

# zin ex

**From Abstraction to Algorithm**

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11.09.2020  
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**Tabakalera**  
Exhibition hall

EN



Javier Aguirre  
José Luis Alexanco  
Baloji  
Wojciech Bruszewski  
Henri Chopin  
Guillermo Cifuentes  
Salvador Dalí & Philippe Halsman  
Forough Farrokhzad  
Florian Fischer & Johannes Krell  
W+B Hein  
Narcisa Hirsch  
Takahiko Imura  
Robert Janker  
Kenneth C. Knowlton  
Robert Luxemburg  
Jesse McLean  
László Moholy-Nagy  
Joana Moll  
Vera Molnár  
Gunvor Nelson & Dorothy Wiley  
A. Michael Noll  
Stefan Panhans & Andrea Winkler  
Letícia Parente  
reMI  
Lis Rhodes  
Walter Ruttmann & Lore Leudesdorff  
Lillian Schwartz  
Eusebio Sempere  
Soledad Sevilla  
José Antonio Sistiaga  
Elfriede Stegemeyer  
Steina  
José Val del Omar  
Maarten Vanden Eynde  
Stan VanDerBeek  
Ruth Wolf-Rehfeldt



*Zin Ex. From Abstraction to Algorithm* is the beginning of a series of exhibitions in Tabakalera which will explore the relationship between art and cinema every September, coinciding with the San Sebastian International Film Festival.

The series is a result of Tabakalera's commitment to reinforcing collaboration between the different institutions that make up our ecosystem and taking advantage of the concentration of knowledge and talent in the field of audiovisual creation in this cultural centre. This first exhibition, dedicated to expanded cinema, which will be followed by a second part next year, is the result of a work process carried out jointly by the San Sebastian International Film Festival and the Elías Querejeta Zine Eskola.

In addition to exploring the relationship between cinema and art, and offering a new journey through the history of experimental cinema, *Zin Ex. From Abstraction to Algorithm* provides a new point of view from which to address these topics by investigating the relationship between different artistic expressions and the technological possibilities of each moment in a precise way. This novel understanding of how creative processes mutually reinforce each other through technical and material advances is revealed throughout this exhibition by means of works by some thirty artists and filmmakers from different countries and generations. The parallel programme of gatherings and visits in dialogue also includes the Fifth International Film Seminar as well as the *Arte Makina* course, an approach to contemporary art which complete this first chapter of *Zin Ex*.

We would particularly like to thank the curator of the exhibition, Florian Wüst, for the ambitious and dedicated work he has put into this project, as well as the collaborating institutions and resource providers for their support and participation.

**Tabakalera**  
San Sebastian  
September 2020

# zin ex

## From Abstraction to Algorithm

*Zin Ex. From Abstraction to Algorithm* undertakes an ambitious journey through the history of experimental cinema, video and computer art. By highlighting the artistic examination of the material conditions of the technical device—whether a camera or a computer—, the exhibition intends to show how creative processes transformed and put forth new possibilities for critically reflecting the world we live in.

Experimental filmmaking started about one hundred years ago with “abstract film”, or “absolute film”: films that relied on elements and qualities inherent to the medium itself—light, motion, composition. In its pure form, no attempt is made to reference reality or to narrate a “story” in order to provoke an emotional experience. **Walter Ruttmann** (1887-1941) was among the first artists to make abstract films. For *Opus IV* he worked with Bauhaus student **Lore Leudesdorff** (1902-1986), who produced the drawings of the film’s rhythmic lines, waves and patterns. Rhythm organizes movement in time and space—it relates to the heartbeat and the assembly line in equal measure. In the European modernity of the early 20th century, the compatibility of organic and mechanical principles helped to dissolve boundaries between art, life, industry, and science. One example of the rage for technical advancement shared by artists, scientists and contemporary audiences alike is the great endeavour to visualize what is invisible to the human eye. The popular X-ray films of **Robert Janker** (1894-1964), professor of radiology at the university hospital in the German city of Bonn, depict an abstracted image of the body that is both fascinating and horrific: the anticipation of total control over human bodies without identity.

At the Bauhaus, Hungarian artist and photographer **László Moholy-Nagy** (1895-1946) based his concept of “objective vision” around the idea of light as a design medium, as shown in *Light-Space-Modulator*, a kinetic sculpture he finalized in 1930. His first film, *Impressionen vom alten Marseiller Hafen (Vieux Port)*, however, lays bare the social inequalities unleashed by unprecedented industrialization and urban growth. The photographs and photograms of German self-taught artist **Elfriede Stegemeyer** (1908-1988) approximate the theories of Moholy-Nagy in their own original way. Stegemeyer’s series of glasses filled with water accentuates the sculptural quality of mass-produced objects while also reflecting an interest in optical disruptions and deflections.

The work of Granada-born **José Val del Omar** (1904-1982) links the historical avant-garde with the post-war experimental film movements. Val del Omar was an inventor of audiovisual processes and devices such as the “diaphonic sound” or the “tactile vision”, a lighting technique that creates a three-dimensional experience through the visual representation of two-dimensional objects. Next to one of his key film works, *Fuego en Castilla (Tactilvisión del páramo del espanto)*, the exhibition features a selection of collages produced by Val del Omar in the late 1970s and early 1980s. These collages highlight the technical and cultural dimension of cinema as a synaesthetic event.

