The perfect black box and its global paths

FROM CYBERSPACE TO HYPERSPACE

BY ANDERS MICHELSEN

In a number of essays on media and communication, philosophy and culture, sociology and cybernetics, including cognition and chaos theory, and, not least, radical prospects of computerized interconnected medias, such as international networks and "cyberspace", multimedia and hypermedia, the German philosopher vis-à-vis the phenomena of contemporary media and communication. But Bolz also presents a very factual cross-disciplinary approach to these problems. Drawing on disciplines such as second order cybernetics, Niklas Luhmann's system theory and sociology, Marshall McLuhan's ideas, as well as philosophers Kant and Humboldt to contemporary visions of media and communication in for example Ted Nelson's ideas. One of the important arguments in Bolz's thinking pursue the transformation of meaning from a text based media as the one McLuhan termed "The Gutenberg Galaxy" to the contemporary electronical media. Bolz emphasizes the radicality of the change from media such as the book and the text, to the visually based, interconnected, global media of what he calls hyperspace. He foresees new structures of discourse in these medias based primarily on two elements.

One is the fundamental condition of production and reception of meaning in the eletronical media. Bolz sees hyperspace as a self enclosed system of communication with its own structures and roles, where "reading" and "writing" - input and output - are interconnected into rhizomatic, flat structures with the option of many, fractal, patterns. A structure which one can find pioneered in the works of Wittgenstein, Joyce and Deleuze and Guattari, where several narratives are made possible within the same work.

The perspective of hyperspace is a media where production and reception of meaning converge into a communication no longer oriented along the lines of the Gutenberg paradigm of

Norbert Bolz has created a deeply read authorship on contemporary media and media society.

In his books Bolz maintains a constant relationship between "classical" modern thought, and insight into new media and communication technology. Something which is comparatively rare in the international debate on communication and new media. Alongside thinkers such as Paul Virilio and Vilem Flusser, Bolz emphasizes and maintains the need for radical reflection such as Benjamin, Derrida and Deleuze, the reader of Bolz's work is confronted with an inspiring amalgam of classical reflection, precise analysis and radical viewpoints.

In one of his latest books "Am Ende der Gutenberg Galaxis" (At the end of the Gutenberg Galaxy) (Wilhelm Fink Verlag, München 1993) - perhaps his most comprehensive work - he confronts Marshall McLuhan's famous credo about "the Gutenberg Galaxy", with a broad range of knowledge and thought from

writer/reader. The access to and navigation within the "informationspace" of hyperspace put forth more multifarious relations between production and reception of meaning, where it will no longer be possible or necessary to distinguish between author and reader. Rather one finds new constellations and configurations where author and reader become somehow interchangeable, or attain new positions and options.

Another crucial issue for Bolz is the problem of the data-structure in hyperspace. It is important to emphasize that hyperspace is not only a communication system, a media. The informational structure of the system - the software and data structure - creates a new framework for action and social existence. Thus the designers - and designs - of the software structure of hyperspace, in contrast to the mere use, and user, who access the system through the graphic user interface on the computer screen, are some of the real keyfigures and powerholders of future hyperspace. The questions of how, and whether information structures are designed thus come to pertain to strategic questions of how a future global society and civilization will develop.

The interview was made in connection with the international conference "Doors of Perception", on multimedia, networks and communication, held by The Netherlands Design Institute, in Amsterdam, 30-31 October 1993.

Anders Michelsen: "Doors of Perception" discussed the structure of what you have termed "hyperspace", i.e. the actual developments of structures, options and problems in cyberspatial communications systems. Are we getting closer to a clear understanding of cyberspace/hyperspace?

Norbert Bolz: It would be wonderful if that was to be the future of the cyberspace technology. Today cyberspace is nothing more than a public relation parole for the entertainment industry. The technology is not applied where it has the greatest potential, i.e. in the creation of cybernetic and multimedial spaces. Cyberspace should be used for the development of a space composed of information, with infinite dimensions, and not only to create images and simulations. One can apply the flight simulator as a model in this regard. In cyberspace one does not fly through simulated worlds as in the simulator, but through a space composed of data. If we follow this direction we would approach a new technology for the information society.

A.M.: The American architect and cyberspace researcher Michael Benedikt believes that cyberspace is an area which must be civilized?

N.B.: That is exactly what I mean. Cyberspace originated in Nasa and Pentagon. Now, as before, the military

applications stood in the foreground. At the same time one must acknowledge that these media are becoming civilian media, even if they originated within a military context. If one can liberate cyberspace from its military use and the primitive use in games, as entertainment, we can perhaps approach a viable, practical space constructed of information, what I call Hyperspace.

A.M.: In the discussion and analysis of cyberspace and new information technology one finds a tendency to compare aspects of the brain's function with features of the new information media?

