Stalking the Continuum

by Adelheid Mers
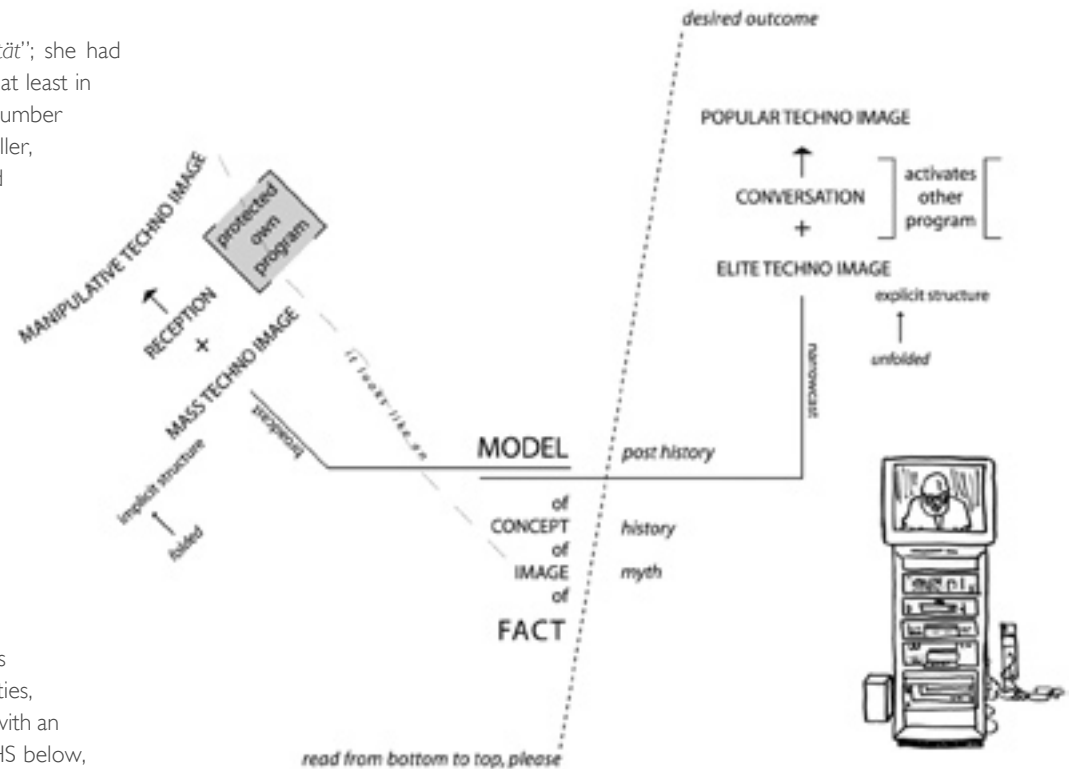
finding Flusser

Gerlinde gave me the small pamphlet, the Benteli edition of "*Krise der Linearität*"; she had received it from Ursula, who had met Flusser in Marseille, but was now over him, at least in terms of her thinking about New Media. On the last train home across town, the number one, I was able to read the entire thing. The next day I raided both König and Müller, filled my big-wheeled suitcase and took it all back to Chicago. He had been dead for years.

Some of the German titles are: "*Kommunikologie*", "*Medienkultur*", "*Nachgeschichte*", "*Bodenlos*", "*Ins Universum der technischen Bilder*", "*Die Geschichte des Teufels*", "*Die Schrift*", and "*Vampyroteuthis infernalis*". (Silvia loaned me a copy of the out-of-print "*Gesten*" when I returned the following year and visited the archive). There are also many texts in Portuguese, and some in French. The Flusser Archive's office is a small room on the first floor of the Academy of Media Arts in Cologne (the archive is about to move to Berlin, I have heard). The setting feels medieval, windows open both onto the street and into the driveway that cuts through the front building and connects to the courtyard; this would be a fine spot for the castle's guardian. With my digital camera I shoot typewritten pages (no line breaks) from the manuscripts, lined up in shelved binders. I find the word "textolatry", as I thought I might. Flusser's own library is housed upstairs. There's a copy of a book dear to me since the seventies, Whorf's "Language, Thought, Reality". Like Mary Poppins, Silvia climbs onto a desk with an umbrella, reaching to close a transom. On a TV set on a rolling cart, DVD and VHS below, I watch a video, Flusser talks. Comfortably seated across from me, he is a cyborg now.