The intention to undermine (if not destroy) cinema as a “theatre of illusion” necessarily challenged accepted ways of seeing. In his Neo-Dada-inspired film *Kuzu (Junk)*, **Takahiko Iimura** (1937) portrays the Tokyo Bay as a dumpsite for the city’s human, animal and industrial waste against a bizarre soundtrack by Fluxus



**László Moholy-Nagy**  
*Ein Lichtspiel*  
schwarz-weiß-grau  
1930

Film still

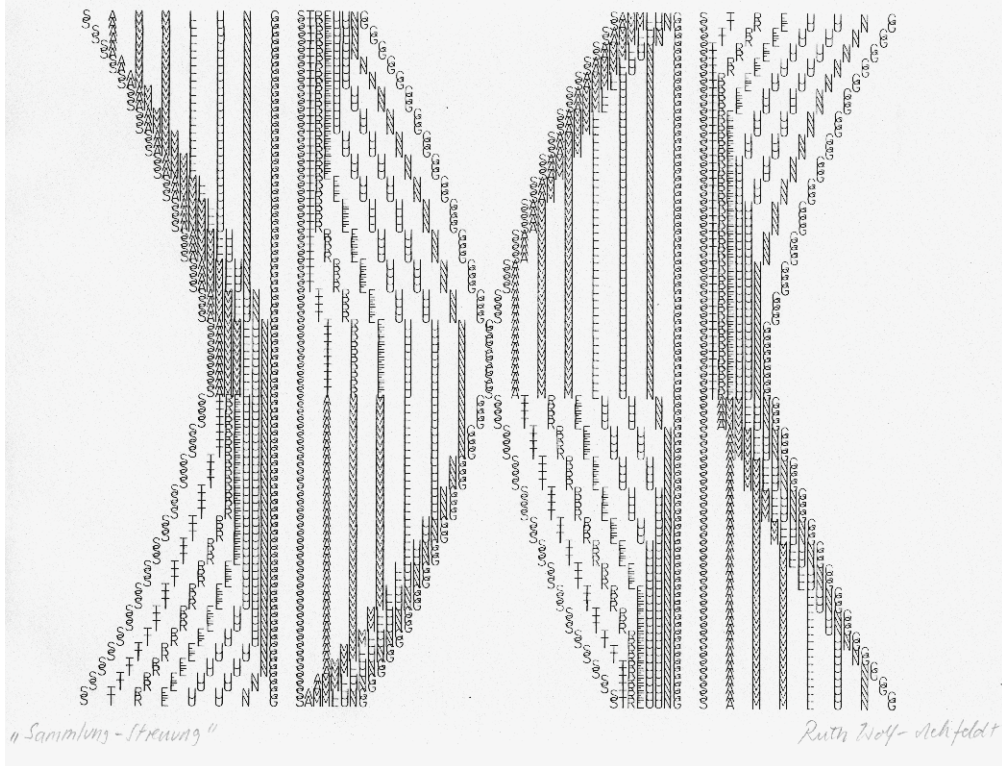
© Light Cone and the  
Moholy-Nagy Foundation



**W+B Hein**  
*Rohfilm*  
1968  
Film still

composer Takehisa Kosugi. With *Rohfilm*, the West German artistic duo Wilhelm (1940) and Birgit Hein (1942), known as **W+B Hein**, made a pure material film in 1968 described by Stephen Dwoskin as “visual bombing”: fragments of found images, scenes shot from the TV screen, cut-up film strips, film perforations, dirt and ashes are all projected on a wall and refilmed. Another direct assault on the senses can be found in *Dresden Dynamo* by **Lis Rhodes** (1942). Eschewing the camera, Rhodes fixed Letratone stickers to the filmstock and applied red and blue colour filters. The film’s stripes, dots and wavy lines deliberately extend into the optical soundtrack, turning image into sound.

*Anti-Cine*, a series of eight short films shot between 1967 and 1971 by Basque filmmaker **Javier Aguirre** (1935-2019), represents one of the most radical examples of experimental Spanish cinema. Along with the films—some of which employ only abstract colour and flicker, while the most political one, *Che Che Che*, reflects on revolution and art—, Aguirre published a manifesto-like book in which he expounds his film theory in close dialogue with concrete music, literature and even computer-generated art. In the collaborative work they carried out while living as friends and neighbours in California, **Gunvor Nelson** (1931) and **Dorothy Wiley** (1935) confront a male-dominated society by addressing issues of family, partnership, and domestic life. Their brazen feminist collage film *Schmeerguntz* juxtaposes the messy everyday events of pregnancy and motherhood with pristine images of women found in media and advertising. Depictions of what remains unrepresented are also central to *Khaneh siah ast* (The House Is Black) by modernist poet **Forough Farrokhzad** (1934-1967), a short



**Ruth Wolf-Rehfeldt**

*Sammlung - Streuung*  
Zincography on paper

© Fonds Ruth Wolf-Rehfeldt /  
Zentrum für Künstlerpublikationen,  
Weserburg Museum für moderne  
Kunst, Bremen

film from 1962 regarded by many as a masterpiece of Iranian cinema. Filmed at a leper colony near *Tabriz*, in northwestern Iran, Farrokhzad's documentary chronicles the daily lives of the lepers. "The strength of the film", according to Susan Doll, "lies in the way it combines the external reality of the leper colony with an internal response to their plight. It is neither dispassionate nor sentimental; it simply captures the misery of the situation".

