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# Mapping in Flusser, Deleuze and Digital Technology

## Vilém Flusser's *My Atlas*

A man muses over his grandfather's tales of the development of atlases. Beginning with imprecise yet normed Mercator projections over attempts to improve the accuracy of mapping, atlases begin to take on new dimensions, meaning and relevance. They no longer limit themselves to a pictorial and two-dimensional representation of the globe; instead, they represent abstract themes and concepts such as politics, geography and history. They play with scale and begin to zoom. New colour codes and symbols have to be learned to decipher meaning, and atlases have to be read sequentially. The developments lag behind current political or recent historical events.

The grandfather, who is a writer and who has only ever used two atlases for his work, is first amazed and scared by the changes, until finally he gives up and bashfully returns to his old Mercator atlas. The narrator, telling his story from an unspecified future, is bemused by his grandfather's attitude towards atlases and the world. He has his own atlas, a machine capable of producing every piece of information, be it historic, geographic, botanic or technical, on objects and places. The main components of this machine are a screen and a menu; the protagonist still has to manually operate this menu but he hints towards the possibilities of voice-controlled screens. Thus he browses through the present, the past, and even the future of Central Park, and he admits that sometimes, he prefers Central Park as it is in his atlas to the comparatively boring real and concrete Central Park. He ends his story with the confession, apparently surprising even to himself, that he longs for the days in which atlases were books.

"My Atlas" is a short story by Vilém Flusser (1920-91), most probably written in 1973. Flusser is celebrated as a media theorist and this story shows why: the futuristic elements of the story, the narrator's atlas, do not seem to be too futuristic anymore less than forty years after completion of the story in the age of Google Maps. Just as intriguing as the 'atlas machine' is the figure of the grandfather who seems to have lived through the entire development of atlases, from their beginning with Mercator in the 16th century right up until the late 20th century, thus making him a fictional contemporary of Flusser's and a fantastic personification of history.

The prophetic qualities of Flusser's work aside, his essay is interesting because it presents a problem which is a central one in the digital age: that of the relationship between original and

representation, model and finished work, progress and nostalgia, all illustrated in the example of atlases and maps.

Gilles Deleuze and Félix Guattari describe the activity of mapping in their "Rhizome" essay (Deleuze and Guattari, 1980, pp.1-25). I will apply some theories and terminology developed in this essay first to digital technology in general, then more specifically to Flusser's "My Atlas" with its parallels to Google Maps. The general aim is to draw out the problems posed in Flusser's work in relation to digital mapping. In my discussion of these problems I differentiate between structural problems and effective problems; in other words, I explain common misconceptions of the structure of digital media and how these misconceptions are also relevant for Guattari and Deleuze's ideas. I then lay out how these misconceptions affect everyday experience and behaviour.

I will refer to Guattari's and Deleuze's theoretical framework in my analysis, including a critical discussion of the question of embodiment which poses problems to the concepts developed in the "Rhizome" essay as well as raising the issue of nostalgia which can be found in Flusser's work. In conclusion, I contrast and merge the two essays both built around the topic of maps in order to produce a practical and constructive criticism of digital maps and technology.

## Digital Technology, Two Maps and the Rhizome: Deleuze's and Guattari's Rhizome in Relation to Digital Technology

Gilles Deleuze's and Félix Guattari's "A Thousand Plateaus" "[…] is composed not of chapters but of 'plateaus.' […] [T]hese plateaus may be read independently of one another, except the conclusion which should be read at the end." (Deleuze and Guattari, 1980, p.1) I will read and present "Rhizome", the introductory plateau, independently of the other plateaus in order to lay out the insights to digital technology this text can offer and later link some of the ideas, metaphors and concepts raised with Flusser's text "My Atlas". I want to stress that the critical points I discuss in my analysis are specific to the chosen text and my close reading of it. I do not intend to make a statement about Deleuze and Guattari's wider work.

I will begin by laying out the conceptual framework developed in the "Rhizome" essay. I then show parallels between these ideas and the World Wide Web. I will conclude this first section by highlighting structural and effective problems in the "Rhizome" essay and in our common sense approach to digital media which come out in my analysis.

Literally, a rhizome is "[a]n elongated, usually horizontal, subterranean stem which sends out roots and leafy shoots at intervals along its length." (Oxford English Dictionary [OED], 2010). The authors contrast this system to the traditional image of the tree[1] which "[…] is already the image of the world, or the root the image of the world-tree" (Deleuze and Guattari, 1980, p.5). It is a better metaphor for the interconnected and changing multiplicity that constitutes the world because it "ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles" (ibid.: 7).

The authors explain *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." (ibid.: 8) One way of thinking about multiplicity is therefore the entirety of interconnected changes which are occurring; however, "thinking about multiplicity" is already a fraught approach because it introduces mind and a subject into the process.
Thus a rhizome and the multiplicity it metaphorically stands for are the totality of changing, self-establishing and self-destroying connections between ideal and factual entities, with no room for the idea of separate *subject* and *object* entities.