reading Flusser

"Towards a Philosophy of Photography", "The Shape of Things", "Writings", "The Freedom of the Migrant", are editions that are available in English. In Europe, Flusser became well known with "Towards a Philosophy of Photography". I gather that his work is still mostly discussed in the context of media studies. Three of my favorite essays are "Celebrating", "Exile and Creativity" and "Line and Surface" (all can be found in "Writings"). In "Celebrating", he develops the idea of an 'other program' (as opposed to an 'own program') that can be read as a plea for open-source software. That's a nice, frothy peak the essay whips up, but I prefer to read it through a different lens. What if the notion of the 'other program' leads to a critical survey of the reader's very own premises, in preparation for a mutual exploration of contingencies that have programmed not software, but individuals? How do I make sense, and what prompts me to do it just so? Celebration comes into play when ossified (implicit) structure is discerned and brought back to life (made explicit and thus again pliable), when a new capacity for absurdity

supersedes habits and truths. "Exile and Creativity" describes how to be uprooted forces one to approach the above, and how an embrace of permanent migranthood (the witnessing of structure) promotes conditions of creativity (the teasing of structure). What are the means available to perform and to express these operations? They are image and text. In "Line and Surface", Flusser assesses how they are intertwined. At all times, humans attend to facts. Initially, images mediate. As the notion rises that images are man-made, linear texts are invented to explain the images (iconoclasm). As the notion rises that texts are man-made, techno-images are summoned to model the texts (textoclasm), that have earlier served to explain the images and still contain their traces.

In "*Kommunikologie*" (not available in English), Flusser offers something that I take to bolster my art practice: diagramming, or "conducting surveys of premises." Again, an important distinction between implicit and explicit structure is performed: Flusser expands the term "technical image"—an image that models a text—into "mass-techno image" (implicit structure) and "elite techno-image" (explicit structure). The elite techno-image is what I wish to claim, but first I'd like to set up the more complicated mass techno-image. Mass techno-images are created when an operator uses a code or an apparatus to produce images. (For example, a photographer uses a camera, or the Hubble Space Telescope is programmed to record images of space). An apparatus is not only a conduit for image-making, it is also a particular conduit. But, unless one is educated about the history that shaped the apparatus and about the limits the apparatus promotes, an image created with it does not reveal its mode of production. It just appears to show an instance of truth. A picture of a pretty girl, a cute puppy, a colorized galaxy, a compassionate conservative. Mass-techno images are not only rooted in the texts of science, but in addition they lend themselves to the ends of manipulators, and Flusser strongly advises education about their inherent framing, about their capacity to be Trojan horses for ideologies, in short, about the entirety of their implicit, man-made texts.

"But this is not the entire truth. There also are techno-images that are not part of the apparatus-operator complex that is grinding everything into stereotypes. These elite techno-images can be seen everywhere: in science and technology, in politics and in art, and they are distinguished from mass techno-images by the fact that only specialists are able to read them. They are conscious efforts to make terminology imaginable [...] Thus, our predicament permits two prognoses: (1) Either the apparatus-operator-complexes will imbibe all texts to recode them into techno-images and to then broadcast them around while also grinding the elite techno images into mush, (2) or the elite techno-mages will lead to a new level of consciousness, from the vantage point of which it will be possible to liberate the world that is encoded in techno-images from the grip of the apparatus operator complex, to serve true human communication." (*Kommunikologie, Frankfurt am Main*, 1998. pp.156, my translation.)

An "elite techno-image" is a means of communication that has as its purpose to construe an existing text, or even to propose new construction. A text is engaged by the person who creates the elite techno-image, who educates herself about the text's history, is aware of its artifice, of its life, and who wishes to share what she found. The elite-techno image is honest about its own premises and limitations, does not hide its own inherent ideologies, but exposes them as far as possible. Examples Flusser gives of elite techno-images are blueprints, charts, designs or diagrams.

Here it is, a much-appreciated support of my long-standing urge (initially an artist's whim) to diagram texts. As I read it, Flusser allows that the practice of diagramming can be part of a strategy to better the world because it is well suited to point to the fact that structures are always present, hidden in plain view, waiting to be modeled. The question Flusser does not address is how best to transform an elite techno-image into a popular techno-image, but the emphasis he places on dialog throughout his entire body of writing offers guidance. One way an elite-techno-image can become a popular techno-image is if the structure it models is animated in conversation.

