in Literary History, this does not mean that I know more of the works of James Joyce than the person who vacuums my office. It is not even possible to talk about autodidacts any more, due to the shifting views in both pedagogy and accessibility of information. These shifting views give non-academics and non-experts, (formally), the same information as experts have, and possibilities to connect to academic networks without being an academic.

Wikipedia is the ultimate image of trust. On the other hand, it is important to understand there is more to it. Wikipedia has a sophisticated version of a management system. As soon as someone posts something disagreeing with the collective intelligence guarding the interest of the Wikipedia knowledge community, it is placed in a kind of knowledge limbo. If it is a clear piece of abuse, or likewise, it is simply erased, sending the former state of the article to the front. Wikipedia has many problems, and probably more to come, but it is one of the best examples of participation, harnessing the collective intelligence, and thus one of the most significant examples of Web 2.0.

One of the most buzzed words on World Wide Web is blogging. O'Reilly (2005b) places blogging as the Web 2.0 contrast to the personal home page. Many of us who remember the first years of the World Wide Web recall the hits we got searching AltaVista or Lycos. I remember stumbling on fearsome examples of personal home pages with appalling “undesigns” of people's first steps in the creation of a home page for the family, or the counterparts by small companies. It was a time when design and content often seemed to choke under their own weight. Blogging is both a reaction against that and in some sense a reinforcement of it. In general thought, it might be seen as a pure communication and knowledge gaining tool, leaving the design to experts. Home pages have always been a kind of bulletin board with information shaped by short but effective traditions on the World Wide Web, such as an “about page”, a “link page”, etc. Gradually it became more and more disgraceful, or even shameful, to have a personal home page of the kind we saw in the beginning of the World Wide Web – i.e. private homepages with pictures of your kids, the dog and the Volvo, and so on.

And then everything seemed to be reversed. Suddenly we saw the private sphere taking its place in the media, and many Internetians started their own diary, trying to put the private sphere forward to the public. Reality TV built some kind of bridge between the stars and “ordinary” people, showing stars just like you and me, and that you and I could be a star, without having some kind of expertise or being born into the right context. We seem to leave the diary age, when it comes to blogs anyway, establishing ourselves as knowledge fighting people striving for the right to our own voice in the knowledge society. Most of the diary bloggers in early 2006 are journalists in “show business” trying to find their own voice in this sea of extremely relevant voices. The blogging community starts to gain relevancy in both journalism (this is quite well known) and in academic circles (this is not quite so well known). The academic community will probably change a lot in the coming years because the boundary between the more intuitive blogging and the regulated academic contexts is going to be blurred.

My own behaviour when it comes to reading blogs, does not follow any bloggers as persons. I have several applications helping me to harvest the more interesting parts of the academic blogging community. It stands to reason that most academics could not create showers of daily deep-thoughts. Because the blogging communities demand almost daily activity, it also stands to reason that only a part of their postings are up to normal academic standards. And still I constantly stumble over blog articles which could easily be taken as academic with a little more attention to the reference management.

The most striking phenomenon in O'Reilly's Web 2.0 illustration is, perhaps, participation. Participation in various communities, and in various ways, all over the world, is certainly some kind of road to the future. By participation, I mean communication within some of the many communities on the Internet. It might be a person blogging current topics or reviewing books on Amazon.com, or it might be a person searching in a price comparison community to save some euros on a certain product. Participation is becoming the soul of the Internet. Perhaps you could say that an Internetian is valued by the degree of his participation, instead of his wealth, clothes, etc.

The last phenomena I am commenting in O'Reilly's chart are stickiness and syndication. Web syndication is a form of syndication in which a section of a website is made available for other sites to use. Syndication usually means the possibility to subscribe to the information flow of a website via RSS feeds. Syndication started in the blogging community but had now spread to most big Web sites and practically every CMS (Content Management System) has implemented RSS syndication. One way to use syndication is to read the information flow from several websites in applications called RSS aggregators or RSS readers. RSS feeds can also be used to build applications based on the information from the feeds.

Stickiness is a Web marketing term used to measure the amount of time spent at a site over a given time period. A website with stickiness as a point of departure is like a spider's web, where the whole point is to catch the prey. It does not have to be a conflict between stickiness and syndication, but now, at the beginning of the Web 2.0 era, it seems difficult for commercial companies to balance their information flow. Amazon.com has a form of syndication where it is possible to use their album covers in other applications. Practically all commercial newspapers have syndication services for their articles, which makes it possible to read small parts of each article in RSS readers. RSS services still have to find their place in the commercial part of the Internet.

