

The contingency of all that exists and all that has value is not a little truth for which we have somehow or other to make room in some nook or cranny of the system: it is the condition of a metaphysical view of the world.
Maurice Merleu Ponty. (1)

Within the postindustrial affluent world science, technology and invention have evolved into a massive and looming mythical complex, which today can be called technoscience. Something which must be acknowledged, one way or another, as the conviction of a major part of humanity. Technoscience seems to have developed to the point where it has become an insistent construction of the entire world. From the application of telematics to the disasters of the Aral Sea, technoscience introduces itself as a kind of natural philosophy interwoven with foundational allusions of truth, knowledge and teleology. A compound of tool and art, a transliteration of the classical word *technai*, on a new level, inscribed in the virtual.

The technologically new, invention, is not adept at ceasing(2). But the texture of this -modern- reassurance, the inward and inherent avantgardism of modern science right from the hypothesis of Copernicus and the telescope metaphor of Galilei(3), has been overlaid with a strong sense of intricacy.

Technoscience seems to aggravate and intensify its command of civilization. As Donna Haraway puts it; "Our machines

REVIEWS

CYBERSPACE PLUGGING INTO METAPHYSICS...

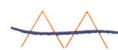
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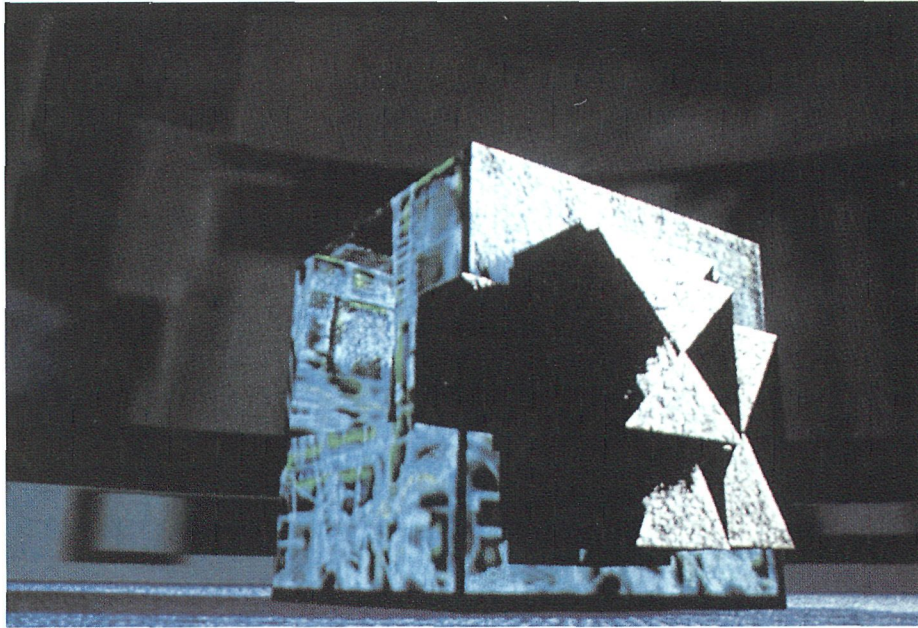
are disturbingly lively and ourselves frighteningly inert". But the texture of this modern allusion seems to have altered. Instead of linearity, atomism and dynamics, we have arrived at Chaotics, cybernetics and contingency, identity supplanted with contextuality. The technologically new will be the advent of neither truth nor origin, but rather the commencement of indeterminacy, as for instance the complications of the ecological problems and their solutions demonstrate. What we have here is the arrival of the interchangeable, multilayered and also multicultural. -A metaphysical view of the world which suddenly corresponds in finite ways to physical and historical reality. A direct plug into metaphysics in scientific as well as speculative terms, inscribed in the midst of the conglomerate of technoscience.