Several films and works of art in the exhibition are directly related to concrete poetry and electronic music, with the aim of focusing on image, language and sound as important themes in the history of experimental film and video art. The Argentinian experimental filmmaker of German descent **Narcisa Hirsch** (1928) constructed her short film *Come Out* around a legendary audio piece of the same name by composer Steve Reich. Through endless repetition of a small piece of speech, it references the 1960s civil rights struggle in the United States. By virtue of a highly diverse artistic practice, the work of sound poet, graphic artist and independent publisher **Henri Chopin** (1922-2008) signifies the transformative shifts in technology and media



throughout the second half of the 20th century. With his *poésie sonore*, Chopin explored the human voice as an “orchestra of infinite variety”, capable of uttering an incalculable number of sounds. **Ruth Wolf-Rehfeldt** (1932), an important figure in the GDR mail art scene of the 1970s and 80s alongside her husband Robert Rehfeldt, produced an immense body of work conducted with a typewriter. She used letters, numbers and punctuation marks to create two- and three-dimensional shapes on paper. After the fall of the Berlin Wall, Wolf-Rehfeldt stopped making art. The zincographies and carbon copies of her typewritings in *Zin Ex. From Abstraction to Algorithm* reveal an intriguing interplay between mathematical concept, visual poetry and political concern against the background of a divided world.

The dialectics of art are evoked in the rarely-seen film *Chaos and Creation*, made in 1960 by **Salvador Dalí** (1904-1989) together with photographer **Philippe Halsman** (1906-1979). Recorded on video in a television studio in New York, the film playfully mocks modern painting not because of its abstract designs, but with a view to discard the general assumption that art must be produced by hand. According to Dalí and his paranoiac-critical method, the survival of the artistic gesture depends on its ability to interact with or interrupt the “cybernetic order” of the new media. A realization that **José Antonio Sistiaga** (1932), from Donostia/San Sebastián, seems to imply by adopting the art of cameraless filmmaking and translating the free and subjective expression exercised in his paintings directly to the cinematic medium. With *...ere erera baleibu izik subua aruaren...*, made over the course of one and a half years between 1968 and 1970, he created the first hand-painted feature-length film in history.

The concept of conscious exploitation of the unconscious corresponds with what Gene Youngblood regards in his seminal 1970 book, *Expanded Cinema*, as a distinctive feature of the ultimate *aesthetic machine*: “The chisel, brush, and canvas are *passive* media whereas the computer is an *active* participant in the creative process”. At AT&T Bell Labs in Murray Hill, New Jersey, engineers such as **A. Michael Noll** (1939) and **Kenneth C. Knowlton** (1931) experimented with programming languages that brought randomness to the automatic creation of images. Knowlton collaborated with experimental filmmaker and expanded cinema pioneer **Stan VanDerBeek** (1927-1984) on *Poemfields*, a series of multilayered moving tapestries with text and word play as central features: concrete poetry on film. In 1968, visual artist **Lillian Schwartz** (1927) was invited to work at Bell Labs. In her early films *Pixillation* and *UFOs* she utilized Knowlton’s EXPLOR software to generate geometric patterns that were subsequently colourized and animated. Combined



**Lillian Schwartz**  
*UFOs*  
1971  
Film still

with images of crystal growth, liquids and stroboscopic effects, as well as soundtracks produced by electronic music composers Gershon Kingsley and Emmanuel Ghent, they convey a dazzlingly hallucinatory experience.

The Computing Centre at the University of Madrid (CCUM) was founded in 1966 on the basis of an agreement with IBM to supply electronic equipment. The centre provided computing capacity to other university departments and set out to investigate the possibilities of the new technology in fields such as mathematical linguistics, graphics, construction, art, and education. One of the transdisciplinary seminars held at the CCUM between 1968 and 1973 was *Generación automática de formas plásticas*, which brought together artists, architects, engineers and programmers. Among its participants was **Eusebio Sempere** (1923-1985), one of the key figures of kinetic art in Spain, whose work explores the repetition of lines and the illusion of motion. **Soledad Sevilla** (1944) was one of the few women artists at the CCUM. Her computer-based work resulted in modular paintings and drawings that analyze pictorial space through geometry. In his *MOVUNT* project, **José Luis Alexanco** (1942) experimented with three-dimensional models reminiscent of human figures. Their twisted textures were generated through a software designed by Alexanco himself in Fortran IV. Along with works of Sempere, Sevilla and Alexanco, the exhibition presents archival objects and ephemera that shed light on the international scope of the computer art that emerged in Europe and the United States in the 1960s and 70s. It reached as far as Buenos Aires and across the Iron Curtain, where the *New Tendencias* movement turned Zagreb, Yugoslavia, into an important place for annual

gatherings and exhibitions. In Paris, French-Hungarian painter **Vera Molnár** (1924) devoted her attention to digitally created art after having explored the concept of a *machine imaginaire*. Later she developed her own computer program in order to produce diverse drawings by means of deforming any given forms.

