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“Live Forever in the Kinora”: Motion Photography in between Pre- and Early Cinema¹

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This paper addresses the Kinora (1896-1914), an early motion picture technology designed for home use.² Originally invented and patented by Auguste and Louis Lumière in 1896, the Kinora was an adapted version of the Mutoscope, which – similar to Edison’s Kinetoscope – functioned as an individual viewing machine. Like the Mutoscope, the Kinora viewer makes use of a flipbook mechanism in which a series of paper-based photographic cards are attached to a wheel. By turning the wheel and looking through the magnifying lens of the viewer, one could watch a series of photographs in motion. As such, the Kinora reminds us of the principles of nineteenth-century “pre-cinema” optical toys, like the Phenakistoscope and Zoetrope, the chronophotographic experiments by Muybridge, Marey, and Friese-Greene, as well as paper-based animated portrait photography systems, like the Biofix and Filoscope. In this paper, I aim to make these diachronic and synchronic intermedial connections visible while focusing on the interrelationships between the materiality, design and use of the Kinora as an early twentieth-century motion picture technology.

Experimental media archaeology

My analysis is informed by a research project on “experimental media archaeology”,

1.- This paper is an outcome of the project “Doing Experimental Media Archaeology: Practice and Theory”, funded by the Fonds National de la Recherche, Luxembourg (FNR) (C18/SC/12703137) and hosted by the Luxembourg Centre for Contemporary and Digital History (C²DH) of the University of Luxembourg. Special thanks to Stephen Herbert, Laurent Mannoni (Cinémathèque française) and Sébastien Lemagnen (Antiq-Photo Gallery) for their generous permission to use images from their collections. I am also grateful to Erkki Huhtamo and our exchanges, in particular his feedback during the DEMA workshop in 2019. I would furthermore like to thank Claude Wolf from the Department of Engineering for his collaboration in the Kinora replica project, Andy O’Dwyer for proofreading, and the other team members of the DEMA project – Andreas Fickers, Stefan Krebs and Aleksander Kolkowski – for their support.

2.- For a history of the Kinora, see: Barry Anthony, *The Kinora: Motion Pictures for the Home 1896-1914: A History of the System* (London: The Projection Box, 1996).



Figure 1. Image of the original and replica Kinora viewer and reel. Photo © Tim van der Heijden.

as an alternative approach to media historiography³, conducted at the Luxembourg Centre for Contemporary and Digital History (C²DH) at the University of Luxembourg between 2019 and 2021.⁴ Within this project, I became interested in the Kinora as an early home cinema technology and studied how it differs from small-gauge home cinema technologies from the 1920s and 1930s in terms of its materiality and practices of use. Besides conducting a historical study, involving literature research, analysis of original patents, advertisements and other historical sources, I investigated the Kinora through various hands-on explorations and experiments. For the research project, I was able to purchase

an original Kinora viewer from 1907, including five original reels, so it could be used for hands-on experimentation as well as 3D modelling and replication.⁵ In collaboration with the Department of Engineering at the University of Luxembourg, we have produced various prototypes of working replicas of the original Kinora viewer and reel.

These hands-on experiments and 3D replication processes turned out to be a valuable addition to my historical study as they allowed me to not just read about the Kinora, but also *experience* the material object and its features in a hands-on and sensorial way. This hands-on or “thinkering” approach, to speak in terms of media archaeologist Erkki Huhtamo⁶, enhanced my historical understanding of the Kinora,

3.- Andreas Fickers and Annie van den Oever, “Experimental Media Archaeology: A Plea for New Directions,” in *Techné / Technology: Researching Cinema and Media Technologies, Their Development, Use, and Impact* (Amsterdam: Amsterdam University Press, 2014), 272-78; Andreas Fickers and Annie van den Oever, “Doing Experimental Media Archaeology: Epistemological and Methodological Reflections on Experiments with Historical Objects of Media Technologies,” in *New Media Archaeologies*, ed. Ben Roberts and Mark Goodall (Amsterdam: Amsterdam University Press, 2019), 45-68.

4.- For more information about the “Doing Experimental Media Archaeology” (DEMA) research project, see: <https://dema.uni.lu/>.

5.- The original Kinora viewer and reels were purchased on behalf of the DEMA project at the Antiq-Photo Gallery, based in Paris, France.

6.- Erkki Huhtamo, “Thinkering with Media: On The Art of Paul DeMarinis,” in *Paul DeMarinis: Buried in Noise*, ed. Ingrid Beirer, Sabine Himmelsbach, and Carsten Seiffarth (Heidelberg and Berlin: Kehr Verlag, 2010), 33-46.

its technological functioning and histories of use. The lessons we learned from the Kinora replica project and the productive combination of hands-on media historical inquiry with 3D replication and mechanical engineering are written down in another paper.⁷ For this contribution, I will focus less on the heuristic value of our methodological approach, but rather depart from these experiences and the new knowledge it has produced to think about the Kinora and – in line with the conference theme – re-assess its place within early cinema and film historiography. The argument will be developed that the Kinora, as an early motion picture technology designed for home use, is uniquely positioned “in between” early and pre-cinema, film and photography, viewing and screening.

