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MEDIA ARCHAEOLOGY AS FILM PRACTICE— THE WERNER NEKES COLLECTION

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Abstract

The Nekes Collection of visual techniques and optical devices is an invaluable resource for scholars and filmmakers researching a wider history of film and animation comprised of early and pre cinematographic materials.

Items relating to three-dimensional optical techniques such as stereoscopes, perspective theatres, peepshows, *vues d'optique*, and zograscopes (the bulk dating from the mid-18th century to the early 20th century) make for a significant part of the collection and reveal an interest in three-dimensional representation and binocular superimposition.

The films of Dore O. (b.1946) and Werner Nekes (1944–2017) stand out in terms of the richness of experimental visual techniques in dialogue with this extensive historical archive used primarily as a source for creating new films and devising new ways of engaging with the medium.

This paper presents an overview of the collection and investigates the connections between the objects found in the archive and Nekes and O.'s editing techniques, with a particular focus on three-dimensionality and spatial illusions created through transparency and dissolving effects.

Keywords: Werner Nekes; Dore O.; experimental film; montage theory; optical devices; stereoscopy.

Introduction

Werner Nekes was an experimental filmmaker and avid collector of historical visual techniques and optical devices. Together with filmmaker and artist Dore O., they created and independently produced short and feature films for over two decades, collaborating extensively in each other's filmmaking processes and continuing to create work separately from the late 1980s.

With artistic concerns close to those of structural and materialist film, and a commitment to making those works visible in Germany, especially through the Hamburg Filmmaker Coop founded in 1968, Nekes and O. were acquainted with the wider international experimental film community, in particular with Peter Kubelka and Kurt Kren in Europe, and with figures such as Norman MacLaren and Paul Sharits in America.

An extensive collection of optical devices was gathered by Nekes, the bulk dating from the mid-18th to the early-20th century in Europe, relating to the fields of animation and movement sequencing, but also to the history of projection mechanisms, light and shadow shows, perspective theatre, anamorphosis, depth rendition and other optical illusions.¹ Featured in numerous exhibitions, the collection has been a subject of interest for scholars such as Siegfried Zielinsky (1997) and Nicholas J. Wade (2005), coinciding with the renewed focus on early cinematic techniques stemming from the nascent field of Media Archaeology.

In addition to conservational and pedagogical concerns, better exemplified in his *Media Magica* documentary series,² Nekes also used his knowledge of and access to this extensive archive as a means of rigorously studying the technical and mechanical aspects of filmmaking and devising new ways of engaging with the medium. There has been little investigation on the relationship between Nekes' study of historical visual techniques and his filmmaking, the two figures of collector and creator remaining for the most part unlinked and attracting scholarship in impervious ways. This corpus of over 70 films, mostly in 16 and 35mm formats, is not only informed by but directly includes media archaeological research as part of the creative process through the revival and adaptation of historical audio-visual techniques.

Using artistic means to explore film as a distinctive sensory experience, Nekes and O.'s film practice is based on a hands-on study of the medium in permanent interaction with other fields relating as much to cinema as to a broader history of visual media. Their particular interest and study of archival materials can be seen as a means "to create new architectures of old forms" (Dore O., as cited in Keller, 1975, p.32) by reviving understudied procedures to be reemployed in new works, creating new modes of audio-visual transmission and interaction between media.

1) 35,000 objects spanning six centuries of visual effects, see Getty Research Institute (1993) and Deutsches Filminstitut & Filmmuseum (2020).

2) Produced in 1986 (Part I) and between 1995 and 1997 (Parts II–VI).



Fig. 1 Dore O., film still from *T-WO-MEN*, Nekeš (1972).



Fig. 2 Werner Nekeš, film still from *Kaskara, O.* (1974).