Since the writer William Gibson conceived of the term cyberspace in the

novel "Neuromancer" in 1984 (4), the actual invention of computer generated "cybernetic" "space", named Cyberspace after Gibson's literature, seems paramount to demonstrating such a view of the world. A range of inventions have seen the light of day, often accompanied by radical and highly speculative statements. Such as the Californian programmer Jaron Lanier's claim, that the interface technology called "Virtual Reality" part of the Cyberspace agenda, can cause the user to become intimate with death(5). The implementation of advanced computer programming and corresponding advancement of hardware and interface procedures have been followed by a host of postulates about the societal, cultural and civilizational impact of this new technology. Although voices of moderation and caution have also been raised -and despite the rather modest actual results so far- many researchers in the field seem to agree on the radical visions inscribed in this new field. That this technology promises to create substantial changes in notions of man, technology and nature -the subject and the object- along the lines of the french "techno-phenomenologist" Paul Virilio:

"It becomes more and more apparent: the new technologies (with their digital, video and radio characteristics) will in the future not only change the human environment with its territorial bodies radically, but predominantly the





Two algorithmically composed objects in a cyberspace chamber. Dynamically varying algorithmically composed textures combining computed and scanned information are displayed on both objects and environment.

individual and its living body. The function of planning of space with its massive material infrastructures (streets, railway-lines) are today transformed into almost immaterial space control (satellites, optical cables). They lead to the body of man as a computer terminal, as it is an interactive being who transmits and receives at the same time”(6).

The German writer Vilem Flusser has argued in the same manner, that man becomes “...a knot in this information network”:

“Man will abandon his I-capsule completely. Then there will be no more man. The interhuman connections will become more and more dense. On the inside they will be so massive that there will only be connections. Then there will

be no more people who have associations with each other, on the contrary there will only be connections- what Husserl has called the pure intentionality.”(7)

In an unforeseen way, Cyberspace seems to affirm Marshall McLuhan’s famous idea from the sixties about an “extension”: an extension of the anthropocentric qualities of man through the extension of the human sensorium by means of electrical and electronic technology (the radio as an extension of the ear, TV as an extension of the eye, etc.). It seems to transpose and revoke this idea of extension as a kind of “intention”, i.e. an inauguration, where technoscience appears to be an intertwining of body and machine as sheer virtuality, a situation where “interface disappeared in the virtual” (8).

However, the ensuing result turns out to be not a “global village”, based on advanced communication, as McLuhan dreamed of, but rather a new territory - perhaps a horizon in second degree (“second potense”) as Virilio has suggested in an article on the Gulf War (9), referring to the electronic theater of modern warfare. A unique technosphere, or an electrical environment, as McLuhan said, based on advanced electronic technology. A new application of technology, where the machine appears to detach itself from the known historical application and context of tools and machines, which effects an intrusion into man and culture by technoscience. A “posthuman condition” as William Gibson asserts (10), where all our senses and all our reasoning is affected:

“Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nations...A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind. Clusters and constellations of data. Like city lights, receding” (11)

As Gibson and others have warned, this is not necessarily a democratic or liberating technology. It rather emphasizes the differences between the affluent computerised societies in the north and west and the rest of the world.

In Gibson's words it emphasizes the enormous disparity between the posthuman being of Beverly Hills and the man in Bangladesh, still living on an agricultural planet.

In a short but emphatic article Gilles Deleuze has described the current diffusion of digital and computerised technology as an outline of a new type of society (12). Deleuze sees the ongoing process as a transformation from the society of discipline, which Foucault analyzed, to a society of control, based on varieties of one and the same geometry, a digital geometry. A "universal modulation", "...forming a system of variable geometry the language of which is numerical (which doesn't necessarily mean binary)". A basis, or perhaps a matrix, for control, in the shape of modulation; "...controls are a modulation, like a self deforming cast that will continuously change from one moment to the other...like a sieve whose mesh will transmute from point to point." (13)

After WW2 technological research and development has approached the visions of a new space. At least four trends can be said to have been interrelated in this process. 1) Experiments with advanced manipulation of the senses. 2) Development of increasingly complicated ways of creating images. 3) Development of technically based simulation, primarily in the military industries. 4) Research into intelligent

machinery (Artificial Intelligence, AI). All this has been reinforced by experimenting with robotics, aural technology (as advanced sound systems and speech machines), systems for visual identification and even haptic perception in Virtual Reality (14).

One important result has been an increasing comprehension of the interdisciplinary possibilities of the different fields (which have been the direct objective of institutions such as the Media Lab at the Massachusetts Institute of Technology (15)). The advancing computer technology has functioned as a kind of common denominator, changing previously more or less diverse phenomena and scientific areas into the constituents of data and dataprocessing.

