Peter Weibel
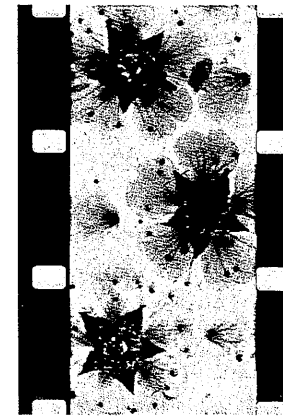# Expanded Cinema,
Video and Virtual Environments *(2003)*

top
Hans Richter
Rhythm 23
1923
16mm film
b/w, silent
3 min
film strip
courtesy Cecile Starr,
New York

bottom
Kasimir Malevich
*Artistic and Scientific Film –
Painting and Architectural
Concerns – Approaching
the New Plastic
Architectural System*
1927
manuscript page from a
three-page film script
private collection
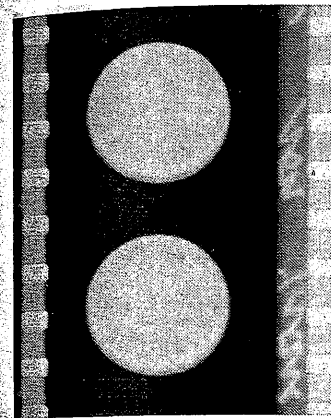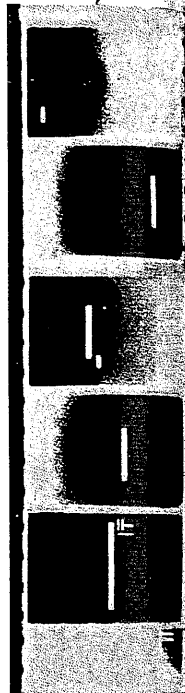
Gil J. Wolman
L'Anticoncept
1951
film stills
L'Institut Scandinave de
Vandalisme Comparé
from Joseph Wolman, *L'Anti-
concept*, Éditions Allia, Paris,
1994, p. 66

Stan Brakhage
Mothlight
1963
16mm film
color, silent
4 min
film strip
© Stan Brakhage

Birgit and Wilhelm Hein
Rohfilm [Raw Film]
1968
16mm film
b/w, sound
20 min
© the artists

1 Kasimir Malevich, "Painterly
Laws in the Problems of Cin-
ema," in *Cinema and Culture*
(Kino i Kultura), nos. 7–8,
1929.

2 This history is described and
documented in the following
books: Sheldon Renan,
*An Introduction to the
American Underground Film*,
Dutton, New York, 1967;
P. Adams Sitney (ed.), *Film
Culture Reader*, Praeger,
New York, 1970; Gene Young-
blood, *Expanded Cinema*,
Dutton, New York, 1970;
Parker Tyler, *Underground
Film* (1969), Secker & War-
burg, London, 1971; David
Curtis, *Experimental Cinema,
A Fifty-Year Evolution*,
Universe Books, New York,
1971; P. Adams Sitney,
Visionary Films, Oxford
University Press, New York,
1974; Hans Scheugl,
Ernst Schmidt jr., *Eine
Subgeschichte des Films.
Lexikon des Avantgarde-,
Experimental- und Under-
groundfilms*, vols. 1, 2,
Suhrkamp, Frankfurt, 1974;
Amos Vogel, *Film as Subver-
sive Art*, Random House, New
York, 1974; Stephen Dwoskin,
*Film Is – The International
Free Cinema*, Peter Owen,
London, 1975; Stephen
Dwoskin, *Film Is...*; Peter
Gidal (ed.), *Structural
Film Anthology*, Peter Gidal
(ed.), BFI Publishing, London,
1976; *Film als Film 1910 bis
heute*, Birgit Hein, Wulf
Herzogenrath (eds),
Kölnischer Kunstverein,
Cologne, 1977; Malcolm Le
Grice, *Abstract Film and

Avant-garde Film

In most histories of cinema the avant-garde film oc-
cupies a minor and marginal position. In the interwar
period of the twentieth century, avant-garde film was
initially seen as a spin-off or by-product of visual art
movements like Cubism, Futurism, Suprematism, Con-
structivism, Dadaism or Surrealism. Linked to these
movements were abstract or pictorial animations as
well as montage and kinetic films by artists like Fer-
nand Leger, Bruno Corra, Kasimir Malevich,[1] Viking
Eggeling, Hans Richter, László Moholy-Nagy, Oskar
Fischinger, Man Ray, Marcel Duchamp, Len Lye, Lotte
Reininger, Berthold Bartosch, Alexander Alexeieff and
Claire Parker. These films constituted a body of work
that served as the source for the innovative and au-
tonomous post-WWII motion picture that was vari-
ously termed "art" or "experimental" film. This new
movement differed from its historical predecessor
(few artists, small audiences, no media presence, no
theaters, no organization, no distributors) in that it
was at a certain moment in history a mass movement
(with its own distributive organizations, with large au-
diences in conjunction with the student and pop-
music revolutions, a large number of filmmakers, its
own theaters and magazines). The independent or ex-
perimental film of the 1960s was very conscious of
being a new branch of art, a new medium and form of
art as opposed to merely a byproduct of the visual
arts, even if some major filmmakers like Andy Warhol,
Guy Debord or Yoko Ono could be linked to Pop Art,
the Situationist International or Fluxus. This aware-
ness of film as new art medium led to a complete de-
construction of classical cinema. The apparatus of
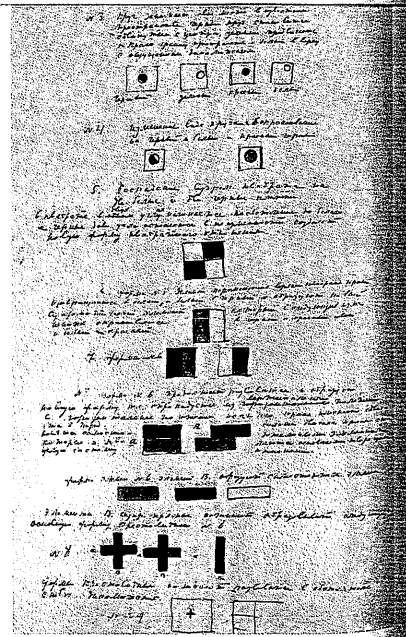
classical cinema, from the camera to the projector,
from the screen to the celluloid, was radically trans-
formed, annihilated and expanded. The history of
avant-garde film is a history of interpellations in the
sense of Althusser (see my preface) on the basis of
the apparatus itself.[2] The deficit of the cinematic ap-
paratus theory of the 1970s was that it showed us
only the ideology inherent to Hollywood films, just as
in the 1960s Umberto Eco used semiotics to explain
James Bond films and today Slavoj Zizek uses Lacan
to explain Hitchcock. Neither theorist used the appa-
ratus theory radically in order to demonstrate that
the cinematic apparatus and the inscribed ideology
can be transformed by making different films with
different technologies in the way done by avant-
garde filmmakers. They therefore missed a vital point,
and fell behind their own theoretical premises. Their
theoretical work insofar paradoxically supported the
hegemony of Hollywood and dismissed the avant-
garde movement from film to video, from video to dig-
ital, as representing a transformation of the cine-
matic apparatus.

