

Zielinski's essay, "Media Archeology," is an eloquent plea for the recovery of artistic subjectivity as a way of tempering the sometimes operational sterility of today's multi-media fest.

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Editors' Note: *We're travelling from the 'Body in Ruins' symposium at V2, the artist-run collective outside Amsterdam, to a midnight debate about net politics with European surplus class theorists in a warehouse squat on the industrial outskirts of Frankfurt. Our travelling companion from Amsterdam to Cologne is Siegfried Zielinski. We meet in an old railroad car that looks like it hasn't been refurbished since the 1930s: lace curtains, red velvet seats, mahogany trim. A perfect site for the delirious tale that Zielinski invokes of Europe's media past: a strange but haunting vector of secret texts, books within books, ancient curses, digital dreams, and medieval cyber-art. A real "prolegomena to an-other history of technological visioning."*

1. This year, Cologne's Academy of Media Arts hosted an event in which artists, musicians, filmmakers, philosophers, engineers, psychoanalysts, and writers came together for five days and nights to talk about and around Antonin Artaud. It was not our intention to hold obsequies for a dead poet nor to celebrate a legend. Involved as we are, day in day out, both practically and theoretically with digital artefacts and systems, a few months ago we decided to take this disturbing and troublesome phenomenon Artaud and keep him in the Academy for a period of time as an imaginary fixed point around and on which to debate the following question: Is (artistic) subjectivity an antiquated notion at the end of the 20th century and something we must bid farewell to, or is it something that just requires new conceptions? Naturally we failed in our endeavour, that was inevitable. We did not answer the question. But we did get a little closer - just a few beats of a butterfly's wing - to renouncing some of the dualisms that have become both dear and familiar to us, like:

- * Calculation and Expenditure
- * Simulation and Excess
- * Moderation and Extravagance
- * Universalization and Heterogeneity
- * Code and Sensation

I argued vehemently against declaring artistic subjectivity dead because I have the impression that were we to do so, we would encircle this empty space left by theory and philosophy in an even more hectic and panicked fashion, with even more words and images and I also think that we from the field of social praxis represented by media art must finally start to confront the production of mediocrity and nice design, particularly and because we are responsible for teaching and training young artists.

Yet in which direction are we to formulate this concept of artistic subjectivity (in the indissoluble linkage of an aesthetic and an ethical orientation), vis a vis the gigantic cleansing and reducing machinery of digitization? And beyond the dualisms and antagonisms mentioned before?

There is a gang[1] of artists, theoreticians, and artist-theoreticians who have a very strong affinity (moreover, one that links them to a figure such as Artaud): they burn and burn up in the endeavour to push out as far as possible the limits of what language and machines, as the primary instances of structure and order for the last few centuries, are able to express and in doing so to actually reveal these limits. Without doubt it is the most difficult path to tread in and with the apparatus. Otto Rossler, as physicist and applied chaos theoretician, belongs in my opinion to this gang, with his attempt to bring together participants and observers in a physics of heterology that also recognizes ethical responsibility; Peter Weibel is another, for no one has been more resolute in challenging techno-aesthetics, from its potential strength to its signs of fatigue; or there is Oswald Wiener, whose poetic texts on the phenomenology of artificial intelligence have helped me enormously to understand that the sensational richness of all that is non-machine processable is the greater the more intensively and uncompromisingly the machine world is thought of as world machine.

Something is articulated in strategies and ways of life such as these that, for me, achieves its clearest expression in the *Tractatus Logico-Philosophicus* by Ludwig Wittgenstein, that reckless tightrope walker between uncompromisingly precise thinking and life, who adhered to the premise that philosophy is not something to be sat out on a professorial chair, but should be a continuous action of clarification in its very own medium, language. "Philosophy is not a doctrine it is an activity / Tätigkeit... The results of philosophy are not 'philosophical sentences' but the clarification of sentences. Philosophy should make thought that is otherwise cloudy and indistinct, clear, and should sharply differentiate it." (4.112, p. 41)[2]

The notion of the subject that informs these deliberations has the power to break free of the shackles of ontological ascriptions. Interface/the boundary, expressed through main sentences of Wittgenstein's *Tractatus*:

"The world and life are one." (5.621, 90)

"The thinking, imagining subject does not exist." (5.631, 90)

"The subject does not belong to the world, it is a border of the world." (5.632, 90)

"That the world is mine, this is shown in that the limits of language stand for the limits of my world."

