THESIS:

The Delegation of Perception

(img: H.Farocki)

on images seen by remote devices

www.delegate-perception.net

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Still from 'I Thought I was Seeing Convicts', 2000

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Introduction

Once it was easy: ”All media as extensions of ourselves serve to provide new transforming vision and awareness.” said Marshall McLuhan.[1]

”Am I a man or a machine?”[2] The ambiguity came into actuality with the enormous contemporary production of hybrids that are becoming our everyday partners in a complex technological reality. Since it is not longer clear, where the images we perceive do come from, surely not only from mental consciousness anymore – so which kind of images do we perceive and how?

We still expect images to be a representation of our reality and that they resemble what we can perceive in ‘reality’. We do not question at all, which reality we are in or the images do come from – even though our extensions have began to change into hybrids of daily life. (The expression of hybrids points out that we use technological devices to do things we cannot or do not want to do. As well it stresses the fact of further bio-mechanical development and the ambivalent impulse we have towards them).

L. Manovich states that during the last 150 years we now have come to accept the image of photography and cinematography as reality. We have learned to see reality ‘as seen by a camera lens’, because we think the camera pictures a surrounding reality – so to say, what exists can be photographed. Virilio marked for this the expression of ‘the era of the dialectic logic of the image’[3] (concerning traditional photography and cinematography) defining the reality of presence of the object as belonging to the past, but also marking its actuality.
Film - transporting mostly arranged images to an audience - but especially television and photography, demand the belief in reality effect of the transmitted pictures of the camera lense. Events, like the moonlanding and other extraterrestrial pictures, still can be used to make the majority to rely on them as facts, eventhough the only accessible proof for them are taken photographs.

Now an indicative shift of significance can be stated with the invention of the digital image, which is coded in binary data like all the other digital information.

[1] http://web.mit.edu/jhmurray/www/HOH.html
[2] (B.Kunst quoting * S.Zizek (“does my brain function as a computer”) http://www.interact.com.pt/ligacoes/share/iessay.html
"Today's form of the obsessive question 'Am I alive or dead?' is Am I a machine (does my brain really function as a computer) or a living human being (with a spark of spirit or something else that is not reducible to the computer circuit) (...)." In: Slavoj Žižek: The Plague of Phantasies, Verso, London, New York, 1997, p. 136.
[3] Die Sehmaschine, Virilio, Paul, p.144 (german text)

Actuality:
synthetic images and reality effect

Nowadays we do not only delegate the making of images to algorithmic coded machines, but as well the perception to automation without direct human control.
There is a difference between what a handheld or directed camera is taping and one fixed to a wall (surveillance camera, webcam, satellite), which probably can be moved via remote control, which means that at least sometimes there is an observer. In contrary those cameras on helicopters, bombs and cameras mounted on guns (so that they can see further then the soldier, who is perceiving the picture via a little monitor in front of his eye), which see 'more as or instead of' the observer.
Typical examples are: 1. The operative images we got from the gulf war in the 90s or the slightly different 'before & after' pictures from Afghanistan now. 2. The green nintendo pictures (Baghdad, Belgrade, Kabul), we get when we should not see anything real. 3. Face recognition and robots, which recognize us.

It is constantly getting more difficult to distinguish reality from 'synthetic reality', but at the same time great effort is put in making the invisible visible. This mostly means to involve further technical development like infrared light, videotracking, surveillance cameras, webcam, eyescan, thermal detection, endoscopy, etc. without questioning what kind of 'real' and perceivable information these electronic *eyes* give.

But what is invisible is not necessarily unseen, it is just not represented. 'When we notice what can be seen and what can be seen in a new way, we have as well to be attentive for what cannot be seen or cannot be seen anymore.' (Introduction: Paradoxes of visibility; Treichler, Cartwright, Penley)[1]

Simulation, coming from the military field, became one of the most important fields in making images - creating a reality. The creation of illusions has been delegated to optical and electronical machines and machines that can see, like robots. The question is what exactly do we perceive through this scientific sight? Considering that on one side it is claiming objectivity and actuality, but on the other it is recorded / created and transmitted via digital illusion generators – computers?

Algorithmic creation of images and synthetic sight allow the relativistic fusion/confusion of the factual with the virtual – thus producing the dominance of the 'real as effect'[2] wrote Virilio.
The perception through photography and film invented a new reality long ago, so now the new technologies must have an impact as well.
Regardless how boring (surveillance camera stream) or obviously artificial (computer games) those images appear, they have been getting a new status in our consciousness 'life on the screen' and thereby change our perception. But we do not take much notice that the strategies of working with computer data become our general cognitive strategies.

In my eyes, there is a connection between the nonlinear of computer data and associative way of perception of images. Coded in algorithm the stream of images in combination with icons, symbols, & letters, allows more complex informations and decisions (screen of games, TV, websites, etc.) than before. When seeing is understood as a permanent, half unconscious act, I wonder how we deal with sight and perception of reality at the moment, with the images of industrial sight, which do not belong to any of our memories. At a time when we get used to synthetic creation and digital transmission of images, do we perceive this automated sight as real or as reality effect?

[1] Imagineering, Holert, Tom, p.22 (german text)
[2] Die Sehmaschine, Virilio, Paul, p.138 (german text)

Part I:

Reality with remote devices

1.

'This is to say: representation cannot be simply tested against reality, as reality is itself constituted through the agency of representations.' (V.Burgin)[1]

Construction of perception

Seamingly Descartes was the first to state an independent concept of perception, which was not directly connected to the retina. Eventhough T.Kepler had argued before, that the lens of the eye presents an inverted image on the retina, he still assumed the eye to be the judge. In contrary to that for Descartes the act of perceiving took place in the brain – so he came to the conclusion that 'perception, or the action by which we perceive, is not vision ... but is solely an inspection by the mind.'[2] He could break that clearly with the concepts of vision of his time by concentrating on his consideration of light as a material substance with concrete being. 'The Cartesian theory was the first to assert clearly that light itself was nothing but a mechanical property of the luminous object and of the transmitting medium.' (A.I.Sabra 1982)[3]
Judgement then is essential to Descartes' system of perception. The informations perceived via the eye are therefore just series of representations, which the mind has to categorize. In this sense he could see and accept images, as from the camera obscura, in a perspective way and thus claim perspective as a natural law. 'Descartes was aware that perspective was a representational code that E.Panofsky later called a 'symbolic form', but at the same time saw that code as having a place in the natural world.'[4]
So understanding those images as accurate depictions of the shape of objects, the way to see their resemblances as representations was opened up. The perspective system, which places the one-point viewer – using just one eye – at the center made the images inherently coherent and by this credible. Therefore perspective had a key role as the boundary between resemblance and representation, but also supported the fusion of both. 'In the Cartesian system of vision, representation replaced resemblance. From this point on, the modern picturing of the world as representation[5] became possible.'[6]

When for Descartes there was the need to find some clarity (insight) - a method to escape the uncertainities of mere human vision and the confusion of senses, - the camera obscura looked like the ideal instrument to reflect a 'purely objective view of the world.'[7] The camera is a dark chamber, which separates the eye of the observer from the depictions (pictures, resemblances) arriving through a small, clearly defined hole. This way the observer became a disembodied witness to an accumulation and combination of signs, which stand for a representation of the objectivity of the world. But at the same time human subjectivity is simultaneously involved in the objective apparatus through the presence in the camera. So the development of the camera-like seeing machines on one hand legitimized the viewpoint of the individual and on the other hand decorporealized vision for the first time, by seperating the act of seeing from the body of the observer. Other devices like

[1] in/different spaces, Burgin, Victor, p.238
[2],[4] Visual Culture (an introduction) Mirzoeff, Nicholas p.43
[3] Visual Culture (an introduction) Mirzoeff, Nicholas p.44
[5] Visual Culture (an introduction) Mirzoeff, Nicholas p.55
[6] M. Heidegger pointed out, that "a world picture ... Does not mean a picture of the world but the world conceived and grasped as a picture. ...The world picture does not change from an earlier medieval one into a modern one, but rather the fact that the world becomes a picture at all is what distinguishes the essence of the modern age." (1977) The Visual Culture Reader, Mirzoeff, N., p.6
[7] The Visual Culture Reader, Mirzoeff, Nicholas, p.250

telescopes, etc. just expand sight, while keeping the viewpoint of the viewer.
Further inventions in the field of sight like the panorama and the diorama offered new forms of mobility for the gaze – it became more virtual.[1] Paradoxically the more mobility was invented for the gaze, the more the observer became passively seated, like with diorama and stereoscope in 19th century or with cinema later on. With this move of virtuality from the (Descartes') pure mental space into virtual
architecture the focus of perception of reality itself shifted. 'These devices produced a spatial and temporal mobility - if only a *virtual* one ' (Friedberg 1993).[2] Those instruments were not directly used for social engineering but, already covered some desire to 'have visual mastery over the constraints of space and time'.[3]
When up to then perspective somehow defined the point from which to see and brought some systematics to the visual field, with the creation of the panopticum (literally: the place where everything is seen) the perspectival viewpoint was turned into an all-powerful one. The main illustration for this shift is the panopticum as designed by J.Bentham in 1791, which in the research of M.Fouccault stands for the new system of discipline in place. The vanishing point which organized perspective now became a point of social control. Visibility became a system of discipline that contrasted to that of the camera obscura: 'The seeing machine was once a sort of dark room into which individuals spied; it has become a transparent building in which the exercise of power may be supervised by a society as a whole.' (Anne Friedberg)[4]
In the opinion of others like D. Haraway it is even expressed more radically. She sees vision as always beeing a question of the power to see and inevitably as an inherent partial viewpoint. 'Vision requires instruments of vision; an optics is a politics of positioning. Instruments of vision mediate standpoints; there is no immediate vision from the standpoint of the subjugated.' (Haraway 1991)[5]