This transformation took place in three phases.
In the 1960s, the cinematic code was extended with
analogous means, with the means of cinema itself.
Shortly afterwards, new elements and apparatuses
like the video recorder were introduced, and the
cinematic code was expanded electromagnetically.
Artists' video – from Bruce Nauman to Bill Viola, from
Nam June Paik to Steina and Woody Vasulka – was
initially successful in the 1970s, but was halted in the
1980s by retro-oriented painterly neo-Expressionism.
In the 1990s video art became the dominant form of

media avant-garde, and dominated major exhibitions
like the Kassel documenta and Venice Biennial. In the
same decade, film entered the field of digitally ex-
panded cinema.

Material Experiments

The subversive explosion that shattered the cine-
matographic code in the 1960s affected all of the
technical and material parameters of film. The mater-
ial character of the film itself was analyzed 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;
Birgit and Wilhelm Hein, *Rohfilm*, 1968), perforated it
with a hole punch (Dieter Roth, 1965), painted it (Harry
Smith used 35mm material, processing it with grease,
paint, tape and spray, 1947), covered it with finger-
prints (Peter Weibel, *Fingerprint*, 1967) or glued moths
to it (Stan Brakhage, *Mothlight*, 1963, in which moth
wings and leaves were fixed between layers of per-
forated tape and projected). Empty frames, black film
and overexposed material were also used (Gil J. Wol-
man, *L'anti-concept*, 1951; Guy Debord, *Hurlements
en faveur de Sade*, 1952; Peter Kubelka, *Arnulf Rainer*,
1960; Tony Conrad, *The Flicker*, 1965).

At the same time, the apparatus of film, from
camera to projector, was 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

Beyond, The MIT Press, Cam-
bridge, MA/London, 1977;
Deke Dusinberre, A. L. Rees,
*Film as Film, Formal Experi-
ment in Film 1910–75*, Arts
Council of Great Britain/
Hayward Gallery, London,
1979; Peter Gidal, *Material-
ist Film*, Routledge, London,
1989; David E. James (ed.),
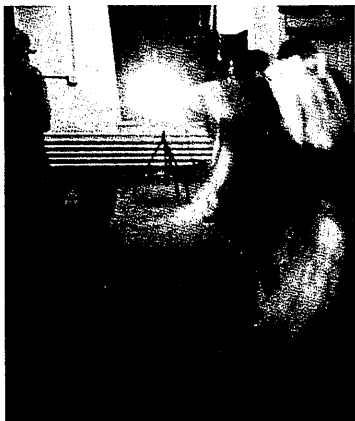*To Free the Cinema. Jonas
Mekas & The New York
Underground*, Princeton
University Press, Princeton,
New Jersey, 1992; Kerry
Brougher, *Art and Film Since
1945: Hall of Mirrors*, Mona-
celli Press, New York, 1996;
Spellbound: Art and Film,
Ian Christie, Philip Dodd
(eds), BFI Publishing, London,
1996; Jack Sargeant, *Naked
Lens: Beat Cinema*, Creation
Books, London, 1997; A. L.
Rees, *A History of Experi-
mental Film and Video. From
the Canonical Avant-Garde
to Contemporary British
Practice*, BFI Publishing,
London, 1999; Garrett
Stewart, *Between Film and
Screen. Modernism's Photo
Synthesis*, The University of
Chicago Press, Chicago and
London, 1999; *Into the Light.
The Projected Image in
American Art 1964–1977*,
Chrissie Iles (ed.), exhib. cat.,
Whitney Museum of Ameri-
can Art, New York/Harry N.
Abrams, New York, 2001;
Malcolm Le Grice, *Experi-
mental Cinema in the Digital
Age*, BFI Publishing, London,
2001; Hans Scheugl, *Erweit-
ertes Kino. Die Wiener Filme
der 60er Jahre*, Triton, Wien,
2002; Martin Rieser, Andrea
Zapp (eds), *New Screen
Media. Cinema/Art/Narra-
tive*, BFI Publishing, London,
2002, book and DVD; Margot
Lovejoy, *Digital Currents: Art
in the Electronic Age*, Rout-
ledge, London, 2003.

Anthony McCall
Line Describing a Cone
1973
16mm film
b/w, silent
31 min
installation view: Artists Space,
New York, 1974
Whitney Museum of American
Art, New York
courtesy Anthony McCall
photo © Peter Moore,
VG Bild-Kunst, Bonn 2003

Robert Whitman
Shower
1964
environment
16mm film loop transferred to
video, shower stall, water, water
pump
installation view: Newark
Museum, New Jersey, 1999
collection Robert Rauschenberg
photo courtesy
Robert Rauschenberg and
Robert Whitman

Simone Forti and
Lucinda Childs in
Robert Whitman's
Prune Flat
1965
performance view: Expanded
Cinema Festival, Film-Maker's
Cinematheque, New York, 1965
photo © Peter Moore;
VG Bild-Kunst, Bonn 2003
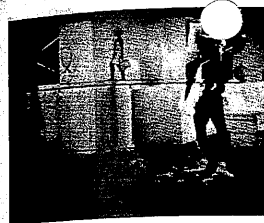
ONCE Group
Unmarked Interchange
1965
photo © Peter Moore; VG Bild-
Kunst, Bonn 2003

