Hartmut Winkler

Chapter 5:

Traditional visual media and the computer

1. Problems in the conception of media history

> "In a radical break with optical representation, a different mode of presentment appears with the information machines. Its novelty is not yet clear, because it is difficult to understand the difference between the synthetic image and other automatic images."[1]

One of the fundamental questions about the data universe is how it connects to the established media. Ever since the computer has been recognized as a medium, there has been a fierce debate about criteria and categories, and completely different theses have been put forward as to how the computer should be classified in media history.

And again and again, the focus is on differentiating it from technical images. 150 years of photography, film and television make media and visuality appear almost synonymous; so does the new medium really mean a 'radical break with optical representation'? Or does the computer not also produce images, synthetic images, which would at least limit the difference that needs to be understood?[2] And did photography and television not already provide 'grainy,' in a sense digital representations?[3] Or is it only the technical images that stand for representation and reference at all, while the new medium has to be thought of in completely new categories?[4]

---

[1] Couchot, Edmond: Die Spiele des Realen und des Virtuellen. In: Rötzer, Florian (ed.): Digitaler Schein. Ästhetik der elektronischen Medien. Frankfurt a. M.: Suhrkamp 1991, p. 347 (transl. H. W.).

[2] This reference is captured in the overarching concept of 'screen media;' it is also advocated by many authors who write specifically about digital images.

[3] This is Flusser's view, for example; see Fl., Vilém: Towards a Philosophy of Photography [1983]. London: Reaktion 2012, pp. 31f.; or Fl., V.: Into the Universe of Technical Images [1985]. Minneapolis/London: Univ. of M. Press 2011, pp. 15ff.

[4] From an infinite number of examples: Hagen, Wolfgang: Die verlorene Schrift. Skizzen zu einer Theorie der Computer. In: Kittler, Friedrich A.; Tholen, Georg Christoph (eds.): Arsenale der Seele. Literatur und Medienanalyse seit 1870. München: Fink 1989, pp. 220, 224, 226; Bolz, Norbert: Computer als Medium – Einleitung. In: B., N.; Kittler, Friedrich; Tholen, Christoph (eds.): Computer als Medium. München: Fink 1994, p. 10; Nake, Frieder: Künstliche Kunst. In der Welt der Berechenbarkeit. In: Kunstforum, No. 98, Ästhetik des Immateriellen, part II, Jan./Feb. 1989, p. 86.

The confusion was exacerbated by the enormous hype surrounding computer art in the 1980s. Large annual forums such as the 'Ars Electronica,' each documented in detail on television, and a wave of journalistic and scientific publications on the subject gave the impression that, after a prehistory of non-sensuous data and abstract algorithms, digital media had now also reached the stage of sensuous perception. This was the second attempt after the computer art of the sixties. Supported by superior hardware, it seemed possible to cope with the exorbitant data quantities of graphic data processing and to actually compete with the high resolution of photographic images. Film and television converted their post-production to digital techniques and in the aesthetics of advertising spots, synthetic and real images merged into an indistinguishable amalgam.

Image databases have been built up in the international data network since around 1993. Many users have acquired highly equipped multi-media machines on which graphics-capable browsers can also process moving images,[6] even very simple webpages are richly illustrated and the quantities of data transmitted are one of the reasons that have brought the network to the brink of collapse.[7] Accordingly, there is intense discussion on the expansion of capacities; and interactive television and video on demand appear to be the goals towards which the development of the data highway is heading.

All appearances suggest that the digital media have moved in the direction of the visual. But what if, in this case, appearances are deceptive? What if it is a transitory phase, a historical compromise offered by computers to a public accustomed to visuality? With the prospect of derisively revoking the compromise as soon as the shift in the balance of power allows it? In this perspective, the visual surface would be a kind of shield, behind which the actually relevant changes take place.

And this, in fact, is the thesis that will be defended in the following. I assume that a media upheaval – away from technical images and towards the universe of computers as a completely different, abstract and structure-oriented media constellation – is indeed currently taking place. A decisive crisis of technical images thus seems to have arrived[8] and a profound epochal turning point in the history of media. A new game seems to have been opened up and a new, fascinating world has begun.

The thesis, as I said, will be developed step by step. First, however, a methodological consideration makes sense. The thesis outlined above depends primarily on the way in which media history as a whole is conceived. There is a fundamental difference between McLuhan's distinction of television and computers from writing and Kittler's view of the epochal break in the transition from language to a 'recording of the real;'[9] and there is also a difference between the view that the predominance of the eye reaches its climax in writing and ends in the 'tactile' medium of television,[10] and Flusser's view that two-dimensional images and linear writing lead to zero-dimensional algorithms.[11]

---

[6] (Note on translation:) The text dates from 1997, when the multimedia age was just beginning.

[7] See for example: Datenmüll verstopft Computernetzwerk. In: Frankfurter Rundschau, 03-30-95, p. 34; Wolf, Gary: The (Second Phase of the) Revolution Has Begun. In: Wired, No. 2.10, October 1994.

[8] I have developed this thesis in: W., H.: Das Ende der Bilder? Das Leitmedium Fernsehen zeigt deutliche Symptome der Ermüdung. In: Hickethier, Knut; Schneider, Irmela (eds.): Fernsehtheorien. Dokumentation der GFF-Tagung 1990. Berlin: Sigma 1992, pp. 228-235; und: W., H.: Tearful Reunion auf dem Terrain der Kunst? Der Film und die digitalen Bilder. In: Paech, Joachim (ed.): Film, Fernsehen, Video und die Künste. Strategien der Intermedialität. Stuttgart/Weimar: Metzler 1994, pp. 297-307.

[9] Kittler, Friedrich A.: Discourse Networks 1800 – 1900 [1985]. Stanford (Cal.): Stanford UP 1990.

[10] McLuhan famously put forward this thesis.

[11] Flusser, Into the Universe of Technical Images, op. cit., pp. 6ff.

And there is an even more general problem behind all these concepts: is it even possible to assume that different media replace each other in the course of media history? That television takes the place of the Gutenberg galaxy and that each new medium supersedes another, previously powerful medium? Or do the new media merely add to the existing ones, so that it would make more sense to describe media history as a process of successive accumulation?

This is a very fundamental difference in perspective, which has far-reaching consequences for modelling media history. The concept of cumulation initially provides the more peaceful picture. Here, media history is seen as a constant enrichment and differentiation; for example, it is argued that even the age of technical media has not been able to eradicate books, indeed, on the contrary, their number is constantly increasing; nor is the existing media landscape irritated when the computer enters the stage, new systems primarily bring new possibilities with them and it is important to use their respective specifics in the best possible way.

The thesis of replacement (substitution), on the other hand, is based on the observation that at least historical media upheavals have actually displaced, disempowered and marginalized formerly powerful media. And it is often implied that media history can be described as a chain of 'leading media' which replace each other. 'Oral societies' are replaced by writing, writing by technical images and these are now replaced by computers.

However, the concept of a leading medium raises problems. How exactly should the term be defined? Is it already the invention of writing that triggers the upheaval, or is it central that a caste of scribes establishes itself and gains influence on the social process? Or does the generalization of literacy replace the oral tradition? Quantitative and qualitative criteria seem hopelessly entangled. In addition, talk of a leading medium all too easily obscures the fact that it is fundamentally *media constellations*, an ensemble of different interwoven media, that determine a media-historical situation. But how should a leading medium and some 'complementary media' be considered together? Is a model of compensation, of mutual equalization of deficits, valid, or is it more promising, instead of assuming a pre-stabilized harmony, to emphasize precisely the temporary distortions and the abrupt changes of direction in media development?

Even if all these problems are largely unsolved, it can be said that the 'substitution' thesis is evidently the more interesting concept. Media history only becomes a dramatic process when it becomes clear that new developments actually damage the existing constellations; the fact that our lifespan and the time available for media consumption are limited, that the different media compete for our lifetime, attention, and the function of exploring the world, that even with an expansion to 500 television channels, the hours of media use will not increase significantly, and that ultimately there is no other time available for computer usage than that previously spent in front of the television[12] – such considerations alone make it clear that the competition between the media is about something.