The authors make a similar contrast between the activities of tracing[2] and mapping. The former operates on the "basis of an overcoding structure or supporting axis, something that comes ready-made" (ibid.: 12). Their suggested alternative analogy, the map, "does not reproduce an unconscious closed in upon itself; it *constructs* the unconscious." (ibid.: 12, my emphasis) Furthermore, it "has multiple entryways, as opposed to the tracing, which always comes back 'to the same.'" (ibid.: 12) The map in its complexity and openness, free from subject or object, resembles multiplicity and the rhizome more accurately than the goal-oriented, defined tracing. Deleuze and Guattari claim that "genetic axis and profound structure are above all infinitely reproducible principles of tracing. All of tree logic is a logic of tracing and reproduction." (ibid.: 12)

[1] The image of the tree also appears in René Descartes's work. In the preface to the French edition of *Principles of Philosophy*, he introduces the tree as an analogy for philosophy "of which Metaphysics is the root, Physics the trunk, and all the other sciences the branches that grow out of this trunk, which are reduced to three principal, namely, Medicine, Mechanics, and Ethics. By the science of Morals, I understand the highest and most perfect which, presupposing an entire knowledge of the other sciences, is the last degree of wisdom." (Descartes, 1644, p.6) Deleuze and Guattari argue against this traditional and established image of metaphysics as roots.

[2] "Trace" or "tracing" is a key idea in the works of Jacques Derrida. Similarly to Deleuze and Guattari, "trace" for Derrida is not a "master-word, that presents itself as the mark of an anterior presence, origin, master" (Derrida, 1967, p.xv). Derrida thus admits that the trace is not primary and cannot be considered out of context. However, he is not offering an original, anterior, master "map" to complete the tracing. Indeed, he uses the word "trace" "sous rature" which means under erasure or crossed out (ibid., p.xvii), thus "effacing it even as it presents its legibility" (ibid., p. xviii) rather than widening its context. His claim is that the idea of approaching this origin or this "map" is too close to Heideggerian "Being" and therefore too transcendental to be considered. It is beyond the framework of this essay to go into more detail on this matter; for further information on Derrida's notion of "trace" refer to "On Grammatology".

Tracing and tree are presented as static, genetic, profound and conservative, that is to say reinforcing sameness. By contrast, maps or mapping and the rhizome are open and naturally creating or destroying rather than reinforcing.

However, the authors defend themselves against the criticism of having "reverted to a simple dualism by contrasting maps to tracings, as good and bad sides" (ibid.: 13). They admit that maps contain tracing, yet they argue that "[i]t is a question of method: the tracing should always be put back on the map." (ibid.: 13) This process of putting the tracing back on the map is not invertible, though. The tracing is a selected, isolated, reduced part of the map and therefore fails to reproduce it; the authors compare the trace to a photograph. "The imitator always creates the model, and attracts it." (ibid.: 13) The tracing may capture a certain part of the map in a certain state at a certain moment, similar to a photograph or picture. However, the static nature of such a pictorial representation fails to reflect the constant change in the rhizome and the map.

The similarities between this rhizome web or all-encompassing map and the World Wide Web appear striking. Hypertext, the connecting "infrastructure" of digital technology used and created by individuals, has been designed with the explicit aim to overcome artificial sequence. Ted Nelson, a philosopher who coined the term "hypertext" and worked on the first hypertext project (see Project Xanadu, 1960) wanted to create a "machine-readable text that is not sequential but is organized so that related items of information are connected" (quoted in *Introduction to Digital Media*, 2009). He claims that "[t]he structure of ideas is never sequential; and indeed, our thought processes are not very sequential either." (Quoted in Han, 2005, p.15) Hypertext represents his idea of the structure of thought more accurately than traditional text free of hyperlinks, for example a book or this essay, because "[h]ierarchical and sequential structures […] are usually forced and artificial" (ibid.: 15).

The high connectivity of the "World Wide Web" appears to be closer to a map in Deleuze's and Guattari's sense than to sequential tracing. However, Nelson's statement that "[i]n an important sense there are no 'subjects' at all" (ibid.: 15) in this web reveals the problem with his idea of hypertext: any subject engaging with hypertext will have to use and follow it in a sequential way. The user can only read or view the contents of hyperlinks on pages one after another, not all at once. The hyperlink in itself does not reveal its content unless the user follows it. Similarly, thought processes, that is to say, the original template for hypertext, have to be arranged in sequential order in the form of words, sentences and communicable content, in order to be exchanged between two or more subjects.

This also uncovers the limits of Deleuze's and Guattari's map or rhizome and its primary position over tracing. Granted, a tracing does not represent the map in its entirety, yet at the same time it seems impossible to think of a map without tracing as soon as a subject engages with it.

An embodied individual must interact with its physical environment in a sequential, constrained manner, for example in the geographical sense of moving from A to B. Deleuze and Guattari leave room for this possibility by stating that a tracing has to be put back on the map, in other words it has to be put into a wider, changing, thus unstable and non-conservative context. However, the "Rhizome" essay does not seem to give credit to the *necessity* of the *rooted tracing* for an embodied individual.

