

Transluminations = New Screen Media Narratives: Andreas Zapp and  
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### Narrated Theory: Multiple Projection and Multiple Narration (Past and Future.) (2007)

The subversive explosion that shattered the cinematographic code during the Sixties affected all of the technical and material parameters of film.

#### Material Experiments

The material character of the film itself was analysed by artists who, instead of exposing the celluloid, scratched it (George Landow, *Film In Which There Appear Sprocket Holes, Edge Lettering, Dirt Particles, etc.*, 1965/66; Wilhelm and Birgit Hein, *Rohfilm*, 1968), perforated it with a hole punch (Dieter Roth, 1965), painted (Harry Smith used 35-mm material, processing it with grease, paint, tape and spray, 1947), covered it with fingerprints (Peter Weibel, *Fingerprint*, 1967) or glued moths to it (Stan Brakhage, *Mothlight*, 1963, in which moth wings and leaves were fixed between layers of perforated tape and projected). Empty frames, black film and overexposed material were also used.

At the same time, the technical resources of film, from camera to projector, were taken apart, reassembled, augmented and used in entirely new ways. There were cameraless films, for which unprocessed celluloid, known as clear film, was inserted into the projector (Nam June Paik, *Zen for Film*, 1962), and films without film, in which Kosugi, to name one example, focused light from a projector without film against a paper screen, cutting out sections of the screen from the middle until there was nothing left of it (*Film No.4*, 1965). In other works, the light beam was replaced with a stretched length of rope (Peter Weibel, *Lichtseil*, 1973), the conventional screen with curtains of steam, running water (Robert Whitman, *Shower*, 1964) and the surfaces of human bodies (in his *Prune Flat*, 1965, Robert Whitman projected a film onto the body of a girl wearing white clothing; the film showed her taking off the same clothing; in Andy Warhol's and Jud Yalkut's *Exploding Plastic Inevitable*, 1966, the film was projected onto the figures of people dancing in the audience to music by Velvet Underground).

## Multiple Screen Experiments

Many film artists carried out radical experiments with the screen itself. It was exploded and multiplied, either through division into multiple images using split-screen techniques or by placing screens on several different walls. Thus multiple projections occupied the foreground of a visual culture that was intent upon liberating itself from the conventional concept of the painting, from the technical and material restrictions of imaging technology and from the repressive determinants of the social codes. One example worthy of note is Andy Warhol's *Chelsea Girls* (1967), a mixture of split-screen techniques and multiple projection in which a number of performers discuss their unusual lives from multiple perspectives and at several different levels at the same time. In much the same way that some painters sliced up the canvas (Lucio Fontana) or used the human body as a canvas (Vienna Actionism) in search of avenues of escape from the picture, cinema artists were also engaged in a quest for ways of breaking out of the limited film screen during the same period. There were monumental mobile projections from moving vehicles onto building facades (Imi Knoebel, *Projektion X*, 1972), onto dancing people, onto forests and fields, onto the curved inside and outside surfaces of geodetic domes, onto plastic balls, hoses, etc.

## Multiple Narrative Experiments

Multiple projections of different films alongside one another, one on top of the other and in all spatial directions represented more than merely an invasion of space by the visual image. They were also an expression of multiple narrative perspectives. The film-maker Gregory Markopoulos, an early master of quick cuts and complex cross-fading techniques, published a manifesto of new narrative forms based upon his cutting technique in *Filmculture No. 31* in the sixties.

*"I propose a new form of narration as a combination of classical montage technique with a more abstract system. This system incorporates the use of short film phases that evoke thought images. Each film phase comprises a selection of specific images similar to the harmonious unity of a musical composition. The film phases determine other interrelationships among themselves; in classical montage technique, there is a constant relationship to the continuous*

*shot; in my abstract system there is a complex of different images that are repeated."*

From the outset, the extension of the single screen to many screens, from the single projection to multiple projections represented not only an expansion of visual horizons and an overwhelming intensification of visual experience. It was always engaged in the service of a new approach to narration. For the first time, the subjective response to the world was not pressed into a constructed, falsely objective style but instead formally presented in the same diffuse and fragmentary way in which it was experienced. In the age of social revolts, consciousness-expanding drugs and cosmic visions, multiple projection environments became an important factor in the quest for a new imaging technology capable of articulating a new perception of the world.