And the theoretical questions are shifting. Because now the reason why certain media changes occur becomes relevant. And again, various hypotheses are possible: It is conceivable that shifts in the structure of needs have occurred and that the new medium better serves changed social requirements. It is also conceivable that previously unnoticed deficits of the previous media create the space into which the new medium enters; that media are exposed to a kind of 'fatigue' in the course of their history or that certain hopes on the part of the recipients are exhausted. The argument thus returns to the terrain of those 'wish constellations' that are the subject of this book.

---

[12] This applies to private use; in addition, of course, the computer is the first mass medium after writing that also plays a role in everyday working life. In September '95, Forbes magazine ran the headline: "Toss out your TV, fire your secretary. The cyberspace revolution is getting serious." (Forbes, September 11, 1995).

If a media shift from technical images to computers is currently taking place, and if people – this was the question in the introduction – are investing money, time, energy, hope and curiosity in the new medium, then the real puzzle seems to be why all this is happening, when the new medium is obviously so little sensuous, so little entertaining, so little accessible without preconditions and so little immediately satisfying, indeed, on the contrary, it offers considerable frustration and experiences of personal failure right up to relatively high levels of competence. If one follows the criteria that have been used to explain the triumph of technical images, it seems impossible that such a medium could be successful. So, either these criteria are inapplicable to the new medium (and this is fundamentally different from the previous ones) or they have missed essential features of the old media constellation too.

A double search movement therefore seems necessary. The question is both which difference (which gradient, which promise?) causes the migration of users and, complementarily, which mechanisms and factors, despite the obvious differences, remain constant; for this also presupposes the thesis of replacement: Since the needs structure of the subjects will not change abruptly, there must be needs that the old and the new medium serve equally, and characteristics that connect both media below the surface. And the deep irritation lies in the fact that these are obviously not the factors previously considered relevant. In this respect, it will be a question of criteria in which the upheaval can be conceived, and of a discussion of criteria proposed by some authors.

The view that falls on the object is necessarily particular. Comparing media and arguing in the space between the media is a fundamentally coarser procedure than describing individual media on their own terrain and from their own logic. This type of media theory can therefore offer no more than one perspective; and only if this is taken into account does the chosen, large-scale sketch make sense.

2. A Crisis of Images?

> "The optical image always shows us a completely momentary, self-contained and literally crystallized reality in the granules of the film or in the alignment of the magnetic particles of the electromagnetic bands. The concept of representation, which means that something existing is re-presented through the image, expresses precisely the way of working that is characteristic of this technique […].
> The synthetic image [on the other hand] does not represent the real, it simulates it. It shows no optical trace, no record of something that was there and is no longer there but creates a logical-mathematical model that describes less the phenomenal side of the real than the laws that govern it. What precedes the image is not the object (the things, the world...), the completed real, but the obviously incomplete and approximate model of the real, i.e. its description formalized by pure symbols. [...] The new image no longer bears witness to the real through the instantaneous inscription of light, nor does it reflect it, but it bears witness to an interpretation of this real that is elaborated with language and filtered by it."[13]

Couchot's definition makes the difference clear in all desirable clarity; photography had placed the phenomenal side of the real at the center of its system of representation, breaking with a metaphysical tradition that fundamentally mistrusted visual appearance. The basis was a machinery that seemed to guarantee the relationship between representation and the represented and to counter the arbitrariness of other systems with a reliable, iconic relation of signs. Realism

---

[13] Couchot, Die Spiele des Realen..., op. cit., pp. 347f. (transl. and add. H.W.).

and reference to the world were the basis on which the system of technical images was built, and which enabled the development of its other side, fiction, magic, and the fantastic.

The new, synthetic images now abandon this overall arrangement. From the surface itself, attention shifts to the structures that generate the surfaces, to the level of programs, formalized description and modelling, which Couchot, importantly, places in the vicinity of language. In this respect, the pictorial character of the pictures is almost peripheral. For the functioning of the models, it is almost irrelevant whether they are translated into images or other forms of representation. Iconicity loses its privilege, and symbolic mediation, it seems, is intact again.

And secondly, it is clairvoyant that Couchot does not simply declare the reference to the world to be obsolete, because arbitrary systems have of course always claimed reference. And again the question: How can such a radical change come about? Has the project of technical images reached a limit, has it exhausted itself?

An intelligent interpretation, I think, will have to assume that it is not external reasons but primarily changes on the terrain of the images themselves that are responsible for the upheaval. The universe of images was the answer to a describable historical problem, a reaction – this will have to be shown – to the fact that language and writing had fallen into a profound crisis. So, if the development is now also leaving technical images behind, it is reasonable to assume that a comparable crisis has now hit the pictures. The thesis is that internal contradictions in the universe of images have intensified in the course of historical development and are finding their solution in the current change of media.

3. Language Crisis Around 1900 - Shuddering at Social Mediation and Arbitrariness

The so-called 'language crisis' offers itself as a model case for the current situation. Dating to the period between 1850 and 1918, the crisis itself is largely undisputed in literary studies, regardless of how the media-historical environment is conceived. But how could a medium as powerful as language fall into a fundamental crisis?

Literary studies names the changes that have taken place within literature, and these can be reduced to a few key words, as they are now part of the general understanding of literary modernism.[14]

Grimminger, for example, describes how, in the course of the 19th century, literary texts became increasingly antithetical to language. Less and less a self-evident means of expression, language becomes an authority against which authors have to write and from which they have to wrest their project;[15] language is increasingly regarded as a system of conventions, even of constraint, and this experience is thematized in the texts themselves.

It was a language of higher education that the 19th century imposed on its authors. Intertwined with the conventions and linguistic rules of a repressive society, language seemed to be a system primarily of exclusion; large areas of subjective experience, but also of the new scientific world view, were painfully banned from language, as was technology which took up an ever-greater role in everyday life.

And it was precisely at the point of these exclusions that the new literary movements began. Grimmiger sees authors as divergent as Schnitzler, Kraus, Hofmannsthal, and Rilke as being characterized by the common motif of reasserting the repressed in the field of language. From

---

[14] The German tele-teaching program ‚Funkkolleg Literarische Moderne' already used the term 'language crisis' as a title of one of its study units (Grimminger, Rolf: Der Sturz der alten Ideale. Sprachkrise und Sprachkritik um die Jahrhundertwende. In: Funkkolleg Literarische Moderne. Studienbrief 3, Tübingen 1993, S. 431).

[15] In Kristeva's 'Revolution in Poetic Language' this will already be the self-evident basis...

Nietzsche's critique of language to Freud, and from naturalism to the projects of the avant-garde which in their attack on grammar and semantics reveal the body of language itself, what had not been language until then gains the upper hand; the realm of lucid consciousness is strongly relativized, and a somatic moment prevails in writing. However, the role of language becomes precarious in the course of development.

The point at which the transition to technical media takes place is therefore almost evident. If Chandos refers explicitly to the images and if opera first produces the 'Gesamtkunstwerk,' only to be inherited by cinema, then it seems only logical that the development leaves language behind. The technical media offer themselves as an ideal path because they are not dependent on conventions to the same extent. The 'recording of the real'[16] replaces the linguistic description, and a reconciliation with the excluded other seems to be possible.

The interpretation outlined in this way belongs, as I said, to the basic stock of contemporary literary studies, which takes account of the development of the media. As much as it has merit, it is irritating, at least from the point of view of the current situation, that the described development only makes sense as an irreversible one. For in what way should the doubt about the convention evaporate again? It seems more than unlikely that media development will simply return to language or to a language-analog system. And if computers don't fit the outlined because they function from the outset via symbols and thus conventions, then this at least calls the model into question.