Ethically justifiable aesthetic activity in the net of the technical and the imaginary should, according to this, clarify the fragments of expression contained in it and their relationships to each another. I would term this activity subjective if it were to succeed in rendering the difference to life / the world to be experienced by formulating the boundaries of the net. In principle this is only possible if we exhaust its possibilities. "...to go in every direction to

the end of the possibilities of the world"[3] - this thought comes from the theoretical work by Georges Bataille on the aesthetic avant-garde and it is still well worth putting it into practice.

This is not a new idea and it did not first occur to someone in the 20th century. It appears to me to be a basic idea for understanding what we might call the avant-garde of technical visioning in history - in awareness of the controversy surrounding this term.

I shall now launch a few probes into the strata of stories that we can conceive of as the history of the media in order to pick up signals from the butterfly effect, in a few localities at least, regarding both: the hardware and the software of the audio-visual. I name this approach media archaeology, which in a pragmatic perspective means to dig out secret paths in history, which might help us to find our way into the future. Media archaeology is my form of activity /Tatigheid.

2. One of the most exceptional stories in Western Judeo-Christian culture that imagines an intensive temporal process is the dream of Jacob's ladder: the risky and hazardous ascent to the light, the ineffable, as a regular, metrical pattern of progress up the rungs of a ladder or solid steps. In some sense or degree it is the reverse side of Freud's staircase dream, which in the interpretation of the psychoanalyst, stands for the strenuous, rhythmic ascent of coitus and its release, ejaculation. There are countless visual representations of Jacob's dream, illustrations, paintings, icons. Some portray the ascent as a wondrous, gentle movement upwards in the company of pretty angels (in this century the musical film still continues to evoke this), some as a horror scenario of the death struggle, that takes place between the hell on earth and the proffered hand of God Almighty. In these media treatments of the theme, the work that is most often adapted is the 7th century heavenly ladder of Johannes Klimakos, abbot of the monastery of St. Catherine on Mount Sinai. Vertigo: simple, diagonal ladders, spirals of winding rungs and stair formations, double ladders and double helixes, mainly occupied by monks of whom the odd one or other plummets vertically downwards into misery, does not make it to the top because he cannot completely resist the temptations of hell.

From a perspective of the time image, a highlight among these adaptations is a Greek manuscript dating from ca. 1345.[4] The exposition of this particular episode starts with a long shot that gives an overview, followed by a reminiscence of the author, Johannes Klimakos, with the intersecting vertical and horizontal lines above his head. Then we see the scene, the monastery in which the Book of Books was written, first from above, then a zoom to a picture of the abbot at work. Now the real plot begins, portrayed in iconographic miniatures: the ascent, step by step. The movement of ascending is expressed visually, image for image, only by takes of the ladder, one rung at a time. External movement is minimal and only becomes dynamic through the succession of images. Between these, other dramatic scenes are interposed that are supposed to characterize the momentary whereabouts of the adept, as, for example, at the beginning of the dream scene, encounters with angels, with virtues or with vices. In this manner, 30 steps are mounted. On the top step, where a monk is depicted kneeling humbly before Christ, the

ladder has disappeared completely. The story ends with two grandiose credits: Johannes Klimakos and his homily Johannes von Raithn; the final frame shows the star once again in a close medium shot.