So far, the similarities between hypertext and the rhizome web appear strong, even to the extent of shared problems of forced sequence arising from interactions with individuals.
Structurally, hyperlinks, just like the rhizome, are in constant change, established, edited, and destroyed. Yet, all these processes are passive; they are not actively self-establishing and self-destroying. The rhizome is not passively constructed; it has no subjects or objects. Hyperlinks are artificially and hierarchically established by subjects before they begin to serve as an infrastructure – they resemble roots[3] more than they resemble a rhizome. The rhizome-map simply *is* the totality of subjects and objects.

Consequently, the authors criticise "organized memories […] [in which] an element only receives information from a higher unit, and only receives a subjective affection along pre-established paths. This is evident in current problems in information science and computer science, which still cling to the oldest modes of thought in that they grant all power to a memory or central organ." (Deleuze and Guattari, 1980, p.16) This demonstrates the structural limits of an analogy between the World Wide Web and Deleuze's and Guattari's map. The internet as a surface used by individuals is a network of established, not self-creating hyperlinks. Even if they appear to be self-establishing and changing, for example in Google searches, they follow a programmed algorithm[4] and are therefore not spontaneous and creative in their change. Even users contributing to content online, for example bloggers, face this constraint in two ways:
First, they are *limited by* hyperlinks inasmuch as they are currently the only form of connection between two forms of content on different website surfaces. Even though they can take different forms, for example text or picture, they all still work in the same way through user selection and

[3] For further information on roots and hierarchy refer to footnote 1.
The analogy of roots and hyperlinks is apt because it helps to illustrate the hierarchy in the web of supposedly equal and levelled hyperlinks. Google as the biggest search engine acts as a gatekeeper to the World Wide Web because most users will not know the web addresses containing the information or service they require by heart. At the heart of Google is the "page rank algorithm", fed by previous web searches, which determines the relevance of displayed websites. Brin and Page, the creators of the page rank algorithm, "saw that every time a person with a Web site links to another site, he is expressing a judgment. He is declaring that he considers the other site important. They further realized that while every link on the Web contains a little bit of human intelligence, all the links combined contain a great deal of intelligence – far more, in fact, that any individual mind could possibly possess." (Pasquellini, 2009, p.1) This is how "the apparently flat data ocean of the internet was shaped by Google in dynamic hierarchies according to the visibility and importance of each website." (ibid., p.3) Every user contributes to this hierarchy by selecting and thus giving a higher relevance and raking to certain links.
[4] See previous footnote.

activation. From an even more basic point of view, many bloggers use free programs instead of coding their own blogs which is putting constraints on their final product. Furthermore, the external and existing content a contributor can refer to is vast but not infinite.

Secondly, and more importantly, contributors *actively limit* hyperlinks by artificially creating or intentionally destroying them. They are thus creating their own "pre-established paths" which then again limits their usage and interaction with the web of hyperlinks and the content they refer to. Despite the structural differences between the internet and rhizome, the *question of access*, that is to say the shared effective problem of a loss of individual embodied subjectivity remains.

Deleuze and Guattari make an interesting distinction between short-term memory and long-term memory. Short-term memory is closer to the spontaneous, creative or disruptive multiplicity of the rhizome and mapping, whereas long-term memory (such as origin and family) is a pre-established trace (Deleuze and Guattari, 1980, p.15f). This distinction helps to draw out further differences between the World Wide Web and the rhizome: the internet resembles long-term memory, indeed it is the biggest information storage current society has. Users engaging with it can be seen as short-term memory if they spontaneously change parts of the infrastructure. Yet in both cases, the distinction between short and long-term memory brings up the question of how short-term memory can be possible if it is not *rooted* in the long-term memory, and inversely, how long-term memory could be established without short-term memory. This brings us back to the earlier question of the dubitable possibility of a map without tracing.

Deleuze's and Guattari's "Rhizome" essay helps drawing out several problems in digital technology. However, it also poses new and thus far unanswered questions about the role of the individual and subjectivity in the face of maps. I will explore these open questions in relation to Flusser's "My Atlas". The parallels between Flusser's atlas and digital atlases such as Google Maps will be drawn out in order to highlight the relevance of this analysis for technological challenges society is facing.

## Flusser's Atlas and Google Maps

The similarities between Guattari and Deleuze's framework and digital technology allow me to apply the presented terminology to digital technology. I will now draw out the shared structural issues of *mapping* in Deleuze and Guattari's sense and digital mapping as well as the resulting effects on experience and behaviour in more detail. To illustrate my analysis I will refer to Flusser's essay "My Atlas". For the sake of my analysis I will concentrate on the relation between

experience, imagination and maps which is discussed in this essay; I will have to omit other interesting points about politics or humanism which are raised in the text.