In 1965, Stan VanDerBeek published a manifesto in justification of real-time multiple projection environments, a kind of "image-flow" in which image projection itself became the subject of the performance. In the same year he showed *Feedback No. 1: A Movie Mural*, achieving a first breakthrough for multi-projection cinema. To realise his idea, he established a *Movie Drome* in Stony Point, New York; a vaulted cupola modelled on the geodetic domes of Buckminster Fuller. The USCO Group associated with Gerd Stern began working on the multi-projection shows on the US east coast in about 1960 (*We are all one*, with four 16-mm projectors, two 8-mm projectors, four carousel projectors, etc., 1965). Several artists also created huge multi-vision environments for Expo 1967 in Montreal (Roman Kroitor *Labyrinthe*, 1967, for example) with the intention of developing new forms of storytelling. As Roman Kroitor asserted, "people [were] tired of the standard plot structure." Francis Thompson, a pioneer in large-scale, multi-image cinematography, presented his piece "We are Young" on an arrangement of six screens at Expo 67. The Czech pavilion featured a huge screen on which 160 slides could be shown simultaneously (Diapolycean screen). Milton Cohen, the leading figure in the ONCE Group from Ann Arbor, Michigan, had been at work since 1958 developing an environment for multiple projections with the aid of rotating mirrors and prisms using mobile rectangular and triangular screens under the title *Space Theatre*,

"to free film from its flat and frontal orientation and to present it within an ambience of total space."<sup>1</sup>

John Cage, Lejaren Hiller and Ronald Nameth staged "HPSCHD", a five-hour "Intermedia Event" with 8000 slides and 100 films projected onto 48 windows at the University of Illinois in 1969. Between 1960 and 1967, Robert Whitman experimented with multiple plastic and paper screens onto which films were projected (*The American Moon*, 1960). In *Tent Happening* (1965), films, including a sequence filmed through a glass pane showing a man defecating, were projected onto a large tent. Beginning in 1965, Aldo Tambellini "Electromedia Theatre" worked with multiple projections (*Black Zero*, 1965) in which, to cite one example, a gigantic black balloon appeared from nowhere, blew itself up and eventually exploded. Hundreds of hand-painted films and slides were used. In 1968 Tambellini organized *Black Gate* along the banks of the Rhine in Dusseldorf, an event featuring projections onto helium-filled, airborne plastic hoses and figures by Otto Piene. Jud Yalkut created *Dream Reel* for Yukihsa Isobe's "Floating Theatre", a gigantic parachute held by nylon threads - a portable hemispheric screen for multiple frontal and rear projections. The group "Single Wing Turquoise Bird" (Peter Mays, Jeff Perkins, the later video artist Michael Scroggins and others) from Los Angeles put together light shows for rock concerts in 1967 and 1968. Sponsored by the painter Sam Francis, they subsequently conducted experiments in an abandoned Santa Monica hotel with constantly changing images, from video projections to laser beams. In their *Theatre of Light*, Jackie Cassen and Rudi Stern projected multiple images on pneumatic domes, transparent Plexiglas cubes, polyhexagonal structures, water surfaces, etc., with their self-constructed "sculptural projectors" during the late sixties. Particularly impressive was a fountain illuminated by a strobe light, a technique that evoked the impression of individual falling drops of water suspended like crystals in the air.

### **Time and Space Experiments**

In addition to the expansion of the technical repertoire through experimentation with projectors and multiple projections,

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<sup>1</sup> Cf. Gene Youngblood, *Expanded Cinema*, New York: Dutton

another material-oriented approach to the visual expression of the new concept of reality, the renunciation of historical social obligations and the new drug-induced, consciousness-expanding experience emerged. It involved the shifting and distortion of the conventional parameters of space and time using techniques designed to extend, slow, delay and abbreviate time. Film duration was extended to as much as 24 hours (Andy Warhol, *Empire State Building*, 1963) or to an extreme of only a very few seconds (Paul Sharits, *Wrist Trick*, ten seconds, 1966). Time dilations in film and music were favoured as primary means of expression not only because of their consciousness-expanding effects but also for compositional and formal reasons. The same applies as well to time-shortening and aggressive cutting techniques.