As artists began to work with computers in corporate research laboratories and universities, portable video technology was becoming available. The relatively inexpensive **SONY Portapak**, marketed in the United States around 1965, qualifies as the first and most iconic model of a battery-powered video camera with built-in microphone and electronic viewfinder connected to a tape recorder, all of which could be carried by one single person. This technical innovation enabled “artists, politically active individuals and groups to fight back against the corporate monopoly of the ‘one-way’ broadcast television system”, writes Chris Meigh-Andrews in his book *A History of Video Art*. Published in the early 1970s in New York, the **Radical Software** magazine served alternative video communities by advocating free information and helping to establish technology as a cultural force. Similarly to experimental filmmakers, video artists tested the materiality of the new medium. The closed circuit between the camera and the monitor inspired many of them to manipulate analogue signals or create feedback effects. Between 1973 and 1977, Polish artist **Wojciech Bruszewski** (1947-2009) produced *Ten Works*, a series of short experiments that addressed the repercussions of film and video recording on the nature of reality and human perception. The fundamental relationship between sound and image in video, an inherent trait of the electronic medium that sets it apart from film, was explored by Reykjavík-born **Steina** Vasulka (1940) and her husband Woody



**Steina**

*Violin Power*

1969-78

Film still

© BERG contemporary  
and the artist

in their early collaborative work. The Vasulkas are among the most prolific pioneers of video art. Steina, who was trained as a classical violinist, describes her video *Violin Power* as “a demo tape on how to play video on the violin”. Two decades later, personal computers could be equipped with video editing and sound generation software, which made it possible for an ever wider number of artists and musicians to push the limits of electronic-based sounds and images. In the year 2000 Renate Oblak (1972) and Michael Pinter (1969), a.k.a. **reMI**, created *Mobile V*, a video whose brightly coloured patterns, chaotic distortions and glitches, reminiscent of the early days of video art, are entirely computer-animated.

From the beginning, video also acted as a tool to record simple actions and performances in public as well as in domestic space, often in one single, uninterrupted take. Said characteristics can be applied to the video work of **Leticia Parente** (1930-1991), whose art practice condemned the discrimination and physical oppression exercised by the Brazilian military regime. In *Marca Registrada*, Parente highlights—through the subversion of an everyday activity associated with women, as Elena Shtromberg describes it—the ambiguous nature of the individual body as a site for political, social and gender critique. Elaborating on televised acts of political violence in his video trilogy *Lecciones nocturnas*, **Guillermo Cifuentes** (1968-2007) looks back at the Chilean dictatorship, which forced him and his parents into exile. He reflects on found TV footage as an element of personal and collective imaginaries, trying to connect with faces and bodily gestures lost in history.



**Guillermo Cifuentes**  
*Lecciones nocturnas*  
1997-98  
Film still  
© Antonia Cifuentes

From the TV screen to computer games as interfaces for artistic investigation: in *Freeroam À Rebours, Mod#I.1 – Installation Version*, **Stefan Panhans** (1967) and **Andrea Winkler** (1975) translate the motions of humanoid avatars back into real bodies. Mixing experimental film, music video, contemporary dance and sculpted props, they exemplify anomalies, idle runs and repetitions in the behaviour of the game characters with the aim of embracing not the perfection of the machine, but its mannerisms instead. **Jesse McLean** (1975) also probes the limits and possibilities of our relationship with non-human entities. In her video *See a Dog, Hear a Dog*, trained animals obey and disobey human commands, algorithms collaborate or improvise. Technology has always reflected human desires. But can we cope with its own inventiveness?

Today's obsession of constantly being online, made possible by mobile communication, is addressed by Congolese-Belgian musician and multi-media artist **Baloji** (1978) in his satirical short film *Zombies*, shot on the streets of Kinshasa. In one scene, cellphones made of dark green malachite—a precious mineral containing a high percentage of copper—appear as hair accessories. Fabricated by **Maarten Vanden Eynde** (1977) in collaboration with Fillot Ngoyi Makelele and Augy Ngoyi Twite, the *Malachite Mobiles* refer to local artisan practices and *chakra* healing as well as to the industrial use of copper, extensively mined in countries like the Democratic Republic of Congo. Other works by Vanden Eynde featured in the exhibition employ the graphic layout of printed circuit boards to be found in all but the simplest electronic products. Dotted with seeds collected around the world, the artist brings into awareness the global extraction and migration of natural resources.



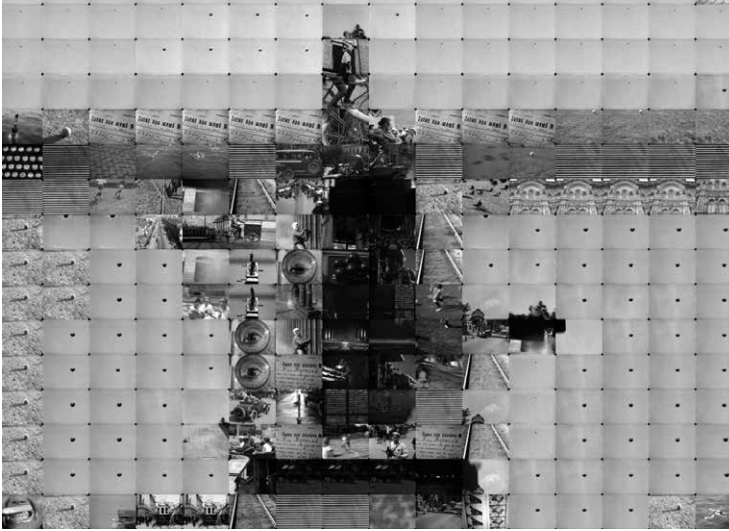
**Stefan Panhans,  
Andrea Winkler**  
*Freeroam À Rebours,  
Mod#I.1 – Installation  
Version*  
2017/2020  
Installation view