A website often mentioned as some kind of symbol for Web 2.0 is Delicious (<http://del.icio.us>) – often together with Flickr. Delicious offer syndication to practically all information on their site, which has led to a large amount of applications and services, built on top of that information. Delicious' context (users, links etc) is becoming enormous due to their generous syndication policy. In the middle of December 2005 Delicious was acquired by Yahoo, who earlier that year had also acquired Flickr. Both of these acquisitions are interesting phenomena since Yahoo themselves had services in the same branches as Flickr and Delicious. At this time Yahoo has owned Flickr

about ten months and I cannot see any negative consequences. Yahoo's actions with Delicious and Flickr will have large effects on the future of the Web. For example, will Yahoo let Delicious and Flickr remain as stand-alone services or will Yahoo try to integrate them more in the Yahoo family of services? You can see it as a commercial actor buying two of the largest open source communities. How will they integrate these two actors into their business model? Flickr and Delicious have survived by being bought by Yahoo, but if they do not generate any money, what is their base of existence for a commercial actor?

Looking a bit closer at Delicious and their Yahoo counterpart (Yahoo Bookmarks), the differences are mostly about Yahoo's reluctance to let the information out of their sight. Yahoo had a Web bookmark service, according to the Web 1.0 model, for some years, called Yahoo Bookmarks. But in the middle of 2005 they decided to surf the wave of the Web 2.0 concept and launched an application called "Yahoo Web 2.0 Beta". This is not a bad application and some of its functions surpass the functions in Delicious. The most fundamental difference between Delicious and Yahoo's Web 2.0 Beta is that the former views the Web as a platform for cooperation, community building and openness, while the latter still remains in the Web 1.0 container thinking: the Yahoo family container of applications and services. Yahoo Web 2.0 Beta has no export functions (January 2006). It is easy to import your bookmarks to Yahoo but it is more difficult to let them out of their container. They are not willing to take the risk of you switching bookmark application and importing your Yahoo bookmarks into the new application. This view means they have misunderstood, or more likely, misused the concept of Web 2.0. They have tried to copy the concept when it comes to the ajaxian user interface (more of that later), but missed the soul of the Web 2.0 concept. It will be interesting to follow their strategy with their two real Web 2.0 applications. Will they try to containerize these applications or will Delicious and Flickr influence Yahoo to create a balance between stickiness and syndication, a business model where user participation is a valuable layer in their information strategy, and not only a target for marketing?

The line of argument above calls for some reflections:

- Yahoo is not the only Web 2.0 application remaining in some sort of container thinking. Many companies fall into this trap.
- Perhaps you cannot blame them for trying to keep their customers. Containing your customers is a standard way of keeping your customers, according to some business models. An example is mobile phone operators. They are giving away phones for free if you sign an agreement for 12 or 24 months, and you often have to pay to unlock your phone for other operators.
- We do not know if the Web 2.0 business model works yet. Only time can tell.

Web 2.0 cannot really be defined. It stands for a kind of paradigm shift on the Web. In this case we are talking about a paradigm light, because this is not a new set of thoughts replacing the old ones, as in Tomas Kuhn's sense of the concept (Kuhn, 1996). I will use the term mindset, instead of paradigm light, to denote the Web 2.0 phenomenon. Figure 3 shows a "meme map" loosely created after an illustration in O'Reilly's article

What is Web 2.0 (O'Reilly, 2005b). It shows core parts of the Web 2.0 mindset. I will return to many of these phenomena below.



Figure 3: A “meme map” loosely created after an illustration in O'Reilly's article What is Web 2.0 (O'Reilly, 2005b)

## Main Concepts

There are four concepts building the main structure of Web 2.0. The Web as a Platform and the Ajaxian Interfaces are about the environment and construction technologies; Collective Intelligence and Folksonomy are about participation and social networks. All these are essential for the Web 2.0 concept. In the following section I discuss them one by one. The order of the sections is based on a balance between intuition and rationality. The first section is Web as a Platform, as this is the physical base of the whole concept. Collective Intelligence and Folksonomy are in my meaning the most important and interesting of these concepts. The Ajaxian Interface is important, but not as important as the other three.



### The Web as a Platform

O'Reilly's description of the content (Figure 3) captures some qualities in Web 2.0. His analysis follows loose thoughts I had before hearing about the concept. My own entrance to the Web 2.0 concept is via concepts such as collaborative filtering, social navigation and folksonomy. I recognized that many of the new applications and services I liked had several things in common, such as tagging abilities, design contents in the form of tag clouds, RSS, and they seemed to work together quite well. The concept works since it functions as a magnet for creativity when it comes to Web applications and services. There is by no means a consensus about the meaning of Web 2.0, yet most people involved tend to point to the same concepts, phenomena and services when they use the expression Web 2.0.