N.B.: I disagree with this theme which is widespread in certain milieus and debates about new information technology. I do not believe it is possible to establish a parallel between the functioning of the brain and the new media; i.e. a certain inversion of these media in the brain, and vice versa. From neural physiology we have learned that the cells in the brain are structured as a neural network, where there are no hierachies but only "flat", horizontal connections. This is a model, an interesting metaphor, which can be used to structure information systems, and also management systems. But this is not an "implementation" of the brain in the computer. We have to emphasize, that this is only a metaphor.

Historically the dispute in this area stood between "making a mind" and

"modelling a brain". In the Universal Turing Machine it was attempted to contruct a brain, a spirit. Then the efforts changed towards a model of the brain, but this is also an illusion. It is impossible to build a copy of the brain and its complexity. What can be learned from the research into the brain is the principle of non-hierachical connections, and this can by far the best be obtained in hypertext systems. The hypertext concept, first put forward by Ted Nelson, implies a completely flat, non-hierachial network. There are only connections. Exactly as in the brain where there only are neurons, actions and knots, without privileged and overdetermining structures. The model for hypertext is infinite connectivity.

We have two alternatives in hyperspace. One is to treat images as text. One can treat images as text - leap towards the images as it is called, beautifully - connect images with other data, infinitely. On the other hand it is clear that texts are no longer read and treated as classical texts, in hyperspace. In the computer they obtain an iconical, image-like quality. The compression of data in the computer means that these texts are treated as images.

From a general point of view we can speak of two different approaches, which make at least one point clear. The old distinction between text and image has become precarious, and this is closely connected with the digitalization of all forms of data. It is no longer possible to distinguish fundamentally between sound data, visual data, text data and animations in hyperspace. All forms of data are digitable and accessible at the same time, through the same interface. It only depends on the computer power whether you can process images just as accurately as text.

A.M.: What role does consciousness - the mind - play in this respect?

N.B.: Here we can introduce the radical constructivism of second order cybernetics, as we find it in the ideas of Heinz von Foerster. The basic idea - and the fundamental insight in neural physiology - is that the relation between sense-input and the activity, processing, in the brain is on the scale of 1 to 100.000, i.e., for each sense-input the brain makes 100.000 calculations. It means that the input from outside is infinitesimally small compared to the activitity of the brain itself. Even if you open "The Doors of Perception" it means that what is actually entering the brain is a minimum. The decisive factor is the activity of the brain. The same applies - naturally - to information systems. It can easily be proved - and the theories I draw upon, build on this - that information systems and communication systems in our society are closed systems, i.e. they only function "within themselves". They only receive very little input from outside - "noise", "white noise" - and transfer this input to their own coordinates. To talk about "Doors of Perception" is a grand illusion. The title of this conference comes from a poem by William Blake, the nineteenth century artist. In the nineteenth century the idea that imagination can change our lives when we sense the outer world correctly, was still feasible. Aldous Huxley adopted this idea and applied it as a designation of "opening the senses". But science has proved the exact opposite. It has shown that what goes on in the brain, or in communication systems is completely overpowering compared to what is established through sense-input. To name a conference "Doors of Perception" is an expression of romanticism which understands electronic images as images of an outer world, or somehow connected with an outer world. It is completely wrong.

The images we work with in electronical systems are neither a depiction of the outer world, or a relation of mimesis vis-à-vis the outer world, or any other relation. My colleague Niklas Luhmann once explained it this way, "the simulations are without "simul"", i.e. they have nothing in common with the outer world. They don't resemble anything, they are internal constructions in the system itself.

A.M.: How do you see the development in hyperspace and cyberspace in the forthcoming years?

N.B.: The decisive problematic will be the ability to navigate in the information

space, it is completely clear. And only a few will be able to learn that. This implies two major problems.

On the one hand the Western world will experience an immense division in designers and user, i.e. people who can design - program - software and the famous, and notorious, user, the person who can only use the systems. In conferences such as "Doors of Perception" the attitude towards the problem designer/user is rather misleading. The debate is continuously about interface transparency, but what can you actually see in this interface? You can see nothing of the informatics, of the data structure. The user is made to believe that there is no computer. And this is called transparency! It is exactly the opposite. It is the absolute, complete "black box". On one side we have the software designer, and on the other the sad user!

On the other hand we have another problem, closely connected with the previous. It has to do with the fact that today very few are able to command uncommon cultural techniques. Let me give an example. Today there are fewer and fewer people who are able to read difficult texts. At the same time our whole tradition is handed down to us as complex texts. The result of this is that text-readers become a small esoteric élite culture, still able to carry out complex reflections, almost like some sort of new monks with secret knowledge. They confront the masses who live in a completely post-historical condition.

Only the absolute technological present is valid here, and tradition becomes an absolute break, an incision, where everything more than ten years old becomes "Stone Age". We encounter an enormous "cultural gap" between those who still have access to memory, tradition and knowledge, and the rest, who increasingly become "low end consumers".

