

# COUNTER-DEVICES OF MOVING IMAGE: THE WERNER NEKES COLLECTION

 **MARIA MIRE**

Ar.Co – Centro de Arte  
e Comunicação Visual  
mariamire@arco.pt

## ABSTRACT

If we trace an archaeological perspective on the history of moving image, we will invariably find innumerable visual devices that both belong to the field of science and that have become popular optical toys. Allowing therefore to put in discussion if the nature of cinematic experience is in fact rooted historically in cinema, since this is a diffuse experience, synthesized in devices that wanted to give back *anima* to what had previously been fixed in an image. It is for this precise reason that it is particularly pertinent to approach in this context the Werner Nekes' collection of optical devices, because it possesses unique qualities as an archive that condenses the history of visual media, cross-referencing it with visual culture in its popular expression, as well as with the universe of fine arts and contemporary art.

Keywords: Media archaeology; Optical devices; Moving image; Contemporary art; Cinema.

- *You wanted to declare war?*
  - *I would like to have peace.*
  - *Well known fact, the rule of all dictators.*
  - *I impose nothing, just a very modest idea of cinema.*
  - I just want us to leave the cinema in peace for a little bit.*
  - *Cinema?*
  - *Yes, the cinema, the real cinema.*
- Raymond Bellour (2012, p.13)

Since the filmic objects made by the first avant-gardes of the 20<sup>th</sup> century – in which the moving image was influenced by a set of formal experiences that have proposed a rupture with the codes of aesthetic cinematic experience – that it is clear it was reductive to label all artistic forms related to the moving image as cinematographic practices, even though under the hat of experimentalism. But to move away from the cinema, it is by no means to diminish its historical importance and current relevance. It is only to consider that today a medium does not make an artistic field, and that art lies more in the gesture than in the technical apparatus.

This separation is manifested by the need to claim a more autonomous history for optical devices, which would allow the decolonization of the history of the moving image regarding the privileged narrative of cinema, definitively breaking the myth of the birth of cinema through a spontaneous gestation in the late 19<sup>th</sup> century. Demonstrating that it is a difficult task to determine the invention of a technology and to glorify it as a novelty, because most of the time this assumption of inventiveness produces, first and foremost, the obscuring of the existing relations with the multiple dimensions of knowledge.

When mapping the tracks of the moving image, its apparatus, the cinematic illusion and its forms of projection, we will see how devices sometimes differ radically between them, as the experience they summon in the field of visual perception. As well as it will put in perspective the historical path that places the *cinématographe* as one among several devices that will be favoured by an industrial perspective driven by the profitability of the production and projection of the moving image.

Moving images started out as images that moved, that is, kinetic images resulting from physical movements applied in space. Like the projected images of the *magic lantern*, in which some plates incorporated the kinetic mechanisms themselves; or those projected by the *phantoscope*, in which its movement was induced by the change in scale achieved by moving closer or further the apparatus to the projection surface. Or like images that rotated on their own axis, such as the ones produced by *thaumatrope* or the later *phenakistiscope*, deceiving the eye by being able to create optical illusions of synthesis of movement. Or the first movement mimicking devices based on photographic images, in which these sequences were tensioned inside the *cinetoscope*.

These ideas find echo in what Erkki Huhtamo supports to be the methodological principles of media archaeology, i.e., “the study of cyclically recurrent elements and motives underlying and guiding the

development of media culture” and “the excavation of the ways in which these discursive traditions and formulations have been imprinted on specific media machines and systems in different historical contexts.” (Huhtamo, 2000, p. 313).