The contents of these independent avant-garde and underground films also strayed from the familiar terrain of the industry film in a social sense. Images from the personal sphere, psychodramatic documents of an excessive individualism were shown publicly in uncensored form. Normally taboo sex scenes were acted out in front of the camera (Jack Smith, *Flaming Creatures*, 1962/63, a transvestite orgy that triggered a scandal even in artists' circles at the time yet became a major source of inspiration for Warhol's universe; Kenneth Anger, *Scorpio Rising*, 1963, which marked the birth of *Biker Movies* and homo-erotic self-fashioning, *Inauguration of the Pleasure Dome*, 1966). The widening of material and technical parameters also went hand in hand with the dissolution of social consensus.

### **Sound Experiments**

Both formal and thematic extensions of the cinematographic code were welcomed enthusiastically in the aesthetic and social revolutionary atmosphere of the sixties and, like progressive rock music, supported by a new, youthful audience. Indeed, a large number of such underground films were accompanied by rock (from Grateful Dead to Cream) and avant-garde (from John Cage to Terry Riley) music. Music played a much more emancipated role in these films than in industry movies. In standard industry productions, regardless of whether they used classical or popular scores, music serves more or less as background sound and as a device for controlling mood and atmosphere - heightening or resolving dramatic tension. In many avant-garde films, on the other hand, music and sound have a determining effect upon

the structure of imagery, and images are cut and composed in accordance with musical principles. The function of the soundtrack, the serial arrangement of existing popular songs and the commissioned piece known as a theme song and used associate a certain film with a certain musical hit, clearly illustrate the tendency toward the industrial exploitation and marketing of film images through linking with music. This technique of using semi-prefabricated components in movies is reminiscent of the accelerated prefab building techniques employed in mass industrial high-rise construction. Instead of compound concrete-and-steel construction, the rapidly mass-produced industrial film made use of a compound sound-and-music construction. In contrast, the avant-garde films of the sixties employed a highly differentiated approach to the development of new relationships between sound and visual imagery.<sup>2</sup>

### **Expanded Cinema and New Video**

Several avant-garde galleries promoted analytical refinements and developments ranging from the Structuralist films to spatial film installations during the seventies. This period also witnessed the emergence of video art, with viewer-oriented closed-circuit installations that anticipated the observer-relative interactive computer installations of the nineties and time-delayed installations, which pursued further the experiments of Expanded Cinema. The market-induced revival of figurative painting in the eighties put an abrupt end to the development of expanded cinematic forms and video art. Broad segments of visual culture were affected by an amnesia as scandalous as it was total, for which not only the market but institutional art historiography, which had buckled under to the power of the market, were to blame. Viewed from this perspective, the triumphant embrace and revival of the tendencies of the expanded cinema of the sixties by the video generation of the nineties is all the more astounding and gratifying.

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<sup>2</sup> Cf. Michel Chion, *Les musiques electro-acoustiques*, Aix-en

Provence: INA-GRM 1976; idem, *Le son au cinema*, Paris:

Cahiers du Cinéma 1985; idem, *L'audiovision*, Paris: Nathan 1990;

idem, *La musique au cinema*, Paris: Fayard 1995

This generation takes its cue less from the progressive achievements of video artists of the eighties, since their art was subordinated to the sculpture and painting of their time. Thus, in pursuing the development of a specific video-based language, the video art of the nineties focuses deliberately on the expansion of image technologies and social consciousness of the sixties. We find surprising evidence of parallels, sometimes extending even to the finest detail, not only in style and technique but in content and motif as well. For the most part, the video art of the nineties is also shaped by an intense interest in multiple projection and the new approach to multi-perspective narration that comes with it. Numerous representatives of the video generation of the nineties, including such artists as Jordon Crandall, Julia Scher, Steve McQueen, Jane and Louise Wilson, Douglas Gordon, Stan Douglas, Johan Grimonprez, Pierre Huyghe, Marijke van Warmerdam, Ann-Sofi Siden, Grazia Toderi and Aeronaut Mike, now work within the context of a deconstruction of the technical "apparatus" outlined here. Many computer artists of the nineties, among them Blast Theory, Jeffrey Shaw, Perry Hoberman, Peter Weibel and others, have also taken up the tendencies and technologies of the expanded cinema of the sixties once again. However, video artists of the nineties are pursuing the deconstruction of the cinematographic code in a much more controlled, less subjective manner, applying strategies that are also more methodical and more closely oriented to social issues than those of the sixties. In the video art of the nineties, experiments with multiple projections are employed primarily in the service of a new approach to narration. Video and slide projections onto unusual objects are used by artists ranging from Tony Oursler to Honore d'O. Projections onto two or more screens are found in the work of such artists as Pipilotti Rist and Sam Taylor-Wood, Burt Barr and Marcel Odenbach, Eija-Liisa Ahtila and Shirin Neshat, Samir and Doug Aitken, Dryden Goodwin, Heike Baranowsky and Monika Oechsler. Split-screen techniques are characteristic features of the art of Karin Westerlund and Samir. Multiple-monitor environments are employed by Ute Friederike Jürß and Mary Lucier.