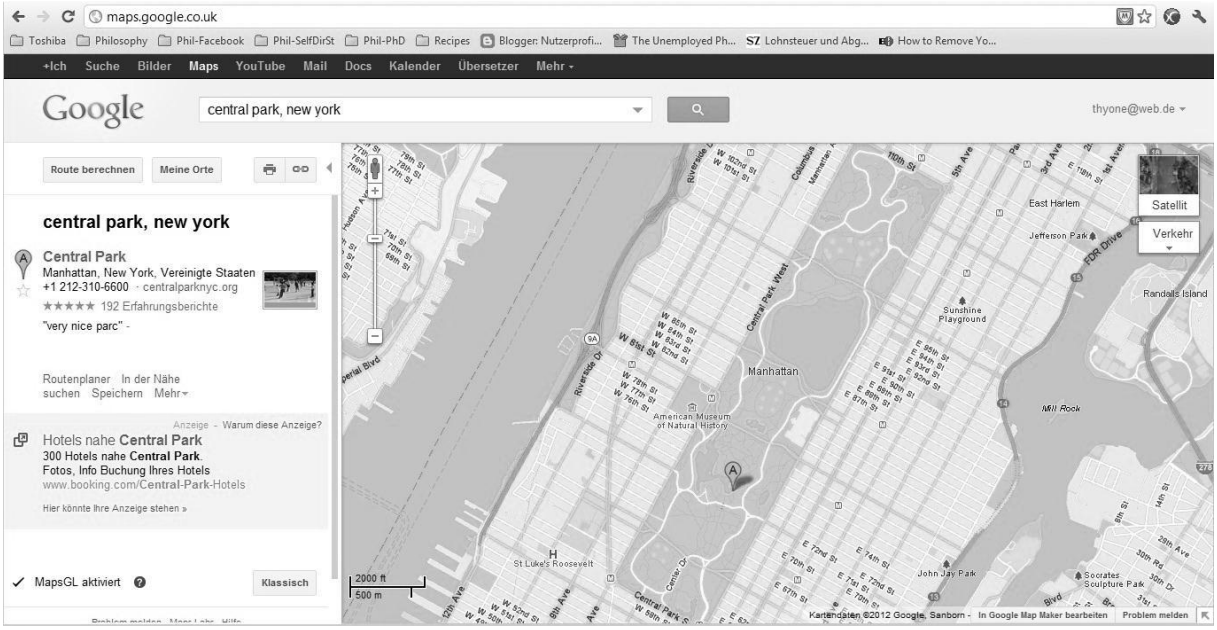
Unlike Deleuze's and Guattari's map, both Flusser's atlas and Google Maps are constructed and coded; they therefore share the problem of artificiality with the internet's web of hyperlinks. Though it is not explained how and by whom the atlas or the screen in Flusser's essay was built, the fact that it is a machine with a set of functions and a menu proves that it is not a self-establishing rhizome.

Google Maps poses an even deeper problem: not only is it artificially constructed, but it is created with an agenda. Google as a company presents itself as a free search engine while it collects user data and sells these data to clients for tagged advertising. After recent changes in Google's privacy policy, it has widened its scope from merely tracking web searches so it "can [now] pool data about signed-in users' web or video searches, map directions, web browsing, which ads have been clicked, and other information in order to target adverts and services at people using the web" (Arthur, 2012). Even though Google Maps resembles Flusser's atlas-machine in some of its functions such as swiftly changing to a smaller scale (to the extent of "Street View") and access to further information on certain depicted elements (through Google web search), this difference of a self-interested creator is important and often overlooked in its usage. It has been said that "when an online service is free, you're not the customer – you're the product" (Freedman, 2012) and even though this may be an extreme way of phrasing the problem, it does capture the often naïve way in which Google users give away personal data.

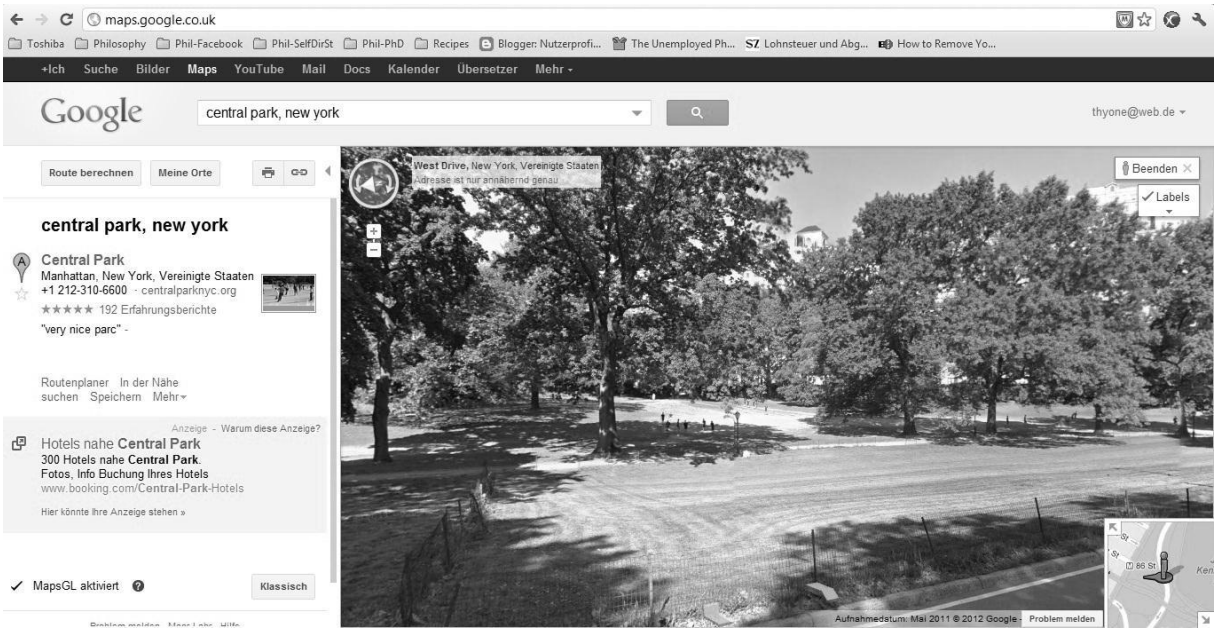
Google Maps can therefore be seen as an example for "organized memories […] [in which] an element only receives information from a higher unit, and only receives a subjective affection along pre-established paths" criticised by Deleuze and Guattari. The user is under the impression of being active in the seemingly unlimited possibilities of the internet, for example, when looking up the way from her house to a Chinese restaurant and checking reviews for the restaurant. Yet in fact, she is operating within the limited pre-established paths of an organised memory, receiving the requested information and at the same time contributing by giving away her home address as well as her personal culinary preferences. Google as a company can be said to *trace* its users in this way instead of creating a non-teleological *map*.