The attempts to move away from a vertiginous actuality through a decelerating gesture of excavation allow a critical examination of the past. An analytical movement that makes possible the scrutiny on a progressive vision of the dominant narratives. Since a new medium, when it is the object of an excavation, may be discovered buried in a former geological stratum. This approach allows us to perceive that in the history of the media, as Huhtamo points out, cyclical phenomena transcend specific historical contexts, i.e., these are “phenomena which (re)appear and disappear and reappear.” (Huhtamo, 1997, p. 221)

Explaining this sense of *déjà vu* then becomes one of the goals of media archaeology. This expression, which accounts for the strange sensation of living the present as something that has already taken place in the past, is converted into an analytical instrument that also aids Tom Gunning (2004, p. 101) to talk about how one can evoke the mythical origins of cinema, through its seemingly chaotic present:

This *déjà vu* goes beyond recognizing the recurrence of historical cycles (whether tragical or farcical). Recalling cinema’s origins at this point in time should open up a non-linear conception of film history within which a chaotic and protean identity holds utopian possibilities and uncanny premonitions. In place of a well-rounded century of film history, this approach to cinema’s centennial aspires to Walter Benjamin’s description of true historical thinking: ‘to seize hold of a memory as it flashes up in a moment of danger’. To do this one must, as Benjamin demands, ‘blast open the continuum of history’ and discover in the past the shards of a future discarded or disavowed.

If we trace an archaeological perspective regarding the moving image, we will invariably find innumerable visual devices that both belong to the field of science and that have become popular optical toys. As well as we can find already, in many of them, the technical principles later unified in the *cinématographe*. As a matter of fact, cinema will find its relevance diluted in multiple devices that competed in the late 19<sup>th</sup> century to claim themselves as ways of recording and projecting the moving image. And that was made clear precisely by the inventive flow that marked this century of extreme experimentation, which was characterized by the use of numerous devices that came out of the laboratories to become popular optical recreations.

The different archaeological approaches to cinema, made by authors such as C.W. Ceram (1965), Georges Sadoul (1946), Jacques Deslandes (1966), Laurent Mannoni (2004-2005) or Werner Nekes (1977; 2011), among others — and in Portugal, by Henrique Alves Costa (1988), Manuel Félix Ribeiro (1968) or Amândio Videira Santos (1990) — allow us to

identify a historical context that determined the technological glorification of the *cinématographe*, as one among several devices that competed, in the late 19<sup>th</sup> century, to assume themselves as the technical apparatus that enabled the collective reception of the projection of photographic images, whose rapid succession produced the illusion of movement on human vision. Thus, C.W. Ceram states, “it is a mistake to ask when the cinema was invented. Only cinematography was invented. The cinema is far more than an apparatus, and it was not invented; it ‘grew’.” (Ceram, 1965, p. 14-15)

The extensive and inventive family of devices that, in the 19<sup>th</sup> century, were the predecessors of the technical and optical foundations of the technological advent of cinema — like the thaumatrope, the *phenakistiscope*, the *zoetrope*, the *praxinoscope* or the *cinetoscope*, among others — make precisely use of the productive capacity of the vision to establish an illusory continuity through luminous impressions. This genealogy — built from the way the synthesis of movement was understood and particularly from the devices, which were developed throughout the 19<sup>th</sup> century that in the first decades were materialized expressions of recreational optical science — allow us to understand that the moving image was disseminated in countless devices that provided a context of effervescent inventiveness. In which, as Alves Costa states, “each one, by itself, made a contribution to the discovery of Cinema and, sooner or later, they would have achieved the same results as the Lumière brothers, if they had been able to improve their inventions. Without, in any way, diminishing the decisive discovery of the Lumière brothers, it is necessary to definitively destroy the idea that the *cinématographe* was the exclusive work of a single inventor.” (Costa, 1988, pp. 107-108)

The commercial exploitation of the *cinématographe*, through collective public sessions, begins on 28<sup>th</sup> December 1895 in the basement of the *Grand Café*, in Paris, with a program composed by a set of multiple short silent black and white documentaries, filmed by the Lumière brothers themselves. This being the date called as the historical milestone of the beginning of cinema. However, and possibly to argue this amnesic retrospective analysis, George Sadoul states that this date represents, at the same time, the “end of the inventors’ period.” (Sadoul, 1946, p. 196) And, in fact, it will be important to point out that the *cinématographe*, regardless of its success and perhaps exactly determined by it, represents the crystallization of a model and the industrialization of a device that by overcoming all others establish a definitive experience regarding the reception of moving image.