### **Multiple monitors, multiple projections and multiperspective narration**

These multiple projections take advantage of the opportunities offered by multiple perspective for a departure from familiar ways of looking at social behaviour. On three screens

projected in alternation, Monika Oechsler's *High Anxieties* of 1998 shows the construction of feminine identity as it begins in childhood, illustrating how even girlfriends of the same age control the formation of the individual as agents of society. The changing cinematic perspective calls to mind the familiar cinematic codes of courtroom dramas involving prosecutors, defence attorneys, victims and defendants. Enhanced by the possibilities offered by triple projection and multiple perspective achieved through this formal montage technique, this new perspective intensifies the hidden violence inherent in the socialisation of the individual. In a similar way, the triple projection in Eija-Liisa Ahtila's *TODAY/Tanaan* of 1996/97 enormously enhances the possibilities for complex linking of image and text elements independent of the narrator's perspective. Only rarely do the texts match the faces and genders. Texts and images do not identify each other; instead they distinguish each other, floating alongside one another and forming moving islands, nodes in a network of multiple relationships which the viewer must create himself. Free-floating chains of signs, be they images or texts, are interwoven to form a universe without a centre. Yet its core harbours the catastrophe of a fatal accident that has obviously eradicated all possibility of a coherent, linear narrative. Only disparate fragments of memory are presented in strangely objective fashion by the passive, *Networked Subjects* (Elisabeth Bronfen, 1998). The story of the catastrophe no longer follows the linear track of rational thought; instead, the irrational essence of the catastrophe is released (from censorship) by disorderly, centrifugal, multi-perspective trajectories of narration. Only in this way can the catastrophe be experienced as such - through the refusal of image and text elements to merge and fit together. Narrative structures of this kind, which employ the irrational character of dream and the human psyche as plot elements, clearly reveal associations with the early films of Ingmar Bergmann (*Wild Strawberries*, 1957, for example).

Shirin Neshat presents the binary opposition of man and woman in a patriarchal society on two screens positioned facing one another. The woman has a voice but neither words nor listeners. She has only sound and her ability to scream. The man possesses the words, the culture of language and an audience which rewards him with frenetic applause at the end. The exclusion of woman from the building of civilization and society can hardly be illustrated more vividly than in this binary juxta/position of projectors and positions. The device of

the synecdoche (used here in the representation of the violence inherent in gender issues and the politics of identity) is typical of many of the best works of video art, which deal in a methodological-analytical manner with the eradicated power mechanisms of the social code, as opposed to the predominantly subjective approaches of the New American Cinema of the Sixties. Modern society offers the real subject a number of different role models and possibilities for role behaviour.

On a scale of multiple possibilities defined by the culture industry in media ranging from popular movies to highbrow opera, from slick magazines to low-ratings TV, the subject can make its choice and position itself, as long as it can take the pressure of the respective social code. This relationship between the subject as a real possibility and the imaginary subject option is expressed as a synecdoche in Sam Taylor-Wood's *Killing Time* of 1994. Like several other fellow artists, Taylor-Wood works with "found sound". Interestingly enough, her work confirms the theory of the dominance of musical structure as the determining narrative structure. It is not the visual image but sound that dictates the behaviour of the actors. The four persons shown in the quadruple projections listen to *Electra* by Richard Strauss, waiting for cues for their assigned voice parts. Like Shirin Neshat's work, the film sequence is a synecdoche for the range of available (social) roles and the role of the voice in society.<sup>3</sup> The theatre of sound opens a view to the theatre of subject positions. In comparison, Pipilotti Rist tends rather toward the structure of semi-prefabricated components in her work. She uses pre-recorded music, which she illustrates with her pictures, or the music illustrates her pictures according to coded schemes of the kind we see on MTV. She remains within the codes of the subject option and the industrial narrative prescribed and accepted by society. We find a similarly interesting adaptation of the relationship between sound and image at the narrative level, since remembering is one of the functions of narrative, in *A Capella Portraits* by Ute Friederike Jürß.