Live performers interact with a
projection of *Top Hat*, starring
Fred Astaire and Ginger Rogers.
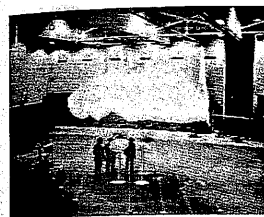
center and bottom
Partially opened parachute
becomes Isobe's *Floating
Theatre* for the presentation
of Jud Yalkut's *Dream Reel*
intermedia environment at
Oneonta, New York, March 1969
photos courtesy Yukihisa Isobe.
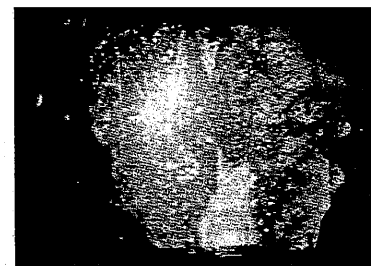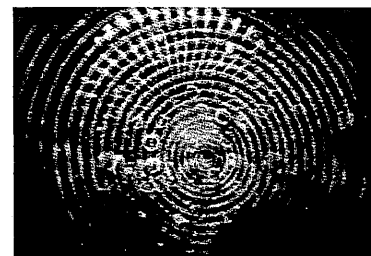
The Single Wing Turquoise Bird group
in their studio at Venice,
California, 1967/1968
photo © Gene Youngblood

screen, cutting out sections of the screen from the middle until there was nothing left of it (*Film No.4*, 1965). In *zzz:hamburg special* (1968), Hans Scheugl replaced the filmstrip with a thread actually running through the projector to create a shadow line on the screen. In other works, the light beam was replaced with a stretched length of rope (Peter Weibel, *Licht-seil*, 1973), or became the pure and only matter (Anthony McCall, *Line describing a cone*, 1973). Films were projected not on the conventional screen but on curtains of steam with running water (Robert Whitman, *Shower*, 1964) and on 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 clothes; in Andy Warhol's and Jud Yalkut's *Exploding Plastic Inevitable*, 1966, the film was projected onto the figures of members of the audience dancing to music by the Velvet Underground). The history of these material experiments is described in Peter Gidal's book *Materialist Film* (London, 1989).

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. In much the same way that some painters sliced up the canvas (Lucio Fontana) or used the human body as a canvas (the Viennese Actionists) 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.

The *Vortex Concerts* (visuals by Henry Jacobs, Jordan Belson, the Whitney Brothers), 1957–59, mixed multiple film projections and slide shows. Kenneth Anger showed *Inauguration of the Pleasure Dome* (1954) on three screens in Brussels in 1958. In order to "free film from its flat and frontal orientation and to present it within an ambience of total space,"[3] Milton Cohen, the leading figure in the ONCE Group from Ann Arbor, Michigan, had since 1958 been developing an environment (*Space Theatre*) for multiple projections with the aid of rotating mirrors and prisms using mobile rectangular and triangular screens. 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 realize his idea, he established a *Movie Drome* in Stony Point, New York; a vaulted cupola modeled on the geodetic domes of Buckminster Fuller. Around 1960, the USCO ("US" company) Group associated with Gerd Stern began working on the multi-projection shows on the east coast of the USA (*We are all one*, with four 16mm

3 See Gene Youngblood, *Expanded Cinema*, Dutton, New York, 1970, p. 371.

projectors, two 8mm projectors, four carousel projectors, 1965).

John Cage, Lejaren Hiller and Ronald Nameth staged *HPSCHD*, a five-hour "Intermedia Event" with eight thousand slides and one hundred films projected onto forty-eight 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's *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* in Dusseldorf along the banks of the Rhine, an event featuring projections onto helium-filled, airborne plastic hoses and figures by Otto Piene. Jud Yalkut created *Dream Reel* for Yukihisa Isobe's *Floating Theatre*, a gigantic parachute held by nylon threads – a portable hemispheric screen for multiple frontal and rear projections. The Single Wing Turquoise Bird group (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* of the late 1960s, Jackie Cassen and Rudi Stern used self-constructed "sculptural projectors" to project multiple images onto pneumatic domes, transparent Plexiglas cubes, polyhexagonal structures, water surfaces, and so forth. Particularly impressive was a fountain illuminated by a strobe light, a technique that evoked the impression of individual drops of water being suspended like crystals in the air. This effect is today variously repeated by Olafur Eliasson. Toshio Matsumoto showed his *Space Projection AKO* in a dome in 1969. One noteworthy example is Andy Warhol's *Chelsea Girls* (1966), 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. 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, and so on.