**Joana Moll**  
*The Hidden Life of an Amazon User*  
2019  
Installation view

The material conditions of the Internet are a recurrent subject in the work of Barcelona-based artist and researcher **Joana Moll** (1982). *The Hidden Life of an Amazon User* shows the environmental footprint caused by the purchase of a book on amazon.com. The excessive tracking of user behaviour by companies like Amazon activates the transmission of dozens of megabytes of data each time a customer buys an item. The Internet as a giant marketplace and money-making machine has given birth to so-called surveillance capitalism, but it persists as an indispensable platform for participation and the sharing of knowledge. Sebastian Lütgert (1972) has developed alongside Jan Gerber the ongoing project Pirate Cinema, which appropriates cinema as digital data. Under the alias name **Robert Luxemburg**, Lütgert created a mesmerizing remake of Dziga Vertov's *The Man with the Movie Camera* (1929), where each frame of Vertov's one-hour masterpiece is split into a grid of 256 cells that display the closest matching frame from the film itself. Algorithmic abstraction deliberately harks back to the early avant-gardist embrace of the mechanical device that supersedes the human senses. Here, the implementation of the utopian dream of shattering and recomposing reality through infinite comparison operations is executed by 120 lines of code made available in the public domain, along with the work itself.

Even if the narrative frame of the exhibition begins and ends with 1920s avant-garde film, we must not forget that cinema is prior to human evolution. The basic structure of every camera, the so-called *camera obscura* effect, for instance, can be observed during a solar eclipse when the inverted image of the obscured sun appears on the ground through a myriad of pinholes formed by



**Robert Luxemburg**  
*The Man with the  
Personal Computer*  
2020  
Film still

the canopy of trees. Such optical phenomena and apparitions are explored in *UMBRA*, a video installation by **Florian Fischer** (1981) and **Johannes Krell** (1982), who subscribe—through the camera motions and montage principles they employ—an almost animist subjectivity to all kinds of matter.

Bringing together a unique international selection of films, works of art and archive materials, *Zin Ex. From Abstraction to Algorithm* points at the ambivalent potentiality of technical media. Humans and machines: a relationship that is determining life on Earth in ever-increasing ways, and one that needs to be fundamentally revised nowadays by understanding the systemic interconnectedness of all and everything in nature.

**Florian Wüst**

**Javier Aguirre**

*Espectro siete*, 1969

Video, colour, sound, 8'28"

*Uts cero (Realización I)*, 1970

Video, b/w, sound, 9'08"

*Objetivo 40º*, 1970

Video, b/w, sound, 10'45'

*Impulsos ópticos en progresión geométrica*, 1970

Video, colour, sound, 9'21"

*Che, Che, Che*, 1971

Video, b/w, sound, 25'12"

From the *Anti-Cine* series, 1967-71

Courtesy of Museo Nacional Centro de Arte Reina Sofía, Madrid and Filmoteca Vasca

**José Luis Alexanco**

*Mouvnt*, 1968

Silver

*Output de plotter con error*, 1971

Plotter print and ink on paper  
Courtesy of the artist and Maisterravalbuena, Madrid

**Baloji**

*Zombies*, 2019

Video, colour, sound, 14'58"

Courtesy of Sudu Connexion

**Wojciech Bruszewski**

*The Video Touch 7/77*, 1977

Video, b/w, sound, 1'40"

*Tea Spoon*, 1976

Video, b/w, sound, 2'

*Input / Output*, 1977

Video, b/w, sound, 3'20"

From *Ten Works*, 1973-77

Courtesy of Museum of Modern Art in Warsaw

**Henri Chopin**

*Vibrespace, Audio-poème*, 1963

Audio, 8'51"

Courtesy of SCAM and Brigitte Chopin Morton

*Le poème alphabétique*, 1965

Silk screen on cardboard  
vertical

Ink on paper

*Rire sur le vieux monde*, 1972

Photograph, typescript, paint and ink on paper  
Courtesy of Archivo Lafuente

**Guillermo Cifuentes**

*Lecciones nocturnas*, 1997-98

Video, colour, sound, 34'

Courtesy of Antonia Cifuentes

**Salvador Dalí & Philippe Halsman**

*Chaos and Creation*, 1960

Video, b/w, sound, 18'21"

Courtesy of Philippe Halsman Archive

**Forough Farrokhzad**

*Khanh siah ast (The House is Black)*, 1962

Video, b/w, sound, 21'53"

Courtesy of Fondazione Cineteca di Bologna

**Florian Fischer & Johannes Krell**

*UMBRA*, 2019

Two-channel video projection (colour, sound, 15'), translucent acrylic glass  
Courtesy of the artists

**W+B Hein**

*Rohfilm*, 1968

Video, b/w, sound, 20'36"

Courtesy of the artists

**Narcisa Hirsch**

*Come out*, 1971

Video, colour, sound, 11'38"

Courtesy of the artist

## List of artists and filmmakers in alphabetical order



**Takahiko Iimura**

*Kuzu (Junk)*, 1962  
 Video, b/w, sound, 7'54"  
 Courtesy of Light Cone and  
 the right holder

**Robert Janker**

*Röntgenfilm I: Das  
 Verdauungssystem*, 1936  
 Video, b/w, silent, 10'03"  
*Röntgenfilm IV: Ellbogengelenk und  
 Gelenke der Hand*, 1937  
 Video, b/w, silent, 6'13"  
 Courtesy of Wellcome Collection

**Kenneth C. Knowlton**

*A Computer Technique for the Production  
 of Animated Movies*, 1964  
 Video, b/w, silent, 16'01"  
 Courtesy of AT&T Archives and  
 History Center

**Robert Luxemburg**

*The Man with the Personal  
 Computer*, 2020  
 Video, b/w, silent, 66'  
*Vectorisation(s) du cinéma #1*, 2020  
 Video, b/w and colour, silent, 1'40"  
 Courtesy of the artist