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<sup>3</sup> Cf. Kaja Silverman, *The Accoustic Mirror. The Female Voice in Psychoanalysis and Cinema*, Bloomington: Indiana Univ. Press

## Found image and sound, found films experiments

Just as artists of the sixties made use of "found images" and "found footage" (George Landow and others), contemporary video and film artists like Douglas Gordon, Marcel Odenbach and Martin Arnold employ found material as well. Arnold deconstructs his found footage to the extreme in order to make hidden semantic structures visible through gradual repetition. Found footage is reassembled, looped, partially re-filmed and visually estranged in its entirety. The use of found film is part of a general strategy of media reflection and appropriation. When Marcel Odenbach, Gabriele Leidloff, Samir, Isabell Heimerdinger, Andrea Bowers, Burt Barr, Pierre Huyghe and Douglas Gordon allude to familiar films, including such classics as *From here to Eternity* (Fred Zinnemann, 1953) and *The Godfather* (Francis Ford Coppola, 1972) or to popular television images ranging from cheerleaders (Andrea Bowers, *Touch of Class*, 1998) to scenes from Lady Di's funeral (Gabriele Leidloff, *Moving Visual Object*, 1997), then what we have are media-oriented observations of a second order, in which visual culture as a whole is exposed as a ready-made object for analysis. Consequently, observation of the world gives way to the observation of communication. The unconscious character of the visual code becomes evident in a kind of symptomatic reading.

In Doug Aitken's installations, with multiple screens, the narrative universe is broken down into individual, autonomous film frames and series of effects of the kind familiar to viewers schooled in video-clip techniques: from detail shots, blurred motion, technical modifications achieved with the camera, digital image processing, short cuts and dilations of time. Narration is not only broken apart spatially through projection onto multiple screens but in chronological terms well.

Shifts and distortions of conventional parameters of space and time play a significant role in the New Narration. As in the sixties, these experiments with time emphasise the technological time of the cinematic order as opposed to the biological time of life. The focus is on artificial time rather than "rediscovered time", on time constructions as visual symptoms of a completely artificial, constructed reality. In his triple projection *L'Ellipse* of 1998, with Bruno Ganz, Pierre Huyghe illustrates the difference between industrial time (the use of time in the industry film) and personal time (the use of time in Pierre Huyghe's own film). He uses found footage or found

film, film as a ready-made work of art, which he deconstructs by subjecting it to chronological manipulation: Whenever Bruno Ganz is missing in industry films, the projection of his personal film begins and interrupts the projection of the industry film. Huyghe plays with the cinematographic technique of cutting to one scene to another by deleting the time and space in between which technique is called "elliptical". Douglas Gordon subjects industry films to similar time manipulations. He also works with found films (from Hitchcock's *Psycho* to Ford's *Searchers*), expanding them to 24 hours or five years, respectively.

### **Reversible Rhizomatic Narration**

The narrative universe becomes reversible and no longer reflects the psychology of cause and effect. Repetitions, the suspension of linear time, temporal and spatial asynchrony blast classical chronology apart. Multiple screens function as fields in which scenes are depicted from a multiple perspective, their narrative thread broken. The accusation once levelled at the New Music that it had cut the link to the listener, since the listener could no longer reconstruct or recognise the principles of composition, can now be applied without reservation to the advanced narrative techniques of contemporary video art. They have severed the link to the viewer, who can no longer make out the narrative structure. Linearity and chronology, as classical parameters of narration, fall victim to a multiple perspective projected onto multiple screens. Asynchronous, non-linear, non-chronological, seemingly illogical, parallel, multiple narrative approaches from multiple perspectives projected onto multiple screens are the goal. These narrative procedures comprising a "multiform plot" have been developed with reference to and oriented toward such rhizomatic communication structures as hypertext, "associational indexing" (Vannevar Bush, "As We May Think", 1945), text based "multi-user dungeons" (MUDs) and other digital techniques of literary narration.<sup>4</sup> Gilles Deleuze's definition of the rhizome as a network in which every point can be connected with any other point is a precise description of communication in the multi-user environment of the World Wide Web and the allusive, open-ended image and text systems derived from it. These narrative systems have a