Constitution of 'reality'

With the invention of photography first and film later the claim of perspective to be reality became less convincing, and new concepts for the constitution of reality were created. One main point then was the actuality of the image: what could be photographed or filmed must have been in front of the camera lens. In this sense the image was dialectical, because it sets up a relationship between the present viewer and the past moments of space or time which were represented. '.. In other words: an image is dialectics at standstill. For while the relation of the present to the past is a purely temporal, continuous one, the relation of the then to the now is dialectical: not of a temporal, but of imagistic nature.' (W.Benjamin)[6] Barthes mentioned that one defining attribute of photography was that the object has been real. On the other side he stated the madness of the representations a photographed image gives, he saw it as a 'bizarre medium, a new form of hallucination: false on the level of perception, true on the level of time ...' (1981)[7] So photography created a new relationship to the experience of time, which marked the paradoxical symptoms of modernity very clearly.

Photographs and films offer a far more democratic visual map of the world, than the perspective system, which handed all comprehension to the powerful viewpoint from which it was drawn. Eventhough it is still a selective view through specific apparatuses and serving the needs of distinct subjectivities, we came very much to rely our constitution of reality on them. Especially photography

[1] The Visual Culture Reader, Friedberg, Anne p.261
[2] Visual Culture (an introduction) Mirzoeff, Nicholas p.93
[3] The Visual Culture Reader, Friedberg, Anne p.261
[4] The Visual Culture Reader, Friedberg, Anne p.256
[5] Visual Culture (an introduction) Mirzoeff, Nicholas p.225
[6] Visual Culture (an introduction) Mirzoeff, Nicholas p.69
[7] Visual Culture (an introduction) Mirzoeff, Nicholas p.250

claimed to picture the world and index reality. This fundamentally changed with the development of the digital image, which is created from binary code. There is no more evidence in the representation as *reality* now, because it can quite easily be manipulated by computers. But the discovery of the lack of reality is inherently connected to the discovery of the invention of other realities, Lyotard stated in 1993. 'As one mode of representing reality loses ground another takes its place without the first disappearing.'[1]
The virtualities of the postmodern images are further eluding our capacity of comprehension by the appearance of the paradoxical image as Virilio specified in 1994 (The Vision Machine). For him the real-time image dominates the object represented / transmitted and thereby dissolves it.
But 'with the creation of digital imagery also the relationship between observer and observed has changed. There is no longer any necessary or logical connection between a virtual image and exterior reality.'[2] As well emerged an increasing visualization of things that are not themselves visual, at least for the human. 'Visualizing technologies seem without apparent limit; the eye of any ordinary primate like us can be endlessly enhanced by sonography systems, magnetic resonance imaging, artificial intelligence-linked graphic manipulation systems, scanning electron microscopes, computer-aided tomography scanners, colour-enhancement techniques, satellite surveillance systems, home and office VDT`s, cameras for every purpose from filming the mucous membrane lining the gut cavity of a marine worm living in the vent gases on a fault between continental plates to mapping a planetary hemisphere elsewhere in the solar system.'[3]
'Basically, the *truth* of what we see is no longer given by our eyes, but by our instruments and their scientific interpretation or military appropriation. More disturbing, these prostetic visual devices unanchor natural perception from the field of human body`s natural capacities.'[4]
The crisis of the visual in the era of postmodernism where paradoxical almost everything 'is increasingly formed and informed, inflected and refracted'[5] through images, evolves exactly from the acceleration and the cirulation of images. It no longer can be distinguished from where they do come, because 'the humanistic distinction between the real and the virtual has disolved.'[6] What Virilio has stated before – the final undermination of the age-old problematic of the site where mental images are formed and as that of the consolidation of natural memory – has become a generalized cultural condition.[7] There is no longer any visual carrier material at all, any digital information can be put down and described by algorythms.

So the notion of *the* world-picture, can no longer stand for the changing situation. Today visual culture has to deal with a fragmented view and complex pictures, which are not created from one medium or in one place. The attention is drawn from structured and formal viewing settings to the visual experience of everyday life, which has to deal with global circulation and accumulation of images and therefore signs. The new configurations of the global and local come via images and these are by no means simple or one-dimensional. Rather, as Gramsci noted of the national-popular, it is an *ambiguous, contradictory and multi-form concept.*[8]
'In short seeing is not believing but interpreting. Visual images succeed or fail according to the extent that we can interpret them successfully.'[9] With the images driven from digital data today it seem obvious that they are mere representations and not depicting something *real* in themselves. Today performative utterances, like actions, events, doings, are understood to be crucial to the construction of reality, a construction that is sociotechnically ordered.[10]

[1] Visual Culture (an introduction) Mirzoeff, Nicholas p.7
[2] The Visual Culture Reader, Mirzoeff, Nicholas, p.186
[3] The Visual Culture Reader, Haraway, Donna, p.191
[4] Machinic Vision, Johnston, John, p.30
[5] in/different spaces, Burgin, Victor, p.36
[6] Visual Culture (an introduction), Mirzoeff, Nicholas, p.123
[7] Machinic Vision, Johnston, John, p.31
[8] Visual Culture (an introduction), Mirzoeff, Nicholas, p.257
[9] Visual Culture (an introduction), Mirzoeff, Nicholas, p.13
[10] perform or else, McKenzie, Jon, p.208

Years before G.Debord wrote: In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into a representation.[1]

2.

'I cannot urge you too strongly to mediate on the science of optics ... Peculiar in that it attempts by means of instruments to produce that strange phenomenon known as images.'[2]

Development of image production

First photography and later film transformed the human memory into a visual archiv which was taken to be more reliable and objective than painting and other mementos. Photography has always had an inherent mutability, but also made possible ways of seeing which had been unimaginable. Alteration in many cases is obvious and can easily be detected especially in pictures of political scenery. But striking examples of the new vision were the pictures of rendering movement by E.-J. Marey and E. Muybridge, where segments of movement were made visible the human eye is not able to perceive. The development to make things visible by taking a point of view, which is not accessible without sight extensions moved on. So today we can imagine 'how the world looks to the compound eyes of an insect, or even from the camera eye of a spy satellite or the digitally transmitted signals of space probe-perceived differences 'near' Jupiter that have been transformed into coffee-table colour photographs.'[3]
Nowadays because of the undetectable manipulation of images of the electronic age, especially photography has lost its claim to picture the world - it no longer can stand for a representation of the surrounding environment. As W.J.Mitchell put it, post-photography is turning on itself to explore the possibilities of a medium freed from the responsibilitiy of indexing reality (1992).[4] Even Kodak has learned that it cannot sell with 'It's a Kodak moment.' any longer, today also they go with the argument that "photographs aren`t just memories any more. They are information."[5] Important is that this just has to be understood focusing on the basis of the technological source of digital data now common to almost any transmission of information.