The Collection

Both the subtitle and opening statement of *Media Magica I—Film before Film* (1986) could be erroneously understood as the expression of a linear historical approach to the study of these devices as proto-cinematic forms in early stages of development. Although Nekeš himself introduces the collection as a series of advances leading more or less directly to the emergence of film, he is referring to technical developments such as material transparency, optical lenses, or photographic emulsion as well as to a concept of film language radically distinct from narration or realism. As pointed out by Terpak (1997), “unlike most film museums that display only a series of devices leading directly to film, Nekeš had acquired a broad sweep of visual history... A strong component of this collection consisted of contemporary toys that showed the continuation of these principles.” Nekeš’ study of the objects in the collection is primarily the study of the mechanical devices

and focuses on the operation of each machine rather than on the content it depicts and its archival historical relevance.

Werner Nekeš began collecting optical toys in the mid 1960s, initially for the purpose of researching thaumatropes while teaching at the Academy of Visual Arts in Hamburg. The collection developed alongside his work as a filmmaker and in 1978, Nekeš and Dore O. moved to Mülheim an der Ruhr (O’s birthplace) to live and work in a former leather workshop where the archive remained and continued to expand as a private endeavour to collect, study, and preserve the items acquired from second-hand markets, collectors, and shops in Germany and abroad when travelling.

Part of the collection has been kept at The Getty Research Institute since 1993 and the acquisition of the remaining

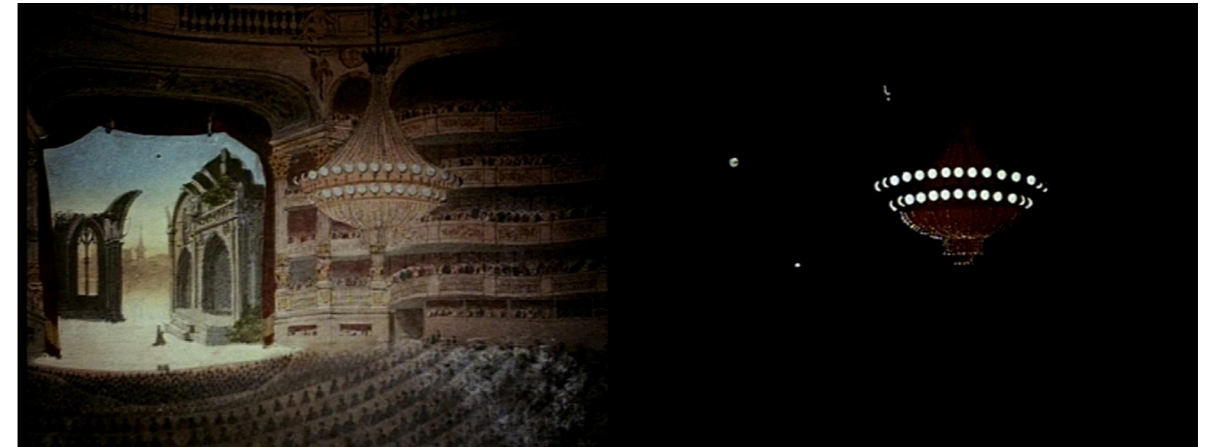


Fig. 3 and Fig.4 Film stills from *Uliisses*, Nekeš (1980–82) showing a dissolving view of an opera theatre from the Nekeš Collection.

archive of around 25,000 items was recently announced in a joint effort to preserve the collection among three institutions: The University of Cologne, the Deutsches Filminstitut & Filmmuseum in Frankfurt, and the Filmmuseum in Potsdam.³ The entirety of the collection will at last be accessible to research, a major advance in both securing its conservation and actively contributing to the field.

From the early 1990s, a series of exhibitions featuring the collection was organised,⁴ most often in film museums and presenting either an overview of the varied techniques and devices or following a thematic selection. The archive was arranged and often presented in the following categories:

Shadow Play and Magic Lantern—Projection; Perspective, Anamorphosis, and Panorama; Peep box, Perspective Theatre, and Transparency; Animation and Montage—Ambiguous Images; Optical Toys; Science and Art; Film and Photo. Media Magica, the video series documenting portions of the archive, is similarly arranged into six thematic parts.