One of the first concepts to be connected to Web 2.0 was The Web as a Platform. According to Paul Graham, Web 2.0 simply denoted "The Web as a Platform" in the first Web 2.0 conference in 2004. At the second conference, the term changed meaning:

*The story about "Web 2.0" meaning the web as a platform didn't live much past the first conference. By the second conference, what "Web 2.0" seemed to mean was something about democracy. At least, it did when people wrote about it online. The conference itself didn't seem very grassroots. It cost \$2800, so the only people who could afford to go were VCs and people from big companies. (Graham, 2005)*

The Web as Platform is the core in Web 2.0. Figure 3 describes it as strategic positioning. The Web is the environment for Web 2.0 applications. It was one of the large Web 1.0 companies that framed the phrase "The Web as Platform", namely Netscape (O'Reilly, 2005b). In their sense, the phrase meant taking control over the browser in the same manner as Microsoft had control over the PC. I can see their vision of the PC application "the Web browser" as a pilot navigating over the world discovering exiting places to steer their aircraft to. Perhaps they did not see their Web platform as a means to discover places on the Internet, but more as an information and advertising channel. This was the time when certain companies, such as Netscape, tried to market the push technology, as they called it. The point being that the desktop was to be replaced by the webtop, where information was pushed from providers who used Netscape's servers. I would rather call this "the Web browser as a Platform", and not "the Web as a Platform".

By contrast with Netscape, Google landed directly in a Web 2.0 Webscape. They started as a native Web application, delivered as a service, with paying customers, directly and indirectly. Google is a striking example of the "perpetual beta", with no scheduled software releases, just constant improvement (some might argue). Google is everything else but encapsulation and would not be able to function at all in environments with growing encapsulating strategies. The first line in Google's "Company Overview" says much about their expertise and strivings within the field of database management: "Google's mission is to organize the world's information and make it universally accessible and useful". This is similar to Netscape's goal with the "Web as Platform", and Microsoft's unspoken goal of making every computer-thing on earth dependent on Microsoft software. There is a thin thought difference. As I see it, Google strives to be



the best actor on the market, and thereby gain control; Netscape/Microsoft strived/strives to gain control by being the only actor on the market. This difference is one of the important markers in differentiating between Web 1.0 and Web 2.0.

In a few years, “Web as Platform” will describe a world where most or all local applications move out to the Web, talking to each other and creating cooperation phenomena impossible on the PC–platform. Jason Kottke had a quite humble vision in that direction at the beginning of the Web 2.0 mindset:

*To put this another way, a distributed data storage system would take the place of a local storage system. And not just data storage, but data processing/filtering/formatting. Taking the weblog example to the extreme, you could use TypePad to write a weblog entry; Flickr to store your photos; store some mp3s (for an mp3 blog) on your ISP–hosted shell account; your events calendar on Upcoming; use iCal to update your personal calendar (which is then stored on your .Mac account); use GMail for email; use TypeKey or Flickr’s authentication system to handle identity; outsource your storage/backups to Google or Akamai; you let Feedburner “listen” for new content from all those sources, transform/aggregate/filter it all, and publish it to your Web space; and you manage all this on the Web at each individual Web site or with a Watson–ish desktop client. (Kottke, 2004)*

In a lecture I gave recently, at the Media Technology Programme at BTH, I asked the students if they would like to have all their applications on the Web instead of on their PC or laptop. One of the students was absolutely against it, arguing that he would feel insecure about not having control over his information. Some students were worried about security matters if someone, for example, was able to read your office documents. Most students seemed to like the idea, although I am not sure if they really cared. Since I got my first PC in the middle of the eighties, I have had wishes, demands and visions about what I and my computer should be able to accomplish. These wishes, demands and visions have been quite far away from what the computer has actually been able to do, at a certain time. For many years now, since the Web became a parallel world for many of us, I have envisioned the Web as a Platform as Kottke describes above, with the difference that my vision includes all the applications I use today, such as office applications, image editing, music editing and so on. That vision is probably some years away, but I will not be sorry when my computer has transformed into a Web portal.

*In each of its past confrontations with rivals, Microsoft has successfully played the platform card, trumping even the most dominant applications. Windows allowed Microsoft to displace Lotus 1–2–3 with Excel, WordPerfect with Word, and Netscape Navigator with Internet Explorer.*

*This time, though, the clash isn’t between a platform and an application, but between two platforms, each with a radically different business model: On the one side, a single software provider, whose massive installed base and tightly integrated operating system and APIs give control over the programming paradigm; on the other, a system without an owner, tied together by a set of protocols, open standards and agreements for cooperation. (O’Reilly, 2005b)*

There are of course merits with the tight API (Application Programming Interface) control in Microsoft’s software family, such as speed, but these merits might be obsolete if software development on the Web platform takes over the PC platform. When software development becomes as decentralised as the anti-monopoly O’Reilly describes, then the APIs of the operating system become obsolete. A full-scale Web as

Platform would mean that I could use every Internet connected computer in the world to reach my digital “things”. But this is not only about location. The scenario lets me choose freely among actors such as Microsoft, Mac, Linux, Palm. This is about power to the user, and democracy. The only application the operating system would have to look after would be the Web browser, which could lead to a merger between the operating system and the Web browser. In the best of worlds this could mean lots of hardware and software (OS + Web Browser) to choose from. The scenario suggests that all hardware could have totally different OS software, as long as it follows the standards for Web communication.