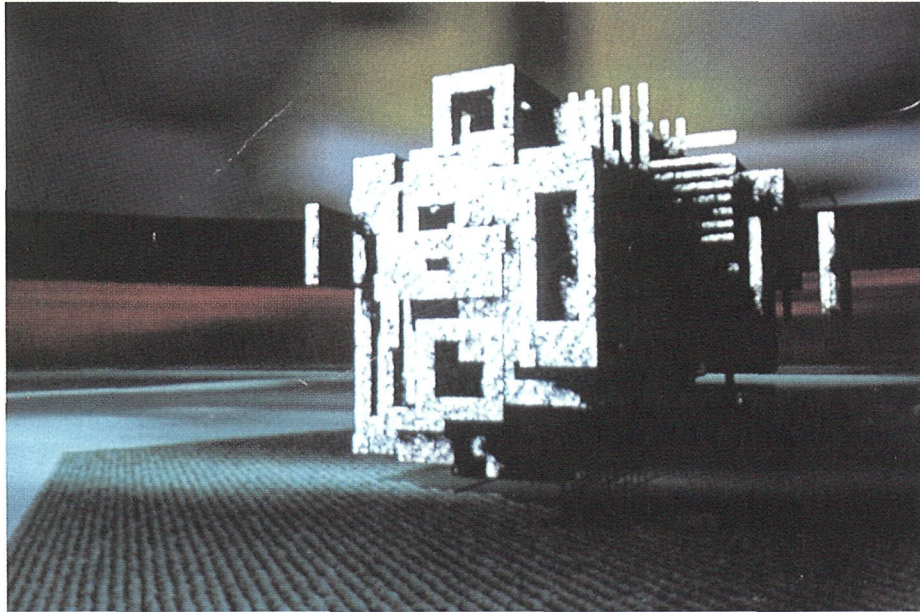
Enhancement of software and hardware capabilities has been united with the development of interface technologies needed for communication between the human nervous system/body and the machine, such as Virtual Reality. An "immersive" (16) interface (as contrasted to the "non-immersive" interface of the desktop screen), based on body-mounted display and interaction systems, which coordinate the real body's sensorium (eyes, ears, and to a lesser extent haptics and the body in general) and actions with a computer space, thus "transferring" the positions and actions of the body into a virtual computer generated environment.

This happens in "real-time" creating a reasonable similarity between the real body's movement and the computer representation's counterpart. There is no time lag (or almost no time lag) between the real movements and the computer created image because of the fast speed of the computer. Associated technologies such as scanning technology (used for example in medical research), electronic image production of various kinds, CAD (Computer Aided Design used in industrial design, architecture and graphics) and CAM (Computer Aided Production used in various areas) and CAI (Computer Aided Instruction used in education) have added to the momentum. Also the build-up of global networks of digitalized and analogue communication (satellites, cables, radio, databases, modems etc.) have fuelled the process.

Within each area, substantial progress has been made, but the outstanding promise of cyberspace - and its fascination - is perhaps the synthesis of all the different attempts as; "... completely spatialized visualization of all information in global information processing systems, along pathways provided by present and future communication networks, enabling full copresence and interaction of multiple users, allowing input and output from and to the full human sensorium, permitting simulations of real and virtual realities, remote data collection and control through telepresence, and

total integration and intercommunication with a full range of intelligent products and environments in real space.” (17).

Thus cyberspace pursues the vision of radical interaction - or interface -



Dynamically varying three-dimensional composition comprising a liquid architecture. The number and kind of its component parts vary according to factors such as position, size, and proximity to other component parts.

between culture in a broad sense and technoscience. The establishment of an inter disciplinary structure with the perspective of “experience beyond description ... postsymbolic communication” as Jaron Lanjer claims, based on the ability to describe directly, in perceptual, visual terms, so to speak, through cyberspatial rendering (18).

Michael Benedikt, the editor of one of the most comprehensive academic surveys of the field so far, “Cyberspace. The First Steps”, defines Cyberspace as

a new architecture with distinct “tectonic” prospects, or a “mode of being”:

“How does “cyberspace” relate to “virtual reality” (VR), “Data visualization”, graphic user interfaces

(GUIs), “networks”, “multimedia”, “hypergraphics”, and other such catchwords for recent developments in computing technology?