Contemporary visual practices have returned to these techniques of mobile projection or deployment of the screen as a window in a moving vehicle, as in Lutz Mommartz' *Eisenbahn* (Railway) of 1967. The interactive installation *Crossings* (1995) by Stacey Spiegel & Rodney Hoinkes simulates a train journey between Paris and Berlin, transforming physical space into the virtual interactive space of the World-Wide Web. *Room with a view* (2000), created by Michael Bielicky and Bernd Lintermann for Volkswagen's "Autostadt Wolfsburg," uses four projectors to achieve a
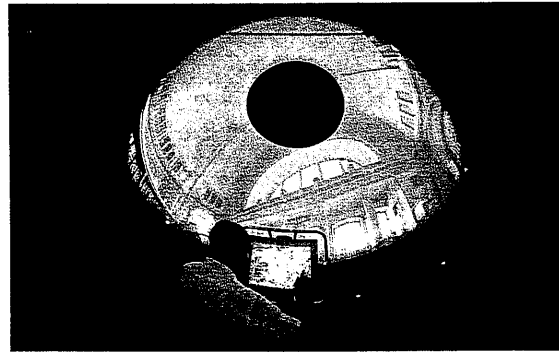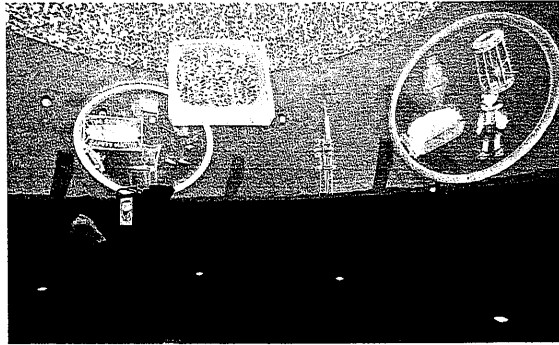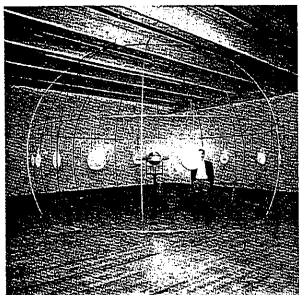
Michael Bielicky,
Bernd Lintermann,
Torsten Belschner
Zimmer mit Aussicht
[Room with a View]
2000
interactive installation
mixed media
dome projection: 1200 cm ø
installation view: Skoda Pavilion,
VW Autostadt, Wolfsburg, 2000
ZKM | Institute for Visual Media,
Karlsruhe
© the artists and ZKM | Center
for Art and Media Karlsruhe
photo © Franz Wamhof
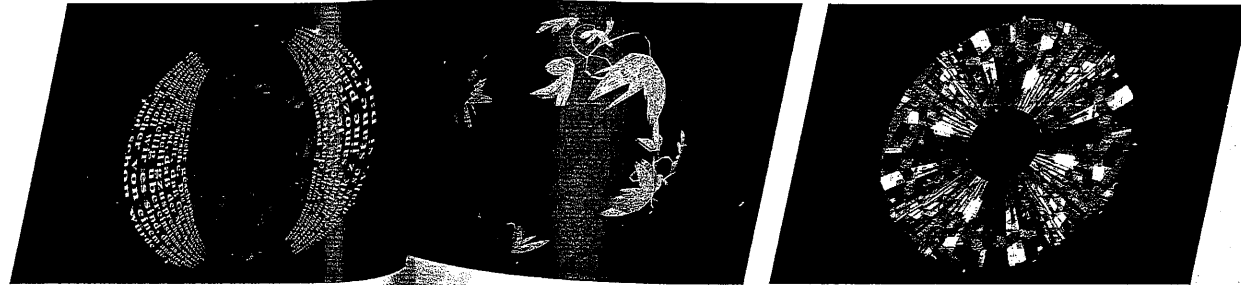
Michael Bielicky,
Bernd Lintermann,
Torsten Belschner
Zimmer mit Aussicht
[Room with a View]
2000
interactive installation
stills
ZKM | Institute for Visual Media,
Karlsruhe
© the artists and ZKM | Center
for Art and Media Karlsruhe

Michael Snow with the machine
used for filming
La Région Centrale
[The Central Region]
photo © Joyce Wieland

Michael Snow
Two Sides to Every Story
1974
projection
two 16mm films
both color, sound
two projectors, painted
aluminum screen
8 min, dimensions variable
installation view: Walker Art
Center, Minneapolis, 1974
National Gallery of Canada,
Ottawa
© Michael Snow
photo courtesy Michael Snow
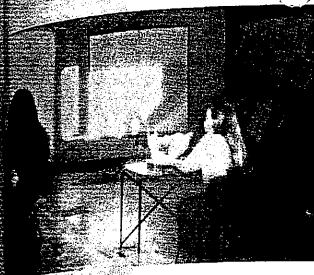
Annabel Nicholson
Reel Time
1973
16mm film
b/w, sound
performance of
indeterminate length
© Annabel Nicholson
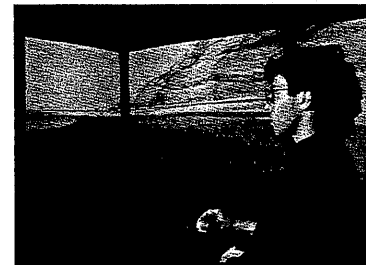
Rodney Hoinkes,
Stacey Spiegel
Crossings
1995
interactive installation,
Internet project
mixed media
dimensions variable
installation view
© Rodney Hoinkes,
Stacey Spiegel
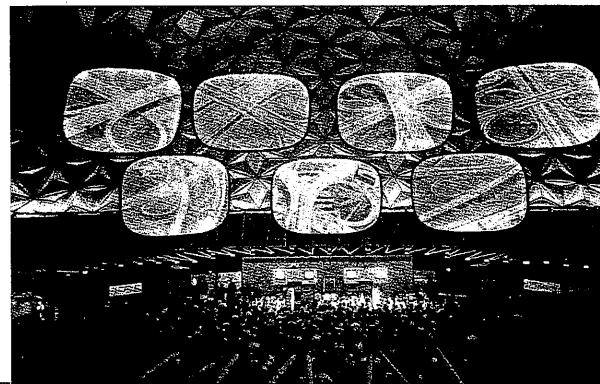
Charles and Ray Eames
Glimpses of the USA
1959
Moscow World's
Fair auditorium

Edmund Kuppel
Das Planetarium
1990
installation
central projector, 12 screens,
steel globe
800 cm ø
installation view
courtesy the artist
bottom
Das Planetarium
detail

perfect 360-degree dome projection, with a touch-screen at the center of the dome allowing multiple manipulation of the projected images. With twelve round screens in a dome construction and one central projector, Edmund Kuppel's *Das Planetarium* (1990) is an interesting paraphrase of Michael Snow's outstanding *La Region Centrale* (1970). In the 1960s, the screen became in a number of ways multiple and mobile, as well as flat or curved, or was even replaced by unusual materials like water, woods and buildings.

Important experiments with material film, multiple projections and expanded cinema were made in the 1970s by a group of British filmmakers associated with Malcolm Le Grice (*After Leonardo*, 1974, a six-projector film) and made up by Dave Crosswaite, David Dye (*Unsigning* for eight projectors, 1972), Gill Eatherley, Annabel Nicholson, William Raban and Lis Rhodes. In 1972, Birgit and Wilhelm Hein showed a two-screen film titled *Doppelprojektion 1-1V.* A very early example of double projection was delivered by the film *L'Uomo meccanico* [The Mechanical Man] of 1921 by André Deed, a French film clown who had been making his "Cretinetti" films in Italy since 1909 and was admired by the Futurists. In this film, a robot filmed with a camera a furiously fast police car and the footage was shown on a second screen inside the first.