A.M.: Electronic technology is primarily a Western phenomenom. At the same time we can see that regimes in The Third World try to obtain power, perhaps somehow contradictory, through support from their tradition as well as through technology from the West. How do you see the future globalization in the context of new information and communication technology?

N.B.: In reality Globalization means "Westernization", i.e. the Western technological principles, Western posthistory and its "American way of life". It is the only form under which we can imagine globalization. At the same time we see a "roll back" in the shape of fundamentalism in different ways. This is an enormous challenge to Western culture. The fundamentalist issue is not only anti-American, it is a fight against the entire Western culture, i.e. against the principles behind the technological globalization inscribed in for example computerized media. In this field it is - of course - impossible to make

predictions. Nevertheless one thing seems clear.

On the one hand there is no alternative to the Western globalization, if one is to think in global terms, i.e that there is only one rationality, which is technologically viable, and it is Western rationality. One cannot mix it with Tai Chi and other Eastern wisdom as we see attempts to do.

On the other hand we have the fundamentalist break, which can result in a huge challenge to the West. However it is possible to imagine that the cunning of technological rationality can prevail in this fight. i.e., that also the fundamentalist parties resort to technology from the West in order to bring forward their claims globally, as we saw in the case of Khomeiny who smuggled cassette tapes into Iran, prior to the Iranian revolution.

This means that the resistance to the Western globalization must use Western technology in order to have effect. - Western rationality prevails through technology.

Another aspect of this problem consists of what we can call un-contemporaneity. We live in a world with the most extreme un-contemporaneity. It has always been so, but we never paid much attention to it, until the the world became "synchronized" through electronic media. With the synchronization of the world -the global village - we seriously feel the un-contemporaneity, and in a new way. In this global world there are

many different "time islands". Medieval islands, islands from the eighteenth and nineteenth century, primarily different time islands in intellectual and cognitive terms. The German intellectuals, for example, do not live in the twentieth century, but in the nineteenth, or even worse, in the eighteenth century!

Everybody lives intellectually, traditionally and economically on different islands, based on differences in historical time. These differences are levelled by the technological development, causing the most terrible pains and catastrophies. Marshall McLuhan has characterised this cruelly - but truly - that war is nothing but technological development with a higher velocity. This is how it functions today. The different "time islands" are "levelled" through wars, catastrophies, violent processes - also of fundamentalist character.
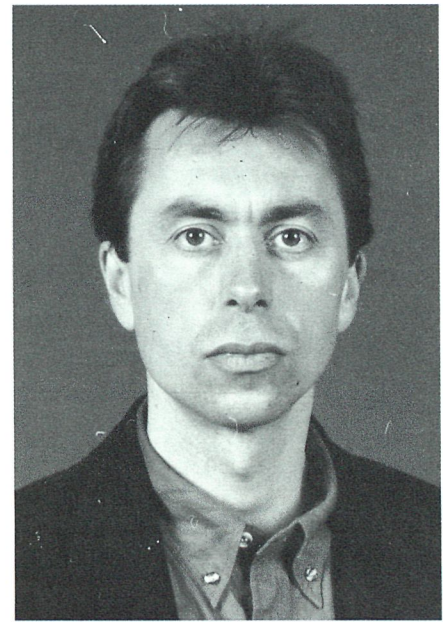
It is a sad perspective, but I don't believe that other cultures, outside the West, can avoid this path.

A.M.: Although we experience "levelling" through technology, as you explain above, couldn't we envision a sort of multicultural relation between culture and technology - despite levelling, or rather "post-levelling" - based on relations between what is a rationality which cunningly, and cruelly, levels traditions, and, the actual diverse, "rhizomatic" uses - interpretive handlings -which the displaced and levelled cultures nevertheless make of

information technology. A sort of fusion between a multiculturalism and hyperspatial technology?

N.B.: I agree with you, but I argue otherwise. Not despite, but rather because the new media and theories of telecommunication homogenize the world, multiculturality can unfold. i.e., the multicultural multiplicity is only possible because there is a media-technical unity within the world society. It is apparent in what you call a "rhizomatic use". The technical secret of the rhizom is the network of world communication. This network has achieved a density, that renders traditional forms of control superfluous. This is why we depart from hierarchies today. In other words the multicultural, the rhizomatic, the network and the heterarchies, create a mediatechnical dispositive.

One can transcribe a famous remark from Wittgenstein and say: The meaning of technology is its everyday use. - A sort of interpretative handling as you term it. But one should not forget, that the user has only a freedom to act within the boundaries of what is defined by the software designer. Put in another way, multiculturalism makes bodily exercises within the "Gestell" (Heidegger) of digital rationality. The power of the future lies not within the rhizomatics of the user, but rather in the media ability of the designer. Multiculturalism remains impotent, as long as it is not founded upon media-literacy.

Norbert Bolz.