The answer: Cyberspace relates to all of them. More than this, in some sense “cyberspace” includes them all and much of the work being done under their rubrics. ...

Cyberspace is a globally networked, computer-sustained, computer-accessed, and computer-generated,

multidimensional, artificial, or “virtual” reality. In this reality, to which every computer is a window, seen or heard objects are neither physical nor, necessarily, representations of physical objects but are, rather, in form, character and action, made up of data, of pure information. This information derives in part from the operations of the natural physical world, but for the most part it derives from the immense traffic of information that constitute human enterprise in science, art, business and culture.

The dimensions, axes and coordinates of cyberspace are thus not necessarily the familiar ones of our natural, gravitational environment: though mirroring our expectations of natural spaces and places, they have dimensions impressed with informational value ...” (19)

Cyberspace; “... must be envisaged as a coherent and global virtual world independent of how it is accessed and navigated” (20). There will be many ways to enter into and exist in and instrumentalize cyberspace, ranging from interfaces based on control animation of video monitor images, through virtual reality to direct neural plugs connecting computer and brain such as Gibson has proposed for the future. Therefore; “... although it depends on them technically, cyberspace itself is neither a hardware system, nor a simulation or sensorium production system, nor a software graphics program

or “application”. It is a place, and a mode of being.” (21).

And here, at least according to enthusiastic commentaries, one can envision radical states of being:

“Using my deck, I enter the cyberspace. At first the world is dark, but not because of absence of light, but because I have not requested an environment yet. I request my default environment, my personal database. From it I choose my home base or workbase or playbase. I am in my personal cyberspace, and I am not yet in contact with others. This is my palace, and it is fortified. Only guests can visit my “fortress of solitude”, and in here I can be Superman to the Clark Kent of my real-space self. Sometimes I organize my information around my armchair and navigate through it at a glance, extracting what I need by effortless exercises of will; other times, for the sake of exercise or play, I scatter it around my globe and fly across immense distances to recover minute recollections with the most strenuous “physical” effort. Sometimes I use a single surrogate, other times I divide into a legion” (22).

This current state of the art in the development of cyberspace can be defined as a state of tension between a new conception of space, outlined briefly above, and a new notion of the image which is essential in the interface between man and machine and thus for the entry to cyberspace.

Cyberspace is perhaps a space with a “postorganic anthropology”, where “... one must actively seek alternative spatial and creative logics, social and cultural configurations” as David Thomas suggests (23). But it is also a space (if one accepts the social, cultural and political bracketing of the remaining majority of the world as an “agricultural planet”) which - so far - is only accessible through the application of primarily visual and aural interface, as for example Virtual Reality or desktop screen interface.

In the introduction to his book about the historical construction of vision in the last century, “*The Techniques of the Observer*”, Jonathan Crary emphasizes the location of a new regime of visuality in computerized imagery; “Increasingly, visuality will be situated on a cybernetic and electromagnetic terrain where abstract visual and linguistic elements coincide and are consumed, circulated, and exchanged globally” (24). Tim Druckrey writes accordingly:

“The discourses of technology (artificial intelligence, cybernetics, virtual reality, biogenetics, scientific visualization) are at the core of a radical transformation of human experience. The shift from semiotic communication to algorithmic communication is at hand. ... Yet the theories of “post-symbolism” are disconnected from critical theories of representation. Instead, a strategy of rendering replaces a critical theory of

representation, a strategy that supplants the deconstruction of representation not as an affirmative, productive form, but as one that replicates the vacuity of images as bearers of meaning and not only form.” (25)

Cyberspace is situated in this tension between the vacuity of images as bearers of meaning and space conceived and experienced in a new way. This state of tension is - as a social, cultural and global construction - actually situated in between the user and the machine, in between man and technology as a mode of being, made up of data, informational value, established through interface. Thus it is neither yet another consequence of machinery nor yet another extension of human tooling. In a way it transcends the limits of the dichotomy between humanity and tools. It proposes a different perspective in this respect. Technoscience is an intrusion, pure intentionality perhaps as Flusser suggests, but still situated in history, as a certain cultural nature within a virtual horizon (26).