However, although there is a clear relation between the technical and optical possibilities of these devices and the beginning of the cinema, they are sometimes analysed as simple episodic moments of a major event, losing its own context and relevance in an evolutionary approach. Because, as Jonathan Crary says, “there is a tendency to conflate all optical devices in the 19<sup>th</sup> century as equally implicated in a vague collective drive to higher and higher standards of verisimilitude. Such an approach often ignores the conceptual and historical singularities of each device.” (Crary, 1990, p. 110)

Therefore, an archaeological approach to the devices of moving image allows, by rescuing several optical objects and contextualizing them historically, to corrupt an idea of the existence of an inventive linearity that converges as a pre-destination to cinema. This is why it makes no sense to give priority to a prehistory idea of cinema, but rather to emphasize the viability of an autonomous history of optical devices, in order not to encourage, as Tom Gunning reminds, the “myths of inevitable progress.” (Gunning, 2000, p. xix) Allowing, therefore, to put in discussion that the nature of cinematic experience is not rooted historically in cinema, since this is a diffuse experience, synthesized in devices that wanted to give back *anima* to what had previously been fixed in an image.

It is, then, important to underline an idea: the need for a process of decolonization of the history of moving images relatively to the privileged narrative of cinema. Questioning, for example, concepts such as ‘prehistory of cinema’, which by itself denotes a hierarchy between optical devices, as well as an evolutionary perspective of the visual media. An archaeology-centred approach to moving image devices, on the other hand, enables the emergence of a complexity that is precisely contrary to a pre-destination idea. And the deepening on the specificities of each visual device also helps us to distance ourselves critically from the euphoric discourse of technological novelty and its progressive tendency to obscure both prior knowledge and what is marginal to it.

It is for this precise reason that it is particularly pertinent to approach Werner Nekes’ collection of optical devices in the context of this discussion, not only because it is one of the most relevant collections worldwide, but because it possesses unique qualities as an archive that condenses the history of visual media, cross-referencing it with visual culture in its popular expression, as well as with the universe of fine arts and contemporary art. Through this collection we can map the wide variety of inventions and devices that belong to the history of the moving image, which despite being dated chronologically, are constantly reinvented in their artistic possibilities by the way Werner Nekes show them and how they participate in his filmic and artistic work.

Becoming these objects, in fact, counter-devices of moving image; if we consider the way how cinema itself valued its own history by celebrating a technological apparatus and a collective experience that stood out for being able to precisely mask the artifice. The way in which the production of the artifice is formed in the various optical devices is vital to understand that masking was one of several ways of achieving it. And regardless the enormous success that the cinematographic device has crystallized, other ways remained latent and operative in their relationship with the moving image.

Precisely, throughout Nekes collection, it will be possible to confront these several different ways how cinema pursued the disguise of the artifice vs. how optical devices celebrated the illusion as instruments of disruptive perceptual phenomena. But Werner Nekes, before becoming an important collector, was also an artist and a well-known experimental filmmaker<sup>1</sup>. Since 1965, he has performed more than four dozen films, and in many of them

1 Regarding Werner Nekes’ filmmaking production, it will also be important to mention Rajele Jain, which was collaborator in many of his films. Following these collaborations, through the programming of the “International Film Festival about Art Portugal”, of which she is the current director, Rajele Jain has created inclusively a space for the reception and discussion of the work of Werner Nekes amongst the Portuguese public. Jain dedicated to Nekes the edition of this festival, in 2017, the year of his death, which was held at Galeria Zé dos Bois, in Lisbon. In her text “Remembering experimental film maker, pioneer and master of ‘film as ligherature’: Werner Nekes”, she states that “much can be said – and has been said – about the inventive and pioneering work of this artist who dedicated his life to prove how easily we are deceived by our senses and how depending our reception is on factors we don’t even consider” (Jain, 2017).

with the collaboration of Dore O., one of the most important directors of the German experimental cinema. In 1971, he taught film at the Hamburg Art Academy and was asked to write an article about cinema for a specialized magazine. Nekes had the idea of writing about *thaumatrope*, a very simple device consisting of a cardboard circle with two images drawn on each side, and that when rotated quickly — using its diameter as its axis — produces the illusion of a third image that arises from the merging of the two drawings.