diagrams

Georgia had asked me to write about my research process, the work that leads up to and includes diagramming. That's when I offered her my translation of *Crisis of Linearity*. Finding Flusser was a pivotal point in my thinking about how I work. AF (ante Flusser) and PF (post Flusser). AF consisted of recurring diagramming incidents that very, very slowly thickened into a conscious practice. I remember all of those incidents. (1) I diagrammed a bacteriophage after my biology teacher's description. None of the other kids in the class seemed to want to do it, and I was immensely proud that I was able to pull it off. (2) Wittgenstein's Tractatus, two pages of being lost at sea among arrows. (3) In my first year of art school, a sculpture after Benjamin Lee Whorf. A cross, knife blades protruding from each arm, a person in the center—as we order the world, it appears to show itself to us. (3) Next, I attacked not figurative language, but a painting: the angels from Altdorfer's "Birth of Mary" escaped their circle and found themselves in new arrangements with frogs, plants and dotted lines. (4) Next, Gabo's circle sculptures were points of departure, flattened paper copies leading to hinged plywood objects whose blades could be rearranged around their empty centers. I thought at the time that the most engaging humans had empty centers, like the eye of a powerful storm, and that accidental folds provided structure. There are no backgrounds, no foundations, only configurations. (5) After moving to Chicago, the art object began to forcefully retreat, and I gave chase: not sculptures, but floor sculptures; not floor sculptures, but puddles of light; not light installations, but audiences; not audiences, but conventions; not conventions, but what seemed to be largely unexamined, underlying assumptions about art, life, politics; the retreat was halted when I ran into a wall of books. Texts were places where thoughts were temporarily arrested, so they could be examined and redeployed, records to be played and sampled. (6) Diagrams became documents of my readings. From the perspective of PF, everything that happened AF is now reframed and retold as having headed toward a diagramming practice. Pesky historical habits die slowly.

practicing

At times I envy my colleagues, the quick-witted historians and philosophers who can swiftly build, discern, hold in mind and traverse entire architectures of thought. In comparison, I am slow and clumsy. I stalk a prey without knowing what it is—a particular crease or fold in the continuum—following hunches along disparate lines of inquiry, picking and choosing based on criteria that seem to be physically embedded in my experience but aren't apparent unless thought matter sticks to them in a particular, site-specific way. Then I get very, very excited. There is a sense of discovery, of high drama. I want to show you, and then I want to tell you about what I'm showing you. There is no methodology, just an idiosyncratic method. That, by the way, is how I have come to define art. Given art's methodology as attention to non-literate thought, its methods are as many as there are artists. My non-literate thought just happened to direct me towards words, as the sources of the images seen and made and talked about today. **BP**

Crisis of Linearity

by Vilém Flusser | Translation from German by Adelheid Mers

The hypothesis to be presented here is: Occidental culture is a discourse whose most important information is stored in an alpha-numeric code. This code is in the process of being replaced by other, differently structured codes. If this hypothesis were accurate, we would have to count on a fundamental change of our culture in the near future. The change would be fundamental because our thinking, feeling, desiring, acting, and even our perceiving and conceptualizing are to a high degree shaped by the structure of the code in which we experience the world and ourselves. We are >>Western people<< because our >>forma mentis<< has been shaped by the linearity of the alphanumeric code. Should our children and grandchildren experience themselves through differently structured codes (for example through technical images like photos, films, and television, and through digitization) then they would be in the world in a different way than we are, and than our predecessors were. The following thoughts will examine this hypothesis.

From childhood on we are so familiar with the aligning of signs (letters and numbers, for example) that we don't always clearly perceive this gesture's objective. It is first the gesture of enumeration, and only secondly the gesture of narration (of accounting to the end). For example, this gesture can be recognized in the stringing of shells to make a necklace. Accordingly, this gesture is ancient and can probably be found in all cultures. But this ges-

ture of lining up has a unique history in the eastern Mediterranean that lasted a few thousand years and finally, around the middle of the second millennium B.C. led to the invention of the alphabet, to be a mark of our culture until the present, without many changes. This development began with the lining up of stylized images (of pictograms) and ended with the aligning of phonetic signs (letters) into lines of text. For lack of space the description of this evolution will be omitted here, even though it would be enlightening and outright exciting. But its point of origin (the enumeration of pictograms) demands consideration.

Looking at a Mesopotamian, hardened clay tablet in which signs had been inscribed, one can relive the objective hidden behind it. This gesture was about the tearing out of image elements (pixels) from the picture plane and ordering them into rows. It was a picture-tearing, iconoclast gesture. Its intent was to tear up images to enumerate, to account for their content, to be able to narrate, to >>clarify<< images: It was an enlightening gesture. The question that now poses itself is this: Why is it necessary to explain pictures? Why enlightenment? To answer, one has to consider how pictures are made.

Let's take as an example one of the oldest pictures known to us (maybe that of a pony at Peche-Merle). This is about views fixed on stonewalls. The picture fabricator stepped back from a pony, contemplated it, and inscribed

the fleeting vision into the memory of the wall. He did it this way, so others could recognize the vision. And he did all these extraordinarily complex things so that his vision could serve as a guide for future actions (for instance for the pony hunt). The function of the picture as a plate for orientation is significant here (our intent is to consider what motivates linear writing). The process of lining up pictograms began when trust in pictures as guides for orientations in the world started to diminish. But one cannot do justice to the matter if one does not attempt to zoom in on the gesture of picture making.