These experiments with multiple screens were carried forward in the 1960s by environments with film and by film environments which combined projec-tion and live action. In *Moviemovie* (1967) by Theo Botschuijver, Jeffrey Shaw and Sean Wellesley-Miller, films and light were projected onto a pneumatic sculpture on which people moved. *Moviehouse* (1965) by Claes Oldenburg showed a film theater without a film. The situation (real people sitting on chairs) was the cinematic spectacle, a cinematic approach re-peated by Janet Cardiff in the 1990s (*Playhouse*, 1997). An innovative project by Markus Huemer (1988) placed the famous letters HOLLYWOOD on a hill in Linz, Austria; the idea was later repeated by Maurizio Cattelan in Palermo (2001), and partially (LYWO) by Bertrand Lavier in Lyon (2000).

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 ex-pression 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:

"I propose a new form of narration as a combina-tion of classical montage technique with a more abstract system. This system incorporates the use of short film phases that evoke thought im-ages. 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 ab-stract system there is a complex of different im-ages that are repeated."4

From the outset, the extension of the single screen to many screens, from the single projection to multi-ple 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 of narration but was instead formally presented in the same dif-fuse and fragmentary way in which it was experienced. In the age of social revolts, mind-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.

Charles and Ray Eames made very early use of slide and film projections onto multiple screens: *Glimpses of the USA* was shown on seven screens at the Moscow World's Fair (1959), and on fourteen screens in the IBM Pavilion at the New York World's Fair (1964-65). For the Montreal Expo in 1967, several

artists also created huge multi-vision environments (for instance, Roman Kroitor's *Labyrinthe*) with the intention of developing new forms of storytelling. "People," as Roman Kroitor asserted, "[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 in Montreal. The Czech pavilion fea-tured Josef Svoboda's *Creation of the World of Man*, a huge (Diapolyekran) screen on which 15,000 slides could be shown simultaneously on 112 movable cubes.

In these experiments with multiple screens we see the beginning of immersive environments, virtual worlds and interactive relations between spectator and image. The spectator slowly becomes part of the system that he observes. Closed-circuit video instal-lations in the 1970s really allowed the spectator to see himself in the video monitor, in the image cap-tured by the video camera. At the same time, multiple screens broke up the linearity of traditional narra-tion. Multiform plots, a non-linear narrative matrix, became possible. Narrative elements could be re-peated, recombined, or replaced by other elements. In *Zorns Lemma* (1970) by Hollis Frampton, letters were replaced by images, and these images turned into events. A new form of narration was achieved on a single screen. The narrative matrix was based on a theorem of set theory (Zorn's Lemma). The narration became a multiform matrix, a multi-story machine.

4 In *Filmculture*, no. 31, winter 1963/64.
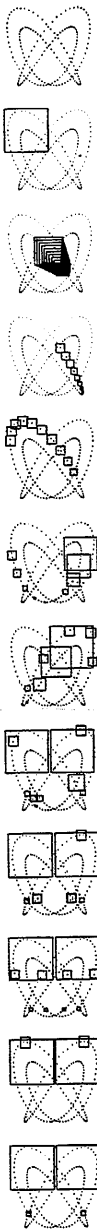
left
John Whitney
Matrix
1971
computer-graphics animation
color, sound
6 min
© John Whitney

Figures from John Whitney's
article "A Computer Art for the
Video Picture Wall," in Robert
Russett and Cecile Starr (eds),
*Experimental Animation. Origins
of New Art*, Da Capo Press, New
York, 1976, pp. 187–191.

above
Ed Emshwiller
Skin Matrix
1984
video
color, sound
15:57 min
video still
courtesy Ed Emshwiller

Douglas Gordon
24 Hour Psycho
1993
video installation
installation view
© Douglas Gordon
photo © Douglas Gordon

Barry Spinello
Soundtrack
1970
16mm film
b/w, parts handcolored, sound
11 min
film strips
courtesy Barry Spinello

Both sound and image are
produced with handmade gra-
phic effects.

In the film *Nowa Ksiazka* [New Book] of 1975 Zbigniew
Rybczynski used a matrix of nine different images on
one screen, showing different parts of one narrative
and thereby anticipating the four-part screen of Mike
Figgis' *Time Code* (2000). Before the term "matrix"
was made famous by William Gibson's novel *New-
romancer* (1984) and the Wachowski brothers' film
Matrix (1999), it was already serving as a method
for visual narratives (see John Whitney's computer
animation *Matrix I*, 1971, and *Skin Matrix*, a video
fantasy by Ed Emshwiller, 1984).

Time and Space Experiments
In addition to the expansion of the technical reper-
toire through experimentation with projectors and
multiple projections, another material-oriented ap-
proach to the visual expression of a new concept of
reality, the renunciation of social conventions and a
new drug-induced, consciousness-expanding experi-
ence 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 twenty-four hours (Andy Warhol, *Empire
State Building*, 1963), just as later Douglas Gordon ex-
tended Hitchcock's *Psycho* to twenty-four hours, or
reduced to an extreme of only a few seconds (Paul
Sharits, *Wrist Trick*, ten seconds, 1966). Temporal dila-
tions in film and music (La Monte Young) were favored
as primary means of expression not only due to their
consciousness-raising effects, but also for composi-
tional and formal reasons. The same was true of time-
shortening and aggressive cutting techniques. The
films of Michael Snow were pure time and space ex-

periments (*Wavelength*, 1967, a forty-five minute zoom
through a room; *One second in Montreal*, 1969; *La
Région Centrale*, 1970). In his *See you later/Au revoir*
(1990), a thirty-second movement (a man leaving his
office) was extended to seventeen minutes and thirty
seconds. In Joe Jones' *Smoke* (1966), the cigarette
smoke streaming from a mouth is extended to six
minutes. The composer Takehisa Kosugi takes thirty
minutes to take off his jacket in *Anima 7* (1966). Peter
Weibel's film actions *The Kiss* and *To pour* (both 1968),
which deploy extreme slow motion, must also be
counted among this "slow anthology" (T. Kosugi).