Thus cyberspace is not only a question of computing capability, image resolution and interface devices (inside and outside body mounted displays) as many of the computer enthusiasts after all tend to believe despite much visionary jingle. It is rather a historical development of the image and the imaginary eo ipso. It is a new kind of picture with diverse qualities as image.

A picture with ability to produce a world. A closure of relations between representation and the represented, a discontinuation of the relation between the natural attitude and the form. A televisual picture with present tele-reality, as Virilio Writes (27). An image which invests in that which Castoriadis calls the radical imaginary, i.e. the imaginary that makes it possible to conceive meanings, culture and history, that is, of the world (28).

This change of the realm of relations between the image and culture, which has been anticipated in a range of theories and phenomena from Debord and McLuhan to Baudrillard and Gibson in the postwar decades, has, in a way, finally - perhaps rather ironically - arrived at reality in the form of Cyberspace. The reality of Cyberspace is an imaginary space, or spatial imaginary; a retained fullness and depth, perhaps in the style of the Husserlian lifeworld, as open ended horizons, as Goran Sonesson writes (29). Because of Cyberspace's power to affect the senses deeply - not least in the manner of unfolded, diversified and animated renaissance perspectives, as Hubert Damish has discussed it (30) - it transposes perception to a terrain where imagery will obtain a new meaning. If not a post-symbolist meaning, then as a new merging of meaning imagery, through cyberspatial rendering. An extraordinary example of what Octavio Zaya calls "...systems of visual discourse that saw the world before we did, and

will go on seeing after we see no longer" (31). A cruise on the "limits of perception", so to speak (32).

The virtuality in the cyberspatial televisual picture originates or springs from this capacity for meaning built into, or built within, cyberspatial rendering. Thus it combines the faculties of perception and the structures of discourse to the effect of creating meaning qua image, or discursivity, intertwined with the visible (as all the different issues of conceptual art in their own way have investigated for several decades).

The next stages of cyberspace, as well as other aspects of technoscience, may depend on how we learn to civilize or navigate this "mode of being", as Benedikt and Novak discuss. In the history of modern science, epistemology and philosophy, space is generally considered something more or less stable, a priori, even if conceived differently as, for example, container (Newton), perceptual faculty (Kant), extension in a mere physical sense etc. Cyberspace points to the fact that the actual history of modernity, not least the emerging technoscience in this century, has not left space a pristine foundation. On the contrary, the operations of technoscience have seen an important intrusion into space.

From the conception of the classical modern space of force, kinetics and

perception in the early natural sciences and their philosophies, evolves the quest for the electromagnetic field in the last century, the space of electromagnetism, and finally - in this century - the disclosure of the field of particle physics and its contradictory spatial deviations, supplemented in recent years by chaotic, catastrophic and multidimensional space. All of these are not only a matter of scientific interest, specified and general versions of scientific space. They are of cultural and social pregnancy, perhaps in the way Foucault conceived panoptic visual space, as an exercise of power. Modulative power, in the words of Deleuze. Each of them stipulates and carries out a version of space which emerges in science, inventions and technology. Afterwards, culture and society come to depend on these constructed solutions. They become cultural and historical feedback. Thus modernity, and technoscience in particular, merges the cognitive space and constructive space (33). - In this regard the spatial imaginary, the televisual regime of Cyberspace, comes close to be a specific version of what Merleau-Ponty called a "visible", a flesh of the world (34). As such, it is always already immersed by and endowed with the meanings, the invisible, which can be carried out as constructions.