I would therefore like to propose a different interpretation, an interpretation that takes up certain elements of what has been said but modifies the understanding of the language crisis. Essentially, it will be a matter of placing the concept of conventions on a firmer footing. The crisis of confidence that language has suffered will not be described as a cause, but as an effect that owes itself to a changed discourse structure, and it will become clear that at least the basic constellation of the underlying problem continues to have an effect into the present. The entire media development, this is the thesis, suffers from the problem that has become undeniably clear in the language crisis. And as different as the media-technical answers are, the project itself appears to be amazingly continuous, it is passed on – unresolved? – from medium to medium.

The text that every literary scholar would probably call the canonized testimony of the language crisis leads directly to the heart of the question: The Letter of Lord Chandos, which Hofmannsthal published in 1902.[17]

Dated back to 1603, this text initially contains the description of a personal experience of crisis; a fictional character suffers the collapse of his ability to speak and describes the course of this crisis in a way that is both vivid and terrifying; and although written retrospectively from the point of view of the gradually recovering person, the shock experienced echoes in the text itself.

The text has an enormous number of facets. Probably the most important point in the context pursued here is that the crisis emanates from the general concepts. The erosion does not affect grammatical structures, the formal side of language, or semantic units in general, but first of all concepts such as 'spirit,' 'soul' or 'body,' and Chandos reports that it is above all 'elevated or general topics' about which it is increasingly impossible for him to speak. So, what does it mean when – quoted countless times – Chandos says that the abstract words "disintegrated in [his] mouth like rotten mushrooms"?[18]

---

[16] This is the term with which Kittler summarizes film and gramophone. (Kittler, Friedrich: Gramophone, Film, Typewriter [1986]. Stanford (Cal): Stanford UP 1999, pp. xxviii, xxxix, 12, 22, 24, 44…).

[17] Hofmannsthal, Hugo von: The Lord Chandos Letter [1902]. In: Id.: The Lord Chandos letter and other writings, NY: NY Review 2005, pp. 117- 128.

[18] Ibid., p. 121.

If one assumes that the semantic system of language works with super- and subordinations and brings the terms into hierarchical relations, the abstractions form a relatively high level of this hierarchy which, although far from concrete perception, nevertheless represents a kind of core area of language. And what is more, it must be made clear that, at least until the Enlightenment, the semantic system was actually understood in the strictly hierarchical form of a pyramid: The concept of God at the top included all other determinations as an organizing center. All things in the world seemed to be derived from the concept of God and dependent on it, the system accordingly centered in a reassuring way, and only in this respect was there any order at all.[19]

When the death of God had now taken away the top of the pyramid, this meant the transition to a new, more complex principle of order. It was necessary to deal with a language that was still hierarchical but was now grouped around an emptied center and had thus become a polycentric system; even if the fundamental insecurity that resulted from this was recognized relatively late as a problem of language and had until then been dealt with exclusively on a philosophical level.

It is reasonable to assume that it could be precisely this erosion emanating from the center that reaches the general concepts in Chandos. But what is the goal of the erosion process? Is the transition to a language possible that in the end only names concretes?

Hofmannsthal at least hints at such a perspective; and now it becomes important that he describes the language crisis as an experience of decomposition. Starting from a previously given unity, the protagonist undergoes the experience of an apocalyptic disintegration that destroys all certainties and renders almost all categories invalid;[20] and the end point is not a restored unity, but a kind of abeyance that can only be grasped in aesthetic categories:

> "Since then I have led an existence which I fear you could hardly imagine, so inanely, so unconsciously has it been proceeding. Yet it is not too different from that of my neighbors, my relatives, and most of the landed gentry of this kingdom, and it is not entirely without happy and stirring moments. It will not be easy for me to convey the substance of these good moments to you; words fail me once again. For what makes its presence felt to me at such times, filling any mundane object around me with a swelling tide of higher life as if it were a vessel, in fact has no name and is no doubt hardly nameable. I cannot expect you to understand me without an illustration, and I must ask you to forgive the silliness of my examples. A watering can, a harrow left in a field, a dog in the sun, a shabby churchyard, a cripple, a small farmhouse – any of these can become the vessel of my revelation. Any of these things and the thousand similar ones past which the eye ordinarily glides with natural indifference can at any moment – which I am completely unable to elicit – suddenly take on for me a sublime and moving aura which words seem too weak to describe. […] I feel a blissful and utterly eternal interplay in me and around me, and amid the to-and-fro there is nothing into which I cannot merge. […] And the whole thing is a kind of feverish thinking, but thinking in a medium more direct, fluid, and passionate than words. […] It is that the language in which I might have been granted the opportunity not only to write but also to think is not Latin

---

[19] A reconstruction of this can be found in Bolzoni's work which also documents some of the medieval picture panels that place the figure of Jesus at the center of tree-shaped hierarchical semantic models. (Bolzoni, Lina: The Play of Images. The Art of Memory from Its Origins to the Seventeenth Century. In: Corsi, Pietro (Hg.): The Enchanted Loom. Chapters in the History of Neuroscience. New York/Oxford 1991, p. 16-65).

[20] "Everything came to pieces, the pieces broke into more pieces, and nothing could be encompassed by one idea." (Hofmannsthal, The Lord Chandos Letter, op. cit., p. 122).

or English, or Italian, or Spanish, but a language of which I know not one word, a language in which mute things speak to me […].”[21]

It is a terrain beyond language that ultimately becomes a refuge for the protagonist. The language of things has taken the place of language, and an aesthetic experience – with a clear emphasis on the visual – has supplanted the destroyed words. So, it is hardly surprising that Hofmannsthal also wrote a euphoric text on cinema.[22]

And the movement must inevitably transcend language, because a comparably radical concretion is unthinkable within language. Since every concept is subsuming and even the most concrete linguistic expression encompasses a multitude of individual things, the concretes are never available as concretes and the mechanism of abstraction is inscribed in language from the very beginning.

And now it will be necessary to include what was said above about the formation of the signifieds.[23] If the formation of meaning has been reconstructed as a mechanism that cumulatively generates signifieds from concrete discourse events (i.e. from chains of signifiers), and if this is the basis for all linguistic processes of abstraction, it follows that the general terms can be ordered according to the level of their generality. In the case of abstracts such as 'mind,' 'soul,' or 'body,' one could say, the character as a signified is particularly obvious.

The language crisis thus obviously attacks language from the side of the signified. Or, to put it more reasonable: If the abstracta fail, this indicates that a disruption has occurred in the formation of meaning, that the transition from discourse to system, normally a blindly automatic part of linguistic functioning, is no longer taking place smoothly, unconsciously and 'silently.' So, it is not the 'conventions' but the signifieds that are in crisis. And the conflict named by Grimminger shifts from the 'conventions,' where it could possibly be dealt with, to the frighteningly general level of the semiotic itself.

Whether such a semiotic/technical interpretation actually opens up anything remains to be seen when we will discuss the possible causes of this change. However, the question is already posed differently; while the thesis that 'trust' in language has suddenly been shaken claims an upheaval primarily in the history of ideas,[24] the question now also turns to factors which, themselves blind, influence the signification processes. But what could such factors be?

If we first return to the level of manifest utterances and to Chandos, a second moment in the text is a tremendous shudder at the social character of language.

> "I found myself profoundly unable to produce an opinion on affairs of court, events in Parliament, what have you. […] It happened to me that, when I wanted to scold my four-year-old daughter, Katharina Pompilia, for a childish lie she had told and impress upon her the necessity of always telling the truth, the ideas flowing into my mouth suddenly took on such iridescent hues and merged into each other to such a degree that I had to make an effort to sputter to the end of my sentence, as if I had fallen ill. I actually turned pale and, feeling an intense pressure on my forehead, left the child, slammed the door behind me, and did not recover somewhat until I was riding at a good gallop over secluded pastureland.

---

[21] Ibid., pp. 123, 125, 127, 127f.

[22] Hofmannsthal, Hugo von: Der Ersatz für die Träume [1921]. In: Kaes, Anton (ed.): Kino-Debatte. Texte zum Verhältnis von Literatur und Film 1909-1929, pp. 149-152.