3. One of the most fascinating figures of pre-modernity, working between the disciplines and different worlds of knowledge, was the Neapolitan, Giovanni Battista Della Porta (ca. 1538-1615): author, man of letters, member of secret societies, multiplicator, aider and abettor of knowledge, organizer - much more than a (natural) scientist, according to our contemporary conceptions. In Volume 28 of Zedler's Lexikon, 1741, the entry for Della Porta reads: "He did much to help establish the Academie Degli Otiosi, and he held another at his house, which was called the Academie de Secreti, to which only members were admitted who had discovered something new about the natural world. But the papal court prohibited the meetings of the latter because its members allegedly engaged in forbidden arts and studies...". Della Porta's most famous work, the 20-part encyclopaedia *Magia Naturalis*, of which both he and his chroniclers claim that he wrote the first version "in the fifteenth year of his life"[5], is a biological, physical, chemical, medical, and philosophical treatise and, equally, an entertaining "Book of Art and Wonders" (as the subtitle of the German edition classifies it), a kind of early form of the popular scientific encyclopaedia, a phantastic boundary crossing printed network of knowledge. "Wisdom and perfect knowledge of natural things" (Porta 1719, 2) - this is how Della Porta characterises his understanding of magic and in these 20 books he undertakes a colossal and daring journey through all areas of life; from zoological observations and the (alchemistic) transmutation of metals and the synthetic production of precious stones to the investigation and composition of special combinations of herbs and rituals for inducing abortions and performing quasi-genetic engineering (the manipulation of the sex of unborn children)[6], from treatises on artificial fire, cooking, and secret ciphers to the XVII Book of "divers mirrors and lenses" (cited by many film archaeologists but read by very few) which contains Della Porta's studies on projection, reflection, and a multitude of optical mises-en-scene. All the volumes share the same view of the world in the direct sense of the expression: natural phenomena offer themselves to the scholar not only for the investigation of immutable objects, for reproduction or for mimesis; they become material that can be altered/manipulated. By means of the magical power of the imagination and experimentation with that which is real, it should be possible to change, transmute and also go beyond them, whereby the body - corporeality - is, as subject, very clearly the centre.[7]

Let us try to make Della Porta's - for his time - seditious relationship to the world clearer, taking his optical studies and blueprints of optical artefacts as an example. His starting point for the interpretation of mirrors and lenses is precisely the traditional and firmly established taboo, that these artefacts allegedly only convey "false images" of the objects observed (reductions, magnifications, distortions,...) and therefore, in accordance with the sanctity of Divine Nature, may only be used to correct defects of vision (that is, for spectacles and the like). This function of the artefacts as prostheses did not interest Della Porta much at all. It was precisely the dilations, deformations, double vision, splitting, changes of dimension, and transmutation of the real that fuelled his searching and driving

attention, the contrast to that which is normally visible, the visualization of the imagination.

"How, when looking at a mirror, a pale yellow or many-coloured form can appear... that it seems as if the face is split down the middle... that it seems as if one has the face of a donkey or a dog or a pig..." (943) - Della Porta begins his XVII Book of the "Magia Naturalis" with these thoughts about simple arrangements of mirrors. In the fourth paragraph of Chapter II we encounter the first astounding phenomenon: "It is also possible, using flat mirrors, to see things that are happening in far-off places..." (947) and he goes on to describe exactly an arrangement of mirrors that, much later, Sigmund Freud installed in his study in order to secretly observe the other people in his house. There follow detailed descriptions of the various kinds and uses of hollow mirrors that we shall meet with again a century later, heavily embellished, in the writings of Athanasius Kircher, and then Della Porta arouses the media archaeologist's feverish interest for the first time in Chapter VI with his "Gesicht=Kunst" (Face=Art), where he demonstrates the germ cell apparatus of the cinema: the Camera Obscura - he calls it *obscurum cubiculum* in the latin original of 1607. He desires to show us "how hunting scenes and battles and other kinds of hocus pocus can be made and performed in a room... Guest performances, battle fields, games, or what you will, so clear, distinct, and pretty to see as though it were taking place before your very eyes," and he explains, "For the image is let into the eye through the eyeball just as here through the window" (Bill Gates' metaphors have a very long tradition); and in describing these optical illusions he gives his imagination free rein in the construction of living scenarios and mises-en-scene: "Namely, opposite to the room where you desire to see this, there must be a large, level space that the sun can shine down upon, where can be placed all manner of trees, forests, rivers, or mountains as well as animals, and these can be real or artificial, of wood or other material... There can be stags, wild boars, rhinoceroses, elephants, lions and other animals, whatever one wants to be seen; they can slowly creep out of their corners into the space, and then the hunter can appear and stage a hunt..."[8] (962). Then, in Chapter VIII, even the author has to hold his breath - "in truth, the pen fell out of my hand" - in the face of the monstrous things he wishes to divulge to us: "How an image can be made to appear in the air without either the mirrors or the form of the thing itself being seen."