The term *perspective* is used in two distinct categories. In *Perspective, Anamorphosis, and Panorama* it refers to the representation of three-dimensional space on a two-dimensional surface leading to or from a central perspective through optic, catoptric, and dioptric anamorphosis, respectively making use of the naked eye, a mirror or reflective surface, and a

3) See Deutsches Filminstitut & Filmmuseum (2020)n.

4) Such as *Imagination Optical Illusions and 3D Beyond the Stereography* at the Metropolitan Museum of Photography, Tokyo, in 1995–1996, *Devices of Wonder: From the World in a Box to Images on a Screen*, J. Paul Getty Museum, Los Angeles in 2001–2002, and *Eyes, Lies and Illusions* at the Hayward Gallery, London in 2004–2005.

lens. It is the section named *Peep Box, Perspective Theatre, and Transparency* that will be of most interest to us as it is closely related to depth rendition and spatial illusions. Here, the term *perspective* refers to the illusion of a three-dimensional space created for the viewer by a variety of two- and three-dimensional optical means such as binocular fusion, layering, and transparency.

The optical toys and devices comprised articulate depth rendition and three-dimensional effects by combining image layering, motion, transparency, and relief. Some of the most complex examples include folding peepshows that incorporated translucent materials or pinpricked areas to highlight specific parts of the image such as streetlights or landscape contours, and a backlit moving panorama to be viewed under candle light.

Dissolving day-to-night views and Spooner protean prints⁵ are featured, as well as dissolving stereo views from 1860s France in pin-pricked card and colour-backed tissue paper, to be viewed with both front and back lighting through a stereoscope. These devices combine binocular viewing and dissolving effects to simultaneously create a relief impression and a time-based transfiguration. Day-to-night transitions or the appearance of an invisible motif can be achieved through the use of front and back lighting and integrated in a virtual

three-dimensional space. Stereoscopic blending can also produce a fusion between two distinct images that overlap when viewed through the same method. Other translucent images include mica picture cards and mica overlays (1820–1860) painted or engraved in a see-through glass-like surface, drawings engraved in translucent fish-scales, Lithophanes, and pictures in Verre Églomisé (France 1800s).⁶

One of the rarest objects in the collection is a portrait in Relief Lumière (photostereosynthesis), a technique using glass plate photographs stratified to create a depth impression similar to a holographic display. Each of the seven positive images was taken with a different focal length and reassembled maintaining the same distance as the initial object, thus rendering the depth of field corresponding to each layer and creating an illusion of relief through overlay.

In magic lantern shows, movement was often produced by displacing the projector, by a panorama effect where a long glass plate containing several images was moved slowly within the lantern, or through the manipulation of the glass layers to animate the picture projected.⁷ Although the stratification of the images allowed for motion effects by shifting the position of one layer in relation to the next, it also enabled three-dimensional effects within the projected image by rendering a complex multi-layered space with



Fig. 5 and Fig. 6 Film stills from *Media Magica Media Magica V - Bild Raum*, Nekes (1995–97), showing a perspective theatre with a layered representation of Lisbon during the earthquake of 1755.

an accumulation of strata containing different visual elements. Among the magic lanterns in the collection, there are examples of multi-layered glass plates used in projection. In *Media Magica V—Bild-Raum*, Nekes points out the etymology of *Film*, from Old English *filmen*, of Germanic origin, related to *fell*, an animal's hide or skin, a thin layer or membrane of transparent material. Although the consistent use of the term *film* over *cinema* or *moving image* can be found throughout experimental practices as the expression of a particular ethos and characterising a conception, usage, and mode of production radically distinct from narrative cinema or more recently as a term distinguishing analogue from digital media, the repeated use of the term and references to its etymology express Nekes' broader view of film as a medium relating to, encompassing, and absorbing other media such as projection mechanisms, backlit transformative images and transparent

slides (of which the term *film* would still bear the traces) and not restricted to animation.

A non-teleological approach to these techniques is also stressed in both his descriptions of the items in the collection presented in *Media Magica* and the inclusion of devices in film production as distinct techniques revisited and reemployed to create new forms.