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<sup>4</sup> Cf. Walter Grond, *Der Erzähler und der Cyberspace*, Innsbruck:

certain algorithmic character. As early as 1928, Vladimir Propp demonstrated in his famous study "Morphology of the Fairy Tale" that the 450 fairy tales he analysed could be reduced to 25 basic functions and narrative events, or narrative morphemes. These 25 morphemes form a kind of algorithm, which generates an endless string of new plots through new combinations. With its audio-visual narrative techniques, contemporary video art breaks down holistic forms into their basic morphological components. These are then reassembled using the multiple methods described above. These new narrative techniques render the complexity of social systems lucid. The crisis of representation, which painting averted during the eighties by resorting to a restorative repetition of historical figurative and expressive conditions, is being overcome in contemporary video art through the revival of narrative conditions anticipated by the historical avant-gardes of literature, theatre and music: from the French OULIPO group to the Vienna Group.

The banishment of narration by abstraction led to the rejection of narrative as an obsolete historical phenomenon. This Modernist dictate of recognising only the purely visual and banishing the verbal was overturned by Postmodernism in favour of a more intense discursive orientation. Thus even the Post-modern visual language of contemporary media art becomes increasingly discursive, the more it makes use of avant-garde narrative techniques. Unlike technically ponderous film art, the video technology of today permits more complete control of cinematic resources and thus promotes a more stable development of the cinematic code. The advantage of today's video technology over yesterday's film technology lies in the improved logistics of its technical repertoire. What was once virtually impossible and susceptible to problems as well is now much easier to realise and entirely reliable. Thanks to this technical stability, the possibilities for new narrative techniques based upon multiple large-screen projections, perhaps the most striking feature of contemporary video art, can now be explored extensively for the first time. And so the video art of today has taken up the lance left behind by the cinema avant-garde of the sixties and developed the universe of the cinematic code a step further.

### **Future Image De/Constructions**

The artificial technology in use up to now to create an image, representing reality, imitated the natural technology of a

natural apparatus, the eye organ. The decisive step in a closer representation of reality was the possibility of imitating movement with pictures. This grounded the transformation of painting and photography to cinema, as a trompe l'oeuil technology to simulate motion with the help of an ingenious technology invented at the end of the 19th century but standardised and made compatible for mass-use at the beginning of the 20th century. The next development in the progress of the image technology was the step from the simulation of movement, motion picture, to the simulation of an image as living system, the viable picture. The computer allowed virtual storage of information as electronic configuration. Information was no longer locked up magnetically or chemically as with videotape or filmstrip. The virtuality of information storage set information free and made it variable. The image became a picture field, its pixels became variables, which could be altered anytime and in real-time. This caused the variability of the image content. The creation of an interface technology between observer and image technique enabled the observer to a certain degree to control with his behaviour that of the image. The picture field became an image system that reacted to the observer's movement. Moving image and moving observer moved towards a new synthesis of image and observer: the interactive image, the most radical transformation of the image since its coming into being. Since artificial systems, which behave similarly reactive as living systems, have been termed "viable" by constructivist philosophy, the new image systems can also rightfully be called "viable". The viability of image behaviour turns the moving image into a living image. Thus the computer is a decisive medium for perfectly simulating reality.

From this revolutions of image technology follows the thesis of the technical and social deconstruction of the image. For this deconstruction of the technical dispositive of the image the artist can enlist the help of a revolution in materials, which enable a new physics of the image. The important role of the index and the imprint in modern art, especially since the sixties, already as a result of a material-based artistic research, indicates that, the indexical image, which is defined through a material and physical relation between sign and object (e. g. smoke and fire), as post-digital image will replace the illusion world of computer-based 3-D simulations, which at the moment are at their ecstatic height. The indexical image is the beginning of a new culture of materiality of the image. This

new culture of materiality will be, especially marked by the transition from electron technology to photon technology. This transition is supported by three stages in computer development. The mainframe era of computing saw the use of a room-sized computer by a lot of people. In the PC-era of computing one person was using one computer, thus the term personal computer. In the future era of calm technology and ubiquitous computing one person is going to carry and use a lot of microcomputers.