[23] (Note on translation:) The cumulative formation of meaning is the main thesis in the 4th chapter of my book 'Docuverse;' the text is reprinted here, see: chapter 3.

[24] Or in the interaction between a repressive society and an exclusionary language, the classical model of base and superstructure...

But this affliction gradually broadened, like spreading rust. Even in simple, informal conversation, all the opinions which are ordinarily offered casually and with the sureness of a sleepwalker became so fraught with difficulties that I had to stop participating in these conversations at all. It filled me with inexplicable fury (I concealed it just barely and with effort) to hear such things as: This matter turned out well or badly for this person or that; Sheriff N. is a bad person, Clergyman T. is good; we ought to feel sorry for Farmer M., his sons are throwing their money away; someone else is to be envied because his daughters are thrifty; one family is coming up in the world, another is on the way down. All of this seemed to me as unprovable, as false, as full of holes as could be. My mind forced me to see everything that came up in these conversations as terrifyingly close to me. Once I saw through a magnifying glass that an area of skin on my little finger looked like an open field with furrows and hollows. That was how it was for me now with people and their affairs. I could no longer grasp them with the simplifying gaze of habit. Everything came to pieces, the pieces broke into more pieces, and nothing could be encompassed by one idea."[25]

The veil of habit had concealed what now emerges with terrifying clarity: that language is based on social agreement and, permeated by value judgments, is by no means aimed at knowledge and truth, but far more at social consensus. With this idea and the polarity of truth and lies, the passage echoes Nietzsche.[26] According to Nietzsche, being truthful means, "[using] the usual metaphors," and "[lying], herd-like, in a style which is binding for everyone."[27]

The entire, impressive conceptual apparatus with its pyramidal order, its laws, privileges, subordinations and boundary definitions is built on a slippery foundation and its inner rigidity is a defensive structure; despite its claim to truth, language emerged from human practice and is "anthropomorphic through and through."[28]

This is the other side of the concept of 'convention,' the insight into the fundamental arbitrariness of language. The insight itself, however, is by no means new in the history of philosophy; if it comes to consciousness in a shocking way with Nietzsche and if the social mediation takes on traits of a pronounced horror, then this indicates that something has shifted in the object itself. But what could this be? Why can language as a whole suddenly be perceived as a 'lie'?

4. Language Crisis: the 'Theory of Two Minds'

The answer to be attempted here starts with the concept of social mediation; however, the approach must now, admittedly a hard break, be changed to a sociologically functional description. Language, of course, is always intersubjective; what appears variable, however, is the social (and semantic) space that language encompasses, and it could be possible that here lies a key to the language crisis as well as to media development.

The motif has already been addressed in the section on the segregation of discourses and the fantasies of unification,[29] and in the section on collective memory, when the connection be-

---

[25] Hofmannsthal, The Lord Chandos Letter, op. cit., pp. 121f.

[26] Nietzsche, Friedrich: On Truth and Lie in an Extra-Moral Sense [1873]. Oxford: Quadriga 2019.

[27] Ibid., p. 7.

[28] Ibid., p. 9.

[29] (Note on translation:) … Chapter two in the book from which the present chapter is taken...

tween the formation of tradition and media problems was discussed with Hejl.[30] The focus there was on the concept of social differentiation, and Hejl had shown that social differentiation also leads to a drifting apart of knowledge bases. If we take up this idea, we can create a model that describes the problem, somewhat roughly and on an initially socio-economic basis; based on Luhmann and Hejl, I will consider the division of labor and the problems of social differentiation.[31]

Hejl proposes to distinguish between two historical types of organization.[32] The first would be that of internally relatively poorly differentiated social systems, as is assumed for tribal societies or for historical agrarian societies. A society in which the majority of people are concerned purely with the acquisition of food is dependent on the corresponding basic qualifications being held by each of its members, i.e. socially redundant to a high degree. This redundancy is created by means of oral tradition formation and the inscription of practical manual skills into the bodies; mythical or religious systems ensure the coherence of world views; and the extensive restriction to a relatively narrow geographical living space allows what lies outside this horizon to be excluded as irrelevant.

There must have been no society that could have managed without social differentiation, such as the division of labor between the sexes, and in which cultural differences, wars, travel and long-distance trade had not always perforated the horizon; what Hejl emphasizes in the concept of 'communities,' however, is the relative self-sufficiency of regionally limited collectives in which neither external reference nor internal differentiation determine the cycles of life.

The system described in this way is limited by the fact that its restricted internal complexity also blocks certain development opportunities, primarily because the memory capacity of the individual members is restricted. This is exactly where the second type of organization comes in; to exceed the aforementioned limit, labor and the necessary mental and physical knowledge are divided up. This enables a rapid increase in social complexity, the development of ever more specialized technologies and, as a result, a regional specialization of production, culminating in the international division of labor, which today encloses the entire globe.

---

[30] (Note on translation:) See ibid., chapter three (cited there: Hejl, Peter M.: Wie Gesellschaften Erfahrungen machen oder was Gesellschaftstheorie zum Verständnis des Gedächtnisproblems beitragen kann. In: Schmidt, Siegfried J. (ed.): Gedächtnis. Probleme und Perspektiven der interdisziplinären Gedächtnisforschung. Frankfurt a. M.: Suhrkamp 1991, pp. 293-336).

[31] Hejl sees in the division of labor a particularly clear picture of what Luhmann describes as the internal differentiation of social systems. In Luhmann's own work, however, the theory is more general; see, for example: Luhmann, Niklas: Veränderungen im System gesellschaftlicher Kommunikation und die Massenmedien. In: Schatz, Oskar (ed.): Die elektronische Revolution. Wie gefährlich sind die Massenmedien? Graz/Wien/Köln 1985, pp. 13ff.; L., N.: Social Systems [1984]. Stanford (Cal.): Stanford UP 1995, p. 7; L., N.: Einführende Bemerkungen zu einer Theorie symbolisch generalisierter Kommunikationsmedien. In: ders.: Soziologische Aufklärung. Bd. 2, Opladen: Westdeutscher Verlag 1975, pp. 170ff.
If I choose the division of labor (and not social differentiation) as the focal point in the following, it is primarily in order to arrive at a more tangible idea and to avoid the very high level of abstraction at which Luhmann's theory operates. So, by no means a Marxist-emphatic concept of 'work,' as I was told at a conference, is the necessary foundation of the argumentation. Of course there are social differentiations that have nothing to do with the division of labor, and the economy is not the basis above which a cultural 'superstructure' rises; nevertheless, I would hold on to the idea that production and economy produce very profound social divisions; directly related to physical reproduction (and necessity), to blind practices, to the evolution of technology and to 'material constraints,' economic divisions have very little arbitrary character; and whoever negates such differences runs the risk of dissolving what is to be grasped into the realm of signs. In the same sense, a distinction is made in other parts of this work between irreversible practices and reversible (symbolic) trial action.

[32] Hejl's separation between communities and societies has already been mentioned.

As far as 'information processing' on a social level is concerned, this process means the elimination of redundancy. Individual stocks of knowledge[33] necessary for production no longer have to be held redundantly hundreds of thousands of times, but only hundreds, so that the rest of the minds and bodies are freed up for new stocks of knowledge.

On the one hand, the social process must ensure that the specialized minds and activities remain reliably related to each other, which requires elaborate mechanisms of internal organization and social mediation through the market and comparable institutions; this objective/organizational side is referred to in the Marxist context with the term 'objective socialization.'

The second difficulty is that objective socialization alone does not solve the problem, so that the division of labor initiates and necessitates a myriad of communication processes. And that, according to Hejl, is the systematic place that the media occupy. Communication essentially takes place in order to relate the differing bodies of knowledge to one another, or, to put it more clearly: Division of labor and media communication are systematically and complementarily interrelated.

Communication becomes the direct counterpart of the division of labor, because it must mediate what is separated by the division of labor – in substance, geographically and functionally. There is thus a direct relationship between the degree of social differentiation and the social need for communication;[34] and as difficult as this category is, it reliably indicates that communication is not a luxury.