This device, developed by John Ayrton Paris in 1826, and which was instrumental in Joseph Plateau's development of his studies on the "persistence of vision", fascinated Werner Nekes and contributed to the start of its collection. Very soon he began to gather other optical devices, images, engravings, or any other object, texts or books that related to the history of the moving image, corresponding this desire of collecting with the numerous trips that he made to show his films all over the world. The *thaumatrope* was equally instrumental to illustrate the film theory developed by Werner Nekes around the elemental unity of the film: the "kine". And for which he drew a mathematical formula to make it more understandable<sup>2</sup>. According to Nekes, this unit is the smallest particle of a film and corresponds to the difference between two images. And every film could be considered under the principle of this difference, which is a construction of a time/space relation:

<sup>2</sup> "The formula for a kine is:  $k = (a + 1) (x, y, t) - (a) (x, y, t)$ . In words this means the linkage of the two frames (a+1) and (a) constitutes the filmic information, built on the differences of the three parameters of filmic information, or dimensions of the signals, the coordinates x, y of space and t, the coordinate of time." (Nekes, 2011, p. 184)

In thinking of the efficiency of film to transport information I remembered the old English optical toy invented in 1826 by Fitton and Paris: the *thaumatrope*, which is a small disk made out of cardboard with two different drawings on each side, that gave the illusion of a third when it was twisted quickly around between the fingers. The bird was on the one side, the cage on the other, so the bird was seen sitting in the cage when they were viewed in quick succession. This *thaumatropical* effect is an example for me of how efficient the kines in a film can be. What an amount of information these two frames a/b give, compared with the a1/a2, which gives the illusion of movement. The perception of movement is always dependent on time segments, which can be understood very easily for film. (Nekes, 1977, p. 8)

Wernes Nekes also directed several films centred on this concept, as is the case of *Standing Film/Moving Film* (1968) in which, through a single frame removed from a mouldy film due to a poorly completed drying process, he managed to produce innumerable variations by the action of heat at the moment this fragmented film was projected. In these films, he explored the medium's structuralist dimensions, by operating on the projection of the moving image and the potentially performative spaces that were produced between the technical apparatus and the image projection. Performing a set of live presentations – which he called "contracted-expanded film performances" (Nekes, 2011, p. 182) – like *Operation* (1967) where he projects a 16mm film of a body operation on the chest of a spectator, becoming this the screen of the projected film.

Regarding his collection, in thirty years Nekes gathered about twenty-five thousand objects, which correspond to several centuries of the history of image, being the strongest core of this assortment the devices of 18<sup>th</sup> century, and those of 19<sup>th</sup> century that relate to the search on the synthesis of movement. As Frances Terpak points out, the way Nekes valued his collection making it so eclectic, made it unique in the way it portrays the story of moving image:

Unlike most film museums that display only a series of devices leading directly to film, Nekes had acquired a broad sweep of visual history including 18th century anamorphosis images, panoramas, early 19th century moveable greeting cards, transformation and transparent images, *Vexierbücher*, lithophanes, metamorphosis and animation toys, plus a related library. A strong component of this collection consisted of contemporary toys that showed the continuation of these principles. (Terpak, n.d.)

In 1986, Nekes also made the documentary *Film Before Film: What Really Happened Between Images?*, which had a clear educational purpose and was made with the goal of showing the optical devices of its collection and how they work to his students without exposing them to handling, since most of them were very fragile objects. The film won numerous prizes at the time and it was even awarded at the 15<sup>th</sup> edition of the Figueira da Foz International Film Festival, in the year of its *première*. Later Werner Nekes would direct five more chapters that together would compose the television series *Media Magica* (Nekes, 1986; 1995-1997).