Social and Sexual Experiments
In the social sense too, the contents of these inde-
pendent avant-garde and underground films strayed
from the familiar terrain of the industry film. Images
from the intimate sphere, psycho-dramatic docu-
ments of an excessive individualism were shown pub-
licly in uncensored form. Taboo sex scenes were acted
out in front of the camera (Jack Smith, *Flaming Crea-
tures*, 1962/63, a transvestite orgy that triggered a
scandal even in artistic circles yet became a major
source of inspiration for Warhol's universe; Kenneth
Anger's *Scorpio Rising*, 1963, which marked the birth
of Biker Movies and homo-erotic self-fashioning, and
Inauguration of the Pleasure Dome, 1966). The widen-
ing of material and technical parameters went hand-
in-hand with the dissolution of social consensus.[5]

Sound Experiments
Both formal and thematic extensions of the cine-
matographic code were welcomed enthusiastically in
the revolutionary aesthetic and social atmosphere of
the 1960s and was, like progressive rock music, sup-
ported by a new, youthful audience. Indeed, a large
number of such underground films were accompanied
by rock (from the Grateful Dead to Cream) and avant-
garde (from John Cage to Terry Riley) music. In these
films, the role played by music was much more eman-
cipated than in industry movies. Regardless of
whether mainstream productions use classical or
popular scores, music serves more or less as back-
ground sound and a device for controlling mood and
atmosphere, for heightening or resolving dramatic
tension. By contrast, in many avant-garde films music
and sound exercise a determining effect upon the
structure of imagery, and images are cut and com-
posed in accordance with musical principles. The ten-
dency to industrially exploit and market film images
through linkage with music is clearly illustrated by the
function of the soundtrack, the serial arrangement of
existing popular songs and the commissioned piece
that is known as a theme song and used to associate
a certain film with a certain musical hit. This usage of
semi-prefabricated components in movies and videos
is reminiscent of the accelerated prefab building
techniques employed in mass industrial high-rise con-
struction. Instead of compound concrete-and-steel
construction, the rapidly mass-produced industrial
film made use of a compound sound-and-music con-
struction. In contrast, the avant-garde films of the
1960s employed a highly differentiated approach to
the development of new relationships between sound

and visual imagery.[6] Barry Spinello's *Soundtrack*
(1970), in which both sound and image are produced
with handmade graphic effects, explored audio-visual
compositional techniques. In *Feature Film* (1999), Doug-
las Gordon reorchestrated Bernard Herrmann's
score for Hitchcock's *Vertigo* and presented only
James Conlon conducting and hearing the film music
played by an orchestra.

The Evolution of the Language of New Media:
Expanded Cinema, Video and Virtual Environments
In the course of the 1970s, several avant-garde gal-
leries promoted analytical refinements and develop-
ments, ranging from the Structuralist films to spatial
film installations. This decade also witnessed the
emergence of video art, with viewer-oriented closed-
circuit installations that anticipated the observer-
relative interactive computer installations of the
1990s and time-delayed installations, which pursued
further the experiments of Expanded Cinema. The
market-induced revival of figurative painting in the
1980s put an abrupt end to the development of ex-
panded cinematic forms and video art. Broad seg-
ments of visual culture were affected by an amnesia
as scandalous as it was total, and for which the mar-
ket alone was not to blame but also institutional art
historiography, which had buckled under to the power
of the market. Viewed from this perspective, the tri-
umphant return and revival of the tendencies of
1960s Expanded Cinema in the work of the 1990s
video generation is all the more astounding and grati-
fying. However, we still face the problem that most
art historians and writers, being oblivious to the his-
tory of avant-garde film and video art, cannot make a

5 Raymond Durgnat, *Sexual
Alienation in the Cinema*,
Studio Vista, London, 1972.

6 See Michel Chion, *Les
musiques electro-acous-
tiques*, INA-GRM, Aix-en
Provence, 1976; Michel
Chion, *Le son au cinema*,
Cahiers du Cinéma, Paris,
1985; Michel Chion, *L'audiovi-
sion*, Nathan, Paris, 1990;
Michel Chion, *La musique au
cinema*, Fayard, Paris, 1995.
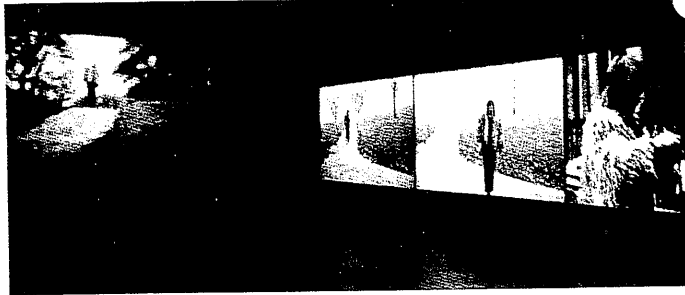
David Lamelas
Filmscript
1972
installation view:
Witte de With, Rotterdam
photo © B. Goedeweagen

Stan Douglas
Win, Place or Show
1998
two-channel
video projection
color,
four channel soundtrack
6 min
video stills
courtesy Galerie David
Zwirner, New York
photo © T. Mills
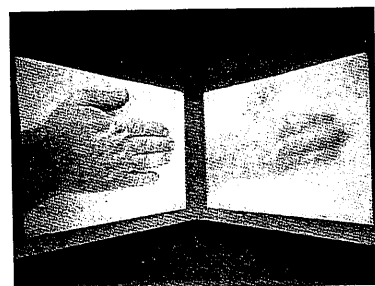
Dennis Oppenheim
Echo
1973
film installation
four 16mm film loops
transferred to video
b/w, sound
installation view: Whitney
Museum of American Art,
New York, 2001
collection of the artist
© Dennis Oppenheim
photo © David Allison
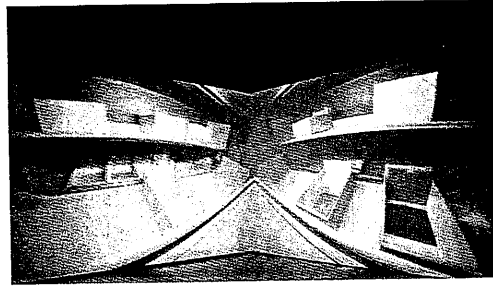
Jane and Louise Wilson
Stasi City
1997
four-channel video installation
color, sound
29 min
installation view
collection Pamela and Richard
Kremlich
courtesy Thea Westreich Art
Advisory Services