Stepping back from the object (for example from the pony) could be a mysterious movement if all of us hadn't concretely experienced it. One doesn't just step from one place into the other (for example onto a hill above the pony) but one steps to a non-place (into one's own interior). One becomes a subject of the thing to be envisioned. One doesn't continue to insist in the objective world, but one now ek-sists. This human (mysterious) ability to step back, to become subject, to exist, is called >>the power of imagination<<, and it has consequences. An abyss of alienation opens between the human being and the objective world, and from this distance, objects are no longer >>manifest<< (graspable). Our arms are not long enough to bridge the abyss. The world is no longer a resistance against which we push, but it becomes an apparition, which we behold. We now doubt if this phenomenal world that we are imagining

here really is objective. Still, this unpleasantness has an advantage: We cannot grasp the items any longer, but we can oversee the circumstances. (We only see the forest after we cease to bump into the trees.) This is the function of our imagination: Even though it is ontologically doubtful, it serves a subsequent handling of the objects. (One is better able to hunt the pony if one has previously made a picture of it for oneself.) For the following reasons, the inventors of linear writing believed that the hunt still did not go well enough:

The vision one gains when stepping back from an object is fleeting, and it has to be fixed in a memory to serve as a model for future acting. The power of imagination alone is insufficient when it comes to image making. Storing the vision in a memory demands that it be codified. That means: translated into symbols which can be interpreted by others. Image making demands that the subjectively seen is translated into intersubjectivity (that something private is being published). It now becomes obvious that the image codes are necessarily connotative: that they allow diverse interpretations by their receivers. (Denotative images, encoded to allow just one reading, become possible only after the invention of linear writing.) If images can be interpreted differently by each receiver, they are not reliable models.

A further, iconoclastic consideration complicates the thought: Like all mediations, images suffer from

an inner dialectic. They are intended to mediate between human beings and the objective world (to bridge the abyss of alienation), but thus they also block the path between the world and human beings. They present themselves in front of the objects instead of presenting them, and so they increase the alienation they were supposed to alleviate. What follows is that humans don't use the images as orientations in the world, but vice versa: They use their experiences with the world to get oriented in the images. They no longer use the images in function of the world, but treat the world in function of the images. Such a reversal of the ontological position of images is called >>idolatry<<, and the resulting mode of action is called >>magical<<.

The motivations of the inventors of linear writing may, somewhat anachronistically, be phrased like this: imagination is an ontologically doubtful stance, the resulting images are connotative, and they are subject to the inner dialectic inherent in all mediation. But it is inevitable to make images before one undertakes to act. Accordingly, these images must be subjected to a critique that allows to clarify their ontological position, to denote their codes and to clear away the ideological confusion they initiated. Particularly for the purpose of critique linear writing was invented. One can see, in this (admittedly somewhat modernizing) phrasing, the invention of linear writing was given the word as the germ of future, Western culture.

In this phrasing all linear writing appears as a description of images, as a critique of the imagination based on a new mode of thought. What characterizes this new, critical manner of thinking is the fact that it is not structured in a two-dimensional, planar way like the imagination, but one-dimensionally, line-like. Critique of images is basically a transcoding from plane to line. The new thinking that becomes a contender with the invention of linear writing is poorer by one dimension than pictorial thought, it is more >>abstract<<, which means: removed by an additional step from the objective world. That only becomes entirely clear when phonetic signs (letters) are used in writing.

If one regards the intertwined development of writing from pictograms to letters from the outside, so to say, it is not apparent why one should forge such a strong connection between writing and speaking. The downfalls of the codes are obvious: To read a text, one has to first learn the language it has been recorded in, and what one cannot say, one cannot write either. That means: The alphanumeric code forces writing thought to submit to speaking thought, and if the code becomes dominant, all remaining modes of thought become impoverished (except for those that can intrude into the code, thanks to numbers). This can be confirmed in a comparison with extra-Western codes (especially those of the Far East).

When observing the development of writing towards the alphabet from the inside (that means: as a writing being), it becomes inevitable. The objective of linear writing is to critique the imagination. The method used is the transcoding of images into lines. Since prehistoric times we have possessed a code, spoken language, which fulfills this task. Images have always been critiqued as they were conjured up; they were transcoded from their planar existence into the line of discourse and thus became tellable. This conjuring up of the imagination was a pretty uncivilized procedure, up until the invention of the alphabet: back then one spoke, without clearly articulating. With an almost closed mouth (>>mythical<<).