This now gives rise to a second consideration which can no longer be based on the witnesses mentioned and which I would like to call, in mild irony towards my own development, the 'theory of two minds.' The consequence of what has been described is that the head of each individual undergoes a significant split. Instead of one head, one could say, everyone now needs two heads – a working-sphere head differentiated according to professional competence, whose specialization tends to isolate it from all other specialized heads, and a second, 'general' head that enables the person to remain 'human' and communicate. It would be the task of the second head to maintain those stocks of knowledge that still have to be redundant for every member of society. The fact that both heads diverge constitutes the tension that will be discussed in the following.

Put less boldly, the problem has of course been dealt with many times. The example of the bourgeois salon and the bourgeois public sphere makes it clear how difficult it was, even in the 18th century, to bring the two minds together again and maintain the ideal of an unconstrained consensus in social discourse against the increasingly diverging world views.[35]

The general problem is that the specialization of working-sphere minds turns into a specialization of world views. All efforts to create a public sphere, social coherence and communication must therefore develop a centripetal force that is able to balance the natural centrifugal forces of social differentiation. And conversely, social differentiation can only progress as far as the coherence of communication can be guaranteed, even if only just.

As crude as this general model is, as I said, it makes clear what is important in context; for language this means that it is increasingly burdened as the division of labor progresses. As an instance of social mediation, it must relate the divergent specialized languages and language

---

[33] The term is of course more than problematic because 'knowledge' should not be reified...

[34] When the first coast-to-coast telegraph cable was switched in the USA, it was seriously denied that the geographically separated partners had anything to say to each other.

[35] See for example: Habermas, Jürgen: The Structural Transformation of the Public Sphere. An Inquiry into a Category of Bourgeois Society [1962]. Cambridge (Mass.): MIT Press 1989.

games back to the language in the singular that the members of society continue to share; and language must absorb the resulting tension in its internal structure.

Specifically, it must provide an exploding number of ways of speaking for everything that is the case (or whatever entities an independent economic or scientific practice produces[36]), and at the same time a set of reliable categories and basic concepts that is capable of consensus for the majority of language users; and it is obvious that this could be a structurally aporetic task. Every new insight and every new practice that does not lead to one of the rare syntheses[37] forms a new microcosm and forces a differentiation of language; this is increasingly coming into conflict with the limited capacity of individual language users; the stock of intersubjectively shared categories will not increase and differentiate to the same extent. This means that the decisive crisis will occur in the core area of language. The central categories, the abstracts, will become increasingly shattered into perspectives, their generalizing power will no longer be sufficient to bridge the different uses; they will lose confidence and become destructively iridescent/ambiguous.

The argument matches precisely not only the phenomenology of the language crisis, but also the determination that the first victim is the formation of signifieds. Now it becomes clear why theory – merely following everyday consciousness? – has become accustomed to placing the signified in the vicinity of 'ideology.' When the signifieds 'lie,' this expresses the experience of an alienation that distances one's own world view and one's own certainties from the determinations of language and that makes one's own speaking – unstable and endangered enough – a speaking against language.

But there is no language without signifieds. There are only signifieds whose character *as signifieds* is more or less obvious;[38] and there is a discursive practice that provides the arena both for language and for doubts about language. It is undeniable, however, that discursive practice between 1850 and 1918 left the terrain of language.

5. Technical Images

The entire development of the media landscape, I think, can be understood as a sequence of attempts to deal with the problem outlined above. And this is obvious for the technical images.

Photography and film were enthusiastically welcomed as a liberation from language;[39] they realize in a very direct way what is anticipated in Chandos as an aesthetic experience, and they

---

[36] This is probably most impressive in chemistry, law and the social sciences, but also in technology, insofar as this does not itself function as a mute substitute for language; "Even the smallest individual part of a modern car, for example, has names that cascade over the layman when the mechanic starts to take apart a differential gearbox, for example." (Hagen, Wolfgang: Die verlorene Schrift. Skizzen zu einer Theorie der Computer. In: Kittler, Friedrich A.; Tholen, Georg Christoph (eds.): Arsenale der Seele. Literatur und Medienanalyse seit 1870. München: Fink 1989, p. 224 (transl. H. W.)).

[37] $e = mc^2$ is one of the syntheses that no longer took place on the terrain of language.

[38] The signifier 'freedom' will be perceived as highly ambiguous, the signifier 'steam locomotive' less so, because it at least corresponds to a describable collective of physical entities.

[39] "The fact that [...] the images are mute is one more attraction; they are as mute as dreams. And deep down, without knowing it, [...] [people] fear language; they fear in language the tool of society. [...] Above the lecture hall is written in golden letters: 'Knowledge is power,' but the cinema calls out more strongly: it calls out with images. The power that is conveyed to them through knowledge – there is something unfamiliar about this power, not quite convincing, almost suspicious. They feel that it only leads deeper into the machinery and further and further away from real life, from what their senses and a deeper secret that resonates beneath the senses tell them is real life." (Hofmannsthal, Der Ersatz..., op. cit., pp. 149f. (transl. and add. H. W.)). – "Nowadays, we are no longer so inclined to grant the word such absolute hegemony. It is perhaps more appropriate to say that words have

choose the same way out of the crisis: Photography and film are in fact the radical type of a language that articulates itself exclusively in concretes. They play off the individual case against the increasingly false general and the diversity of examples against the unity of the concept. If the concept of 'table' can indeed be dissolved into the plurality of concrete, photographable tables, this means above all that abstraction and subsumption, and ultimately the formation of signifieds, can be avoided.

And the same also applies to other features that separate technical images from language. Seemingly effortlessly, the images manage without the fixed network of interrelations that characterizes the system of language; they contrast the conventionalized rules of language with a much more open structure in which there are rules, but which have no load-bearing function for the system of representation and are therefore not dependent to the same extent on social consensus-building. And 'openness' is generally one of the central promises: Where language seems to rely on mandatory meanings,[40] the images always offer a multitude of readings; perception and interpretation do not coincide to the same extent and this opens up a space for ambiguities that are not understood here as destructive, but as a basis for understanding. Convention and consensus do not appear as a prerequisite for communication, but as its possible result; the visual text accordingly as an offer that strives for understanding but cannot force it.

When Metz called film a 'speaking without language,' this was not only a statement on the semiotics of film.[41] It was also the most succinct formulation of the utopia that film opposes to language and that negates the systemic character of language.

Speaking without language would be speaking freely. It would be a way of speaking that would not have to speak against language, but only against the competing texts, and that could turn to an open future unencumbered by the past condensed in the code.

But how have technical images solved the second problem of language? If social differentiation (and in short: the division of labor) had threatened the coherence of language and eroded its central signifieds – what good would a system be that did not possess comparable central signifieds at all?

Now it becomes obvious that the technical images produce coherence in a completely different way. Assuming the thesis of the 'two heads' to be valid, it becomes clear that the technical images by no means invest equally in all semantic fields, but that they are almost exclusively concerned with the second, the 'generally human' head. The project that photography, cinema and television have pursued from the very beginning is to strengthen it and equip it with world views that resist the danger of being torn apart as successfully as possible.

Quite contrary to their claim to represent social totality, the visual media have fixed themselves on a relatively narrow range of topics – people, love, crime and politics; and if it has often been emphasized that the visual media are primarily entertainment media, this also speaks in favor of assigning them to the second head, if one sees in this the 'leisure' head, which stands opposite the working-sphere head.

The condition of coherence was thus that the semantic fields with the strongest centrifugal tendency – work and the socially highly differentiated areas – were largely left out of the realm

---

something overly clear for us nowadays and yet something strangely undifferentiated." (Friedell, Egon: Prolog vor dem Film [1912]. In: Kino-Debatte, op. cit., p. 45 (transl. H. W.)). See also the foreword of the same volume: pp. 17ff.

[40] Of course there are also ambiguities in the case of literature; but there they appear much more clearly as a threat to the understanding of meaning...