It is a slightly different development within cinematography, where around the time of a broader adoption the unsettling transformations of everyday life and society found there equivalent in the moving image. 'Modern attention was vision in motion. Modern forms of experience relied not simply on movement but on the juncture of movement and vision: moving pictures' (Charney and Schwartz 1995).[6] Eventhough taken as indexing reality like photography, film from its beginning had been concatenating images and signs in all of their various types and kinds of relationship. 'Every image acts on others and reacts to others, on 'all their facets at once' and 'by all their elements'.'(Deleuze: Cinema 1 – The Movement-Image)[7] Following the approach of Deleuze this means the rejection of a centered view of an anchored, perceiving subject, from whose shifting perspective and limited

[1] The Visual Culture Reader, Mirzoeff, Nicholas, p.253
[2] (J.Rose places a quotation from Lacan`s first seminar 1953-1954): in/different spaces, Burgin, Victor, p.45
[3] The Visual Culture Reader, Haraway, Donna, p.193
[4] Visual Culture (an introduction), Mirzoeff, Nicholas, p.82
[5] Visual Culture (an introduction), Mirzoeff, Nicholas, p.89
[6] Visual Culture (an introduction), Mirzoeff, Nicholas, p.95
[7] Machinic Vision, Johnston, John, p. 35

horizon perception opens out onto a world. Instead, he argues, we must conceive of 'a state of things which would constantly change, a flowing-matter in which no point of anchorage nor center of reference would be assignable. On the basis of this state of things it would be necessary to show how, at any point, centers can be formed which would impose fixed instantaneous views. It would therefore be a question of *deducing* conscious, natural or cinematographic perception.'[1].
Not going that deep and by focusing mainly on features as close-ups and slow-motion W.Bejamin claimed that 'evidently a different nature opens itself to the camera than to the naked eye - if only because an unconsciously penetrated space is substituted for a space consciously explored by man.' (Benjamin 1968). Film creates access to a dimension of the optical unconscious that previously could not be explored.[2]
Something like this D. Vertov tried to exceed when he started to use his camera as a 'cine-eye', thus carrying the deterritorialization of the image even further. The relative immobility of the human eye was stressed by a variety of technics by the experimental cinema, such as looping, refilming, or hypermontage . So that 'the objective is to attain to "be pure vision of a non-human eye, of an eye which would be in things", witness to the realm of universal variation and interaction of images ..'.[3]
Whilst the human gaze became more and more fixed, the sight instruments on the contrary became faster and more flexible (up to satellites or cameras mounted on bombs) leading to a further fusion-confusion of eye and camera lens – thus indicating a switch from vision to visualisation.

Simply because cinema beeing a multiple system, as P.Wollen mentioned, it could develop and elaborate the semiotic shifts that marked the origins of the avant-garde in a uniquely complex way, a dialectical montage within and between a complex of codes.[4] And that is just the point which makes it slightly different from photography in the change to digital imaginery. As in Deleuze`s analysis of the cinema, this image is not an icon or simulacrum representing something existing in the world (Plato), nor is it the internal or mental picture of an external object (Descartes); it is rather, the perceptual correlative of actions in and reactions to a milieu (Bergson), but a milieu now defined by a variety of agents and sub-agents in human machine systems.[5] Exactly here the passage from this understanding of film, where the *irrational* cut of the modern cinema is seen as a linkage that determines the non-consummensurable relations between images, to machinic vision which is related to information machines can be taken. This leads just to the necessary change in actual perception of digital imaginery

The digital image as driven from computer data evolves from the same elements as digital graphics, this marks a radical shift for its meaning. Compositionally there is no more distinction, all is coded in algorythm and acts on the same level as any other digital stream. 'With numbers nothing is impossible. Modulation, transformation, synchronization; delay, memory, transposition; scrambling, scanning, mapping - a total connection of all media on a digital base erases the notion of the medium itself.'[6] Many of these images, of course, are perceived, but their articulation occurs by means of another logic: the incessant coding and recoding of information and its viral dissemination. The image itself becomes just one form that information can take. Thus leading to the illusion that information became somehow immaterial, 'the digital image seems only to have an electronic underside, so to speak, which cannot be rendered visible'.[7] Visual information today exists on an equivalent level as textual or any other digital output and therefore we have to rely on the source of the image or the veracity of the context as in other media. What we now 'have begun to uncover is the free play of the signifier, a freedom to understand meaning in relation to images, sounds or

[1] Machinic Vision, Johnston, John, p.35
[2] Visual Culture (an introduction), Mirzoeff, Nicholas, p.95
[3] Machinic Vision, Johnston, John, p.37
[4] snap to grid, Lunenfeld, Peter, p.120
[5] Machinic Vision, Johnston, John, p.42
[6] ibid.:, p.42(Kittler, Essays:literature, Media, Information Systems:"In computers everything becomes number..)
[7] Machinic Vision, Johnston, John, p.39

spaces not necessarily perceived to operate in a direct, causal or epistemic relation to either their context or to one another.'[1]

Seeing it this way, the image arosen from digital data is freed from the preestablished code, though as beeing destinct from photography and cinematography it is simply one among many representational forms, just a way of perception – not a representation or index of reality. An image today is an assemblage of graphic elements, stylization and special effects. A change in perception therefore is essential, as 'the circle of images cannot be escaped from, because an image can only be replaced through an other image'.[2] 'Virtuality is not about living in an immaterial realm of information, but about the cultural perception that material objects are interprenetrated with informational patterns.'[3] The visual field nowadays becomes infiltrated and overlayed with data and therefore physical space transforms also into a dataspace. We delegate perception to remote machines, which are claimed to deliver objective pictures and the screen where they can be rendered visible is taken as proof of their reality effect. The image dominated culture is due to the fact that "[t]he spectacle is capital to such a degree of accumulation that it becomes an image" (Debord 1977).[4] Today computational data transmittes this transformation as information but in a self-referential way – so it has to be 'encoded' carefully.

List of remote devices

These remote devices are mainly machines to enhance sight without a directly concerned observer. They are either involved to perceive something not visible to the naked eye: satellites, endoscopy, and others. Or to see instead of an observer – surveillance, etc., where it is not that important if there is one or not. Some other applications operate only with computatorial skills not easily comprehensible for humans – biometrics, ... and so on.
It has to be kept in mind, that what can be seen is a still a 'question about who is allowed to look, to what purposes, and by what academic and state discourses it is legitimated.' And ' that what the eye purportedly 'sees' is dictated to it by an entire set of beliefs and desires and by a set of coded languages and generic apparatuses.'[5]

Mainly based on 'reality' videodata:

- TV
- Webcams
- Surveillance cameras / CCTV
- Satellites
- Smart machines
- Smart bombs / Cameras on bombs
- Cameras on guns
- Radar
- Scanning systems
- Ray tracing
- Autotracking systems / Videotracking
- Motion control / infrared – shooting systems
- Texture mapping
- Computervision: Robots / Pattern recognition

[1] The Visual Culture Reader, Rogoff, Irit, p.14
[2] Schnittstelle, Spangenberg, Peter, p.213 (german text)
[3] The Digital Dialectic, Hayles, Katharina, p.94
[4] Visual Culture (an introduction), Mirzoeff, Nicholas, p.27
[5] The Visual Culture Reader, Rogoff, Irit, p.21,22

- Biometric systems: Face recognition / Irisscan
- Endoscopy

Related Devices:

Based on diverse 'reality' data (audio, video, ..)

- Multispectral sensors
- GPS (Global Positioning System)
-

Mixing virtual and 'reality' data:

- Simulation systems (flight, car)
- VR helmets

(to stop here therefore, it simply would be too much if I add sensors and similar devices.)

Part II:

Machinic vision

3.

'The Western intellectual history of the 20th century is marked by an obsession with coding, whether with cultural codes (linguistic or iconic representation), machine codes, or biological codes.' (CAE)[1]

Digital data and code

All those images recorded, produced, delivered or interpreted with electronic devices have one thing in common – they are now based on binary code – 0s and 1s, counted in bits and bytes, which are an abstract form of a computational process thus transmitting information. As K. Hayles explains, 'in information theoretic terms, no message is ever sent. What is sent is a signal. The distinction that information theory posits between signal and message is crucial. A message has an information content specified by a probability function that has no dimensions, no materiality, and no necessary connection with meaning. It is a pattern, not a presence. Only when the message is encoded in a signal for transmission through a medium - for example, when ink is printed on paper or electrical pulses are sent racing along telegraph wires - does it assume material form.'[2] In this sense now images become exactly the same as any other information within the electronic translation systems, eventhough the output can take very different forms. Digitally the image is 'encoded to a grid of cells – discrete pixels that have mathematical values assigned to them'[3] - by this the photographic and cinematic image is freed from its carrier material and is straight away recoded to algorythm. This allows recomposition as well as instantaneous transmission within a machinic assemblage of images. But crucially one of the very essential distinctions of the digital is its unfinished form. This means that not only 'different users will encounter very different instantiations of distinct things that go under the same names,'[4] they now also appear like naturally in very different contexts. Digitized information allows to be manipulated differently by each user, it can be downloaded, can be shown within the systems of various devices and so on. Therefore digital data does not reproduce, but re-write its content, there is also alteration due to comprehension or degradation. As well as the easily possible modification of data, affecting the pixels for the image depiction – all is conceptually happening on the same level. 'It is simply a matter of substituting new digits for old.'[5]