That means: The code of the spoken language could have possibly been even more connotative than the code of the images. The alphabet was invented to denote the speaking code (to subjugate it to the clear and distinct rules of linear writing) and to refashion it into an effective tool for a critique of the imagination. That means: The alphabet was invented to clearly articulate language (to de-mythologize it) and then to use language to critique the imagination (to de-magicize the images). Initially, the alphabet teaches us to speak clearly and only then it teaches us to critique our imagination. It teaches us to think un-mythically and to act un-magically.

This pedagogical function of alphabetic writing is an extensive process, biographically as well as historically. The gesture of stringing letters expresses a specific way of thinking, but then refers back to this way of thinking and reinforces it: The more texts one writes (and reads), the more textually one thinks, and the more textually one thinks, the more one writes and reads. The feedback between thinking and writing has an effect on brain functions: Neurophysiology is beginning to localize centers of writing and functions of writing in the brain. Our brain is differently organized and it processes the acquired information differently than the brain of analphabetics. (Unfortunately, the problem of cultural conditioning of inherited traits has to be excluded here.)

Conversely, it is imperative to quickly sketch the mental revolution that followed the alphabet. The material world is no longer perceived as a circumstance, but as a bundle of linear processes. That means that time no longer circles above to order everything, but it now streams and forcefully carries all things with it. The world of objects is no longer scenic, but historic. Every situation becomes the result of causes – and the cause of results. Nothing in the world repeats anymore, but each moment is unique. The mood of the eternal return of the same (the magic mood) is replaced by the dramatic mood of linear progress (and it is secondary if this progress is seen as a fall from a perfect original situation or as a rise to utopian situations.) Differently said: the alphabetic critique of the imagination leads to a linear, causal explanation of images. Sketched here is historical consciousness.

It further needs to be said that the close connection of writing to speaking through the alphabet had the distinctive result that the rules of thought were initially posited as equal to the rules of writing (>>orthography<<) and then to the rules of language (>>logic<<). That finally had to propel historical thinking into an attitude of pan-logism: >>all that is, is logic<<. That means: The rules of language are first projected into images, and then are projected through those into the world of objects, only to be retrieved as laws of nature. From this perspective, the famous >>adaequatio intellectus ad rem<< appears as a retrieval of the alphabetic script from the described objects. This closing of the circle of writing (of enlightenment altogether), this post-Hegelian critique of natural science and of its technology, is only a young phenomenon that already indicates the crisis of linearity. In the preceding, 3500 year evolution of alphabetic writing (in the previous history of the West) this contemporary crisis is not palpable.

At the beginning of history (around 1500 B.C., when the alphabet was invented) texts proceeded against images, to narrate them and to thus explain them away. (Only accessible to a small class of literati at that time, the

historical consciousness engaged in opposition against the magico-mythical consciousness of the masses.) But the images fought back against this attack and illustrated the texts which tried to explain them away. This dialectic between text and image strengthened both: the magico-mythical and the historical consciousness. Thus the images became increasingly >>historical<<, the texts more >>imaginary<<. (This dialectic is exemplified particularly well in the development of mediaeval Christianity: the heathen images became more Christian, and the Christian texts became more >>illuminated<<). One may claim that up until the invention of the printing press the >>text/image<< dialectic drove Western history.

With the availability of the printing press, texts became cheaper and so historical consciousness became increasingly common. Images were expelled from the everyday into enclaves that were sanctified by auras, and nothing withstood the inner dynamic of the line of text any longer. Natural science and technology could develop, the industrial revolution became feasible, and the magico-mythical consciousness that had been repressed into the subliminal realm had to bow to the successes of this progress: It proved that a thoroughly critiqued imagination actually did lead to better pony hunting than an un-critiqued one. The enlightenment of thinking (and the associated action) that had been possible thanks to the invention of the alphabet appeared to be finally victorious, and it seemed to conquer the whole planet earth, beyond the West.

For reasons that unfortunately cannot be discussed here, the alphabet soon proved to be a code not entirely adequate for the critique of imagination. Other, non-phonetic, ideographic symbols, namely numbers, had to be introduced. These symbols express a different mode of thinking than the logical mode, and in spite of extraordinarily spirited efforts (see Russell-Whitehead) attempts to bring logical thinking onto a common denominator with mathematical thinking were not successful. The alphanumeric code is divided within itself, and this internal contradiction had to lead to its crisis, as we can discern from our current vantage point. From the perspective of the considerations undertaken here, this inner contradiction can be formulated as such: While letters unravel the surface of an image into lines, numbers grind this surface into points and intervals. While literal thinking spools scenes as processes, numerical thought computes scenes into grains. For a long time these modes of thought could walk jointly, with literal thinking keeping the upper hand because both modes were directed against surface thinking. But as images became increasingly enlightened, numerical thinking had to poise itself against literal thinking, to submit it to its grinding, analyzing critique. Linear, process-oriented, historical thinking sooner or later had to fall victim to analytical, structural, zero-dimensional, point-thinking.