Common preconceptions about the potential of digital media are not limited to its artificial structure. Tracing, that is to say personal, embodied experience needs to find access to the map, so to speak. The user must be able to find his way through the World Wide Web: "hypertext presents in starkest outline the contrast between availability and accessibility." (Landow, 2006, p.360) Google's importance as a gatekeeper and the accuracy of the search results is growing expo-

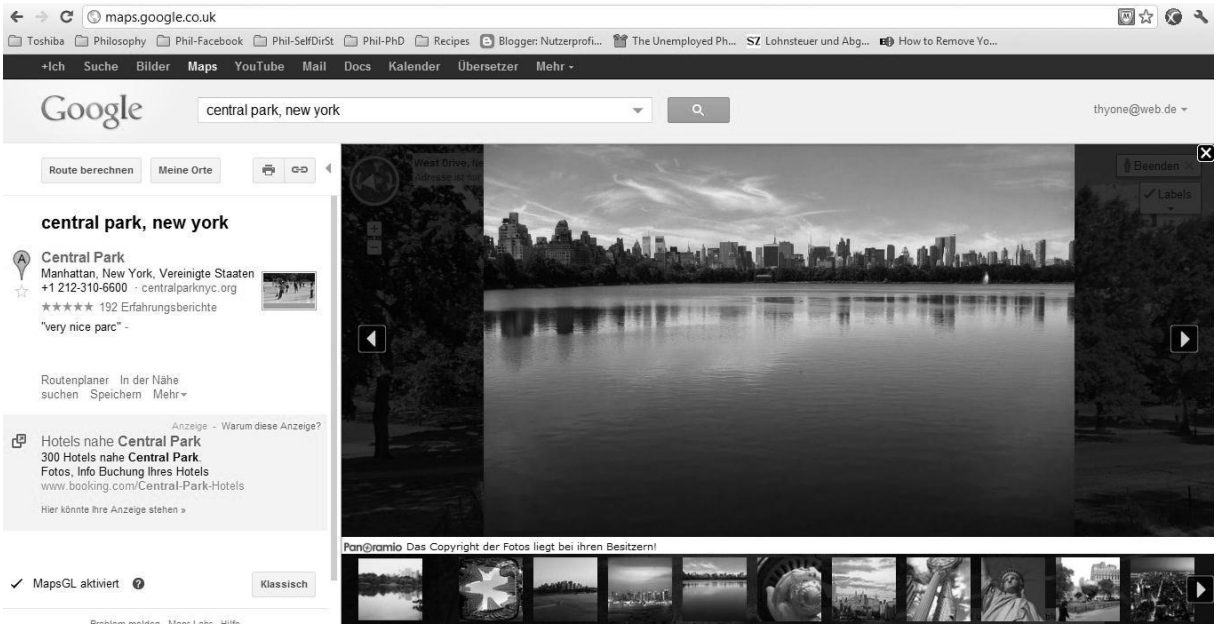
nentially the more it is used (see footnote 3). Not only are most users unaware of how their search data is being marketed, they also do not question the limits of web access via Google.




Central Park on Google Maps (maps.google.co.uk, accessed 16/03/2012)




Central Park in Street View – Ironically the actual park is not accessible in Street View. The user has to look at the surroundings from the main streets; an example for pre-established paths and the detaching and excluding effects of digital technology. (maps.google.co.uk, accessed 16/03/2012)




As a way of overcoming the restrictions of *Street*-View, Google Maps now offers photographs of inaccessible areas, based on user-contribution. This demonstrates the exploitative character of the supposedly free service as well as the limits of representation in Google Maps. (maps.google.co.uk, accessed 16/03/2012)

In "My Atlas", Flusser mentions the possibility of contributing to the program "in a 'creative' way, for example by adding a video of Central Park which I shot myself."[5] The role of the creator of Flusser's machine-atlas is less clear: even though as a machine it must have been constructed, it is not explained whether the creator was acting out of self-interest (for example in order to collect and resell user data) or whether the project somehow developed in an almost natural way like a rhizome. Even though the structure cannot be defined more closely, the question of individual interaction with this atlas remains. After praising his atlas, the narrator turns nostalgic towards the end, longing for the days in which atlases were books. This could be seen as a conservative move from Flusser's side, however, the possibility of effective, non-structural problems in Google's profitable maps and Flusser's potent atlas-machine in relation to Deleuze's and Guattari's map need to be explained before the story's final sentence can be examined more carefully.