Werner Nekes also built a glossary for the optical devices in his collection (Bätzner *et al*, 2008-2010, pp. 301-314), an important document that reveals one of the most distinctive features of the way he dealt with the different objects: his commitment to study the particularities of each one and its specific historical context, thus producing a field of knowledge for each of the optical devices. Through this glossary we are able to understand how each device was looked through the atomization of its effects, allowing therefore to challenge the dominant narrative of subservience of all devices in fulfilling a pre-destiny theory that led to the birth of cinema. Only the fact that it is organized in alphabetical order, like all glossaries, allows the de-hierarquization between the multiple media, by being the first entry related to *anamorphosis* and the last to the *zootrope*.

As a collector, Nekes did not content himself only with accumulating objects, having constantly thought to reconstruct his history, to analyse its effects and to produce interactions between them. His collection has been shown in countless exhibitions, many of which Nekes himself has been involved in curating. Being one of most interesting peculiarities of these exhibitions, the fact that its curatorial projects would promote a crossing between the different optical devices belonging to the collection and countless works of contemporary art<sup>3</sup>.

For example, like the exhibition *Eyes, Lies and Illusions* (Mannoni *et al*, 2004-2005), held in London in 2004 — which aimed to explore the

3 The Werner Nekes' collection participated in numerous exhibitions, among we would like to highlight: *Devices of Wonder* (2001-2002), *Eyes, Lies and Illusions* (2004-2005) or *Máquinas de Mirar* (2008-2010).

artistic and scientific dimension of visual perception from the Renaissance to the present — that included nearly a thousand objects from the Nekes' collection, and integrated works by contemporary artists like Christian Boltanski, Anthony McCall, Tony Oursler or Alfons Schilling. Divided into eight sections — entitled *Shadowplay*, *Tricks of the Light*, *Riddles of Perspective*, *The World Revealed*, *Enhancing the Eye*, *Deceiving the Mind*, *Persistence of Vision and Moving in Time* — the exhibition encouraged visitors to interact with the objects and the illusionist nature these optical devices.

Some of works were modified by the artists for the specific context of this exhibition, like the ones of Alfons Schilling and Tony Oursler<sup>4</sup>. It is also noteworthy that these two artists have made an important contribution to the field of media archaeology, having Oursler developed since 2008 an *Optical Timeline* that has been constantly updated, and that according to him works as a parallel line to the history of art, incorporating new technologies and its problematics.

This timeline, composed by a sequence of particular events in the history of science, is also determined by particular personal events. Like, for example, in the crossing of this chronological line with the social and discriminatory violence exerted on Alan Turing, a British mathematician of the first half of the twentieth century, a pioneer of artificial intelligence and computing. The *Optical Timeline* is also a critique of an idea of naturalization of the eye, pursued by different optical devices, by identifying innumerable disruptions with the notion of the reproduction of the vision from the exclusive understanding of the *camera obscura* model. In a kind of compressed archaeology of the new technologies of the 20<sup>th</sup> century, this timeline is crossed with new paradigms in which the vision merges with the data visualization, as well as it becomes a fertile instrument for the biotechnologies.

Like Werner Nekes, Tony Oursler plays with enormous freedom in summoning innumerable technologies for the construction of his work without having the need to claim a precise artistic territory in a constant intermedial movement. As we can see in the striking review, written by Siegfried Zielinski, about the Werner Nekes' film *The Day of the Painter* (1997), where we can find described the artistic complexity of his work, which we believe that offers as vivid look on the way in which he constructed his collection in a non-hierarchical way:

Nekes orbits around an entire circle of diverse disguises and aesthetic veiling and unveiling strategies for viewing, in long, unhurried sequences. In the process, he employs all the tools of his experience with film technology, visualization technologies, cinematography itself, and his recent experience with electronic devices. [...] *The Day of the Painter* shifts with authority between painting, photography, cinematography, and electronic image-making and manipulation. Just as he is not prepared to recognize the borders between these artistic disciplines, he also oscillates between the media genres of documentary, staged presentation and simulation. (Zielinski, 2001)