Depth, Superimposition, and Vertical Montage

The articulation of spatial illusion and motion illusion is an essential element in Werner Nekes and Dore O.'s filmography, closely related to the concept of fusion or superimposition of two distinct images.

5) After British printer and publisher William Matthias Spooner (1796–1882), these images were transfigured through transparency to reveal a hidden motif and create a spatial or temporal shift.

6) Pictures created by applying several layers of paint to the back of a glass surface using methods such as reverse painting or gilding with gold or metal leaf, displaying a mirrored finish when viewed from the front.

7) Manovich stresses the different actions and links these techniques with the animation of static hand-painted pictures and their relevance before the integration of mechanically produced images (2001, p.251).

In a thaumatrope, the rapid shift between the images on each side of the disc enables an effect of superimposition through flicker fusion. The title of Nekes' *T-WO-MEN* (1972) epitomises this principle. With each of its syllables inscribed in a different sequential frame, it simultaneously means *two men* and *two women*; a visual pun completely dependent on the film mechanism.⁸ Furthermore, the advisory subtitle *Whatever Happened Between the Pictures?* stresses the relevance of this effect – a key concept in Nekes' film theory – and announces the mode in which images will be presented and perceived.

In spatial illusions such as the stereoscope, the difference between the two images presented, corresponding to the difference between the left and right angle of vision, creates the perception of a three-dimensional space. A unique fluidity between these two effects can be found throughout Nekes and O's work, where movement is but one of the possible modes of the film image and relief appears at the intersection between the rapid sequencing of frames and the complex layering within each still.

Dore O's (2001) montage techniques often rely on spatial ambiguity, a *non-euclidian*⁹ composite construction that exists within the film frame and combines different view points through the extensive use of masking and superimposition (multiple exposures). In *Eye-Step* (2000), the winding stair motif is remarkably combined with circular camera movements

that either counter or decouple the perception of depth within the frame.

Nekes refers to the fusion of two film frames and the chain of fusions linking all frames from beginning to end of a film as *horizontal montage*, while the fusion of images within the same frame by means of superimposition is described as *vertical montage*. This concept, closely related to montage theory, diverges from Eisenstein's *vertical montage* by focusing on the visual contents of the image as a unit, a *still*, and by considering the layers within the image. This verticality is a photo-chemical one, the superimposition of images on the film emulsion and the accumulation of exposure time within the same frame, rather than horizontally sequenced on the film strip. The distinction is further supported by Nekes' assertion that "horizontal readability happens in the brain of the spectator, whereas vertical readability is based on processes that have happened beforehand on the film material" (1977, p.10). The *horizontal* fusion of images is therefore dependent on the viewer, whereas *vertical* fusion is physically embedded in the film.

Several devices were adapted and developed by Nekes for use in film shooting. A rotating disk, half transparent and half mirrored, allows for the live fusion of two separate scenes by intermittently showing what is seen through the glass and what is reflected in the mirror. This effect is used prominently

8) A *recipe* for this mechanical pun machine is given by Brewster where "part of a sentence may be written on one side of a card and the rest on the reverse. Particular letters may be given on one side and others upon the other or even half or parts of each letter may be put upon each side, or all these contrivances may be combined so that the sentiment that they express can be understood only when the scattered parts are united by the revolution of the card." (1832, p.35)

9) "A nonEuclidian, ambiguously mangled and transposed adventure film" Dore O. on Kaldalon (1970–71) (O., 2001).



Fig. 7, Fig. 8 and Fig. 9 Film stills from *Ach wie gut—dass niemand weiss, Porträt des Experimentalfilmemachers Werner Nekes*, Schneider & Vogelmann (2009) showing Werner Nekes activating the shutter system.

in *Mirador* (1978) and *Uliisses* (1980–82) to create a *live in shoot in camera* edit.