**Jesse McLean**

*See a Dog, Hear a Dog*, 2016  
 Video, colour, sound, 17'41"  
 Courtesy of Video Data Bank

**László Moholy-Nagy**

*Impressionen vom alten Marseiller Hafen  
 (Vieux Port)*, 1929  
 Video, b/w, silent, 13'46"  
*Ein Lichtspiel schwarz-weiss-grau*, 1930  
 Video, b/w, silent, 8'16"  
 Courtesy of Light Cone and  
 the Moholy-Nagy Foundation

**Joana Moll**

*The Hidden Life of an Amazon User*, 2019  
 Web app in loop (colour, silent, 14),  
 9.000 pages of printed code, Jeff  
 Bezos' book *The Life, Lessons & Rules  
 for Success*, three commissioned texts  
 Courtesy of the artist

**Vera Molnár**

*6 ensembles, 6 couleurs*, 1968  
 Adhesive tape on canvas  
*Horizontales/5*, 1972-73  
 Vinyl paint on canvas  
 Courtesy of FRAC Bretagne  
*Transformation de 64 carrés / réf. A*, 1973  
 Plotter print and ink on paper  
 Courtesy of Galerie Oniris - Rennes

**Gunvor Nelson & Dorothy Wiley**

*Schmeerguntz*, 1966  
 Video, b/w, sound, 14'06"  
 Courtesy of Filmform

**A. Michael Noll**

*Hypercube / 4-D Hypermovie*, 1965  
 Video, b/w, silent, 2'22"  
 Courtesy of AT&T Archives and  
 History Center

**Stefan Panhans & Andrea Winkler**

*Freeroam À Rebours, Mod#L1 –  
 Installation Version*, 2017/2020  
 Mixed media installation with 2k  
 video (colour, sound, 16'13"), stage  
 elements, crowd control systems,  
 chains, handbags, motorbike helmets,  
 carbon, silicone, pizza delivery bag,  
 mannequin leg, leggings, functional  
 shirts, etc.  
 Courtesy of the artists

**Takahiko Iimura**

*Kuzu (Junk)*  
 1962  
 Film still

© Light Cone and the right holder

**Leticia Parente**

- Marca Registrada*, 1975  
Video, b/w, sound, 10'19"  
*In*, 1975  
Video, b/w, sound, 1'17"  
*Preparação I*, 1975  
Video, b/w, sound, 3'31"  
*Tarefa I*, 1982  
Video, colour, sound, 1'56"  
*Projeto 158-1*, 1975  
Poster (reprint)  
*Projeto 158-2*, 1975  
Poster (reprint)  
Courtesy of Galeria Jaqueline Martins  
and André Parente

**reMI**

- Mobile V*, 2000  
Video, colour, sound, 3'36"  
Courtesy of sixpackfilm

**Lis Rhodes**

- Dresden Dynamo*, 1971-72  
Video, colour, sound, 5'  
Courtesy of the artist and LUX, London

**Walter Ruttmann & Lore Leudesdorff**

- Opus IV*, 1925  
Video, colour, silent, 6'45"  
Courtesy of Light Cone and  
the right holder

**Lillian Schwartz**

- Pixillation*, 1970  
Video, colour, sound, 4'  
*UFOs*, 1971  
Video, colour, sound, 3'  
Courtesy of the artist

**Eusebio Sempere**

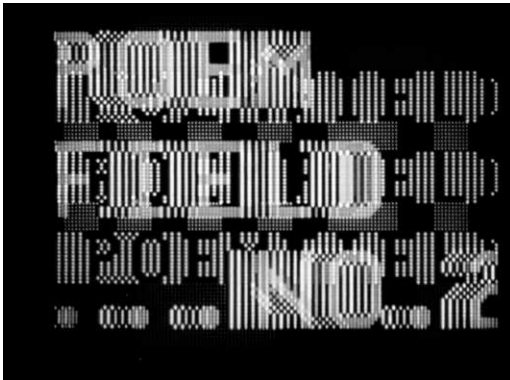
- Autorretratos 0/000/01*, 1969  
Plotter print on paper  
*Colgante octaedro*, 1971  
Chrome-plated iron  
*Serpentín (Fondo rojo)*, 1968-74  
Silk screen on paper  
Courtesy of MACA - Museo de Arte  
Contemporáneo de Alicante

**Soledad Sevilla**

- Untitled*, 1969  
Gouache on cardboard  
*Untitled*, 1969  
Gouache on cardboard  
*Untitled*, 1969  
Reprography on acetate and paper  
*Untitled*, 1971  
Engraved acrylic  
*Untitled*, 1971-72  
Painted acrylic  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid

**José Antonio Sistiaga**

- ...ere erera baleibu izik subua  
aruaren....*, 1968-90  
Ink on 35 mm film, light box table  
*Enrramado*, 1961  
Ink and oil on paper  
*De la serie En el espacio*, 1998  
Oil on cardboard  
*De la serie En el espacio*, 1998  
Oil on cardboard  
Courtesy of the artist

**Stan VanDerBeek**

- Poemfield No. 2*, 1966  
Film still

© Light Cone and Stan VanDerBeek Archive

**Elfriede Stegemeyer**

- Glas auf Wellpappe*, 1934  
Gelatin silver print  
Courtesy of Kicken Berlin
- Glas auf Wellpappe*, 1934  
Gelatin silver print
- Meine Hand mit Wasserglas*, 1933  
Gelatin silver print
- Fotogramm (mit Sieb)*, 1933  
Photogram
- Untitled [Angeschwemmter Tang]*, 1933  
Gelatin silver print
- Stahlschwamm*, 1933  
Gelatin silver print
- Metallkugeln im Netz*, c. 1935  
Gelatin silver print  
Courtesy of Galerie Julian Sander