Following (and extending) Deleuze by using his expressions of machinic and deterritorializing (decoding), J. Johnston describes that machinic vision is not so much a simple seeing with or by means of machines - although it does presuppose this - as it is a decoded seeing, a becoming of perception in relation to machines that necessarily also involves a recoding.[6] Establishing images on the basis of information technology enmeshes necessarily a predefined code – a pattern – which constitutes a relation to the used technology. As described before depending on a more or less universal code, does not give any stable context, therefore the reliance in the function of abstraction of the entailed processes has great impact on the evolving perception. In some way, endless circuits are established, where technology helps to create technology to distribute perception. One of the more simple systems to understand the issue is probably CCTV (Closed Circuit Television), which already exhibits the whole problematic nature. It is not only fact that technology does not develop

[1] Critical Art Ensemble, The Flesh Machine, p.6, http://www.critical-art.net/fleshIntro.pdf
[2] The Digital Dialectic, Hayles, Katharina, p.73
[3] snap to grid, Lunenfeld, Peter, p.58,59
[4] snap to grid, Lunenfeld, Peter, p.126
[5] The Digital Dialectic, Manovich, Lev, quoting W.J.Mitchell, p.181
[6] Machinic Vision, Johnston, John, p.29

without any social context, so there is also influence of the human programmed code and the perception of individuals involved to establish these systems.
'Technologies do not evolve autonomously. The choices to develop, deploy, and value digital media, not only shape the technologies themselves, but also are part of a feedback loop affecting the culture that creates them.'[1]
It is quite clear that technological processes involved in transmission of data are not neutral. As they initiate new modes of consumption, they also influence experiences of embodiment and this reflection leads back to a change in the codes of representation used within the field. Here we are at the very core of the mutable signification of the represented information.

D.Haraway simply and quite positively put it this way: 'The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; they do not dominate or threaten us. We are responsible for boundaries; we are they.(A Cyborg Manifesto)'[2] Substantially there is already human–machine distribution or interacting-influence, which makes obvious that 'the illusion that information is separate from materiality leads not only to a dangerous split between information and meaning but also to a flattening of the space of theoretical inquiry.'[3] In the field of information technology – which is the one of digital data - this is difficult to be understood. The way computers work technologically can not really be controlled by humans. Virtually nothing is really to be seen on the basis of code - 'when computer speak their native languages - assembly code, and beneath that, machine language - they operate within a profoundly non-Cartesian space.'[4] -, but exactly here another field is opened up - everything now can be related to everything. This has been a further important, however provoking human–machinic influence, as 'neural networks in particular have been successful in teaching machines to *recognize* complex visual phenomena. But the important point is that in both these instances programming becomes the experimental production of nonlinear effects of emergence and self-organisation, effects that converge or resonate with fundamental aspects of Deleuze`s philosophy.'[5] 'In the vast and multiply networked telecommunications assemblages within we live now, those functions he (Deleuze and his idea of the cinema of the brain) labels virtual have simply been taken up by less noticeable machines and functions that were formerly attributed to the brain have been autonomized in machines operating as parts of highly distributed systems. In short the brain itself has become a deterritorialized organ. Unlike the eye, however, the brain functions both in and as a network.'[6] Today networking systems as well as humans connected via computers exchange digital data and this leads obviously to an omni-linearity within the data matrix. Developing from this source and expanding within it, the visualization of former invisible objects has been gaining great attention.

Today the interpretation of the visible reality became replaced through the production of visibility and also by the production of virtual reality.[7] And, besides all human–machinic influences and interaction, what is more important, it cannot be done without the recoding of a machinic interpretation.
'Machinic Vision, as I shall use the term, presupposes not only an environment of interacting machines and human -machine systems but a field of decoded perceptions that, whether or not produced by or issuing from these machines, assume their full intelligibility only in relation to them.'[8]
So *to see* means actually to interpret successfully the information in the change of code of representa-tion digital data is transmitting.

[1] The Digital Dialectic, Lunenfeld, Peter, p.65
[2] cyber-moderne, Fassler, Manfred, p.170 (german text)
[3] The Digital Dialectic, Hayles, Katharina, p.94
[4] The Digital Dialectic, Hayles, Katharina, p.90
[5] Machinic Vision, Johnston, John, p.44
[6] Machinic Vision, Johnston, John, p.47
[7] cyber-moderne, Fassler, Manfred, p.226 (german text)
[8] Machinic Vision, Johnston, John, p.27

Reality effect

What is visual and visualized today ranges in a far wider field then ever before. From satellite pictures, Hubble's telescopical recordings to medical images of the inside of the human body and microscopical images – it is now possible to present things in virtuality, so composed from digital data, that could never be seen in any other way. 'Existing in the non-material space of computer simulation, cyberspace defines a perimeter within which pattern is the essence of the reality, presence an optical illusion.'[1]
Thus the pixelated image carries an inherent ambivalence, on one side it is claiming to show the invisible and at the same time it reminds us of its necessary artificiality and absence. So with the improvement of the digital image the pixels become nearly indistinguishable from the former modes of photography and thereby the illusion of reality is reinvented. But in any case now the belief that the transmitted image is a depiction of the original is, as shown before, more then ever misleading. The claim that technological vision and electronic sight, because they are connected to scientific research, are delivering operational and therefore objective images neglects the fact that machinic vision entails a concept of constitution of perception and visualization, which derives from its own construction and the social context.

One of the most stuck beliefs in western societies is probably that the view, the making things visible is showing the 'truth'. So photography as the claimed index of reality could be taken as a proof of what had been there. Thus transparency of sight is seen as connected to higher powers, today technical sight, which in many cases was first developed for the military purpose of the more powerful is still transporting this intention. But yet the question who has access and who interprets the images is important. This complication is quite obvious when 'in the war of cameras, radar and sensors against S.Hussein, only one side can see'[2]. The same occurred in the 'nintendo-images of Belgrade'[3], Kabul, or in images of the 'operartional strokes'[2] of gulf-war: 'at certain moments even colour was abstracted from the scene, leaving the field entirely to line and light: first, the grid and coordinate numbers that turned the television screens of tens of millions into a bomb-sight; then, the blossoming brilliance that over-whelmed the video camera`s sensors and wiped the screen clean - an ultimate self-censoring erasure, in which destruction veiled itself. The more *realistic* images - that is, the minimally less abstract images –came even later.'[4]
Here already the whole myth about technological sight as delivering scientific images is implemented. But also an other difficulty evolves at this point, paradoxically scientific pictures are becoming more and more abstract, in fact they can not be read without scientific interpretation. Standing alone for themselves they have no referent, no meaning - they are no 'pure representations'.[5] Similiar comments about the undetermination of satellite transmissions gives L.Parks, when she explains her expression of codes of orbital sight and the usually involved habits of power. 'To have another meaning than that of their own omniscience satellite-images have to be taken into discoursive exchange. .. Instead of concentrating on a seemingly satellite-panoptism, one could ask, how the sight of satellites has been used to produce codes of an orbital visuality.'[6]

In contrary to that the composed virtual imaginery of virtual reality becomes seemingly the more like a *natural* picture, i.e. the more *realistic* - this means the less abstract it looks. Also L.Manovich points out, that most of the synthetic images are more realistic than traditional photographs. In fact they

[1] Electronic culture, Hayles, Katherine, p.267 or: http://www.english.ucla.edu/faculty/hayles/Flick.html
[2] Schnittstelle, Spangenberg, Peter M., p.207 (german text)
[3] Imagineering, Terkessidis, Mark, p.120 (german text)
[4] In/different spaces, Burgin, Victor, p.231
[5] Iconoclash, Latour, Bruno, p.26, 67 (german text)
[6] Imagineering, Parks, Lisa, p.64,66, Interview mit T.Holert (german text), (siehe auch -> Counterstrategies)

are too real.[1] But this has seemingly not much influence on our perception as *real*, because so we have come to believe in the film-based image we are easily convinced that because it looks real, it can be it. (See for example the camerawork in 'Fight Club' or 'Panic Room'. Almost nobody ever asks if it is possible to fly around the cooking flame, as long as it seems *real*.)
'The more *realistic* the forms of depictions are, the more selfreferential communication and its autonomy for environment-data and –phenomena is, the further *colonialized* perceception becomes. The increase of the realism of depiction is paradoxically connected with the raise of artficiality and not its decline.'[2] We come to live in visually constructed worlds – 'the combined product of 'the media' and a variety of other spheres of image production - can no longer be seen as simply 'reflecting' or 'communicating' the world in which we live: it contributes to the making of this world.'[3]

It would be too easy just to see something entirely new in that fact, but there is to think about the new meanings or codes imaginery is transporting. Seemingly, it does not simply lie in superficial expression of the *real* of an single image any longer. So more than ever, images have to be read in context and in regard of the distributing source, they descend from.