From 1979, Nekes began using a purpose-built automated shutter system that allowed him to expose only specific frames in camera during shooting and following a precise pattern defined in advance. The additional shutter was synchronised with the camera and fixed in front of lens, opening and closing following a set impulse pattern and coordinated with the the speed of shooting. Nekes would then run the film through the camera several times, exposing different frames each time and creating a combination of multiple exposures following the predetermined sequence. In addition to the camera's own shutter obscuring the lens while the film switches from the current frame to the next, this second shutter obscures entire frames, creating a precise frame by frame in camera edit.

This technique, closely linked to Nekes' concept of *vertical montage*, bears many resemblances with other experimental works of the 1960–70s. Filmmakers working with

frame-by-frame predetermined metrical structures, Paul Sharits in the US and Peter Kubelka in Austria in particular, used similar schemas of programmed operations on the film material, editing the separate frames, either collected from various source reels or disassembled and reassembled from an original footage. Nekes achieves a similar result at source through a frame-by-frame editing, combining multiple exposures, non-continuous images, and unexposed frames recorded in camera at the moment of shooting.

Films featuring optical devices – *Uliisses* (1980–82)

Nekes' *Uliisses* is the most striking example of his direct use of optical devices in film production. Based on the *Odyssey*, James Joyce's *Ulysses*, and the 24-hour-long play *The Warp* by Neil Oram, *Uliisses* retraces multiple histories of visual techniques by integrating them into the structure of the film and analogously corresponding them with a particular Odyssean episode in a similar way to Joyce's use of different modes, registers, and styles of the English language.



Fig. 10, Fig. 11 and Fig. 12 Film stills from *Uliisses*, Nekes (1980–82) showing a lithophane from the Nekes Collection.

Contemporary media are used alongside optical devices and early photographic procedures. The film opens with a dissolving view of an opera theatre fading into darkness to reveal only the central chandelier when backlit. The final sequence presents a lithophane under a rotating light source that gradually reveals the positive image by transparency and its negative form in relief.

A series of images is seen while forming and decomposing on screen by the movement of the frame. Nekes used a sensitive phosphorous powder with a similar effect to Schulze's silver

salts,¹⁰ upon which the images from the previous scenes are imprinted by light and then disappear as the glass frame is moved. Mirrors and reflections also feature prominently, as well as multiple frame and layer experiments relating to the perspective theatres and folding dioramas found in the collection.¹¹ Both a zograscope¹² and a mirror cabinet make an appearance, transfiguring the characters by infinite planes of reflection and refraction.

Stereoscopy is included through a combination of flicker and binocular frame-by-frame shooting, alternating between the

10) Johann Heinrich Schulze's (Germany, 1687–1744) is best known for his experiments with silver nitrate in which opaque objects left a temporary trace on the sensitive material after exposure to light.

11) In particular, the series of Martin Engelbrecht's collapsible perspective theatres from 1700–1720.

12) Viewing device with mirror and magnifying lens used to enhance prints and vues d'optique or perspective views from the mid-18th century.



Fig. 13 and Fig. 14 Film stills from *Kaskara, O.* (1974).

left and right angles of vision as in a stereoscopic rendering. Although not producing a full depth illusion, this interface-free technique disrupts the perception of perspective space within the film frame and is similar to the three-dimensional *paracinematic* means developed by the American experimental filmmaker Ken Jacobs in his films and live performances.¹³

Films enacting optical devices – *Kaskara* (1974)

Dore O.'s *Kaskara* merges three-dimensionality and transparency through the simultaneous use of multiple exposures and multiple points of view. The extensive use of double exposures already present in *Alaska* (1968) is here combined with film mattes to create composite shots that blend fragments

of separate scenes as seen from different angles. As described by Michelson, "these multiple superimpositions are articulated with extreme care, producing spatial ambiguities of an infinite variety" (1975, p.66).

Windows and doors are used as a recurring motif linking or dividing enclosed spaces where elements of the surrounding landscape can be seen through the shape and grid of the window panes. A figure (Werner Nekes) is seen entering and exiting fluid and non contiguous rooms, traversing the composite spaces and sometimes appearing twice within the same image, viewed from two different axes recorded at different times.