By means of a complicated arrangement of mirrors, Della Porta anticipates the effect that is today organised by holographic images. Then, in the treatises on lenses, we are confronted with his strange conception of tele-vision: "From a perspective [this term is destined to survive even beyond the first laboratory phase of the technical history of television - SZ], in order that one may see farther than one imagines, he states and explains the point of "this useful thing", this "Gesicht=Kunst", that in this way "well-read personages can recognize things at a distance of many miles and even stupid people can read the smallest letters of the alphabet from a distance." (971) Only a few decades later, at the turn of 16th century, the physics of the visible establishes itself with the astronomical studies of Christoph Scheiner ("*rosa ursina sive sol*"), Galileo Galilei ("*sidereus nuncius...*"), and Johannes Kepler's research on optics, the geometry of the retinal image, encouraging the instrumentalization of these artefacts in the service of representation, albeit enhanced

representation, by means of the telescope, the microscope, and the reversed telescope as projector. In Francis Bacon's fantastic architecture of science, that in ca. 1624 he located in New Atlantis, the serious "houses of optics" are already rigidly separated off from the somewhat dubious "house of sensory delusions, where we perform all manner of magic, sleight of hand tricks, hocus-pocus and illusion as well as their false conclusions." (Bacon 1982, 54). Physics and magic, observer and interpreter, they no longer live under the same roof. In Descartes' "Discours de la methode", and - particularly with regard to optics - in the companion text "La dioptrique" (Leyden 1637), the rational instrumentalization of modern times finds its exact formulation.

Notwithstanding, the magical energy of the designs and imaginings of Della Porta continue, in parallel, to exert their influence far into the 17th century. The most impressive examples are found in the voluminous works of the pupil and collaborator of Kircher, Caspar Schott (*Magia Optica* 1671) and in the studies on technically mediated vision by Athanasius himself, who so mysteriously haunts the pages of Umberto Eco's *Foucault's Pendulum*. Both editions of *Ars magna lucis et umbrae* of 1646 (Rome) and 1671 (Amsterdam) are heavily imbued with both world views: on the one hand, the geometricization of vision as a means of producing reversible image constructions, and on the other, pushing back the limits in order to create visions of that which is generally not-seeable, for example, quasi peep-show arrangements where a voyeur may observe how the visage of another person is transmuted to the head of an ass or a lion or the sun with the aid of a "Metaphor-Drum" ("Metapherntrommel", Gustav R. Hocke) - we have already encountered this illusion technique in Della Porta's "Hall of Mirrors"; light and shadow plays with fixed and mobile prisms, projection apparatus like the magic lanterns and again, even more arrangements of mirrors for the visualization of the Other, not yet or, rather, not yet so seen. Particularly in Kircher's iconographic presentations, which he designed but did not actually construct in most cases, the magic and the modern natural science view of the world run riot, side by side and interlocked; the overlapping of fictions and imagined facticity, is also characteristic of his combination studies (particularly of *Ars magna sciendi*, 1669) and his theoretical and fantastical works on music (*Musurgia universalis*, 2 volumes, 1650). In the same way that Kircher playfully operates with various systems of characters, especially the Hebrew, Greek and Roman alphabets, so too the concepts and signs of mathematical and geometrical constructions converge in Kircher's work with the symbols of the alchemists and astrologers; he links with ease mythology and science, Jesuit theology and philosophy, to form a multiple semantic network, that we today can only understand in its complexity with great difficulty. Here secret codes (a highly specialised quasi hacker language) alternate with that which appears (or perhaps only seems to appear) to be decodable, the highly probable with sheer improbability, solid architecture with fragile edifices of the imaginary and the will to change.