The creation of reality is a simulation of itself and has always been, because the imagination of the unperceivable world is a mode of thinking. We cannot directly grasp reality, eventhough Merleau-Ponty once said '.. all I see is principally within my reach, at least within the reach of my view ..'[4], it is a mere reflection. Nevertheless the simulation of reality today creates a new dimension of indifference, now that the real and the virtual are developed and distributed from the very same devices. 'The programmed visible produces, supports and mutates not only perception; it forms a layer of its own as becoming a part of the unperceivable world and at the same time the mode of its visualization.'[5] As the machinic has been actualized in our everyday experience, there is a profound alteration in the way how reality and thereby 'truth' are constructed.

4.

'Characterizing technology as both deterministic and devoid of embedded values, then, can be seen as a political method to obscure the possibility of choice. Accepting these assumptions or simply ignoring them means that we accept barriers to cultural transformation, at least any transformation other than that desired by the established hierachy.'[6]

Distributed perception

Now that we have come to believe that almost everything can be made visible, it is important how this transparency is constructed, so 'to question the techniques of visualization and especially show visibly respect to the non-visible.'[7] In what is occurring here Virilio had stated a 'seeing that which had previously been invisible becomes an activity that renews the exoticism of territorial conquests of the past. But seeing that which is not really seen becomes an activity that exists for itself. This activity is not exotic bit endotic, because it renews the very conditions of perception.'[8] So there are

[1] The Language of New Media, Manovich, Lev, p.199
[2] Schnittstelle, Esposito, Elena, p.116 (german text)
[3] In/different spaces, Burgin, Victor, p.21
[4] Die Sehmaschine, Virilio, Paul, p.26 (german text)
[5] cyber-moderne, Fassler, Manfred, p.226 (german text)
[6] The Digital Dialectic, Gigliotti, Carol, p.54
[7] Imagineering, Wetzel, Michael, p.88, Interview mit Astrid Wege (german text)
[8] in/different spaces, Burgin, Victor, p.185 quoting Virilio

at least two directions, which have to be distinguished, when we look at the non-visible in the era of 'machinic vision'. It somehow can be described by how the transmission of data, with all its inherent complications for the concepts of time and space, creates new layers within the function of perception. It is best demonstrated in the fact that now the machine is also needed for recoding.

In one direction physical space is going to be extracted to data by surveillance systems, satellites, scanning systems, tracking systems, computer vision, smart devices and so on. For example radar was one of the early systems to enhance vision to the electromagnetic spectrum and thus recording the objects' position in space. At the same time it delivers its data-image instantaneously. It is here where for Virilio reality of the presence of an object collapses through real-time transmission.[1] Eventhough this seems to be one of our current assumptions as 'in the spectacular society we are sold the sizzle rather than the steak, the image rather than the object.'[2], what sounds more important is the conclusion of L.Manovich. He claims that the technologies of remote sensing in the beginning were relying again on the principle of perspective. Thus the old principles of the construction of a space that is not in essence the visual one are at least inherent to the seeing devices and our utilization of them. Today this way of monitoring space leads to a mapping, which forms an overlay of extracted data of former non-visible space, i.e. could not been percepted this way, hence nowadays to be navigated by remote control. Extreme examples are the smart weapons, tracking systems, computer-vision and commando rooms in Florida/ USA for the war in Afghanistan.[3] The other directions descend from the same developments, eventhough the working mode is quite different. Virtual worlds are developed with perspective-generating algorithm, yet density and volume are as mutable as color or texture. Real-time applications are now rendering space trough time.
A seemingly new way of experiencing the outside on the inside appeared. This was the obvious background, when the evolvement of simulators began. 'On the other hand, computer-generated environments offer the chance to interact with and change this illusory reality, an oppertunity that no previous medium has been able to provide.'[4] A very early example for mixing data of diverse sources is the film *Powers of Ten* C.&R.Eames made for IBM. 'The camera descends into the man`s very flesh: moving from skin, to blood, to cell, to DNA, and ending at 10hoch-15 meters with a visualization of subatomic structure. This kind of physical movement is perforce impossible; yet cyberspace, with its constantly enfolding and unfolding structures, offers us a way to imagine a permeable environment wherein we enter spaces forever smaller or larger. The hybridization of hardscape and imagescape takes this previously disembodied experience and reintegrates it into the human spatial environment.'[5]

A more recent phenomenon has been coming up with 'the evolvement of telecommunication, the electronic media and information technology, which had been effecting each other thus leading to the explosion-like growing of cyberspace. In this medium all sources of signs, if they are descended from non-human (recording or receiving devices of any kind) or human sources (persons or groups) are going to be connected equally.[6] Though now seemingly everything can be in exchange with anything, what is important, 'is the extent to which most higher cognitive activities take place through interactions with external resources (whether machines, methods, or both), so that while "individual brains remain the seats of consciousness and experience .. Human reasoners are truly distributed cognitive engines".'[7]

[1] Die Sehmaschine, Virilio, Paul, p.145 (german text)
[2] Visual Culture (an introduction), Mirzoeff, Nicholas, p.27
[3] Der Spiegel, 13/2002, p.174; http://www.spiegel.de/spiegel/0,1518,189562,00.html (german magazine)
[4] The Visual Culture Reader, Mirzoeff, Nicholas, p.181
[5] snap to grid, Lunenfeld, Peter, p.107 or: http://www.powersof10.com/index.html
[6] cyberhypes, Lévy, Pierre, p.239 (german text)
[7] machinic vision, Johnston, John, p.44, quoting A.Clark, Being There: Putting Brain, Body, and World Together Again, p.68

Thus it has to be distinguished that because of the involvement of electronic machines we have reached another level of constructing visiblity, but technological sight cannot be taken as a given fact of *truth*. It is just a distribution, in which we are deeply entailed. The integration of digitized performance to our own actions influences perception.

It has to be taken into regard, that as selfreferential as these computerized systems are, they cannot really work under total closure, because they need correlation. 'In order to be what it is, a system must be other. Yet because self-referentiallity incorporates alterity deep inside the system, it simultaneously creates a pocket within it: the very process of self-referentiality that generates a system's coherence also renders it systematically unstable, incomplete, disorientated.'[1] That should not be forgotten when we take use of devices to create 'imaginary worlds that have a special relationship to reality - worlds in which we can extend, amplify, and enrich our own capabilities to think, feel, and act.'[2]

Visibility – Invisibility

'In posing the challenge of how to frame the unmarked within theory, P.Phelan writes that "Visibility is a trap ...; it summons surveillance and the law; it provokes voyeurism, fetishism, the colonialist/imperial appetite for possession."'[3] Here already the ambivalence of visibility is partly revealed, as at the same time *transperency* usualy is presumed to show the real intention of the seen object. It neglects the construction of the visible, that means that only what actually is known can as well be seen. So there has to be also attention to what comes out of sight because of a new, or as we believe to think enhanced visibility.

'One essential moment of contemporary ideology is the claim, that everything can be seen, that the world lies in front of us like an open book. This extreme form of transparency can also be traced in the glassy architecture of consum-buildings or in the cult of privat exhibitionism, which is constantly produced through media.'[4] Seeing and being watched has been becoming an obsession mainly in industrialized countries, where life is increasingly lived under constant visual or audio surveillance. When we take a look at 'how technologies see trough us' it shouldn't be forgotten that 'technology may determine what is shown, but society determines what is seen.'[5] Audiovisual transmissions have to be understood, if they at least can be taken for some reference more likely as an electronic detection and therefore a transformation of the surrounding world for the purpose of technological sight.[6]

For better explanation follows, a short description of the historical line leading to such devices as face recognition or irisscan. Military developments of space determination through photography and radar, evoked the idea of further mechanical translation systems. Combining this with the research in the automation of mental functions the two fields of artificial intelligence and cognitive psychology were introduced. First developments lead to the field of pattern recognition. 'Pattern recognition is concerned with automatically detecting and identifying predetermined patterns in the flow of information. A typical example is character recognition, instead of listening to every transmission, an operator would be alert if computer picked up certain words in the conversation.'[7]

[1] perform or else, McKenzie, Jon, p.199
[2] perform or else, McKenzie, Jon, p.127, quoting Laurel, Brenda, Computers as theatre
[3] perform or else, McKenzie, Jon, p.41
[4] Imagineering, Holert, Tom, p.89 (german text)
[5] The Visual Culture Reader, Fiske, John, p.156
[6] Schnittstelle, Spangenberg, M.Peter, p.215 (german text)
[7] Automation of Sight: From Photography to Computer Vision, Manovich, Lev, p.10 or: http://www.manovich.net ->articles

The next step was to bring this together with image processing, which following M.De Landa was routinely used to correct for distortions made by satellite's imaging sensors and by atmospheric effects, sharpen out-of-focus images, and so on. This simply developed because there was no hope to go through all these images for the National Photographic Interpretation Center (NPIC). 'The computers had to be taught to compare new imaginery of a given scene with old imaginery, ignoring what had not changed and calling the interpreter's attention to what had.'[1] From this fields computervision (robot sight, irisscan, smart engines) evolved, so up to now we have achieved 'thinking cameras' and 'algorythmic surveillance.'[2]

Thus the perspectival image became problematic for 3D object recognition, so today modern vision systems utilize a whole range of different range finders such as lasers or ultrasound. Examples for the combining of diverse data transmission devices are GPS-systems and scanning devices. 'By systematically scanning the surface of an object, it directly produces a *depth map*, a record of an object's shape, which can be then matched to geometric models stored in computer memory thus bypassing the perspectival image altogether.'[3] It is straight away put into code.