13) The term paracinema is used by Jacobs to refer to unfamiliar procedures of filming and projection. See Pierson, James, & Arthur (2011).

Fragments of spaces/rooms and time sequences, attraction, fusion and repulsion of the various halves of the film image, with the purpose of creating a sensual topology. These are the main formal elements of the chosen film language. One picture devours the next. (O., 2001, p.5)

A rivalry between geometric and composite filmic space is reinforced by the use of patterns and grids in contrast with the fluidity of movements both within the sequences and by the camera. The possibility of a consistent and coherent three-dimensional space represented in the film gives way to the creation of a space existing solely within the film frames and subject to the requisites of the overall film structure and articulation of the sequences.

Multiple layers within each image dissolve into one another in carefully arranged compositions that combine what is seen through the window and what is contained within the film frame. The glass pane's transparency is used to create the dissolving effects while the window frame maintains the structure of the original scene and constructs a composite three-dimensional space with multiple view-points.

Conclusion

Occurrences of the use of stereoscopic forms can be found throughout experimental film practices,¹⁴ often combined with an interest in early and pre-cinematic visual techniques.

In the case of Nekes and O., this interest led to the building of an extensive and extremely varied collection that both salvaged relevant historical materials and contributed to our understanding of these techniques as part of a broader history of film rather than as short-lived curiosities both culminating in and disappearing with the *cinématographe*. Not only were most of these alternative processes connected to one another and often absorbed by film shooting and editing techniques, but they have also persisted and were continuously developed through the work of artists and experimental filmmakers operating outside the frame of commercial cinema.¹⁵

Nekes and O.'s practice and their use of the collection as an inexhaustible source of visual and technical instruments to be included and adapted into film form is a unique and extremely significant example of the interaction between early and pre-cinematic forms and experimental approaches to the medium of film. The pursuit of non-narrative sensorial experiences that radically differ from accurate representation and verisimilitude allowed for both the integration of non-standardised techniques in the creation of new film works and for the development of new hybrid forms and devices.

Biographical notes:

Dore O. (Oberloskamp) was born in Mülheim an der Ruhr, Germany, in 1946. She studied textiles and painting in Krefeld and Hamburg and was one of the founding members of the Hamburg Filmmaker Coop (1968–1974).

Her first film *Jüm-Jüm* (1967) was co-directed with Werner Nekes, whom she married the same year and with whom she continued to collaborate until 1986. The first prize at EXPRMNTL 5 in Knokke (Belgium) was awarded to her film *Kaskara* in 1975 and her work was included in Documenta 5 in 1972 and Documenta 6 in 1977.

She continues to work as a visual artist and filmmaker; her films have recently attracted new attention and scholarship, featuring in screenings and dedicated programmes and are currently undergoing restoration by The Deutsche Kinemathek with film archivist Masha Matzke.

Werner Nekes (Germany 1944–2017)

Werner Nekes was born in 1944 in Erfurt and studied linguistics and psychology in Freiburg and in Bonn, where he led the University Film Club in 1964. In 1967 he met artist and future collaborator Dore O.; they married and moved to Hamburg, co-founding the Hamburg Filmmaker Coop and the Hamburger Filmschau. They moved to Mülheim in 1978, where Nekes remained until his death in 2017.

A professor at the Academy of Fine Arts in Hamburg, at Wuppertal University, and at the Academy of Media Arts in Cologne, Nekes travelled extensively for seminars, exhibitions, and film programmes.

He directed over 70 films and compiled one of the most important private collections of artefacts documenting historical visual techniques and developments in the early history of film. Retrospectives of his work were organised worldwide,

often supported by the Goethe Institute, and he received awards such as the Bambi award, the Deutscher Filmpreis, and the Deutscher Kritikerpreis.

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14) Such as Hy Hirsh, Norman McLaren, Steina & Woody Vasulka, Alfons Schilling, or Ken Jacobs.

15) Attention has been brought to the use of media archaeological methodologies in the visual arts and in video-art, installation, or performative works in particular. See Parikka (2012).

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