[41] "[It] seems appropriate to look at the cinema as a language without a system." (Metz, Christian: Film Language. A Semiotics of the Cinema [1964/67]. Chicago: University of Chicago Press 1991, p. 65; see also: Chapter 3: The Cinema: Language or Language System? Ibid., pp. 31ff.).

of images. These could, it seems, be left to language, once language had been unburdened in the core area and the general terms no longer had to bear the full burden of integration. Film and television took over the central area and brought together – the term 'mass media' captures this fact – broad audiences on the terrain of a relatively small number of texts.

In this respect, the tension between two moments seems to be constitutive for the visual media: On the one hand they are radically concrete, on the other hand they have not replaced the concreta of language, but rather the general concepts from which they seemed furthest removed. The fact that visual appearance and functional determination fall far apart in this way is not a defect, but on the contrary is precisely the point of the visual media: their concreteness denies the problem that the general concepts clearly had, and only in this way could the technical images become the 'solution' to the language crisis.

The result was a system whose entire structure could not 'lie.' If the technical images were always spoken about in categories of realism, truth and reference to the world, this was by no means solely due to the iconicity and the reference to the real guaranteed in the machinery; for of course it could have been admitted at any time that the images were designed, selected, manipulated, staged, or fictitious. What was important above all was that social mediation seemed to have been eliminated and speaking without language seemed possible. The threat emanated from the signified and from the insight into social mediation; in contrast, the intervention of the individual creative subject seemed a relatively manageable opponent.

6. The Crisis of Images

This reinterpretation of the initial argument is important because it provides a key to analyzing non-iconic systems as well. First of all, however, it paves the way for the consideration of what, 100 years after the crisis of language, might have happened to technical images. Obviously, the pictorial universe has proven to be unsustainable, and developments are pushing beyond the solution found with astonishing force.

The fact that a 'crisis of images' has actually occurred can be seen in a variety of symptoms and most obviously in the fact that the quantity of circulating images has grown beyond any conceivable measure. Although theory has long regarded this growth as a sign of health, more and more voices are now speaking of a 'excrescence' of the image universe.

It has been said that the system is proliferating,[42] dissolving into an unmanageable number of increasingly insignificant individual events,[43] and that the multiplication of television channels in particular envelops recipients in a veritable fog of images.[44]

---

[42] Comolli had already written in 1980: "...if cinematic representation is to do something other than pile visible on visible..." (Comolli, Jean-Louis: Machines of the Visible. In: Lauretis Teresa de; Heath, Stephen (ed.): The Cinematic Apparatus. London 1980, p. 141).

[43] See, for example, the 'zero medium'-thesis by the German essayist Enzensberger: (E., Hans Magnus: Die vollkommene Leere. Das Nullmedium oder Warum alle Klagen über das Fernsehen gegenstandslos sind. In: Der Spiegel, Nr. 42/20, 16. 5. 88).

[44] The widespread resistance to the privatization of television in Germany probably has one of its reasons here; regardless of the content distributed, it seems to have deeply irritated the audience that 'television' no longer speaks with one voice. At present, it is above all Kamper who notes "massive disturbances at the peak of image production" and almost imploringly calls for the "breaking out of the image cave, out of the immanence of the imaginary." (Kamper, Dietmar: Bildstörungen. Im Orbit des Imaginären. Stuttgart 1991, S. 7f. (transl. H. W.)). And the Frankfurter Rundschau sneers: "The man admits to being sad. Blunt images everywhere, without reflection. Television, movies, magazines, computer games. Dietmar Kamper is desperate. Images without end. He speaks of the parable of the cave: modern man hangs out in front of screens and terminals, in cinemas and gambling dens – image caves everywhere. The lectures that the sociologist from the Free University of Berlin gives at renowned institutes for

One difficulty is that such statements can hardly be distinguished from those who have always warned against images and, usually from a culturally conservative point of view, believed they had to protect literature from images. The phenomenon itself, however, is probably largely undisputed.

And this is where an interpretation comes in that sees quantities turning into qualities. First of all, it is clear that the quantity of the images erodes the events that can be photographed. The surfaces have multiplied infinitely into the images, and the images in turn threaten to bury the images and the events beneath them; the never-seen becomes increasingly rare, and the suspicion arises that the photographable surface of the world could turn out to be finite after all.

Beyond that, however, the quantitative accretion touches the substance of the images. The accumulation of acts of reception will inevitably lead to the images being perceived less and less concretely and as individuals. They will begin to layer and overlap; inevitably, the constant structures, the schemata and the patterns that organize the images – beneath their different surfaces – will emerge; in short, exactly the effect described above as 'condensation' will occur.[45]

And this process, this is the point, is a process of conventionalization. Despite their concrete differences, the images enter the machine that transforms discourse into a system and extracts structures from concrete discourse events. And this increasingly autonomous machine confronts the individual image. It is by no means the case that only the memories of the recipients and their expectations change, while the images can save their substance; even if it initially has its seat in memory (or makes use of the recipients' memories), the machine of condensation is a social arrangement; like language confronts speech, it limits the space in which meanings are constituted and forces the individual images to relate to it as a binding background. In this respect, the images themselves by no means remain what they are.

And it is only against this background that it makes sense to speak of a conventionalization process. How quickly conventionalization takes place, how quickly the images become a 'language,' depends on the density of the storm of images; however, it is important to note that conventionalization cannot be avoided in principle.[46]

The images thus seem to be heading towards precisely the problem that broke open in the language crisis. The distance between language as a conventionalized system and the technical images is in any case diminishing, and the images are in danger of losing their particularity of being 'speech without language.'

And this constitutes the tension – the aporia? – that the universe of images is currently laboring with. The second observation is that technical images find conventionalization extremely difficult to bear. It is strikingly at odds with the claim to concreteness and ultimately uniqueness that was mentioned above as one of the central characteristics. Tied to the moment, to the detail and to chance, photography has always claimed to be able to capture unrepeatable constella-

---

visual media, at the Academy of Arts in Berlin, at the Academy of Media Arts in Cologne, and for Franco-German TV culture channel 'Arte,' express an infinite mistrust of the world of images. Kampers speeches, which are now also available in book form, were held in front of people who have only one thing in mind: To produce images, as powerful images as possible, as compelling and ambitious, as pointed as they are convincing. But they like Kampers' motif of Plato's cave of images." (Wesemann, Arnd: Notausgang aus der Bilderhöhle. In: Frankfurter Rundschau, 3. 2. 1995 (transl. H. W.)).

[45] (Note on translation): As already mentioned: The concept of condensation is the focus of the 4th chapter of my book 'Docuverse;' the text is reprinted here, see chapter 3.

[46] The hope for permanently 'fresh images,' as the German director Werner Herzog expresses in Wenders' film 'Tokyo Ga' on the Tokyo-Tower, is probably doomed to failure...

tions, irreducible concretes, and thus to avoid the formation of signs;[47] the basic construction of technical images, one could say, resists conventionalization.

If it now becomes apparent that a 'literal repetition' and a complete identity of the signifiers is not at all necessary, but that (following the pattern of Galton's composite photographs) different concreta also enter into accumulation processes and condense into schemata, then the foundation on which the technical images are built collapses. The insistence on concretion loses its meaning and the skeleton of the structures emerges irrefutably.

In short, this seems to me to be the physiognomy of the image crisis that characterizes the current media landscape. As an aversion to repetition and clichés, in the feeling that the images contain less and less that justifies lasting attention, and in an increasingly distracted, ironic or 'blasé' reception, the crisis has now reached everyday consciousness.[48] Theory, of course, will describe it in different criteria; the fact that these are the same ones that were relevant in the case of the language crisis indicates that a constant problem is indeed at work at the bottom of the development. And the same criteria, I claim, now make it possible to analyze the data universe as well.

7. Computers

The first conclusion to be drawn from what has been said is that in the data universe the formation of signified obviously does not 'fail,' as the consideration of condensation had suggested; the formation of signification does not fail, it *is avoided*.