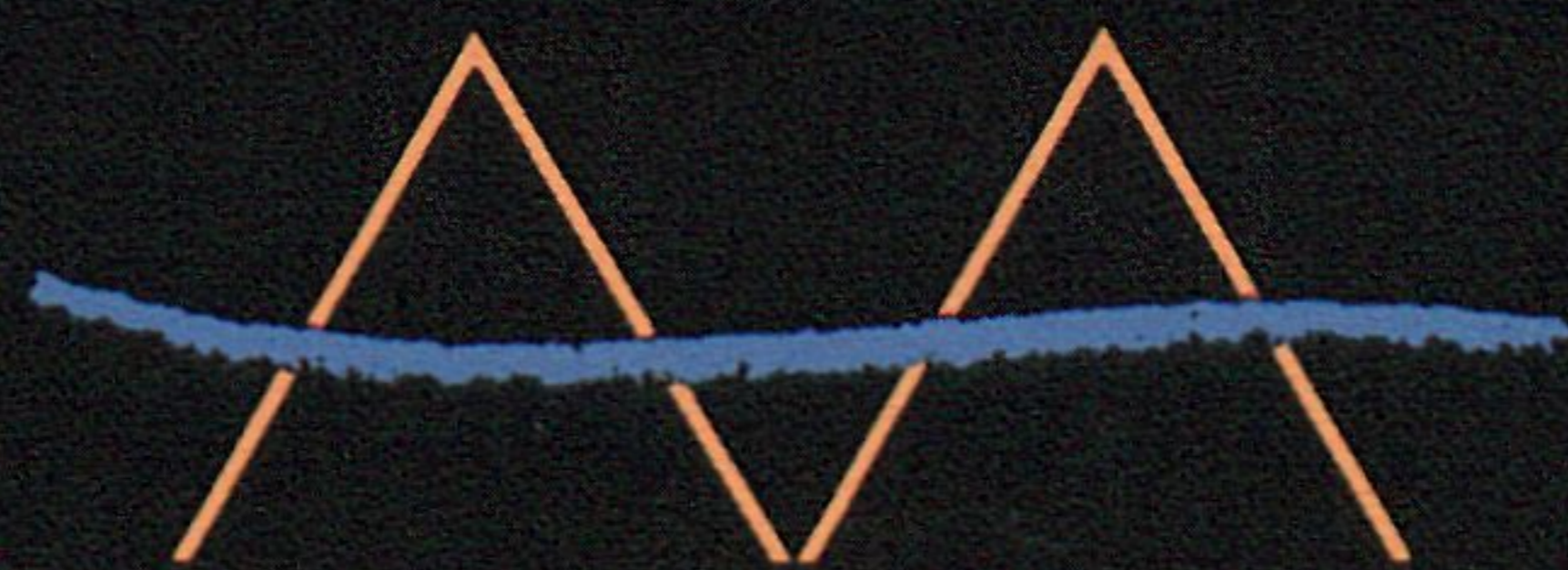
Perhaps Cyberspace is, after all, not as radical as many of its adherents believe. It is a new kind of imagery or regime of visuality, the televisual, but it is also

situated in the continuity and succession of the modern intrusion into the properties of space and nature. As such it constitutes neither a completely new spatialism nor a derivative of the previous, but something in between, connected to the genealogy of space in modernity, as well as the modern visual regime, constituting its own separate

area as a distinguished layer of "flesh" if one likes. As the mechanical space of the universe which founded modern engineering, and the electrification of the metropolis, based on knowledge of electricity, it may result in immense consequences. It might predominantly prove and enhance contingency. After all,

technoscience cannot predict the consequences of its own endeavours and procedures, it cannot foresee what will come next. Cyberspace is yet another "layer", emphasizing the multilayered and interchangeable, the founding yet transient. A metaphysical view of the world... or a plug into metaphysics.