Mathematical consciousness began to attack historical consciousness quite early, as indicated by the names >>Heraclitus<< and >>Democritus<<. While for Heraclitus >>everything flows<<, everything is process-oriented, Democritus describes dots that accidentally deviate from their paths and collide to constitute the world of objects. Already, the differing moods of historical and mathematical consciousness are clearly discernible: For Heraclitus everything is necessary (causally explainable), with Democritus everything is accidental (at best to be explained statistically). We cannot fully comprehend now why

the ancients saw sadness in Heraclitus' causality and joy in Democritus' chance, while we rather feel absurdity as we are about to enter into the mode of Democritus.

During the course of history Democritus' >>atomistic<< thinking was suppressed (and numbers were subjugated to letters), because mathematical thought was perceived as empty. Actually, the numerical code is so clear and distinct, that unfillable intervals gape between each two symbols. (The interval between 1 and 2 can never be filled with numbers, for example 1,1, so that what is to be enumerated, for example an image, can slip out between the intervals.) When it became evident after the imagination had been explained away that the objective world demanded numbers (or that letters demand to be recoded into numbers), the emptiness of this code had to be confronted. Descartes began to fill the intervals, and calculus as invented by Leibniz and Newton transformed the numerical code into an instrument that permitted the description of processes. This is why a process that was explained by a differential calculation was perceived as >>explained<<. What was left to undertake was the attempt to recode the equation back into letters, for the benefit of non-mathematicians. A condition already quite pitiful for linear, historical thought. But that couldn't be all. The invention of computation machines made it unnecessary to painstakingly fill in the intervals by artful feats of calculation: the machines spit out numbers automatically, in a quantity that deposes of all linearity.

Important in assessing the revolt of numbers against letters is the observation that numerical thought (entirely counter to its name) does not enumerate (and so does not tell), but that it pulls apart into point elements and then mounts those elements in a heap. An algorithm is not an enumerated, but an initially broken up and then re-computed circumstance. Someone who is mathematically trained can discern a number of circumstances from the structure of an algorithm, all connected to each other by a common structure. Numerical thought, as it is currently emerging from literal thought, is a formal, entirely abstract thought: It is zero-dimensional and so a step further removed from the world of objects than literal thought. This highest possible abstraction as it is reached in mathematical thought is inbuilt into the stream of literal thinking throughout history: Algorithms formed islands within texts made from letters. For a while now, mathematical, calculating thought has been breaking out from within the alphanumerical code, is claiming independence, and it is turning against linear thought, to analyze it, and (surprisingly, but certainly not unexpectedly) to lead to a new form of imagination. In other words, it begins to no longer encode itself in numbers, but in differently characterized point symbols, and it is opposing those new codes to the texts. This recoding of calculating thought is most clearly visible in its first emergence from linearity, in photography, and for that reason must be given closer scrutiny.

The camera is a contraption that takes in light and captures it on molecules of a chemical compound. The reactions thus initiated result in a negative copy of the objects from which the light originated. This can also be shown differently: The camera is a contraption that catches information, calculates it in bits, stores it in a memory, and computes it in such a way that it can be called up as images. The first characterization of the camera function is as a process, <<Heraklitian>>: The photographic operation appears as a series of chemical, optical and mechanical processes. The second

presentation of the camera function is calculating, <<Democritian>>: In it, the photographic operation appears as a processing of data. The first presentation explains the camera in a causal manner: as result of previous, scientific and technological developments. The second presentation explains the camera in a projective way: as a primitive computer. In the second presentation, the new thinking that is no longer linear comes to bear.

For which purpose was the camera invented? The inventors themselves may have answered: to automate the making of pictures and thus to focus the imagination on its essential characteristic, which is to step back from the world of objects. But seen in the projective manner, this answer is insufficient. It should be: to process a dot-interval-code to open a passage for something that never existed before, namely, a programming imagination. This entity that never existed before is being interrogated here.