Beneath the inherent norms, which necessarily are incorporated from the descended backgrounds and circumstances, there are obviously also the ones which socially evolved in the period and area. Norms are crucial to any surveillance system, for without them it cannot identify the abnormal. Norms are what enable it to decide what information should be turned into knowledge and what individuals need to be monitored. (The power to produce and apply norms, as Foucault tells us, is a crucial social power). It is not hard to imagine circumstances in which political profiles of those who, by some standards would be judged 'not normal', could be as useful to government agencies as consumer profiles are to commercial ones.'[4] 'When bodies are constituted as information, they can not only be sold but fundamentally reconstituted in response to market pressures'[5]. Today this corresponds to the logic of access in any aspect (access to data, information, space, country, etc.). Already Deleuze claimed that the numerical language of control is made of chiffre, which marks the access for information, or respectively the disallowance.[6] And K.Hayles states that 'with information, the constraining factor separating the haves from the have-nots is not so much possession as access. The shift of emphasis from ownership to access is another manifestation of the underlying transition from presence/absence to pattern/ randomness.'[7]

By any means the problem of access to programming these devices or the fact who is interpreting the perceived images is equally important to visibility / invisibility as to the thereby constituted evidence. As this is the point where norms are established.

[1] ibid.,p.11, as quoted from De Landa, policing the Spectrum, p.200
[2] Forum Wissenschaft, 2/2000, Wehrheim, Jan, www.safercity.de or http://www.is-kassel.de/%7Esafercity/2000/cctv.html (german text)
[3] Automation of Sight: From Photography to Computer Vision, Manovich, Lev, p.16
[4] The Visual Culture Reader, Fiske, John, p.155
[5] Electronic culture, Hayles, Katherine, p.272 or: http://www.english.ucla.edu/faculty/hayles/Flick.html
[6] Postscript on the ..., Deleuze, Gilles, http://textz.gnutenberg.net/textz/deleuze_gilles_postscript_on_the_societies_of_control.txt
[7] Electronic culture, Hayles, Katherine, p.272 or: http://www.english.ucla.edu/faculty/hayles/Flick.html

5.

'Pattern tends to overwhelm presence, marking a new kind of immateriality which does not depend on spirituality or even consciousness, only on information.'[1]
'An interface is not an image… it is …a process of translation between different levels of code.'[2]

En / De/ Re Coding

The conditions of perception, understood as a *reading* of signs, are now embedded within an further layer, which in the most obvious way can be detected in the use of the machines necessary for recoding. Important is that these devices simultaneously are employed for distribution, production, manipulation, ... 'We are going to advance to a sort of beyond-culture, which iconic system could be described as follows: virtually everything can be related to everything.'[3] This hypotetically and partly practically as well happens on the level of data anyway. But it is to ask what kind of influences it has on the process of signification for encoding and decoding etc. and than again recoding. As already pointed out before, here also are different directions, which have to be taken into regard, especially the one of recoding from various sources and in very different contexts.

Thus at the same time, what comes as an image today not only is more or less pixelated, but has embedded signs or icons, texts or other markers, intending very different significations. These are ranging from textlines, icons and comic-like speechballons to cross-hairs of smart-bomb monitors or the time-code lines of surveillance camera transmissions. Partly they seemingly ask to be *objective* signs of evidence. And when before the screen of transmission was somehow equivalent to the seen image, this now usually is not the case anymore. Splitscreen, windows and various forms of information messages not only are common on computer monitors, but as well on TV screens, on surveillance monitors, and so on. 'Conventionality and artificiality of the inherent meanings to one segment of perception concerned with communication have been becoming that abstract and distributed that the change was unnoticed: the suspision of manipulation is concerning the assumed intention of the informant and not the extremely unlikely *colonialism* of perception through a even more subtle and independent communication.'[4]

J.Johnston mentions 'as the correlative to both these assemblages (contemporary telecommunications) and the distributed perceptions to which they give rise, the image attains a new status, or at least must be conceived in a new way.'[5] Thus it is clear that we cannot go back to the somewhat more simple encoding – decoding process, it should be kept in mind, that the main part of transmissions-messages are still set on inherent codings of *preferred readings*. 'The domains of *preferred meanings* have the whole social structures, of them as a set of meanings, practices and beliefs: the everyday knowledge of social structures, of 'how things work for all practical purposes in this culture', the rank of power and interest and the structure of legitimations, limits and sanctions.'[6] Nevertheless, the correspondence between encoding / decoding and a newly recoding and so on, is far less necessarily given than ever before. Visual signs and other information now are archived easily and can be transmitted around the world within seconds. 'At the turn of the 21st century, the citationality of discourses and practices is passing across an electronic threshold, a digital limen.

[1] Electronic culture, Hayles, Katherine, p.267 or: http://www.english.ucla.edu/faculty/hayles/Flick.html
[2] Schulz, Pit, quotation from http://www.wildernesspuppets.net/yarns/teaching/ars263pages/objectives.html
[3] cyberhypes, Lévy, Pierre, p.239 (german text)
[4] Schnittstelle, Esposito, Elena, p.121 (german text)
[5] machinic vision, Johnston, John, p.42
[6] Encoding / Decoding, Hall, Stuart, CCCS no.7: http://www.merz-akademie.de/~stephan.gregory/texte/hall--encoding-decoding.htm

Words and gestures, statements and behaviors, symbolic systems and living bodies are being recorded, archived and recombined through multimedia communication networks. Liminal and liminoid genres are becoming cyberspatial, flighty, liminautic.'[1] Discourses and practises can be patched together from various geographical and historical situations. Traditions from very different backgrounds can be merged together, their digital data becomes raw material for other productions. But it has to be remembered that 'the level of connotation of the visual sign, of its contextual reference and positioning in different discoursive fields of meaning and association, is the point where already, coded signs intersect with the deep semantic codes of a culture and take on additional, more active ideological dimensions.' And 'so it is the connotative level of the sign that situational ideologies alter and transform signification.'[2] One of the best, but as well most difficult examples of this complications can probably be found in the perceptions of 911 and its aftermath (2001-09-11).
Thus there is a chance on one side inventing a greater ambivalence, it is also a danger therefore new or unknown perception leads to an uncertainity which usually leans back on *preferred readings*. Or it follows the other strategy to handle the unfamiliar as dangerous, because not readable, and refers to the professional code, which is 'relatively independent of the dominant code'[3], but mostly operates within the established point of view. This correlates to the usual reading of scientific images (including especially *operational* images of war) because they have to be interpreted as the fore mentioned research of satellite images of L. Parks exemplifies. So it still can be supposed that perception strategies yet have to get adopted to the decoding of the new layer of endless recodings. Despite a more or less unconcious scepticism into images, because of their changed way of production, we mainly still perceive them on the level of common visual strategies.

Image-information

'The computer does influence communication, but neither it communicates nor is it producing significations.'[4] So why to speak of a shift of significance? 'Because codes can be sent over fiber optics essentially instantaneously, there is no longer a shared, stable context that helps to anchor meaning and guide interpretation.' We had been looking on this before, is it really that important? 'There are only the flickering signfiers, whose transient patterns evoke and embody what G.W.S. Trow has called the context of no context, the suspicion that all contexts, like all texts, are electronically mediated constructions.'[5] So before it had been stated that commonly the informant is suspected of manipulation, what does it mean then.

Seemingly two things intervened simultaneously leading to a loss of belief in visual perception, which comes together with a mingeling of clear differentiation of the position of text and image. Thus ambivalence always comes with this, equally evolving from the status of the image as well as from the new visuality as mentioned. A further factor is that what can be seen today is not defined by a visibility for the eye, but for the machine. Probably, we are still in the ambigious situation of admiring and neglecting machines at the same time and not accepting that they are a kind of embodiment, eventhough we entirely make use of them and try to build them like us (fields like artificial intelligence have close connections to studies of neural networks and so on).