It is the point of the new medium that it blocks the formation of signifieds; completely parallel to the technical images, it establishes a system that can manage without conventions, without language and without 'condensation,' and when the technical images had saved themselves into concretion and iconicity, it is now the idea of *a textual universe liberated from language* to which hope is transferred.

So this is the reason why computers present themselves as a universe of material texts, whose linguistic character is not taken into account; and this is the only reason why the new medium, although largely bound to written texts,[49] is not seen as a return to language and its problems.

The surface of the texts has taken the place of language. And here, friendlier conditions seem to prevail than in any text universe before: Since the total volume is not limited and every point in the new universe is equally distant, everyone can become an author on an equal footing; no publisher selects, no rejection threatens, no silence is enforced as in the case of one-way mass media. Consensus-building seems superfluous, and the hierarchizing social machine has, it seems, lost its power.

So, if the accompanying discourse repeatedly emphasizes the accessibility and anti-hierarchical character of the new medium, this can now be deciphered as the new variant of an established utopia: the utopia of suspending social mediation.

And the parallel goes much further. When it was said above that the data universe pursues the ideal of depicting the social structure in a 1:1-map, this also does not imply an acknowledgement of the fact that signification is fundamentally socially mediated and that society always

---

[47] Repetition seemed to play a role only in technical reproduction, and in this form not to damage the unrepeatable.

[48] Empirical studies show a rapid decline in satisfaction on the part of television viewers; see: Winkler, Das Ende der Bilder, op. cit., pp. 229f.

[49] (Note on translation:) The book was written in 1996, and the project was to understand the 'Docuverse,' i.e. the WWW.

already has a share in each individual signification process as an instance of standardization, but almost the opposite: The idea that everybody, each facet of society, places 'its' representation in the new universe means above all that everybody speaks for himself and for this reason alone cannot lie.[50]

In this respect, this fantasy is a direct equivalent to what the radical concreteness of technical images is supposed to achieve; there, too, things should stand for themselves and represent themselves, in the sense of an 'immediate' and thus unadulterated representation. Despite all appearances, this is an (albeit unusual) variant of iconicity. Representative and represented are connected by a direct relation; it is the enunciator who is responsible for the text, and the text refers back to nothing but the enunciator. And in this way 'truth' must also arise at the level of the overall structure, as the image of the 1:1-map asserts.

At the bottom of the new media-technical arrangement lies – this is the sum – the deep-rooted horror of arbitrariness. As a constant motif, this horror links the language crisis with the chain of its media-technical solutions, and media history as a whole appears as a sequence of attempts to find a technical answer to the problem of arbitrariness.

We must bear in mind that the concept of arbitrariness is fundamentally twofold, and encompasses both an aspect of a free or elective decision, and the seemingly completely opposite aspect of a socio-historical determination. This now becomes legible as the coordinate system of a double horror: The signs have no reliable support in the world, which places them in a dangerous state of limbo, and – chained to history – they are by no means 'free' after all; their agreement character opposes any dissenting speech as resistance; and far removed from any 'truth,' they derisively refer back to past discourses (the lies and errors of the past).

All media history is an attempt to escape from this more than uncomfortable situation. The technical images chose to flee into iconicity, which promised to chain the signs to the world, to limit their whirr and to counter the pressing past with a radical present; the 'recording of the real' (of sounds and, one should add, of measurement data[51]) followed the same path and delivered an iconicity without images; and media history seemed to prove its worth in erecting a dam against the threatening arbitrariness.

When this solution collapsed in the image crisis, the shock was all the greater. And at least some of the commentators had known it all along; they outdid themselves in dismantling the images' claim to validity and showing that iconicity had always failed to meet the expectations; the privileged reference to the world was, of course, a sham, and it was overdue to recognize that sign systems did not refer to the world, but exclusively to other signs.

Interestingly, it was exactly the same concept of 'simulation,' developed in the critique of technical images, that was now used to describe the new medium. The computers hardly seemed to connect to the history of the images in any meaningful way, but all the more clearly to their critique, and this gave the impression that the computers had simply given up what had proved problematic with the images. Since then, the consensus has been that the computer models do not claim to have any reference to the world.

From the reconstruction attempted here, however, it should have become clear that the opposite is the case. As soon as one does not start from the appearance of iconicity, but from its function of warding off arbitrariness, and as soon as one splits arbitrariness into its determinants – social mediation, the curious mix of freedom of choice and historical motivation, the link to history – the striking continuity that connects the computers with the technical images becomes apparent.

---

[50] Tim Berners-Lee, inventor of the World Wide Web, says with great confidence: "There will be an explosion; more and more people will write about themselves." (Quoted from the German TV-channel 3sat, 06-21-95.)

[51] It is to Kittler's credit that he repeatedly incorporates the cognitive paths of natural science...

The computers have given up iconicity, but they continue the actual project; and the project consists of providing the endangered-arbitrary signs with a support (a series of ever new supports).

If this thesis is plausible, it means that media history has a clearly strategic aspect, on at least two levels. Completely equivalent to the real implementations, their performance or their failure, the accompanying discourse can take on the function of either strengthening or eroding confidence in the substantiality of the signs. In this respect, the ideas, hopes and wishes of the sign users are directly involved in the signification processes. They are 'productive' in Foucault's sense; and the decision to include them in the analysis is confirmed.

In general, sign systems seem to go through a cycle that leads from a hopeful early phase to a stable, naturalized domination phase, only to end in 'disillusionment,' to which media history then responds with a technical innovation that allows the cycle to restart. Within the individual medium, everything will depend on how long the hopes of the early phase can be kept alive and what they contribute to the stabilization of the system.

In the case of computers, the fact that the accompanying discourse denies any reference to the world in an almost bold manner must be understood as a cover strategy under which the actual hopes develop all the more vigorously. And we should have been warned anyway: A technology that enters the stage under the label of 'information' will have to put up with the question of what it is providing information about, i.e. what the object of the collected information is; and if empiricism often confuses its 'data' with reality anyway – which prompted Flusser to make the ironic remark that one should rather speak of facts (i.e. what is made) than of data (i.e. what is given) – then this also indicates that all the problems of the concept of the sign, of meaning, and of reference will also return on the terrain of the new medium.

For the time being, however, they are not recognized as such, and this is what makes the 'early phase' so charming. Only on this basis is the rhetoric of the new possible, which allows technical innovation to stand in for the solution of non-technical problems, and historically shifts what had proven to be precarious on the terrain of the 'overcome' media.

The project of deciphering/exploring the world cannot be abandoned, unless the world has always already been deciphered. Competing systems are conceivable, which – like the competing discourses – test different ways of functioning, modeling and levels of validity, but none of the media systems will completely fall out of the search movement itself.

Their historical sequence, the cycle between hope and disillusionment, confidence, swelling suspicion, crisis and media change, must therefore be seen as the mode in which the search articulates itself historically. As a macro-discourse above the level of discourse, which in turn is a macro-structure above the forward thrust of the individual texts.[52]

The precise function of attacking the cover strategy is not to accelerate the path to disillusionment, but to reduce the effort it takes to read the new medium. In fact, we explore the media like a text; we immerse ourselves in it and sound it out, spending a considerable amount of time familiarizing ourselves with its inner structure. This applies to computers in a particularly ob-

---

[52] This is where the initial intuition to view media history as a story parallel to the individual texts comes to fruition… Outside my window, a pair of magpies have started to build a nest; for about three weeks, the birds worked extremely hard, battling with unruly branches, enduring gusts of wind and even accepting pieces of plastic as building material. In the meantime the project has stagnated, as if it could not prevail against the extreme traffic noise; and I realize that it bothers me that the narration hangs; the urge of the text will not come to an end in this case, the female will lose the eggs somewhere, there will be no little magpies, no feeding, no little problems and no first flight from the nest. The arc will not close, and I am dissatisfied that I will remain dissatisfied.

vious way.[53] And this must also support the idea that the search has turned away from the world and is now instead directed towards the media complexes themselves. But this 'instead' does not exist; there is a reference to the world only through the concentration on texts (and media). And there are sign systems whose functioning and claim to reference are so little clarified that they can impregnate themselves for a time against the uncertainty and frustration that emanate from arbitrariness. But inevitably they all will return: The reference and the doubt about the reference, the reservation about a system on which one is simultaneously dependent, the horror of social mediation and the realization that even the new medium cannot escape it.