4. Last night we were invited to the phantastic hermetic film world created by Ladislav Galeta. Prime symbol of the heavens, of the cosmos, of the journey that always ends at its starting point: the circle. We are familiar with the design of Henry Heyl's Phasmatrope, of Muybridges's zoopraxiscope, of Anschutzen's tachyloskop and its further development into the electronic Schnellseher, of Demeny's phonoskop or of Marey's photographic gun

plates: in the tradition of the Lebensrad of the 1830s and 40s, before film became footage it was painted or mounted on round flat disks. Narratively, it represented a short closed circuit repeatable in quick succession in the same or a similar way, ad infinitum.

In the 1671 Amsterdam edition of his *Ars magna lucis et umbrae*, Athanasius Kircher includes an illustration of a strange device for recounting stories in circular form, the Smicroscopin. The container held the story of Christ's passion in eight dramatic tableaux or scenes (Kircher uses the word *simulacrum* - it was not in fact coined by him but belonged to the terminology of the pre-Socratic thinkers and their theories of vision). The appliance itself, hard- and software all in one, consisted of a round, flat, box construction, the lids of which were connected with a pin so that the picture wheel between could be rotated. One of the lids was inset with an ocular and the other had a round hole in it of the same diameter as the eyepiece of the optical cylinder. The speed and rhythm of the narrative was at the discretion of the user. It would have been easy to change the software wheel. This artefact was portable and did not require a particular kind of energy to operate it.

Kaspar Schott, Kircher's long-standing collaborator, published his own treatise *Magia optica - das ist geheime doch naturmassige Gesicht- und Augen=Lehr* (that is the secret yet natural science of face and eyes) in the same year (1671) that the second edition of the *Great Art of Light and Shadow* appeared. In it, Schott does not merely parade his knowledge as the bright assistant of his more famous Jesuit colleague but surpasses the latter by far in the meticulous care and attention to detail with which he describes the various material systems for seeing that is transformed by the artificial. In Book Six, "Von der Spiegelkunst" (On the Art of Mirrors), Schott dismantles Kircher's Allegorie-Maschine and, using its components, experiments with a number of variations for producing images and for projection. The art of mirrors was at its peak in the 17th century. Before it became linear, the original idea of the material form of film as a round drum or a disk was stubbornly persistent, although it was not until many decades later that it made a reappearance in the shape of the videodisc and the compact disc. Initially the storage capacity was so limited that these were only suitable for very short films. In Henry V. Hopwood's book, *Living Pictures*, published in 1899, which lists and explains hundreds of different types of cameras and projectors for moving images, for example, two US American patents are recorded that complemented each other technically. One described a camera that could capture over 200 individual images in concentric circles on a gelatine plate about 8 inches in diameter. This machine, like the Lumieres' Cinematographe, was dual-purpose and could also be used as a projector. Similar, but mechanically more refined, was Nelson's spiral camera, which had a portable casing containing the plate upon which the recording occurred. Further, in the fathomless archive of the Deutsches Museum in Munich, there is an artefact that in 1898 did not make very much money for its London manufacturer whose name it bears: Kammatograph. The diameter of the wafer-thin gelatine plates on which the images were mounted is about twice that of a modern long-playing record. It is hardly surprising that with the concentric circular arrangement of the miniature images, this artefact calls to mind the early disks of mechanical electric television. Television and cinevision developed almost in parallel, techno-historically.

5. In Georges Bataille's economy of the universe, it is the most extravagant planet of all: the sun. It radiates energy incessantly without ever getting anything back from the recipients of this gift. It is expending all its energy. For over one and a half thousand years models and experiments have been done using the sun as the light source for projection, until first Arab scientists (around 1000 A.D.), and much later Europeans, such as the polymath and alchemist Roger Bacon, developed ideas for concrete apparatus in the form of an obscure chamber that could also operate with light sources generated by humans.