### Collective Intelligence

CI means many things to many people. Here, it refers to the capacity of human communities to evolve towards higher order complexity and integration through collaboration and innovation.

George Pór’s definition of collective intelligence above uses words and phrases as communities, evolution, “higher order complexity”, integration, collaboration and innovation. Collective intelligence is useful as metaphor in the Web 2.0 discourse. I am going to use the concept based on the words above. Collective intelligence, in this context, is thus something created in evolving communities on the Internet, which, through integration, collaboration and innovation, creates a higher order of complexity, an understanding, experience, and intelligence larger than the sum of the participating users. A large group of people talking right into the air is not especially intelligent, thus the community’s intelligence increases relative to how well the software is able to manage these voices, how well the software manages to harness the sum of the intelligence of these people.

Two of the most noticeable examples of collective intelligence are the highly commercial Amazon.com and the open access encyclopaedia Wikipedia. In January 2005 Wade Roush wrote the following in Technology Review:

*Wikipedia is the world’s newest, largest, most varied, most participatory, and most controversial encyclopedia. It is composed and edited entirely by volunteer netizens; as of November 2004, there were some 29,000 “Wikipedians” writing for it in 109 different languages. The site’s massive archive, including 380,000 articles in English alone, puts even Britannica to shame. If you don’t see an article addressing your passion for miniature-teapot collecting, don’t fret. Just write one (Roush, 2005).*

The screenshot from Wikipedia on 2 February 2006 shows a massive development for 2005 (Figure 4). The number of articles has thus gone from 380,000 to 945,000 in one year.



Figure 4: Wikipedia Screenshot 2006–02–02. <http://www.wikipedia.org/>

One of the first Web 2.0 companies, Amazon.com figured out how to use the collective intelligence of hundreds of thousands of users, getting them to provide free reviews of books and gaining significant competitive advantage in the process. Amazon.com was founded by Jeff Bezos in July 1994. He was an investment banker who left New York and moved to Seattle with the idea of creating an online bookstore (Frey C. C., 2004).

Amazon is a commercial business with the main goal of selling as many products as possible. But Amazon is also a community of literature lovers, music freaks, textbook users, etc. – more about Amazon in detail below. These communities have evolved from a few participants in the beginning to hundreds of thousands.

When discussing collective intelligence in a Web context, it might be useful to divide it into two separate phenomena in praxis: the Amazonian form of collective intelligence and the Wikipedian. Both forms have vast possibilities. The Amazonian form builds on a large amount of people participating with small pieces of knowledge. These pieces are treated by the CI machine to give the participant other pieces of knowledge in return, relating to their own knowledge. Their knowledge expands and makes them able to feed the system with more threads of knowledge. The Wikipedian form of collective intelligence is more precise and therefore more vulnerable. One participant may feed the CI machine with large, seemingly objective, and for the system noticeable and important pieces of knowledge. Other participants are then expected to interact with this knowledge either by using it, discussing it or changing it. The underlying rationale includes the idea that this piece of knowledge will be enhanced as time goes on, and as more and more people invest their time and knowledge in it.

The Wikipedian form is by far the most discussed and criticized. The main critique is about the following question: can we trust this piece of information? The question is more than relevant. I am a big fan of Wikipedia, but since I never have trusted traditional encyclopaedias either, nothing is really new. Since information and knowledge are contextual, one single piece of information is very lonely. Adding more sources gives a bigger context and more trustworthy information, even if the information is contradictory.

In the Amazonian form, the physical CI machine has a more profound and complex role because the CI machine's algorithms visualize and in a way enhance the collective

intelligence. No-one expects the information pouring out of an Amazonian CI machine to be objective or true in the same sense that the information in an encyclopaedia suggests. Thus the truth value depends more on expectancy than something inherent in the system.