To step back from the object is a gesture of abstraction: One extracts oneself from the objects, and thus the images are two-dimensional abstractions of objects. But to photograph is a concretizing gesture: one collects (computes) grains, and so photos are two-dimensional concretions of zero-dimensional dots and intervals (of calculations). They are >>grainy pictures<<. Two opposing imaginations are in contention here. The first refers back to the objects, it >>signifies<< the world of objects. The second refers back to calculations, it >>signifies<< a world that has been fully calculated. On first glance, this cannot be gathered from the photographs: They seem to signify objects. This is the case because photographs (like films and videos) are phenomena of transition. In them, the two imaginations overlap. Because information is processed in cameras (light rays) that had been emitted from objects. The new imagination first comes into its own in the realm of synthetic computer images. A synthetic image of an airplane does not signify an object, but a calculation, and it is a model for potential, not for actual objects. In short: The first imagination makes images which are intended to serve as models, and the second imagination makes models, which are intended to picture calculations.

Photographs, films and videos are phenomena of transition. (This makes them so interesting in terms of understanding the current crisis.) Cameras are built in a way that the calculations that are fed into them actually signify objects. But the people who build and feed cameras (the programmers of pictures) employ the second imagination: These pictures are images of their calculations and so are models for a programmed behavior on the side of their receivers. The photographers are film and TV people who push the trigger, doing this in the belief that they are taking pictures of objects. But all these people are technologically redundant: triggers can function automatically. The actual image makers are the programmers. The surge of photographs, films and TV pictures that envelopes us is already, albeit covertly, the expression of a new calculating way of thinking, which articulates itself in dot codes, to compute these into pictures.

As said before: This new way of thinking is expressed clearly for the first time in computers. Because most of us do not yet have daily experiences with computers, but receive by far the largest part of the daily amount of information courtesy of the pictures described above, it is prudent to acknowledge the revolution that these grainy pictures have wrought in our thinking already. Before we shall try to focus

on the outright calculating and computing, it is imperative to consider the >>photographic view<<, through which we see the world and ourselves within it, and thanks to which we have already jumped out of linearity.

The fact that we increasingly experience the world through grainy pictures like photos and TV and less through printed, linear texts is obviously not responsible for construing it more and more as a heap of particles and less as a flux of events. Responsible for this new mode of understanding is the fact that we increasingly encode our information in mathematical codes and less in letter codes, and that fact enables the new, grainy pictures. Conversely, it can be claimed that the grainy pictures enable us to factually see the information: not our cognition, but our worldview is informed by pictures of that kind. This >>photographic view<< of ours shall be presented through several examples, first in a short series of >>epistemological<< photos, and then in an even shorter series of >>ethic-aesthetic<< photos.

(1) We no longer imagine that objects surround us solidly and treacherously, confront us and condition us, but rather that particles rush around in the void (outside as well as within us), and that we somehow process this rushing into objects. (2) We no longer imagine that we live in a world in which matter is moved by forces (for example stars by gravitation, or metal shavings by magnetism), but rather that we are immersed in undulating fields, in the vales of which we had previously envisioned materiality. (3) We no longer imagine that life on earth consists of organisms that cooperate or fight each other, but rather that an undulating mush (the >>biomass<<) covers the surface of the earth, that its droplets (the >>nuclei<<) contain genetic information (particles ordered in chains), that the droplets continuously divide, that in this process information may accidentally be transmitted falsely, and that organisms are outgrowths of these aberrations, which rise from the mush just to sink back into it. (4) We no longer imagine that mental processes (for example perceptions, imaginings, feelings, wishes, thoughts or decisions) are some kind of entities, but rather, that this is about computations of point elements, which are processed in the synapses of the brain. (5) We no longer imagine that we contain some solid kernel (some kind of >>identity<<, an >>I<<, a >>spirit<< or a >>soul<<), but rather that we are immersed in a collective psychic field, from which we emerge like temporary bubbles, acquire some information, process, share, to submerge again. (6) We no longer imagine that the individual cultures that shape our life are some kind of independent structures, but rather that we are immersed in an undulating field of culturemes, from which the individual cultures emerge through computation, just to blur again, while it remains open how much of that is accidental or intentional.

These six >>photographs<< are images of calculations and models for manipulation. They permit the manufacture of artificial objects, artificial matter, artificial living beings, artificial intelligences, artificial identities, artificial cultures. They are examples for a new power of imagination that we presently have available to us.