Quantum computers will replace electronic computers in the future. This new computer technology is going to enable the development of the cinematographic code from a 1:1 relation (1 spectator - 1 movie - 1 space - 1 time) into a multi-user virtual distributed environment (x spectators - x movies - x spaces - x times). In this dispersed virtual reality 100 spectators are going to act not only in front of the screen but also behind it. Internet technology already serves as a new stage for visual communication. Real and simulated worlds become models, between which connections and transformations occur which are variable and which become similar to each other (see *The Motion Picture Matrix*, 1999). Just like the 20th century has standardised and normed and thus turned into a mass industry the inventions in the image technology of the 19th century, the 21st century has to transform the advanced image technology of the 20th century, the computer-based or net-based interactive virtual reality technology, into a mass compatible one. Today's virtual reality technology strongly reminds us of the hour of birth of the cinema in the 19th century, which has been characterised by singular reception. Taking the phenakistoscope as an example enables us to grasp the principle of singular reception: 1 person watches 1 film in 1 place at 1 time. Projection made a collective simultaneous perception possible: x person see 1 movie in 1 place at 1 time. Television brought about and non-local perception: x persons see 1 movie in x places at 1 time. Video and CD-ROM enable either singular or collective perception, simultaneous as well as non-simultaneous: x/1 person(s) see x/1 movie(s) in x/1 places(s) at x/1 time(s). The digital image at the end of the 20th century starts from scrap. The head-mounted display of VR-systems again has the singular local reception as the cinema of the 19th century: 1 person sees 1 film in 1 place at 1 time. If VR technology wants to survive it has to appropriate the forms of perception we already know from television, radio, records,

CDs, film, etc.: collective, non-simultaneous, non-local reception.

The tele-technology of sound that we know from mobile phones (compare wearable ubiquitous computing) supplies the music of the future, which is going to seize the tele-technology of the image as well. Through the image technologies of the future, as I have sketched them, anybody is going to be able to see any movie in any place at any time:  $x$  persons see  $x$  films in  $x$  places at  $x$  times. Anybody, anywhere, anytime is the formula for the digital image technology of the future. The decisive point about this, however, is that with this form of collective interaction (instead of the now only individual interface technology) the observer becomes an internal observer of the world. He does not stay external observer as with film but as internal observer he is going to take part in the image-worlds and thereby is going to change them. His entry into the image-world is going to trigger reactions in the sense of the covariant model not only in multiple parallel image-worlds but also in the real world. The relation between image world and reality is going to be multiple and reversible. The observer himself becomes the interface between an artificial virtual world and the real world. The events in the real world, controlled by the internal observer, are going to affect the virtual world and the events in the virtual world, also controlled by him, are going to affect the real world and parallel virtual worlds.

The observer cuts from one narration to another. The installation replaces the classical cut by one narrator. Instead of linear narration, multiple users will create instant multiple narrations. Interactions by the observer between himself and the image world will become bi-directional. A cause in the real world will have an effect in the virtual world and, reversibly, a cause in the virtual world will have an effect in another parallel virtual world or in the real world. Observer controlled interactions between real and virtual worlds and between different parallel virtual worlds in computer or net-based installations enable the spectator to be the new author, the new camera-man or woman, the new cutter, the new narrator. The observer will be the narrator in multiple-media installations of the future. This could happen locally or be remote controlled through the net. The observers create, through their navigation, new forms of narration in net or computer-based installations.

Translation: John Southard and Barbara Filser

<sup>1</sup> Cf. Gene Youngblood, *Expanded Cinema*, New York: Dutton 1970, p.371

<sup>2</sup> Cf. Michel Chion, *Les musiques electro-acoustiques*, Aix-en Provence: INA-GRM 1976; idem, *Le son au cinema*, Paris: Cahiers du Cinéma 1985; idem, *L'audiovision*, Paris: Nathan 1990; idem, *La musique au cinema*, Paris: Fayard 1995

<sup>3</sup> Cf. Kaja Silverman, *The Accoustic Mirror. The Female Voice in Psychoanalysis and Cinema*, Bloomington: Indiana Univ. Press 1988

<sup>4</sup> Cf. Walter Grond, *Der Erzähler und der Cyberspace*, Innsbruck: Haymon 1999