The whole Web can be viewed as an example of collective intelligence. “Much as synapses form in the brain, with associations becoming stronger through repetition or intensity, the Web of connections grows organically as an output of the collective activity of all Web users” (O’Reilly, 2005b). Several of the new Web companies have a deep understanding of the potential of the hyper linking features of the Internet. One of these is Google. They revolutionized the search engine market, with their PageRank technology. Before Google, search engines ranked their hit pages based on factors such as title, meta-information, headers, number of words, etc. This, Web 1.0, kind of page ranking gave unnaturally high ranking to irrelevant pages, and vice versa. For Google it is not the page itself that sets the rules for the page ranking, it is how the context evaluates that page. If, for example, I search for Volvo, the hits in Google are 31,200,000. At the top of that list are Volvo’s official pages because they have more pages linking to them than pages lower down the hit list. The Internet community creates a ranking complexity, just by doing what they normally do in their daily lives. An equivalent situation in the physical world would be if every person’s footsteps suddenly made marks on the streets. The most visited restaurants would then have more footsteps in front of their door than other restaurants.

Another example of collective intelligence is Ebay. Ebay’s about page says: “eBay is The World’s Online Marketplace”, enabling trade on a local, national and international basis. With a diverse and passionate community of individuals and small businesses, eBay offers an online platform where millions of items are traded each day”. Ebay’s competitive advantage is due to its critical mass of buyers and sellers, but it is not only about quantity. Ebay lives on word of mouth. Every time someone buys something at Ebay, that person is asked to write if s/he is positive, neutral or negative. It is also possible to write something more in detail. This evaluation also works in reverse; the seller can evaluate the buyer. Every buyer can therefore look at the seller’s aggregated evaluation. Thus both the buyer and the seller can feel reasonably assured that their business partner is honest.

Collective intelligence is a new way of looking at information and knowledge. If I wonder what an API (Application Programming Interface) is, I could search Encyclopaedia Britannica Online for an answer. This would be the Web 1.0 (and still relevant) way. I tried this and got no answer relevant to my search question: API. Instead I performed the corresponding search in Google: define: API. I got about 20 relevant hits. The total list was about 25, but 5 of them were other denotations of the word API such as American Petroleum Institute.

## Definitions of **API** on the Web:

- ◆ A set of routines that an application uses to request and carry out lower-level services performed by a computer's operating system. Also, a set of calling conventions in programming that define how a service is invoked through the application.  
[www.maptrax.com.au/standardscompliance/glossaryoftermsatoh/](http://www.maptrax.com.au/standardscompliance/glossaryoftermsatoh/)
- ◆ Application Program Interface. A set of routines provided in libraries that extends a language's functionality.  
[orafaq.cs.rmit.edu.au/glossary/fagglosa.htm](http://orafaq.cs.rmit.edu.au/glossary/fagglosa.htm)
- ◆ Application Program Interface. A set of calling conventions defining how a service is invoked through a software package.  
[www.bitcentral.com/mainweb/support/glossary.asp](http://www.bitcentral.com/mainweb/support/glossary.asp)
- ◆ Application Programming Interface. The interface (calling conventions) by which an application program accesses operating system and other services. An API is defined at source code level and provides a level of abstraction between the application and the kernel (or other privileged utilities) to ensure the portability of the code.  
[www.data-core.com/glossary-of-terms.htm](http://www.data-core.com/glossary-of-terms.htm)

Figure 5: Part of a hit list from a Google search: define: API. Viewed: 2006–02–05.

A quick look at the URLs in Figure 5 probably raises suspicions in most researchers. The hit list from the Google define search shows an array of definitions from sources with questionable credibility, at least at first glance. None of the 20 hits in the whole list have the credibility of, for example, Encyclopaedia Britannica Online. Yet we have 20 definitions and most of them are different, even though there is a core of truth in them, or if you like, a core of similarity. One day, perhaps, a CI machine will be able to harvest this truth in a quite reliable way, but until then it is up to the user to be that CI machine. Acting as a CI machine, I scan these 20 definitions, and as my mind registers the differences and similarities in the meanings, my mind builds an algorithm, which puts an aggregated meaning together, representing an approximation of all those definitions. We could also explain this as a hermeneutic process spiralling down to some kind of similarity core in those 20 definition texts.

I always use definitions as feeds into my hermeneutic machine. One sole definition is not worth much, even if the definition is created by men or women in power within their field. A definition should never be treated as a standard, like the XML standard, but as feeds by the power of the masses. Of course, the collective intelligence increases not only by quantity; quality is also an important factor. Humans have always been CI machines, aggregating and reconstructing information, but the novelty lies within the power of ICT (Information and Communication Technology). A well crafted set of algorithms, together with databases and powerful software/hardware will perhaps rewrite the map of intelligence. Intelligence with the human as blueprint might be the perfect pair together with collective intelligence based on masses of different human voices and powerful CI machines to handle all data.