**Steina**

- Violin Power*, 1969-78  
Video, b/w, sound, 10'04"  
Courtesy of BERG Contemporary  
and Steina

**José Val del Omar**

- Fuego en Castilla (Tactilvisión del páramo del espanto)*, 1958-60  
Video, b/w and colour, sound, 17'30"
- Untitled*, c. 1977-82  
Collage on cardboard
- Untitled*, c. 1977-82  
Collage on paper
- Untitled*, c. 1977-82  
Collage on paper
- Untitled*, c. 1977-82  
Collage on cardboard
- Untitled*, c. 1977-82  
Collage on cardboard
- Untitled*, c. 1977-82  
Collage on cardboard
- Untitled*, c. 1980  
Collage on cardboard  
Archivo Val del Omar  
(Gonzalo Sáenz de Buruaga /  
Piluca Baquero Val del Omar)

**Maarten Vanden Eynde**

- Malachite Mobiles*, 2015-17  
Malachite, various dimensions
- The Great Decline*, 2019  
Printed circuit boards (PCB),  
various seeds
- Future Flora Manono II*, 2019  
Printed circuit boards (PCB),  
various seeds  
Courtesy of Meessen  
De Clercq, Brussels

**Stan VanDerBeek**

- Poemfield No. 2*, 1966  
Video, colour, sound, 5'40"  
Courtesy of Light Cone and Stan  
VanDerBeek Archive
- Poemfields*, 1966  
Poster (reprint)  
Courtesy of The Stan  
VanDerBeek Estate

**Ruth Wolf-Rehfeldt**

- Aufstrebend*, c. 1979  
Zincography on paper
- Bau*, 1977  
Zincography on paper
- Das letzte ABC?*, 1984  
Zincography on cardboard
- Directed Cages*  
Typescript and collage on paper
- Faltung*  
Typescript copy
- Gedankengänge*, 1981  
Zincography on cardboard
- Gefährliches Gleichgewicht*, 1984  
Zincography on cardboard
- Geteiltes Streben*, c. 1979  
Zincography on paper
- Grenzen der Unendlichkeit –  
Unendlichkeit der Grenzen*, c. 1975  
Zincography on cardboard
- Geteilter Planet*  
Zincography on paper
- Informationen*, c. 1981  
Zincography on cardboard
- Interessensphären*, c. 1980  
Zincography on cardboard
- Kubisch*, 1978  
Typescript on paper
- Paraphrase*  
Zincography on paper
- Piece by Piece for PEACE*, c. 1985  
Zincography on paper
- Sammlung - Streuung*  
Zincography on paper
- Turm*  
Zincography on paper
- Vergangen - gegenwärtig -  
zukünftig*, c. 1974  
Zincography on paper
- Zeichenräume*  
Zincography on paper  
Courtesy of Fonds Ruth  
Wolf-Rehfeldt / Zentrum für  
Künstlerpublikationen, Weserburg  
Museum für moderne Kunst, Bremen

**Henri Chopin/ Javier Aguirre**

**Henri Chopin** [editor]

*OU Cinquième Saison no. 20/21*, 1964  
Magazine [folder with original works,  
including *OU Cinquième Saison Revue-*  
*disque no. 20-21*]

*Untitled*

[Cover draft of the disc included in  
*OU no. 40/41*]  
Chinese ink, collage and handwritten  
text on cardboard  
Courtesy of Archivo Lafuente

**Javier Aguirre**

*Anti-Cine*

Madrid: Editorial Fundamentos, 1972  
Book  
Courtesy of Archivo Lafuente  
Private collection

*El Anti-Cine de Javier Aguirre*

Madrid, 1972  
Leaflet  
Courtesy of Filmoteca Vasca

**Fernando Millán** [organizador]

*Los límites de la escritura*

Centro Cultural de los Estados Unidos,  
Madrid, April 1973  
Leaflet  
Courtesy of Archivo Lafuente

**Computing Centre at the University  
of Madrid/ Early Computer Art**

**José Luis Alexanco**

*"Mouvnt" Performance*  
Handwritten text about *Endless Film*  
*Trabajos sobre generación automática*  
*de formas, 1968-73. Posibilidades*  
*y necesidad de analisis de un*  
*proceso intuitivo*

Typescript

*[Programa Mouvnt en Fortran IV]*

Computer print-out with  
handwritten notes

*Programa "Mouvnt" para*  
*una IBM-1130/2250*, 1969-73

Photograph

*[José Luis Alexanco trabajando en el*  
*Centro de Cálculo]*

Photographs

*Alexanco*

t-5 [Tendencias 5], Galerija Suvremene  
Umjetnosti, Zagreb, 1973  
Poster draft (reprint)  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid

*Ordenadores en el arte. Generación*  
*automática de formas plásticas: resumen*  
*de los seminarios celebrados durante el*  
*curso 1968-69*

Centro de Cálculo de la Universidad  
de Madrid, 1969  
Catalogue  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid  
Courtesy of Manfred Mohr  
Estate, ZKM Center for Art and  
Media Karlsruhe

*[Actos de clausura del] Seminario*  
*de generación automática de formas*  
*plásticas, curso 1969-1970*