4 In *Blue Dilemma* — a work that Tony Oursler presented in the context of the exhibition *Eyes, Lies and Illusions* — he assumes, in his own words, that: "It's essentially a whimsical machine for image processing. The image enters the system and is transformed as it moves through, and so too (hopefully) is the viewer. There are elements from the major inventions in the history of the moving image, notably the *camera obscura*, the Nipkow disk, the rainbow, the vacuum tube lens, the television and John L. Baird's ventriloquist dummy, Stooky Bill, the first figure to be teletransported... I should also mention the devil and the color blue. Blue is the media color for me, the flickering cold glow which one sees at night when passing the window of a house where someone is watching television: the corrosive, deadly, beautiful color of electronic waves washing over flesh. The devil too, and the different forms in which it has been depicted, kept appearing during my research with alarming frequency. I had to include this controversial figure that crops up whenever there are any new technological inventions." (Oursler, 2001)



In the catalogue of the exhibition *Eyes, Lies and Illusions* (2004), it was also published a text by Laurent Mannoni, entitled “The Art of Deception”, in which this author proposes, through the scope of the Werner Nekes’ collection, to look again to this new old art. That is, by recognizing the art of deception as a new field that brings out the illusionistic potentiality of optical devices and its uncanny proprieties. In which images, as they arise apparently by means of magic tricks, invariably question the reality of visual perception. According to Laurent Mannoni, besides being the perceptual and technical foundation of the creation of the instruments that allowed the visualization of the moving image, the *deceptive art* was also crucial, for example, to the development of abstract art, as it “appears (...) to be a school of avant-garde experimentation that has spanned the centuries and that persists in our own time with the same vitality.” (Mannoni *et al*, 2004-2005, p. 52)

The art of deception thus reveals a history of the counter-devices — opposed to a history of the moving image told from the point of view of cinema based on the valorisation of an evolutionary path, which had as its main objective disguising the artifice — by placing the power of illusionism as an intrinsic quality that should not be masked but rather celebrated, making the uncanny emerge from the perception of the effects of these devices.

As Sigmund Freud (1994, p. 210) points out, this feeling of uncanny “will be included in the realm of what is frightening and goes back to what is long known, familiar”. Or, as Friedrich Kittler (1999, p. 153) tells us: “Freud translates the uncanny of the Romantic period into science, Méliès, into mass entertainment.” Being, as we know, the early cinema very permeable and a precursor in the valorisation of magic tricks, quickly became a powerful industry of storytelling of narratives as credible as possible.

In sum, the great interest at looking at the Werner Nekes’ collection, in the context of a discussion on the archaeology of moving image, is to see the concretized effort of a history of optical devices without the presence of cinema as constant figure of this narrative. That is, the desire to study the specificities of each device, highlighting each apparatus without diminishing its historical importance in an evolutionary perspective, as well as the determination to cross-reference several fields of knowledge to discuss visual perception, producing a profuse connection between different visual technologies and contemporary art.

This relationship between art and technology is also discussed in a non-evolutionary perspective by Siegfried Zielinski (2011), which gives voice to the relationship between art and technology in an anthropological perspective that looks at the open possibilities between these two fields both deeply committed with the idea of experimentation. Art, in this context, is rooted in an idea of experimental aesthetic praxis and committed to science itself: Zielinski proposes an approach to the relational qualities of this connection, in which its four different states do not necessarily follow a clear chronological evolution: “art before media, art with media, art through media, and art after the media”. (Zielinski, 2011, p. 301) Rather evoking these four states the quality of

this relationship and the different levels of affinity and commitment that are established in artistic work. The art after the media emerges in this context as a possibility, not of disconnecting art from the media, but rather as an emancipation that is foreseen and that we can also glimpse in the approach taken by Werner Nekes through his collection.

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