However, real interest was not directed to the pure light of the sun. The desire of the scientists focussed on the impure, the dark elements of this squandering planet, through which light in projection produces forms and structures. Christoph Scheiner, who was overshadowed by Kepler and above all by Galileo, was one of the co-founders of a physics of the visible. In order to observe sunspots[9], he developed a heliotropic telescope, a simple device for protecting his eyes when looking directly at the sun but also for procuring upright and inverted pictures of sunspots. This projection machine was up to 22m in length and with its aid, Scheiner was able to project the surface structure of the planet that he was interested in onto a piece of white paper where he could fix it (icono-) graphically. A striking particularity in contrast to earlier concepts of the Camera Obscura or Camera Clausa where the observer's position was outside: equipped with lenses, Scheiner's chamber was a viewing room that contained the observer.

Maculas etiam caelo deducit ab alto - "They can even bring down the sunspots from the sky": in these emphatic tones the instruments that enable natural irregularities to become temporal images are celebrated in Johannes Zahn's famous book of 1685 on the artificial eye.

A companion piece: in the stylised and contrived images of the magic lantern, the spots that were made visible and analysed by scientific means take on the form of the incarnation of evil, of the weird and uncanny. The first subjects to be painted on transparent disks for projection using candlelight in order to throw big and ghostly images onto walls were really devilish ones, such as Lucifer and the allegorical depiction of the flames of purgatory (as in Kircher's first illustration of a *Laterna Magica*). Images of horror run through 500 years of media history up to and into the present day. One of the earliest, around 1420, had a particularly striking feature: the diabolical element was very definitely imagined as feminine. The projectionist, who held the lantern with a taper in his hand, wore oriental clothes (possibly a reference to the original inventors of the magic lantern). The drawing of the lantern was not exact; the apparatus is depicted around the image area and had to be black so that the she-devil could make her shadowy appearance on the wall.

6. Only since Paul Virilio's famous essay, "War and Film", has it become customarily postmodern to interpret advanced media technology in the context of an original military vanishing point; war as an archimedean point to which and from which the world of illusions is structured. Well-worn references from the history of technology are, for example, the revolving drum, the repeating rifle and particularly Janssen's photographic

revolver and Marey's photographic gun, that he used to shoot successive pictures of birds in flight - amongst other things.

But film - insofar as its origins can be defined at all - is not a medium that destroys space or volume as may be concluded if it is assigned to the military complex. For me, film means first and foremost time that is structured and formed. For the specific history of the mechanical and electrical apparatus it makes sense to begin the search for prime artefacts from this perspective. The wheel clock, that was developed in this form in the mid 14th century, is a technical system whose functionality comprises the decisive elements for the process of shooting pictures with a camera: the combination of regular progress (continuity) and graduation (discontinuity).

The mechanical heart of the wheel clock is the cogwheel. Its earliest known applications are documented in the culture of ancient Egypt: Sakié was the camel-powered machine for drawing water from wells and its central component was a gigantic horizontal wooden wheel with deep notches. Machinery for survival and not for death. Later, the cogs of the first wooden, and later metal, wheels that engaged exactly were the guarantee of the precisely regulated running of many machines. This includes, of course, the cinematographs and kinoscopes that were built in the early years by engineers from the clock and watch-makers' branch of light engineering industry. Stop & Go, the perpetual alternation of movement and standstill, was the binary code of 19th century industrial culture. In the cinema, it finally achieved status in the moving image. Yet its history is nearly as old as that of man outsmarting nature.