Stan Douglas
Evening
1994
three-channel video installation
color, sound
20 min
installation view: Renaissance
Society, Chicago, 1995
courtesy Galerie David Zwirner,
New York
photo © T.Mills

top
Blast Theory
Desert Rain
1999
VR environment
for performance
installation views: ZKM |
Center for Art and Media
Karlsruhe, 1999
© Blast Theory
photo © Franz Wamhof

bottom
Sam Taylor-Wood
Third Party
1999
installation
seven 16mm
film projections,
transferred to DVD
installation view
photo © Jay Jopling,
London

connection between the generations and therefore exaggerate contemporary achievements.

The new generation took its cue less from the achievements of 1980s video artists, whose art was subordinated to the sculpture and painting of their time. In pursuing the development of a specific video-based language, video artists in the 1990s deliberately focused on the expansion of image technologies and social consciousness that took place in the 1960s. 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, 1990s video art is also shaped by an intense interest in multiple projection and the concomitant new approaches to multi-perspective narration and multiform plots. Numerous representatives of the 1990s video generation, including artists like Jordan Crandall, Julia Scher, Steve McQueen, Jane and Louise Wilson, Douglas Gordon, Stan Douglas, Johan Grimonprez, Pierre Huyghe, Marijke van Warmerdam, Ann-Sofi Sidén, Grazia Toderi and Aeronaut Mike, now work within the context of a deconstruction of the technical "apparatus" outlined here. Many computer artists of the same decade, among them Blast Theory, Jeffrey Shaw, Perry Hoberman and Peter Weibel, have also returned to the tendencies

and technologies of 1960s Expanded Cinema. In a series of interactive computer installations, including *On Justifying the Hypothetical Nature of Art and the Non-Identicality within the Object World* (1992) or *Curtain of Lascaux* (1995–96), Peter Weibel realized various virtual worlds in which the observer played a pivotal role derived from his closed circuit video installations of the late 1960s/early 1970s. The observer became part of the system he observed, articulating the immersive image system, and changed the behavior and content of the image by his actions. The British group Blast Theory's *Desert Rain* (1999) sent six visitors on a mission in a virtual environment made up of six rooms. The virtual worlds were projected onto a curtain of streaming water. Each visitor had thirty minutes to complete his mission by communicating with the other five virtual environments and their inhabitants. However, 1990s video artists pursued the deconstruction of the cinematographic code in a much more controlled, less subjective manner, applying strategies more methodical and more closely oriented to social issues than those of the 1960s. In the video art of the 1990s, experiments with multiple projections were employed primarily in the service of a new approach to narration. Video and slide projections onto unusual objects were used by

artists ranging from Tony Oursler to Honoré d'O. Projections onto two or more screens are found in the work of artists like Pipilotti Rist, Sam Taylor-Wood (*Third Party*, 1999, seven projections), Burt Barr, Marcel Odenbach, Eija-Liisa Ahtila, Shirin Neshat, Samir, 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, Mary Lucier and Chantal Akerman (*D'Est*, 2002, twenty-five monitors).

Multiple Monitors and Screens, Multiple Projections and Perspectives, Multi-perspective Narrations and Plots

These multiple projections take advantage of the opportunities multiple perspective offers for a departure from familiar ways of looking at social behavior. 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, defense attorneys, victims and

defendants. Enhanced by the possibilities offered by triple projection and multiple viewpoint achieved through this formal montage technique, this new perspective intensifies the hidden violence inherent in the socialization of the individual. In a similar way, the triple projection in Eija-Liisa Ahtila's *TODAY/Tanaan* (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 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 center. Yet its core harbors 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, *knotted subjects* (the title of a book by 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 narrative trajectories.
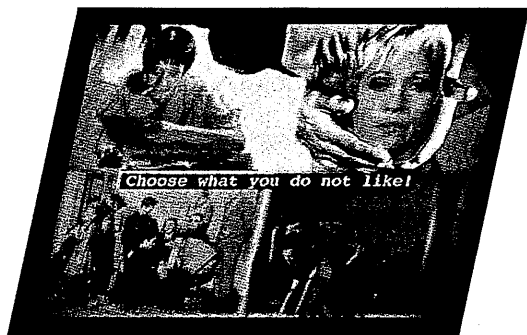
Marina Gržinić, Aina Šmid
Troubles with Sex,
Theory and History
1997
interactive CD-ROM
screenshot
© Marina Gržinić,
Aina Šmid

George Legrady
Slippery Traces
1996
interactive CD-ROM
screenshot
courtesy
© George Legrady

Perry Hoberman
The Sub-Division
of the Electric Light
1996
CD-ROM
screenshot
© Perry Hoberman

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 (for example, Wild Strawberries, 1957). The interactive CD-ROM Troubles with Sex, Theory & History (1997) by Marina Gržinić and Aina Šmid analyzes aleatoric, combinatoric and recombinatoric relations between images and text, based on a selection of works by Grzinic and Smid between 1992 and 1997.

Shirin Neshat presents in Turbulent (1998) the binary opposition of man and woman in a patriarchal society on two screens positioned opposite 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 juxtaposition 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 1960s.

Modern society offers the real subject a number of different role models and possibilities for role behavior. 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 (1994). Like several other 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 behavior 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.[7] The theater of sound opens a view to the theater 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 differently 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. The videos of Sylvie Blocher, Gillian Wearing, Sam Taylor-Wood combine in a very complex way mise-en-scène, documentary, sounds, images, masks and screens to serve the deconstruction of the world as a multiform script.