[1] perform or else, McKenzie, Jon, p.94
[2] Encoding / Decoding, Hall, Stuart, CCCS no.7: http://www.merz-akademie.de/~stephan.gregory/texte/hall--encoding-decoding.htm
[3] Encoding / Decoding, Hall, Stuart, CCCS no.7: http://www.merz-akademie.de/~stephan.gregory/texte/hall--encoding-decoding.htm
[4] Schnittstelle, Esposito, Elena, p.127 (german text)
[5] Electronic culture, Hayles, Katherine, p.275,276 or: http://www.english.ucla.edu/faculty/hayles/Flick.html

So obviously it is important to keep in mind K.Hayles mentioning that 'the perception facilitates the development of he technologies, and the technologies reinforce perception,'[1] when we read L. Manovich claiming that 'strategies of working with computer data become our general cognitive strategies'.[2] He also specifies 'that the loop and the database are defining tropes for contemporary digital media',[3] although we are using the same source for very different outputs. But it seems interesting to look on that, as far as concerning perception, it is probably showing quite obvious the new grad of construction we are already used to.

The character of inherent manipulation or fiction of images today, and as well their non-readability (or readability in every direction / flickering signifier) and their loss of contextuality are giving way to different strategies of presentations. Now structures of repetitions, recontextalisations, ... and interpretations 'of rhetoric, inscenatoric and performative aspects'[4] are increasingly involved in the presentation of images. 'The communicative process consists not in the in the unproblematic assignment of every visual item its given position within a set of prearranged codes, but of performative rules – rules of competence and use, of logics-in-use which seek actively to enforce or prefer one semantic domain over another and rule items into and out of their appropriate meaning-sets.'[5]
Probably images have been turned into code for information technologies on the level of compositing, but as B.Latour is quoted 'images demonstrate transformation, not information'[6], they are not information on the level of their appearance. The sense to which they can be regarded as information now is close to text – they are mutable, composited and yet more or less abstract but nevertheless transmitted through the dissolving real-time effect.
Thus the situational context has become important for the presentation of images, we are perceiving at a specific moment, because their evidential character is not existing without a further production of significance.

[1] The Digital Dialectic, Hayles, Katherine, p. 69
[2] The Language of New Media, Manovich, Lev, p.118
[3] snap to grid, Lunenfeld, Peter, p.133
[4] Korrespondenzen, Holert, Tom, p.215 (german text)
[5] Encoding / Decoding, Hall, Stuart, CCCS no.7: http://www.merz-akademie.de/~stephan.gregory/texte/hall--encoding-decoding.htm
[6] Latour, Bruno, quotation from http://www.wildernesspuppets.net/yarns/teaching/ars263pages/objectives.html

Part III:

Current approaches

6.

'...the societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy or the introduction of viruses.'[1]

Strategies of authenticity

Today, the decision on which the criteria of an image or better, its transmission (in the sense of performative strategies) perception of authenticity obviously relies has been becoming more important than its depiction. Thus the view on perception frames the depicted image. What to say with this?
Eventhough we are still mainly convinced that only 'that can be believed in what can be seen'[2], it is no longer easily to be said what can be seen. The delegation of perception has made it impossible to determine the evidence by the visible clearly.
It is astonishing how widely strategies of *framing* or sequentional repetition are used now to bring something within a *reality* context, thereby demanding for authenticity. Performative strategies are introduced into most mediated spaces. Only one example is T.Holert's description especially of politicians. Here the german minister of defense Scharping, as 'regisseur of evidence' in an analysis of producing 'visual blindtexts', when Scharping was utilizing satellite images to constitute his arguments.[3] Under these circumstances it is not that important, what can be seen on the *framed* images. As in many cases it is not readable without professional (scientific) help or it is nearly indistinguishable because of the mode of recording. 'On the contrary the specific *visibility* of these images is based on a degradation of the visible, on a tendency to let the *picture* vanish and to replace it, with the *visual*, with the imageless, so to say the *blind* image, as the film theorist S.Daney has stated.'[4]

It is already a common approach, used by artists up to *real-life* documentary reporters, to record in an amateur-like handheld camcorder style. Ultimatively an event becomes real, when low-quality amateur material can be transmitted via one of the big news channels (TV and internet), logically videotapes of U.Bin Laden are verified authentic, because their low quality cannot be faked easily.[5]
An early referenz of the utilization of low-quality videomaterial has been the taping of Los Angeles Police beating R.King. The TV-screening of the 'totally unrethoric and in the end unreadable low-tech-visual' described 'as *trauma-TV*, which disolves referential stability, because it shows the unbelievable, the unsignificable'[6] was employed for the production of authenticity. Ironically the very same material used as standstills has been considered to give evidence to the contrary point of view. Split to single frames, the images were taken 'to reinvest them with a narrative twinning that simultanouesly moved Mr. King from victim to violator and instantiated indexicality through standard policing procedures.'[7]

Some similarity can be seen in the increasing use of videomaterial especially of surveillance cameras in various media contexts, which mainly show no other evidence then the imprinted timecode. (see

[1] Postscript on the ..., Deleuze, G., http://textz.gnutenberg.net/textz/deleuze_gilles_postscript_on_the_societies_of_control.txt
[2] Korrespondenzen, Holert, Tom, p.200, quoting M.de Certeau (german text)
[3] Korrespondenzen, Holert, Tom, p.206-208 (german text)
[4] Korrespondenzen, Holert, Tom, p.199 (german text)
[5] www.taz.de/pt/2001/12/15/a0090.nf/text.name,askWW8wn2.n,10/ww.taz.de/pt/2001/12/15/a0089.nf/text.name,askWW8wn2.n,11
[6] Korrespondenzen, Holert, Tom, p.221 (german text)
[7] Korrespondenzen, Holert, Tom, p.221 quoting A.Ronell (german text)

check-in of the hijacker 911 or Spiegel title 17/02 about Djerba).[1] Here also appears a correspondence to the scientific or *operational* imaginery, operating on a different level, but also usualy not readable and thus needing interpretation.
'An isolated scientific image is meaningless, it gives no evidence, says nothing, shows nothing, it has no referent.'[2] This is due to its inherent artificial inscription, but on the other side exactly this marks its ability for the sequential chain or repetition. Astonishingly just this seems also to be a newly invented mode of handling for the digital imaginery of the *real*, which as mentioned before, have become more abstract images.
'If reality itself becomes an ensemble of fictions (O.Marquard), the problem of the representation of the real has to be subject of iconic and media theory discourses.'[3] In these discussions the issue of the performative obviously should be taken into regard, as it seemingly will be an increasing factor concerning the instantiation of authenticity. 'Performatives are not informational reports, but actions, events and doings. Today, performative utterances are understood to be crucial to the construction of reality, a construction that is sociotechnically ordered.'[4]
Performative mechanisms are corresponding to very different strategies of communication as they can be used in various terms and relations to produce situation and context. They have been becoming more important for the constituation of the *real*, so due to a shift of significance in a spectacular society the depiction of the index of an object can not be expected any longer.

Counter / Strategies

Naturally all these strategies of producing a certain visibility and thereby as well invisibility carry the inherent possibility of inversion. The problems for these tactics obviously dwell in access, cost/money, mobility. So therefore it very much relies on identity, which usually just gets constituted through visibility.
'Information technology is highly political, but its politics are not directed by its technological features alone. It is, for instance,a technical feature of the surveillance camera that enables it to identify a person`s race more clearly than his or her class or religion, but it is a racist society that transforms that information into knowledge.'[5] Eventhough the accessability of electronic tools, like camcorders or internet, radically changed the situation in many parts of the world, there are still very political barriers like distance, poverty and nationality which dictate possibilities and difficulties.

Nevertheless people interested in political and social circumstances, as well as artists, already some time ago have begun to make use of the invented technologies combining them with their specific possibilities. As their strategies have to deal with widely spread and established concepts, immediate ways of use have to be considered. Interestingly two main strings can be notified as being adopted, which are performative procedures and the introduction of *viral* strategies. Common to both are a nomadic and flexible structures, as well as polyrythmic and non-linear temporalities,[6] though corresponding to the caracteristics of new media. Performative structures work with the creation of frames of representation and concepts of perception. They span from decontextualisation, fake, to the simple use of low-tech equipment, because of its presumed authentic character, which 'results from it's user's lack of resources to intervene in its technology'[7].