7. The deviant, the impure, and the image of an era. The project of film for cinema received an enormous boost of innovative energy from physiological and psychophysiological research. The century of the industrial revolution was madly keen to fathom out the functioning of bodies, to study the movement of their muscles and limbs (that were often enough imaginized as parts of a mechanism), to make their energies and surges visible. Medics, biologists, physiologists, registrars, and manic encyclopaedists from the most diverse backgrounds initially pounced on what was nearest because it was the most obvious. They studied deviant behaviour. For example, over the last three decades of the 19th century the Italian doctor of medicine and criminologist, Cesare Lombroso, developed an extensive factitious system by which means he attempted to explain mental, cultural, and social phenomena of heterogeneity through their supposed 'inscriptions' on the body. He analysed handwriting and skull structure, preserved aborted fetuses, fabricated correlations between social unrest and the menstrual cycles of the female militants, analysed drawings and songs by prison inmates and the writings of prisoners condemned to death. Each deviant behaviour and its expression had to be recorded. The Other, that seemed to be threatening the centre of bourgeois life, had at the very least to be pinned down in statistics and texts if it could not be really understood.

The period photography of Kohlrausch is paradigmatic: the walk of the neurotic man is captured twice, once as spatial progress and once as temporal progress. Corresponding with the successive movements, the chronometer is positioned above the man's head. In

this respect, Etienne Jules Marey's set-up was even more precise and effective. For his studies of the movements of humans and animals, the pictures he took included a measuring tape that ran along the bottom, plus a running clock showing the corresponding position of the second hand. The physiologically orientated chrono- and movement photographers were not primarily concerned - like Muybridge - with the body as a superficial sensation. Their relationship to their objects in front of the camera was above all analytical. That was the reason why they literally had to get on their subjects' backs. Georges Demyen - the assistant and later rival of Marey - did some experiments in which he tried to capture the movements of the mouth articulating words. The aim was to produce a basis for teaching the deaf to speak. For this purpose the pictures had to be large. Much later, a montage of close shots of a similar kind, with semi-close ups and long shots, became a shock-horror experience for cinemagoers.

The artificial eye's focus on the functionality of the body already contains in essence the beginnings of the computed, synthetic image that at the end of the 20th century is increasingly being integrated into films. The line structures that result from the scanning of real objects by 3-D scanners and that constitute the basis for the generation of figures in movement by the computer, do not differ in principle from the studies of movements done by Marey with his test persons wearing black suits with white spots running down their extremities. There is also a striking correspondence with regard to the subjects: as yet, computer animation of living beings in film is mostly restricted to monsters, to the abstruse, to humans that are not homogeneous. But this is - just as it was a hundred years ago - just a matter of time; today of time that needs computation.

8. I probably owe you an explanation as to my intentions in constructing these wild juxtapositions of heterogenous phenomena from media history, and particularly with regard to the presence of the digital media and their start into the next century: I do not proceed on the assumption of a coherent praxis in artistic production and reception with and through the media in the expanding present, and likewise I try not to homogenize or universalize the historic development of the media. Thinking further along the lines traced by others, Georges Bataille for example, I attempt to think and write about the previous technical and aesthetic and theoretical richness of the development of artefacts of media articulation hetero-logically. In this concept both re-construction and the conception of possible future developments rub together. Against the enormously growing trend toward the universalization and standardization of aesthetic expression, particularly in the expanding telematic nets, the only strategies and tactics that will be of help are those that will strengthen local forms of expression and differentiation of artistic action, that will create vigourously heterogenous energy fields with individual and specific intentions, operations, and access in going beyond the limits that we term mediatization.

To put it more pragmatically - I am pleading for a project of diverse praxis with advanced media machinery. I am counting on a creative side-by-side co-existence: not in the sense of grandiose arbitrariness but rather as a division of labour that is very necessary because we - as cinephiles, as videophiles, as computerphiles - do have different wishes and expectations of the obscure object of our desire.