If we return from the level of such general considerations to the concrete media upheaval, it is noticeable that the transition from images to computers has lost much of its sharpness. The difference is not moderated by the fact that computers also deal with pictures, but by the fact that the images themselves have proved to possess their own (and hidden) structure and have thus moved closer to the computer models. When the process of conventionalization causes the 'skeleton' of the images to emerge from beneath the radically concrete surface, then it seems only logical that media history now favors a medium that relies on abstraction, structure and schemata from the outset. The first continuity would be that the recipients have perhaps always been interested – at least also – in structures, in the case of images in graphic-visual orders and formations (and their semantic implications), in the case of film in complex temporal-semantic patterns.[54] The innovation would therefore be that the new medium isolates and explicates this level. The analysis would have to follow this and develop a language that makes the structural designs of the new medium describable. The debate about linearity and hyperspace can only provide a first approximation here; it will be necessary to observe the concrete textual practices in the new medium and extract from them, step by step, what they have in common. Behind the language of the documents, at any rate, we'll find the structure of their arrangement in hyperspace; and the hope that the arrangement will achieve what the documents, the schemata and the language as well as the image media fail to do.

Finally, the last consideration concerns the role that images play in the new medium itself. If computers are able to process numbers, texts, algorithms, images, sounds and whatever else, this does not mean that this happens on the same level and that all symbolic systems are equally suitable for being processed in bits and bytes. There is a fundamental difference between whether a computer is to store and send texts written in language or whether it is to search them according to meaning criteria, whether measured data is to be evaluated with the help of statistical procedures or images are to be recolored on a monitor.

The main question therefore seems to be what the computers can do with the different types of data. The algorithms available for the individual symbolic systems vary greatly in their performance and efficiency; the most powerful are probably in the field of numbers and mathematics, which as a coherent system of transformation rules allows impressive permutations and, above all, data reductions; and much less impressive, for example, in the field of natural language, where keyword searches and word frequency statistics still mark the state of the art.[55] (Haptic and olfactory 'data' seem to resist the data form itself).

In the spectrum thus marked out, the images occupy a position far removed from the slender and elegant mathematical operations. It is by no means to deny that there has been an explosion

---

[53] No one would say that they sit in front of the television "to get to know it;" in the case of the computer, this is standard.

[54] In this perspective, the multiform surfaces would be a kind of comforting foreground that makes the structural message palatable to the consciousness, completely parallel to the dream and its 'regard for presentability' and to the thesis that the culture industry does not provide concretizations but reconcretizations.

[55] (Note on translation:) …1997!

of digital image processing, post-production and image synthesis. The thesis, however, is that this is more of a feat of strength than a sovereign conquest, and that the exorbitant resource requirements of image processing already indicate that images (and, f. e., real sounds) are not exactly the strength of computers.

And what's more: we will have to ask ourselves whether and to what extent it is images at all that the computers are dealing with in image processing. What appears on the screen as an 'image' is initially addressed exclusively to the human being. As a result of operations that are largely external to its image character, only on the screen does what is depicted take on a two-dimensional form; the programs stand still and wait for the aesthetic assessment and intervention of the user. The pictorial character of the images, one could say, is completely inaccessible to computers. There are no algorithms for recognizing shapes or for segmenting image content, comparing images is only possible with considerable effort,[56] and all access systems have to make use of linguistic or numerical meta data.[57]

Measured against the ideal of the continuous flow of data, the images must therefore appear as a dead end road; as a kind of two-dimensional traffic jam in the n-dimensional data universe or as a 'surface' that seeks a compromise with the human eye. All this supports the thesis that the current hype surrounding digital images is actually a phenomenon of transition. Limited to an illustrative function,[58] the images remain appendages to the actual productive structures.

Or do the structures *need* a level of appearance? And do the images benefit from the fact that the structures at least overtax the human imagination in a specific way? So, what do the digital images refer back to? In basic computer graphics, it seems, to the virtuosity of the graphic designer, which would be a relatively boring resumption of pre-technical images. Secondly, to the state of software development, which can only be guessed at through the images; but always where it curiously takes 'realism' as a yardstick,[59] revealing an astonishing, once again mimetic dimension of the computer models;[60] and most importantly: the digital images refer to the play of the structures themselves. The fully synthetic techno-videos, which currently form the front line of clip aesthetics, stage the dance of data itself, complex rhythmic patterns and orders, the upheaval of orders and, exemplified in the Mandelbrot set, their border to chaos.

It becomes clear that the second general tendency of artistic modernism, abstraction, has now also flowed into technical images. Strangely blocked on the terrain of photography and film,[61] this upheaval has obviously had to wait for the computer, and conversely, in retrospect, it is now clear how far abstraction in the visual arts has anticipated the current media revolution.

---

[56] The German Federal Criminal Police Office, for example, uses parallel computers to filter out portraits from video footage. (…1997!).

[57] The fact that image databases also organize their access not via images but via search terms, names and numbers is a matter of course that nevertheless deserves to be mentioned, as this changes the position of the images...

[58] A kind of flagship of this logic are image databases that are currently being set up in many museums; the WWW also contains a 'virtual museum' that makes a scanned set of Great Masters accessible around the globe in horrible repro quality. (…1997!).

[59] One of the main trends in current production is to recreate the movements of the human body, facial expressions or natural phenomena as deceptively as possible. This contradicts the thesis that digital images have no reference to the real world and indicates that the models – confronted with a leveled surface of infinite possibilities – are quite obviously looking for a scale.

[60] The concept of mimesis will play a role in the next chapter; even if imitation and resemblance are regarded as its core meaning, it is by no means limited to these.

[61] The 'Absolute film,' associated with names like Richter, Ruttmann, Eggeling and Fischinger, forms an exotic exception within a sea of representational images. If a film is not representational or only representational to a certain extent, it is automatically classified as an 'experiment.' And only advertising has occasionally made use of this type of aesthetic.

Digital images are, alongside the sound spaces of synthetic music, a way of finding intuitive access to the new universe; but as such they are a gateway, access, and not the accessible/inaccessible itself. As a surface, illustration and appeal, they undercut what they refer to; and the actual task remains, in a curious analogy to Plato, to think what appears in the appearances.

With Plato, it was the ideas (the signifieds) that knowledge had to seek out. In the case of computers, it is structures (to which the structures of the concrete programs are only a down payment). The fact that the two could have something to do with each other and that, despite their differences, a kind of common project between the divergent sign systems can be demonstrated is what is being asserted here.

In any case, the crisis of the signified has triggered the search movement that we call 'media history.' Just as the network metaphor bridges the abyss between language and computers,[62] the reservation against the signified and the horror of arbitrariness, the horror of social mediation and history, connect computers with technical images. And like these, the data universe also wants to be a 'speaking without language.'

The constancy of such motifs shows that it is not a completely new game that has been opened after all. If emphatic hopes are attached to every media innovation, and the discourse needs a relatively long time to evaluate the new medium, then this is always also a strategy of postponement, parallel to the narrative postponement of the individual texts. And just as there, the forward-pressing desire is only promised a temporary satisfaction. As clearly as it is possible to describe what drives it, it is just as impossible to name a goal.

And yet the movement does not end in a purely differential 'articulation;' it therefore makes sense, despite its metaphysical/teleological connotations, to insist on the concept of a 'search.' Like that of desire, it holds that the change is actually about something, about actual needs, actual difficulties of orientation, ultimately about misery/necessity, and not about a combinatorial game that takes place luxuriously above a secure basis. The difference between the two perspectives will become much clearer in the last section of my book. In any case, necessity seems to be a peculiarly constant feature of media changes.

---

[62] ...bridges the gap, not makes it irrelevant. (Note on translation: The network metaphor is the subject of the second chapter in 'Docuverse').