A map is a representation and codification of areas of life which are not otherwise presently accessible or even naturally visible. This inaccessibility may be connected to space[6] and situation (scale or position), time (representation of historic events) or the idealistic nature (maps depicting religious beliefs of populations) of the object. Maps therefore respond to a demand posed by an intentional subjectivity restricted by physicality.

[5] See Vilém Flusser, "My Atlas", p.5. in the present issue of *Flusser Studies*.

[6] By "space" I understand everything that concerns a subject beyond its immediate environment; it can be seen as the merging of mapping and tracing for which I argue in my conclusion. I refrain from using the concept of "space" in this paper because I want to lay out the relevance of said merging of mapping and tracing, environment and abstraction step by step. The uncritical use of the term "space" in my understanding brings with it a number of presuppositions about an existing subject which I want to slowly establish rather than taking it for granted.

The company Google has recognised this demand and uses it for profit by collecting and selling user data. Awareness of the danger of being targeted by Google and advertisement is rising, yet this is not the only constraint of Google Maps. The user can still only follow pre-established paths even though the notion of unlimited possibilities is advertised. For example, Google Street View only shows streets at a certain point in time when photographic images were taken; it is currently not offering a real-time image.

Compared to the possibilities opened up by Flusser's atlas-machine, Google Maps appears almost archaic. If maps are a response to the demand of overcoming embedded physicality, the atlas-machine appears to be the ideal solution. Here, imagination has primacy over environment ("I must admit that I find it almost impossible to tear away from my atlas and return to the comparatively boring so-called 'concrete environment'."[7]

From this point of view, the essay's closing sentence sounds naively nostalgic: "The days when atlases were books must have been beautiful."[8] Using the terms introduced in Deleuze's and Guattari's model, this could be a plea for a *tracing* instead of *mapping*. Yet, a less sentimental and more practical argument for the primacy of physical embodiment over ideal and infinite representation can be made when the effects of a primacy of mapping over tracing are examined.

Sensory impressions in an embodied presence embedded in an environment are simultaneous and interdependent. The stimulation and interaction between all five senses enabled by a body play an important role in our impression of immediacy and presence[9]. Even in Flusser's atlas-machine, only visual and maybe auditory senses are stimulated; these two senses would not be sufficient to speak of an embedded physical presence in Central Park. The atlas operator cannot smell the flowers or jump into the lake in Central Park.

Smell is a strong example for the importance of sensory impressions in experience, precisely because it is "[…] the most undervalued sense in the modern West" (Classen, 1992, p.2). Even though its importance is often overlooked, smell "consists not only of the odours themselves, but of the experiences and emotions associated with them" (ibid.). The reduction of sensory impressions also distracts from the experience.

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[7] Flusser, "My Atlas", p. 7. Jon Rafman, a photographer who works on Google Street View as art, shares this view of a mélange between reality and representation. He says that "[t]he world captured by Google […] appears to be more truthful and more transparent because of the weight accorded to external reality, the perception of a neutral, unbiased recording, and even the vastness of the project." (quoted in Appleyard, 2011) The mingling of reality and representation is not as far-fetched as it first sounds in Flusser's essay.

[8] Flusser, "My Atlas", p. 6.

[9] Maurice Merleau-Ponty explains the importance of body and sensory impressions in saying that "[t]he exteroreceptivity demands that stimuli be given a shape; the consciousness of the body invades the body […]" (Merleau-Ponty, 1945, p.87). He argues against a divide between mind, body and environment or world in underlining their connections: "I cannot understand the function of the living body except by enacting it myself, and except in so far as I am a body which rises towards the world." (ibid., p.87) These connections between mind, world and body are relevant for the dangers of widened gaps between those elements as provoked by digital technology and mapping. A more detailed account of these dangers is going to follow in this essay.

Thus the subject-object divide in Flusser's atlas-machine is clear and deep: the divide is materialised as the screen (and indeed, "the screen" is often used as a pars pro toto for the atlas itself).[10] A pedestrian in Central Park on the other hand would feel less detached and divided from his environment – even though the narrator claims that his atlas of Central Park is "more interesting than all the Central Parks in which citizens of Manhattan believe to be taking walks" (ibid.). This issue relates back to Deleuze's and Guattari's insistence of *putting the tracing back on the map* – personal, restricted tracing as embedded in a wider context. Using the terms introduced in their other example I could say that spontaneous short-term memory needs to be rooted in conservative long-term memory.