Synthetic images that have their referents in the real bore me, whether they be mimetic biologies, virtual studios, actors, or effects. I hope that the most creative computer artists will move heaven and earth into worlds that I do not know as yet, that will expand and enrich the horizon of my fantasy. For example, Catherine Deneuve's expression in Bunuel's *Belle de Jour*, when she looks into the Chinese man's box, I cannot quite imagine this as a simulation. If I feel in the mood for audiovisual leisure or for reading sound-image-text constructions, I will put a disk into the CD-ROM drive WHEN it surpasses the complexity that a book and a videotape and an MC offers me. For fast communication or extending my knowledge of the world (including the world of media), I am very happy to use the Internet or the World Wide Web (if I've got the time). But if I want a story about love or life or death that goes beyond my own powers of imagination and brings me into contact with the Other, then I do not turn to the delirious community of Net users who all consider themselves artists, but rather, I spend my time with an exceptional story-teller, I actually seek a long term confrontation with a single picture, or with a musical composition that enriches my time-experience. And I notice that I need this all the more when the attractors of knowledge, planning, and organisation accelerate at a frenzied pitch.

Notes

1. The term is used here in the sense of Deleuze's/Guattari's 1000 Plateaus: a loose and somehow anarchic group of people without bureaucratic institutional form.
2. All citations taken and translated from the Suhrkamp edition of the *Tractatus* (Frankfurt 1963).
3. Cited in Jurgen Habermas: *Zwischen Erotismus und Allgemeiner Ökonomie*. In: J. Habermas: *Der philosophische Diskurs der Moderne*, Frankfurt 1985, p. 267.
4. For further details on the adaptations see Rupert Martin, *The Illustration of the Heavenly Ladder of John Climacus*, Princeton, 1954.
5. We used the Frankfurt edition of 1607 in Latin and several translations into German ("ins Teutsche"); all citations are from the Nurnberg edition of 1719.
6. This is particularly emphasized by the editor of the German translation in the preface: "It would be somewhat strange if the pregnant girls or, rather, the careless whores, were no longer to hold in esteem the concoctions of SABINER or the Seven-[Satten] tree, if the effect corresponds to what he claims for the female fern [Farren-Kraut]; that as soon as a pregnant woman steps on it, the fruit of her womb would leave her and she would abort. Yes, certainly, the women would idolize him if it were certain what he claims for the herbs PHYLLON and MERCURIALIS; that if a woman drink the juice of the male plants of these herbs, or simply place the leaves on that natural place, she would conceive a son without fail."
7. In his *Tractatus Primus on the sun ("De Sole")* (we used the German translation of 1608, edited by Joachim Tanckium), included in the volume, *"Vom Stein der Weisen und von den vornembsten Tincturen des Goldes..."*, Roger Bacon always refers to the "Leib" (body) of this precious metal, as in this small extract from the chapter on theory: "Solches vorwar geschicht dem Golde nicht / denn bis zum letzten Urtheil des Gerichts / mag die Natur

dem Leibe des Goldes nichts an seiner NOBILITET unnd PERFECTION endern oder mindern: Es ist auch zwar eine Materia aller Edelgesteinen / und gibt sie besser von seinem Leibe und von seiner Materia / denn sie die Natur finden mag und erreichen. Und ich sage euch / ob das ASTRUM seine INCLINATION in ein solchen claristeirten Leib des Goldes wenden und IMPRIMIEREN worde / es kundt sein VIRTUTEM und Potentz bio zum letzten Urtheil nicht verlieren. Denn der Leib ist PERFECT und allen Elementen vereinigt und angenehm / und ist kein Element das ihm nicht schaden." (p. 44).

8. Not a word is said about the burning question of "the first". Della Porta's text without doubt exploits earlier writings. For example, similar descriptions to his can be found in Villeneuve's works, written in the 13th century, and whose 'shows' go quite a bit further, prefiguring the 'talkies': "during the play he arranged for a group of people outside the room to make appropriate noises, such as the din and clash of swords, or screams and blasts... from trumpets." (Hammond 1981, 9, 10).

9. In his major work of 1626/30, Scheiner calls the sun "the bear rose" (*rosa ursina*), in mythology often with the connotation of female attributes, as the real flower of the goddess Venus, symbol of love, beauty and the erotic. The title of Scheiner's book, in which he published a description of his telescopic lense for the first time, is in latin and takes up five lines (*Refractiones celestes...*) It was published in 1617 in Ingolstadt.

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