The last story about collective intelligence I will tell in this section is about information redundancy in the blogosphere. Blogosphere critics often say that the blogging com-

munity is an echo chamber. The echoes consist of the word of mouth. One blogger writes something. Another blogger believes that text to be relevant and therefore quotes the original text in his/her own article – and so on. The result is a wide array of texts echoing in a blogosphere. This echo chamber corresponds to the researchosphere and is not a bad thing at all. This is collective intelligence at work, filtering out the most relevant information (according to the group) in a wild torrent of voices. In a way, the echo chamber corresponds to Google's PageRank, where a Web page gets higher rank in the Google hit list if it has more pages linked to it, than the pages further down the hit list. The blogosphere is also similar to Web of Science, a science Web service, which creates an aggregated index of researchers refereeing each other in scientific journals.

Several Web 2.0 companies have tried to structure these choirs of voices. One example is Digg. You could call Digg a bookmark flag service. It works like this: you find an interesting page on the Internet; you add this page to Digg's database. It, so to speak, lands on the bottom of the Digg repository. When users find it interesting, they click on the digg button. The digg button displays how many users clicked it. For every user clicking it, the value aggregates with 1 and when enough users have clicked it, the bookmark rises one level in the repository. The algorithm also takes into account how new the bookmark is. The fifteen bookmarks floating around on the highest level of the repository have between 50 and 1000 clicks. There are bookmarks further down with several thousand clicks, but they are older. Digg can be viewed as some sort of anti-gravitation chamber where things are floating vertically depending on the weight created by the number of clicks and how new things are.

### Folksonomy

In a posting in the blog Atomiq on 3 September 2004, Gene Smith wrote the following:

*Last week I asked the AlfIA members' list what they thought about the social classification happening at Furl, Flickr and Del.icio.us. In each of these systems people classify their pictures/bookmarks/web pages with tags (e.g. wedding), and then the most popular tags float to the top (e.g. Flickr's tags or Del.icio.us on the right).*

*Thomas Vander Wal, in his reply, coined a great name for these informal social categories: a folksonomy (Smith, 2004).*

This piece of communication was one of the snowballs leading to the Web 2.0 concept. Searching for the word folksonomy in Google returns 5,670,000 hits (24 April 2006).

Every time I search Swedish Google for "folksonomy", the system asks me if I would rather do the search on "folksång" – the Swedish word for "folksong". Thus the Google glossary in Swedish does not contain the word folksonomy. The word is quite new, attributed to the information architect Thomas Vander Wal (see the quote above). Folksonomy is a combination of 'folk' and 'taxonomy'. Taxonomy comes from the Greek taxis (classification) and nomos (management). 'Folk' comes from the Old English folc, meaning people; so folksonomy means people's classification management. Features later named folksonomy probably first appeared in del.icio.us, Flickr and Annotea: "Annotea is a Semantic Web based project for which the inspiration came from

users' collaboration problems in the Web. It examined what users did naturally and selected familiar metaphors for supporting better collaboration" (Koivunen, 2005, p. 1). Flickr is a way to store, sort, search and share photos online; del.icio.us is similar but for bookmarks instead of photos.

Folksonomy can be discussed as the opposite of ontology. The computer scientist Tomb Gruber describes it like this:

*Short answer: An ontology is a specification of a conceptualization.*

*The word "ontology" seems to generate a lot of controversy in discussions about AI. It has a long history in philosophy, in which it refers to the subject of existence. It is also often confused with epistemology, which is about knowledge and knowing.*

*In the context of knowledge sharing, I use the term ontology to mean a specification of a conceptualization. That is, an ontology is a description (like a formal specification of a program) of the concepts and relationships that can exist for an agent or a community of agents. This definition is consistent with the usage of ontology as set-of-concept-definitions, but more general. And it is certainly a different sense of the word than its use in philosophy.*

*What is important is what an ontology is for. My colleagues and I have been designing ontologies for the purpose of enabling knowledge-sharing and reuse. In that context, an ontology is a specification used for making ontological commitments. The formal definition of ontological commitment is given below. For pragmatic reasons, we choose to write an ontology as a set of definitions of formal vocabulary. Although this isn't the only way to specify a conceptualization, it has some nice properties for knowledge-sharing among AI software (e.g., semantics independent of reader and context). Practically, an ontological commitment is an agreement to use a vocabulary (i.e., ask queries and make assertions) in a way that is consistent (but not complete) with respect to the theory specified by an ontology. We build agents that commit to ontologies. We design ontologies so we can share knowledge with and among these agents. (Gruber, n.d.)*

One example of an ontology is the Linnaean taxonomy; the system of scientific classification now widely used in the biological sciences. The classification systems used by libraries are also ontologies. They are like hyper-structured worlds, where everything fed to the system – ideally speaking – has a predetermined parking space. A librarian who is just about to classify a book has this ontology partly in his/her head, and partly in a written "manual". Let us say the book, which is going to be classified, is called "My love of Maya". Maya can stand for one of three things: 1) a female name; 2) the South American people called Maya; 3) the 3D programming software. When the librarian catalogues this book s/he has to determine which of these Maya denotations corresponds to the content of the book, and then compare this subject with a "place" in an ontology, such as the library cataloguing system, the Dewey Decimal System.