Centro de Cálculo de la Universidad  
de Madrid, 22-26 June 1970  
Invitation card  
Courtesy of Herbert W. Franke  
Estate, ZKM Center for Art and  
Media Karlsruhe

**List of archival objects in showcases**

*Generación automática de formas  
plásticas* [Exposición]

Centro de Cálculo de la Universidad  
de Madrid, 1970  
Photographs (reprints)  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid

*Generación automática  
de formas plásticas*

Centro de Cálculo de la Universidad  
de Madrid, 1970  
Catalogue  
Courtesy of Manfred Mohr Estate, ZKM  
Center for Art and Media Karlsruhe

*Centro de Cálculo de la Universidad  
de Madrid. Agosto 1970 - Julio 1973*

Madrid: Universidad  
Complutense, 1974  
Book  
Courtesy of Archivo Lafuente

*Impulsos: arte y computador: grafismos,  
música, cine*

Instituto Alemán de Madrid,  
22 February - 14 March 1972  
Leaflet  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid

**Lillian Schwartz**

*To Herbert W. Franke*

12 July 1970  
Handwritten letter  
Courtesy of Herbert W. Franke  
Estate, ZKM Center for Art and  
Media Karlsruhe

**Herbert W. Franke**

*Computer Graphics – Computer Art*

London/New York: Phaidon, 1971  
Book  
Courtesy of Museo Nacional Centro  
de Arte Reina Sofía, Madrid

**Jasia Reichardt** [editor]

*Cybernetic Serendipity. The Computer  
and the Arts*

Studio International special issue  
New York: Frederick A. Praeger  
Publishers 1969 (reprint of 2018)  
Catalogue  
Private collection

*IBM-Informatique, No. 1*

Paris: IBM, 1970  
Magazine  
Courtesy of Archivo Lafuente

*Page 20. Bulletin of the Computer  
Arts Society*

London: Computer Arts Society,  
February 1972  
Newsletter  
Courtesy of Archivo Lafuente

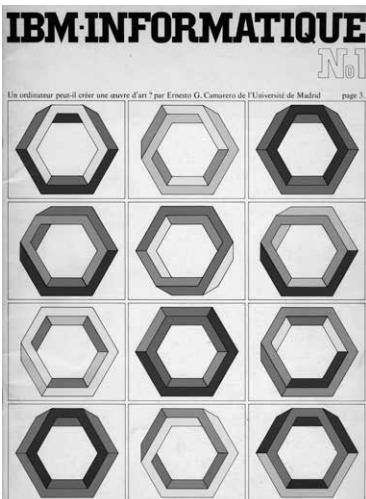
**Carole Spearin McCauley**

*Computers and Creativity*

New York: Praeger Publishers, 1974  
Book  
Private collection

*Computers and People, Vol. 24, No. 8*

Newtonville, MA: Berkeley Enterprises,  
August 1975  
Magazine  
Courtesy of Manfred Mohr Estate, ZKM  
Center for Art and Media Karlsruhe



*IBM-Informatique, No. 1*

Paris: IBM, 1970

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**SONY Portapak**

SONY AV-3420 Portapak

1969-

Video Camera AVC-3450CE

Videocorder AV-3420CE

AC Power Adaptor AC-3420CE

Shoulder Bag

Open Reel High Density Video Tape

Courtesy of ZKM Center for Art and

Media Karlsruhe

**Expanded Cinema / Radical Software**

**Gene Youngblood**

*Expanded Cinema*

New York: E.P. Dutton & Co, 1970

Book

Private collection

*Radical Software, Vol. I, No. 1*

New York: Radical Software, 1970

Magazine

*Radical Software, Vol. I, No. 2*

New York: Radical Software, 1970

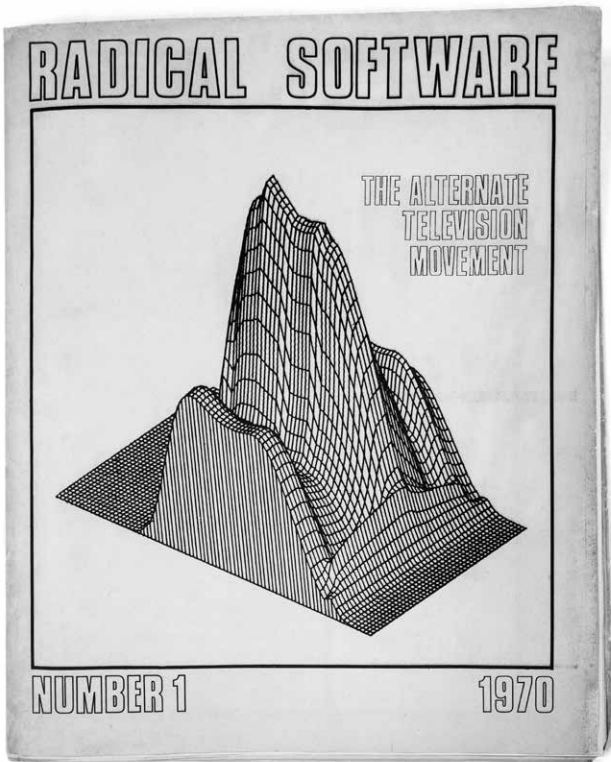
Magazine

*Radical Software, Vol. I, No. 3*

New York: Radical Software, 1971

Magazine

Courtesy of Archivo Lafuente



*Radical Software, Vol. I, No. 1*

New York: Radical Software, 1970

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In collaboration with San Sebastian International Film Festival and Elías Querejeta Zine Eskola  
and with the support of Goethe Institut



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