The break of connection and resulting objectification of environment is illustrated in the grandfather's confusion when faced with the abundance of new codes and symbols to be learned in order to understand new atlases: "These codes were indecipherable unless the maps were given a key, a legend to be learned by the reader."[11] The grandfather goes on to explain that "atlases caused a revolutionary change in the reader's approach to history. Instead of [being immersed] in it, he was facing it."[12]

This draws out the difference between partaking in history, that is to say, actively contributing to events and acting in them on whatever scale, and passively trying to decipher it. It underlines the emphasized subject-object divide of embodied individual and environment in a reading of maps as opposed to physical presence in an environment. The issue of symbol-reading and the resulting detachment can be compared to the often ignored factor of using pre-established paths online: both activities are necessary skills, though once acquired, the gap and detachment they create is often forgotten.

Unlike Google Maps and digital technology, the atlas-machine can be used in a seemingly infinite number of creative ways which results in an "overwhelmed […] 'new imagination'."[13]

However, these representations and pieces of information still do not completely satisfy Flusser's narrator who longs for an ancient, clearer divide between represented, objectified environment and physical, immediate environment. Based on the preceding analysis I can name at least two reasons for this longing:

(i) First, most current representations are only audio-visual and therefore just stimulate two out of five senses. The narrator cannot smell the flowers his screen shows him, he cannot touch,

[10] The relevance of the *screen* is another subject which would deserve more attention, here and in general. It is surprising that despite rapid progress in hardware and software, the screen as the main "object-surface" so to speak and key element of representation has remained mostly unchanged and static.
[11] Flusser, "My Atlas", p. 3.
[12] Ibidem, p. 3.
[13] Ibidem, p. 2.

smell or taste them, and he cannot hear the noise of a breaking branch on the bush. In a simplified way, I want to call this the passive incompletion of artificial sensory impression.[14]

(ii) Secondly, the narrator cannot make any changes in Central Park in his program except fictitious ones. These changes are not shared with anyone in the same way that, for example, planting a new tree in the shared physical environment of Central Park would be. They only exist privately in his model. This second reason for preferring an embodied presence in a physical environment I want to summarise as the lack of shared active impact beyond personal creativity in an artificial environment,[15] again in a very simplified manner.

Both arguments – that is to say, the passive incompletion of artificial sensory impressions and the lack of shared active impact beyond personal creativity in an artificial environment – share the implicit absence of physicality. Flusser's narrator raises this problem when he justifies his nostalgic longing for the days when atlases were books by laying out the main difference between himself and his grandfather: "He used his hand to play; I use my fingertips at best. My children will not even go this far anymore: the screen will follow the command of their spoken word."[16]

Deleuze's and Guattari's "Rhizome" essay gives a primary relevance to *mapping* over *tracing* which in the face of the foregoing analysis is troublesome. Mapping in their description seems to be an activity derived from imagination, not physical presence; the latter would be a restricted tracing. In this model, however, the *imagination* replaces Flusser's atlas-machine or even Google Maps minus the agenda of maximising profit. Taken to the extreme, the secondary position of physicality and *tracing* and the primacy of *mapping* could be seen as a Cartesian move of prioritising mind over body.

Deleuze and Guattari would reject this criticism because it presupposes the necessity of imagining the metaphorical map. Mind and imagination are often seen as human traits which would imply an anthropocentrism which he rejects in his works on inanimate objects such as

[14] I am aware of the fact that sensory impressions are not merely passive but rather active and acquired. As Merleau-Ponty puts it, "the 'sensible quality', the spatial limits set to the percept, and even the presence or absence of a perception, are not *de facto* effects of a stimulation outside the organism, but represent the way in which it meets stimulation and is related to it." (Merleau-Ponty, 1945, p.86) Yet he also underlines the importance of the stimulus in the process of perception: "I cannot understand the function of the living body except by enacting it myself, and except in so far as I am a body which rises towards the world." (ibid., p.87) It is beyond the framework of this essay to take the activity of perceiving in relation to digital technology into account; I therefore present my critique of a "passive incompletion of artificial sensory impressions" in a very simplified manner and as a useful critique for the main focus of this analysis.

[15] I am aware of the fact that the possibility of a shared active impact also includes the possibility of a shared passive impact from other people in a person's proximity. However, this opens up a new issue of two or more subjects in relation to a shared physical environment and their relevance to one another. It is beyond the framework of this essay to explore this problem in more depth; I will therefore restrict myself to discussing one single active subject in relation to a physical environment.

[16] Flusser, "My Atlas", p.6.

stones. According to the "Rhizome" essay, m*apping* as an activity and the *rhizome* as a process just *are happening*, without the necessity of a mind trying to imagine or overview it.

Yet given my analysis and interpretation of Flusser's "My Atlas", it is questionable how the high connectivity and the sense of wholeness of a map or a rhizome are really accessible or even relevant for an embodied subject outside of the imagination; indeed, how much multiplicity can the imagination handle before it turns into an "overwhelmed 'new imagination'"?

In other words, in a physical, restricted environment a subject *experiences* a tracing rather than *encountering* a map. The rhizome may be present and developing, yet the rooted trees a person may encounter in her immediate environment are more intense and presently relevant. For example, when someone is taking a walk through Central Park he will take in different impressions from all directions. He may even ponder over the ahistorical question of hats women used to wear in the 17th century in Central Park. Yet, when something unexpected happens in his immediate environment, for example a tree falling over, this event immediately gains primacy over his rhizome-like thoughts.