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- (1) Maurice Merleau-Ponty, *Sense and Non-Sense*, Northwestern University Press 1964, p.96.
- (2) For the discussion of modern notions of time, see, Reinhardt Koselleck, *Vergangene Zukunft. Zur Semantik Geschichtlicher Zeiten*, Frankfurt a.M., 1979.
- (3) cf. Timothy J.Reiss, *The Discourse of Modernism*, Cornell university Press 1982.
- (4) William Gibson, *Neuromancer*, Grafton, London 1984.
- (5) cf. Claus Bülow Christensen, *Traed ind i din computer*, in *Teknikeren* 4/91. Copenhagen 1991, p.17.
- (6) Paul Virilio, *Das dritte Intervall*, i, Eidith Decker m.fl. (red), *Vom Verschwinden der ferne. Telekommunikation und Kunst*, Köln 1990, p.336-337. See also Paul Virilio. *The Lost Dimension*, New York 1991; Paul Virilio, *Interview*, w.Jérôme Sans, i *Art and philosophy*, Giancarlo Politi Editore, Milan 1991; Paul Virilio, *L' Inertie Polaire*, Paris 1990.
- (7) Vilem Flusser, *interview*, w.Sabine Kraft, *Virtuelle Räume - Simultane Welten*, in, ARCH No.111 1992, p.44.
- (8) cf. Scott S.Fisher, *Wenn das Interface im Virtuellen verschwindet*, in *Manfred Waffender* (hrsg.), *Cyberspace, Ausflüge in virtuelle Wirklichkeiten*, Rowohlt, Reinbek beim Hamburg 1991.
- (9) Paul Virilio, *Horisonten i anden potens*, *Information* 19/10 1990, Copenhagen.
- (10) Gibson in TV-iunterview.
- (11) Quoted from Howard Rheingold, *Virtual Reality*, London 1991, p.16.
- (12) Gilles Deleuze, *Postscript on the societies of control*, in, *October* 59, Winter 1991.
- (13) Deleuze, *op.cit.*, p.4.
- (14) Introduction see; Michael Benedikt (ed), *Cyberspace. First Steps*, Massachusetts Institute of Technology 1991; *Cahiers du CCI, Les chemins du Virtuel*, Editions du Centre Pompidou 1989, Rheingold *op.cit.*; Benjamin Wolley, *Virtual Worlds*, Blackwell Publishers 1992; Barrie Sherman & phil Judkins, *Glimpses of Heaven, Visions of Hell. Virtual Reality and its Implication*, London 1992; Raymond Kurzweil, *Intelligent Machines*, Massachusetts Institute of Technology 1990; Florian Rötzer (hrsg.). *Digitales Schein*, Frankfurt a.M., 1991. See also Philip Heyward (ed), *Culture, Technology & Creativity*, John Libbey & Company Ltd. w.y.; Cynthia Goodman, *Digital Visions*, New York 1987 and Margot Lovejoy, *Postmodern Currents*, Ann Arbor 1989.
- (15) c.f. Stewart Brand, *The Media Lab, Inventing the future at MIT*, Viking Penguin 1987, Penguin Books 1988.
- (16) cf. Rheingold *op.cit.*
- (17) c.f. Marcos Novak, *Liquid Architectures in Cyberspace*, in *Benedikt, op.cit.*, p.225.
- (18) Tim Druckrey, *from Wasteland to toxicity, Reordering Nature as Information*, in, Frits Gierstberg & Bas Vroege (ed), *catalogue, Wasteland. Landscape from now on*, Uitgeverij 010 Publishers 1992, p.26.
- (19) Michael Benedikt, *Cyberspace: Some Proposals*, in, *Benedikt, op.cit.*, p.122, p.123.
- (20) *Benedikt op.cit.*, p.130.
- (21) *Benedikt op.cit.*
- (22) Novak, *op.cit.*, p.232.
- (23) David Tomas, *Old Rituals for New Space: Rites de Passage and William Gobson's Cultural Model of Cyberspace*, in, *Benedikt, op.cit.*, p.46.
- (24) Jonathan Crary, *The Techniques of The Observer*, Massachusetts Institute of Technology 1990, p.2.
- (25) Druckrey, *op.cit.*, p.26.
- (26) cf. Anders Michelsen, *The virtual horizon. A venture in posthistory...* Absalon, Thomas Locher, Lars Mathisen, in, *Balcon No.10*, Madrid 1992
- (27) c.f. Paul Virilio, *L'Inertie Polaire*, Paris 1990.
- (28) Cf. Cornelius Castoriadis, *Marxisme og Revolutionaer Teori*. Copenhagen 1981 (french; *L'Institution imaginaire de la société*, Paris 1975).
- (29) c.f.Göran Sonesson, *Pictorial Concepts*, Lund University Press, p.31ff.
- (30) c.f. Hubert Damisch, *Six Notes and Some Queries Concerning a Phenomenology of So-Called "Virtual" Images* (French/German/ English version), in, Peter Weibel, "On justifying the Hypothetical Nature of Art and the Non-identity within the Object World, Köln 1992.
- (31) In, *About "limits of Perception" (Absence, Concealment and Exposure). A Conversation between Christian Leigh and Octavio Zaya*, in, *Limits of Perception*, catalogue, Lino Silverstein, Barcelona.
- (32) *Op.cit.*
- (33) c.f. Maurice Merleau-Ponty, *The Visible and the Invisible*, Northwestern University Press 1968, p.130ff.



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