In the information architect community, there is a discourse about folksonomy and ontology, discussing them as opposites:

*Ontologies are enabling technology for the Semantic Web. They are a means for people to state what they mean by formal terms used in data that they might generate or consume. Folksonomies are an emergent phenomenon of the social Web. They are created as people associate terms with content that they generate or consume. Recently the two ideas have been put into opposition, as if they were right and left poles of a political spectrum. (Gruber, 2005)*



This dualist view is rather extreme. There are merits in both expert classification and social classification – folksonomy. They contextualise information differently. An expert classifies according to rules learned by a long tradition and “folks” classify on a personal basis. When many non–experts classify something and this knowledge is reconstructed by a CI Machine, it is often called collective intelligence, as outlined in the section above. If all these classifiers were experts, it probably would not be called collective intelligence because all experts are supposed to make the same choices – the right choices.



Figure 6: Tags in a Tag Cloud. <http://www.blinklist.com/pgiger/>

Folksonomy is practically realised in the form of tags and tag clouds. A tag is a keyword describing an entity of knowledge, such as a photo, a bookmark, a music CD or a book. Tagging is non–hierarchical and the tags are not picked from a classification system. Every person who tags a knowledge entity has his or her own classification system, mostly unconscious.

In Figure 6 above we see a bundle of tags shaped into a tag cloud. Tag clouds are visual representations of a group of tags, weighted by occurrence. The tag cloud above is a visual representation of the tags for my bookmarks at the Bookmark service Blinklist. The bigger and more two–coloured a word is, the more bookmarks I have created with this particular tag.

In fact, tag clouds are not entirely new phenomena. Traditionally they are known as a weighted list in the field of visual design. What is new is this particular appearance in conjunction with folksonomized Web sites. A tag is comparable to a table of contents; the main difference is that a table of contents is hierarchical, while a tag cloud is flat, non–hierarchical. The display order of the tags is generally alphabetical, thus making



it possible to find a tag both by alphabetical order and by its popularity. Clicking on a tag will generally lead to a collection of items marked with this tag. The items might be bookmarks as at Delicious or Blinklist, or pictures as at Flickr.

One of the obvious problems with folksonomy is the lack of synonym control. The word Web 2.0 can, for example, be tagged as: web20, web2.0, web\_20 and so on. The collective might handle this automatically within time, as people start to examine how other people have tagged a piece of information. But even if this problem cannot be dealt with I think it is working quite well. I doubt, though, that a solution can include some kind of influence from experts. Folksonomy is an important part of Web 2.0 and will probably be included in more official systems within time, together with expert ontologies. Folksonomy and ontology will together create important arenas for describing and discussing knowledge.

### Ajaxian Interfaces

Ajax is hard to explain to a wide audience, since it is about programming, and I have to expect a wide audience since this is a transdisciplinary text. Therefore I have written two texts: one for readers with no programming knowledge and one for readers with some programming knowledge.

#### **Version 1 – for readers with no programming knowledge**

The leading Swedish IT news channel (paper and Web) wrote the following on their Web page on 2 February 2006:

*Jättarna ska göra webben enklare med Ajax|*

*Ledande programföretag går samman för att utveckla webbtekniken Ajax. Detta ska ge bättre användargränssnitt för webbtillämpningar. Men Microsoft och Sun är inte med.<sup>1</sup>*

*In English:*

*The giants are going to make the Web simpler with Ajax*

*Leading software companies work together to develop the web technique Ajax. This will lead to better user interfaces in web applications. But Microsoft and Sun are not joining.*

Ajax is a programming style used to create Web interfaces with the same appearance and feeling as PC applications. But Ajax Web interfaces do not inherit the grey button based interface from desktop applications. First and foremost this means instant response when clicking a button. A standard Web interface often feels heavy compared to a PC application because every time you click on a button or link, a request is sent to the server, and an answer to that request is sent back to you. This is the basic difference between a desktop PC application and a Web page. The Ajax programming style reduces this difference somewhat. The following quote gives a certain sense of how Ajax was, and is, received in the programming world. The quote is from a text where Paul Graham, essayist, programmer, and programming language designer, tries to figure out what Web 2.0 really is about.

One ingredient of its meaning is certainly Ajax, which I can still only just bear to use without scare quotes. Basically, what “Ajax” means is “Javascript now works.” And that

in turn means that web-based applications can now be made to work much more like desktop ones.