Without wanting to dismiss the map and the rhizome, I first want to raise a practical criticism regarding the status of traces and roots in Deleuze's and Guattari's metaphors. The respective two elements should be on par with each other. In that sense, the tracing does not only have to be put back on the map – the map also has to contain tracing.

Secondly, I want to make a distinction between *mapping* and the rhizome in my criticism. I am sympathetic towards the naturally developing rhizome as a way of thinking about connections and becoming. However, the *map* as a human invention and tool, traditionally abstracting from the natural environment by coding and conserving it at a given time, seems to be an unhelpful choice of terminology for the argument of interconnected and evolving change Deleuze and Guattari want to make. "Cartography is an illustration of the tangible world – an abstraction of the thing itself – which ties back to philosopher Alfred Korzybski's well-known expression that 'the map is not the territory.'" (Lima, 2011, p.80) *Mapping* thus poses similar problems as artificially constructed digital technology, namely the loss of the subject and the multiplicity of experience. I therefore question whether Deleuze's and Guattari's *map* really bears relevance beyond imagination and thus beyond an anthropocentric philosophical model.

## The Individual on the Map

There are two main criticisms of two senses of mapping arising from this essay: first, the widened gap between the embodied individual and her immediate, physical environment in traditional

mapping. Secondly, the widened gap between mind and body and the resulting dangers of an implicit Cartesianism in Deleuze's and Guattari's sense of mapping.

In digital technology and in the activity of mapping (here in the ordinary sense of establishing and using a map) the individual is separated from her physical environment and faced with representation. Sensory connections which create a sense of unity and connections with the environment are reduced. Traditional maps rely on codes and symbols which makes the gap between representation and the represented environment very clear. Digital technology on the other hand offers a more intuitive life-like representation in its connected hyperlinks, thus reducing the *perceived* gap between representation and represented environment. Yet, in fact, the gap is widened because the codes and symbols are concealed by realistic representation which reduces sensory embodied experience to audio-visual stimulation.

In the example of Google Maps, the merge of digital technology and a traditional sense of mapping, this also leads to the danger of overlooking actors such as Google as a company. The individual is under the impression of acting privately, just like Flusser's narrator manipulates his atlas only for himself. The individual using Google Maps is therefore often unaware of how much she reveals to Google and other companies about herself. Furthermore, the widened gap between individual and environment leads to the outlined passive incompletion of sensory impressions and lack of conscious shared active impact beyond personal creativity in an artificial environment.

Deleuze and Guattari try to overcome this problem by introducing the concepts of mapping and rhizome as something *in action*, unfolding without codes or representation. Having outlined the structural problems of artificiality in the map analogy, I will concentrate on the rhizome in my concluding analysis. The main problem is the question of relevance of the rhizome-analogy beyond the imagination.

The rhizome and map are merely thinkable, and probably only partly so. Every attempt at imagining the rhizome is already a tracing, not a mapping, because it is carried out by a situated, limited subject. The rhizome bears important relevance for an individual in the process of a tracing, that is to say, in its embodied presence in an immediate environment; yet, in my opinion this relevance should not be given primary relevance over an embodied presence or conscious reflection. By giving secondary relevance to reductive tracing and thus trying to erase subjectivity in their Rhizome essay, Deleuze and Guattari's work contradicts itself as the rhizome cannot be physically experienced nor completely grasped by a subject. The rhizome is introduced as a thinking point for the reader. Yet I want to question the relevance of such a *thinking* point which cannot be thought or experienced and disregards subjectivity as tracing.

Even though the authors wants to reject the criticism of anthropocentrism, from a practical point of view the importance of the map and the rhizome for non-conscious objects is dubitable, unless it manifests itself in its physical immediate environment. A stone, for example, is *unaware* of the rhizome-connections of its history, its changes and its contacts with surrounding soil, grass, animals, countryside or general geographical position. It may be *changed* and *affected* by all of these factors, for example, if a chain of events leads to an earthquake, the stone may be severely altered by it. Yet, in order for the stone to change, events must take place in its immediate environment. The rhizomatic connections of these events beyond this immediate environment do not *matter* to a non-conscious being. That is to say, "putting the tracing back on the map" can only really be done by a conscious subject, unless you consider every tracing to be part of the map already. In this case, the difference between the two actions is mainly constructed and defined in the mind, not intuitively experienced in embodied action, which is a return to the question of implicit anthropocentrism, maybe even Cartesianism.

Flusser's atlas seems to be an intermediate stage between Google Maps and Deleuze's and Guattari's mapping. Here, the perceived gap between body and environment is minimized to the extreme, yet the narrator still misses embodied experience. The evaluation of mapping over tracing, mind over body or abstraction over the original, bears the danger of a similar loss of embodied, sensual experience. It is therefore important to raise awareness of the widening gaps between mind, body and environment in the digital age as well as reinforcing and elevating the status of sensual impressions in order to put mapping and tracing on a par.

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