[1] hijacker: http://home.online.no/~boethius/wtc/lys-nov01.htm#2 ; www.ireland.com/newspaper/breaking/2001/0920/breaking30.htm Djerba: http://www.spiegel.de/sptv/thema/0,1518,192898,00.html; http://www.spiegel.de/spiegel/0,1518,grossbild-178661-,00.html
[2] Iconoclash, Latour, Bruno, p.67 (german text)
[3] Schnittstelle, Vosskamp, Wilhelm, p.10 (german text)
[4] perform or else, McKenzie, Jon, p. 208
[5] The Visual Culture Reader, Fiske, John, p.154
[6] perform or else, McKenzie, Jon, p.19
[7] The Visual Culture Reader, Fiske, John, p.157

Equally fluid in influencing a situation is the disposition of *viruses* and it is just this intention of disturbance, which marks the effects and not its appearance. 'What a virus does, biological, technologi-cal or social, is to rewrite a basic instructional set on a cellular, machine-language or cultural level, and then to spread that instruction set, upward from below. That's what makes it a form of micro-power, low-tech, secretive, adaptive and extremely replicable.'[1]
Both ways naturally can be inversed too, as to be seen in the text source of D.Dion and as mentioned before. So this just adds one more uncertainty to the constant shift in the construction of perception, but it also can be taken as a chance to step beyond predefined visibility and categorized sight.

Different strategies to produce a *counter-sight*:

Strategies of explaining the construction of authenticity / visibility

- Lisa Parks -> Orbital viewing -> (analysis of satellite images) http://www.cas.usf.edu/communication/rodman/cultstud/columns/lp-07-11-99.html
- Harun Farocki 'eye/machine' -> (analysis via film) http://hosting.zkm.de/ctrlspace/e/texts/17
- Fas -> (looking on official material and opinions) http://www.fas.org/irp/imint/index.html
- Public Eye -> (make new use of it) http://www.fas.org/eyeindex.html
- RemoteSensing.org -> http://www.vtt.fi/tte/research/tte1/tte14/virtual/ ; http://www.fas.org/irp/imint/docs/rst/Front/tofc.html

Strategies of inversing and subverting technology

- Paper Tiger TV -> (using different and low-tech technics) http://artcon.rutgers.edu/papertiger/new.html
- Bureau of inverse technology -> (inversing technology) http://bureauit.org/data/plane.html
- N. Nisbet –> tracing virtual identity (subverting tech for artistic purposes) www.finearts.ubc.ca/faculty/artworks/nisbet/page2.html
- Jordan Crandall -> (subverting for art) http://jordancrandall.com/trigger/index.html

Strategies of disturbance

- Surveillance camera players -> (disturbing for art) http://www.notbored.org/the-scp.html
- EDTheater -> (disturbing for art and politics) http://www.thing.net/~rdom/ecd/ecd.html; http://www.metamute.com/mutemagazine/issue23/disturbance.htm
- Culture jamming -> (disturbing for art and politicals) http://www.syntac.net/hoax/theory.php ; f.ex. rtmark -> http://www.rtmark.com/

Strategies of irony

- Heath Bunting -> CCTV -> http://www.irational.org/cgi-bin/cctv/cctv.cgi?action=main_page
- Fake -> http://www.fake.tugraz.at/
- Afghan-explorer -> http://compcult.media.mit.edu/afghan_x/

[1] Dion, Dennis, The world..
http://textz.gnutenberg.net/textz/dennis_dion_the_world_trade_center_and_the_rise_of_the_security_state.txt

Strategies of making the invisible obvious

- Ascii Art Ensemble (Walter van der Cruijsen, Luka Frelih, Vuk Cosic-> (showing code) http://www1.zkm.de:81/~wvdc/ascii/java/ ;
- Vuk Cosic -> (demonstration of access) http://www.ljudmila.org/~vuk/dx/
- 0100101110101101.org -> VOPOS (shows GPS);www.digitalcraft.org/index.php?artikel_id=277 ;http://www.0100101110101101.org/home/vopos/index.html

Strategies of acess and information

- NYC Surveillance Camera Project -> http://www.mediaeater.com/cameras/
- I SEE -> http://www.appliedautonomy.com/isee/index.html
- Videoactivism -> http://www.videoactivism.org/
- Copswatch -> http://www.specmind.com/copswatch.htm
- Safercity.de -> http://www.is-kassel.de/%7Esafercity/

... more at: www.delegate-perception.net . Eventhough not all of these examples deal solely with images, common to them are their strategies of subverting or changing the point of view and criterias of sight.

7.

'The grid that lays bare the workings of digital media technologies confronts the one that maps out M.Heidegger`s observation that 'the essence of technology is by no means anything technilogical.'[1]

Conclusion

Images always have had an inherent ambivalence, as also showing something different, then which could be seen on their surface. Not only did they traditionally refer to a vanished point of time, they also constructed a new time-dimension, when they were viewed. Therefore every change in the image creation and transmission is leading to a new concept for the constitution of perceiving the so called *real*. The image still mainly is seen as a reference or proof of something, it is not regarded as just signifing an object.
Also images have been achieved to illustrate text, but today text or narration is commonly refering to them. So the relation between both has been changing totally, not only on the level of code, but as well on the level of encoding. Information technologies brought with them a different level of coding, and also a newly recoding at the moment when interfaces are created to enable humans to interact, which mostly means to perceive something. There are also fundamental changes not only in production, but as well in storage and distribution. In the moment of these newly established levels I see a shift of significance, which demands for a different *reading* of images.

[1] snap to grid, Lunenfeld, Peter, p.18

In the last years many new strategies were developing with the intention to avoid additional ambivalence. Those ways primarily tried to avert a further loss of authenticity through very different approaches. They are ranging from handheld camcorder technics for documetation, reality TV (real life transmission), real bombing views of scientific visual unreadables up to real pixelated surveillance camera images. Obvious is an obsession for the construction of the *real*, which in the areas concerned with virtual reality is just the same too, but has been developing on quite contrary strategies. But at one point they just come together, which is their longing for the real-time moment. M.Grzinic sees real-time not as a direct time, but a time without intervals, though a rendering of space through time. In her terms the real-time interval[1] is one of the caracteristics of the virtual image.
What I find interesting is not the notion of the adoption of the *real* to virtual reality, but the transformation of characteristics and strategies of the virtual to reality, like the loop, banner, sample, frame etc. One nice example are the videophone transmissions of CNN on TV, which do not have sychronisation in the audio/visual, but stand for an ultimative evidence of the real-time effect. This all despite the fact, that the ambivalence of images has been growing, as there are so many things we only can perceive via them (and there is no chance for any other visual proof). Besides the recognition that nearly everything can be composited, we still accept images within the context and narration they are embedded, eventhough knowing that it necessarily hasn't to be exactly this way. Following this logic, the low-quality of low-tech could be handled as the ultimate evidence for war (U.Bin Laden video).

The shattering of the installed systems of perception (best actual example: 911) cannot be answered by an increasing production of further blind images, while nobody is questioning the point of view of the seen. 'Fear evolves, when the place of lack is substituted by a specific object, which shatters the frame of fantasy the subject uses to judge reality.'[2] So to avoid falling into the gap of mixing everything - the real and the virtual and especially their strategies of construction, I think the old perception of the status of images has to be questioned definitly. At least one should ask what the image has to be a proof for and if it still can be regarded this way. Though the mind (and so perception) is distributed in the artifacts, which themselves are active in the process of shaping both the realities of culture and identity[3]. As the influence of information technologies alters the relation of the signified to signifier this concerns our whole system of distributed perception. To live in an unstable environment of signs leads, as K.Hayles says, to the implication of flickering signifiers[4]. Exactly this is also a chance for new points of view, which are obviously needed. Instead of reinstalling old concepts, different ways of depiction have to be thought about. In this sense I like the more or less ironic view of B.Lockemann[5], who in newer photographical works is showing the 'invisible through the non-visible'.

As this corresponds to inherent characteristics of information and media technologies the dealing with the delegation of perception demands a very careful questioning of the visible and the invisible and obviously for new categories of the immaterial.
Within the machinic assemblage a single image is no longer able to transport meaning or represent something. It has become a kind of actor within a scenario, consisting in a stage and other, human and machinc, actors. To 'read' an image now though has become more difficult, as it is embedded in the fluidity of information flows. To make this obvious there is a great need for further ambivalence, and this would probably lead to a more contemporary and less static status of the image.

[1] Fiction reconstructed, Griznic, Marina, p.209
[2] Imagineering, Salecl, Renate, p. 95, Angst entsteht, wenn an der Stelle des Mangels ein bestimmtes Objekt auftaucht, das den Phantasierahmen, durch den das Subjekt die Realität beurteilt hat ins Wanken gerät. (german text)
[3] Viseu, Ana, http://fcis.oise.utoronto.ca/~aviseu/eng_research_content.html
[4] Electronic culture, Hayles, Katherine, p.275,276 or: http://www.english.ucla.edu/faculty/hayles/Flick.html
[5] B.Lockemann; photography http://www.archivalien.de/schon/schon.html (german text)

8.

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