Found Image and Sound, Found Film Experiments
Just as artists of the 1960s 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. Perry Hoberman uses in his interactive CD-ROM piece The Sub-Division of the Electric Light (1996) found slides and 8mm film and old projection instruments. Erkki Huhtamo uses a selection of found vaudeville rides, mostly computer-generated to imitate on a simulation platform a journey on virtual vehicles through the highlights of historic cinematographic rides in his piece The Ride of Your Life (1998). George LeGrady in his interactive CD-ROM piece Slippery Traces (1996) uses about two hundred post-cards for a non-linear narration built on an algorithm, navigating through a data bank. Martin Arnold deconstructs his found footage to the extreme in order to make hidden semantic structures visible through gradual repetition (pièce touchée, 1989; passage à l'acte, 1993). Found footage is re-assembled, 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 the funeral of Diana, Princess of Wales (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 employing 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: detailed 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 as well.

Shifts and distortions of conventional parameters of space and time play a significant role in the new narration. As in the 1960s, these experiments with time emphasize 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: When Bruno Ganz is off screen in the industry-film (The American Friend by Wim Wenders, 1977), the projection of his personal film begins and interrupts the projection of the industry film. Huyghe plays with the cinematographic technique of cutting from one scene

7 See Kaja Silverman, The Acoustic Mirror. The Female Voice in Psychoanalysis and Cinema, Indiana Univ. Press, Bloomington, 1988
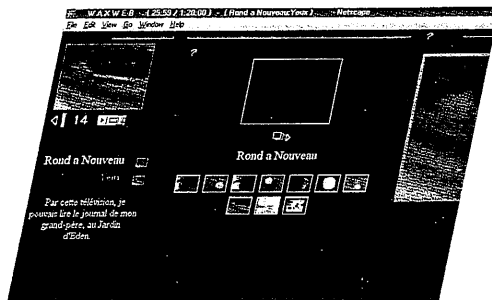
David Blair
WAXWEB
(WAX or the Discovery
of Television Among the
Bees,
a hypermedia version)
1994-2000
video, realtime, 3D/html
screenshot
courtesy the artist

Bill Seaman
Passage Sets/One Pulls
Pivots at the Tip of the Tongue
1994–1995
interactive installation
mixed media
© Bill Seaman
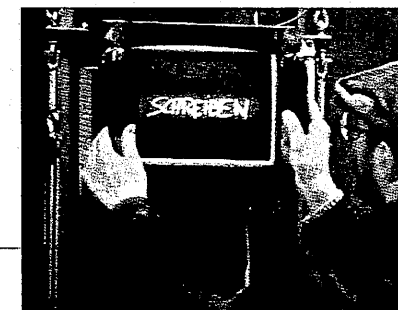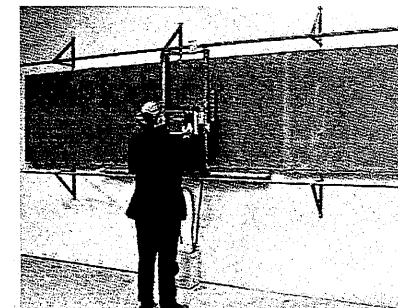
Frank Fietzek
Tafel [Black Board]
1993
interactive installation
mixed media
dimensions variable
installation view: ZKM | Center
for Art and Media Karlsruhe
© Frank Fietzek

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 The Searchers), expanding them to respectively twenty-four hours or five years.

Computer Film

Made with the help of an IBM 1620-21, Marc Adrian's film random (1963) was probably the first computer-aided film made by an artist in Europe. The Whitney Brothers opened the field of the digital film (John Whitney, Permutations, 1968). In 1971, John Whitney jr. made his first digital film Terminal Self, a title that was later recalled in that of Scott Buketman's book Terminal Identity (1993), which simultaneously echoed a line from William Burroughs: "The entire planet is being developed into terminal identity and complete surrender."[8] Michael Whitney made the digital film Binary Bit Patterns (1969). John Stehura (Cybernetic 5-3, 1965), Lillian Schwartz and Ken Knowlton, Charles Csuri and James Shafter (Humming Bird) belong to the early avant-garde of digital film. David Blair's WAXWEB (1994-2000) laid a foundation stone for web cinema.

Navigable Rhizomatic Narration

The narrative universe becomes reversible in the field of digitally expanded cinema and no longer reflects the psychology of cause and effect. Repetitions, the suspension of linear time, temporal and spatial asynchrony blast apart classical chronology. Multiple screens function as fields in which scenes are depicted from a multiple perspective, their narrative thread broken. The accusation once leveled at new music – that it had cut the link to the listener, since the listener could no longer reconstruct or recognize the principles of composition – can now be addressed 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 clas-

sical 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.[9] 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 and scripts have a certain algorithmic character. Narration becomes a machine, a plot-machine, an engine. As early as 1928, Vladimir Propp demonstrated in his famous study Morphology of the Fairy Tale that the 450 fairy tales he analyzed could be reduced to 25 basic functions and narrative events, or narrative morphemes. These twenty-five 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 1980s 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, theater and music: from the French OULIPO (Ouvoir de Littérature Potentielle) group to the Vienna Group. The interactive installation Passage Sets/One Pulls Pivots at the Tip of the Tongue

(1994-95) by Bill Seaman refers to the automatic writing techniques of the Surrealists, but is acted out by a computational random access algorithm. Texts and images are networked in this way of aleatoric combinations. In Frank Fietzek's interactive installation Tafel [Black Board] (1993), a moving monitor in front of a big blackboard reveals hidden words like a palimpsest.

The banishment of narration by abstraction led to the rejection of narrative as an obsolete historical phenomenon. This Modernist dictate of recognizing only the purely visual and banishing the verbal was overturned by postmodernism in favor of a more intense discursive orientation. Thus even the postmodern 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 digital 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 and digital 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 realize 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 and digital art of today has taken up the lance left behind by the cinematic avant-garde of the 1960s and developed one step further the universe of the cinematic code.

A short version of this essay first appeared under the title "Narrated Theory: Multiple Projection and Multiple Narration" in New Screen Media. Cinema/Art/Narrative, Andrea Zapp and Martin Rieser (eds), BFI Publishing, London, 2002.

8   William Burroughs, Nova Express, Grove Press, New York, 1964.

9   See Walter Grond, Der Erzähler und der Cyberspace, Haymon, Innsbruck, 1999

11 SCREENINGS
Peter Weibel / Expanded Cinema, Video and Virtual Environments