(7) We no longer imagine that society is a group of people who have somehow been placed in relation to each other, but rather, that we live within a field of inter-subjective relations, in an undulating net that constantly reties and unties. Thus the historic question: >>does society serve humans or do humans serve society?<< becomes fundamentally mea-

ningless. Social reality is the relation from which human and society are abstract extrapolations, and the knots of the social network might as well be manned by artificial intelligences as by humans, or even stay empty. Political engagement can no longer be an effort to change society or the human being, but the attempt to program (technocracy) or deprogram (terrorism) the field of social relations. (8) We no longer imagine that we are in chains (for example chains of causality, or in a bustle of laws and regulations), and that freedom is the effort to break those chains, but rather that we are immersed in an absurd chaos of contingencies, and that freedom is the attempt to give this chaos shape and meaning. (This reshaping of the question >>freedom from what<< into >>freedom for what<< is extraordinarily characteristic for the rupture in our thinking.) (9) We no longer imagine that we perceive the world and ourselves as >>reality<<, but rather that we ourselves process the perceived into reality. Thus we see in our life no longer a movement that changes given realities, (for example things and ourselves), but rather a tendency to realize given possibilities within us and around us. That means: Our values are no longer those of labor, but rather those of creativity, of the computation of information.

The last three >>photos<< are less in focus than the six of the first series because the calculating thinking is less trained in the area of values than in the area of cognition. But they are better at showing what is meant here by >>Crisis of Linearity<<. Namely, that the transition from one-dimensional to zero-dimensional codes does not only come with new categories of cognition (for example probability calculus instead of causal explanation, or propositional calculus instead of logic), but comes with altogether new categories (predominantly values).

This excursus into the >>photographic view<< was intended to present how the disposition of life changes after the eruption of the dot-interval-thinking from linear thought. How differently are we present when we emerge from the Heraclitian flux to step into the Democritian rain. It is obviously true that it is possible to reduce both sides to each other: to see a thin river in the rain, or a river in a dense rain. (To see a process as a stream of particles, the particle as an aspect of process, the row as a series of dots, the dot as an element of a row). But with this the radical break in the disposition is not eliminated: As soon as we are no longer disposed historically (alphanumerically), but computationally (digital), our lie gains a new coloration. It shall now be attempted to grasp this.

People (for example our grandchildren) sit in front of a computer keyboard, push one key after the other, dot after dot appears on a monitor, and images come into existence. These images will for all practical considerations stay loaded into a memory forever, but can also be transported through cables or other media, to be refashioned by others (humans or artificial intelligences) and thus altered, they may be sent back. Why do these people do that?

Here is the answer that would likely be given by someone who thinks historically, in a linear manner: The images that are created by these people are depictions of calculations and can serve as models for changing the world. For example, these people calculate bridges, and robots can actually build bridges following these images. These people participate in a dialog meant to change the world, and their computers are instruments that permit working up

newer and newer models of world changing based on a continuously materializing consensus. What happens here can be phrased in this way: humans want to (have to) change the world, and with it themselves. To achieve this they first retreated from the objective world, to make a picture of it for themselves (the case of the pony). Then they subjected this image to a linear critique (the case of the alphanumerical explanation). Thereafter they calculated this linear critique (the case of the numerical analysis). And now they have at their disposal a new power of imagination that allows them to project synthetic images that are already entirely critiqued and analyzed. That's how people achieved the goal that they aimed for since the beginning of humanity: Digital code is the perfect method to change the world after one's heart's desire (perfect for hunting ponies).

That is probably not the answer our grandchildren would give. Behind the keyboard whose keys they press is a swarm of particles, and this swarm is a field of possibilities to be realized. Thanks to each key press it is possible to confer shape onto the absurd chaos of this >>1-0<< accident, it can be informed. The information thus retrieved can be stored and dialogically re-informed. All that occurs with great speed, so that the amount of created instances of information is very large, including some entirely unexpected ones. One adventure after the other emerges from chaos and appears on the monitor. So what matters is not only an advancing realization of virtualities contained in this chaos, but mainly to progress from surprise to surprise, from adventure to adventure, jointly with others. It is true, though: automatic machines can project some of the created instances of information outside of the conversation and thus change the field of possibilities of the >>world<<. But the creative giddiness that grabs hold of one in this pure play is not based on the applicability of dialog. On the contrary, it is a symptom of the fact that the player is realizing himself, jointly with others. Our grandchildren will likely say: We do this because through this we realize ourselves inter-subjectively and thus give meaning to our absurd life.

The intent of the considerations presented here was not to promote some telematic utopia based on digital codes. It is not very likely that the historical, occidental culture that is in a state of crisis will actually be replaced by such a utopia, once the alphanumerical code loses its preponderance. What was intended here was to suggest a point of view that counters a widespread cultural pessimism: Doubtlessly, we would lose much if we lost the linear code, and with it historical, process oriented, critical thinking. Almost everything that we identify with. But then other abilities would come into play that we have not yet utilized. The Crisis of Linearity, the first phases of which we are experiencing, is mainly a challenge to us: We should mobilize the newly emerging power of imagination to overcome the crisis, in us and around us. This consideration wishes to be regarded in the sense of an experiment with a new power of imagination. **BP**