*As you read this, a whole new generation of software is being written to take advantage of Ajax. There hasn't been such a wave of new applications since microcomputers first appeared. Even Microsoft sees it, but it's too late for them to do anything more than leak "internal" documents designed to give the impression they're on top of this new trend. (Graham, 2005)*

The fact that Web-based applications can be made to work like desktop ones, is in itself a revolution on the Internet, beside everything else Web 2.0 stands for. I am not sure if you can call these Web based software “applications”. An application is normally software communicating with you through an operating system, such as Windows, Linux or Mac OS X. For the user, practically all Web 2.0 software comes in the form of a service, open source and commercial – though the nature of a Web 2.0 application is openness. Amazon.com and Google are two different examples of the fact that openness and the commercial can work in the same service. In this sense all Web entities will be based on ajaxian interfaces eventually, but not necessarily based on the set of technologies now called Ajax.

## **Version 2 – for readers with some programming knowledge**

Macromedia, and its open source Flash competitor Laszlo Systems, has used the concept “Rich Internet Applications” for several years, claiming the same user – Rich – experience in Web applications as in PC applications. Proponents of Java applets and Microsoft with its ActiveX technology had similar claims. Even though all these technologies have been integrated into our Web (and Web browser) interface, none of them have yet revolutionized the Web as Platform.

Tim O'Reilly writes “the potential of the Web to deliver full scale applications didn't hit the mainstream until Google introduced Gmail, quickly followed by Google Maps, Web based applications with rich user interfaces and PC-equivalent interactivity” (O'Reilly, 2005b). O'Reilly's phrasing is somewhat acute, but it says something important about Web 2.0 applications today and especially tomorrow. Rich interfaces might be produced with several technologies. The technology most mentioned as a Web 2.0 technology is called Ajax. The first time I heard the term Ajax I thought it was named after the two figures in Greek Mythology called Aias (Eng: Ajax). Since the two figures with the same name liked to fight together, I thought it connoted to javascript + XML, which can perhaps be called the core in Ajax. But I was wrong. Jesse James Garrett explains it like this in an essay: “Google Suggest and Google Maps are two examples of a new approach to Web applications that we at Adaptive Path have been calling Ajax. The name is shorthand for Asynchronous JavaScript + XML, and it represents a fundamental shift in what's possible on the Web” (Garrett, 2005). He further defines Ajax like this:

Ajax isn't a technology. It's really several technologies, each flourishing in its own right, coming together in powerful new ways. Ajax incorporates:

- standards-based presentation using XHTML and CSS;

- dynamic display and interaction using the Document Object Model;
- data interchange and manipulation using XML and XSLT;
- asynchronous data retrieval using XMLHttpRequest;
- and JavaScript binding everything together(ibid.).

The paragraph quoted above is the most technical part in the whole text, and many of my readers, naturally, do not understand enough to get the meaning I wish to communicate. Therefore I will try an explanation. XHTML and CSS are expansions of the original programming language on the Internet called HTML (Hyper Text Markup Language), used to render the image on the computer screen. All three of these are very basic and only about painting the computer screen: user interaction, counting, using variables, etc., are not possible. For tasks like user interaction we have script languages such as Javascript. Javascript can manipulate the mark-up data to get a richer user experience. Creating a calculator on a Web page, for example, needs both Markup language and Javascript (or another script language). The Markup (HTML, XHTML) language renders the visual form of the calculator together with colour, type face, size, etc. Javascript does the actual calculation, based on which keys the user is pressing. The Document Object Model (DOM) can be explained as an interface between the Markup and Javascript, making the scripting easier, creating further possibilities mostly relating to user interaction or dynamically manipulating the screen objects. XML and XSLT are also Markup languages. In this context I will call both of them XML (Extensible Mark-up Language). XML is a language used to describe and transport data. It is also possible to store data dressed in XML for smooth access, instead of storing it in simple text files separated with comma or another sign. Data might be transported from a database dressed in a XML structure, to be received by a JavaScript for a structured deliverance to the XHTML (possibly through the DOM), which in turn renders it on the screen.

A standard Web interface feels clumsier than a PC application because the Web interface has to communicate with the server for practically every little action on the screen. The XMLHttpRequest Object enables JavaScript to make requests to a remote server without the need to reload the page. In essence, requests can be made and responses received in the background, and without the user experiencing any visual interruptions. All this together creates the possibility to produce Web applications with the same look and feel as PC applications.

## Endnotes

- <sup>1</sup> [http://computersweden.idg.se/ArticlePages/200602/02/20060202141736\\_CS746/20060202141736\\_CS746.dbp.asp](http://computersweden.idg.se/ArticlePages/200602/02/20060202141736_CS746/20060202141736_CS746.dbp.asp). Viewed: 2006-02-03.

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