The Kinora: system and usage

Let me start with a brief description of the Kinora motion picture system, which includes a viewer, reel and camera. A Kinora reel contains approximately 640 curved photographic cards that are held together by a brass core. When mounting the reel on the viewer’s mechanism and manually turning the rotating handle, the reel is activated. Each of the 640 photographic cards are then successively displayed in front of the magnifying lens. A small metal stop, which is positioned at the edge of the viewer’s guidance, briefly arrests and disassociates each of the curved cards during rotation and thereby flattens them at the very moment they become visible through the lens. When watching the Kinora images through the viewer, this generates a “vivid illusion of animation”, as Frederick A. Talbot describes in his book *Moving Pictures: How They Are Made and Worked* from 1914.⁸ A Kinora reel usually provides a duration of 30-40 seconds, depending on the speed of rotation.

The Kinora system was mainly used for home cinema: the domestic viewing of professionally-recorded films that were reproduced and printed on a Kinora reel. Kinora reels provided various subjects and genres, including child portraits, moving trains and comedic sketches.⁹ The topics of these reels each shared a fascination with capturing and reproducing movement, a common characteristic of early cinema productions. Besides viewing ready-made reels in the Kinora viewer, after 1903 it became possible to have your own “animat-

7.- Tim van der Heijden and Claude Wolf, “Replicating the Kinora: 3D Modelling and Printing as Heuristics in Digital Media History,” *Journal of Digital History*, forthcoming.

8.- Frederick A. Talbot, *Moving Pictures: How They Are Made and Worked* (Philadelphia: J. B. Lippincott Co., 1914), 305.

9.- Anthony, *The Kinora*, 9-10.

ed portraits” made in the Kinora company’s photographic studio in London.¹⁰ Around 1908, when the Kinora motion picture camera was released, targeted to (upper) middle-class families and amateurs to make their own home movie recordings, a third use type emerged for the Kinora system. As recording material, the Kinora camera took both unperforated celluloid film and light sensitive paper with a width of one inch (25.4mm). Although it was promoted in advertisements as “the camera that has revolutionised photography”, it was not very successful in the end.

Intermedial relationships

The description of the Kinora as a medium that has “revolutionised photography” already indicates how the Kinora as a motion picture medium and technological system was positioned in relation to other media technologies and user practices. In the following, I will focus on these intermedial relationships to re-assess the Kinora’s place within early cinema and film historiography.

Between pre-cinema and early cinema

The Kinora was, first of all, positioned in between pre-cinema and early cinema. In the historical sources, the viewing device is sometimes described in terms of “pre-cinema” technologies, such as the Phenakistoscope and Zoetrope. Above all, the round shape of the Kinora reel, the curvature of the photographic cards and their successive display in the viewer made it correspond to the materiality and design of the Mutoscope – also known as the “What the Butler Saw” machine. The Kinora is, as Henry V. Hopwood wrote in his book *Living Pictures: Their History, Photoproduction and Practical Working* (1899), “very similar in principle”.¹¹ Media historian Stephen Herbert likewise discusses the Kinora as “a miniaturised mutoscope”, but also refers to the stereoscope as “[p]erhaps the viewing device most closely comparable to the Kinora”.¹² In particular the wooden Kinora viewer, the basic version that we also used as a model for the 3D replication process, recalls

10.- This photographic studio was the Biograph Studio, owned by the British Mutoscope and Biograph Company. Later, in the early 1910s, a studio by Bond’s Limited was used for taking the Kinora portrait pictures. See: Anthony, *The Kinora*, 9-11. For a history of the British Mutoscope and Biograph Company, see also: Richard Brown and Barry Anthony, *A Victorian Film Enterprise: The History of the British Mutoscope and Biograph Company* (Trowbridge: Flicks Books, 1999).

11.- Henry V. Hopwood, *Living Pictures: Their History, Photoproduction and Practical Working* (London Optician & Photographic Trades Review, 1899), 39.

12.- Stephen Herbert, “Kinora Living Pictures,” *Photo Historian*, no. 95 (1991): 105.

“the stereoscope in design, only instead of two lenses it has one large rectangular magnifying-glass”, also Talbot wrote.¹³

Although the Kinora corresponds to the looks and functions of these pre-cinema technologies, it actually shares an almost parallel history with the Cinématographe.¹⁴ Both were invented and patented by Auguste and Louis Lumière in the late nineteenth-century and shared the ability to produce the illusion of moving images. They only used different methods for doing so, which were not opposed but rather complementary to each other initially. The original 1896 Kinora patent actually mentions the Cinématographe as the recording apparatus from which the “successive pictures of an animated scene” could be obtained.¹⁵ The Kinora was, as Herbert notes in his essay on the Kinora, “intended originally as a system of home presentation for the growing library of Lumière films”.¹⁶

Consequently, one could argue that the Kinora system was positioned “in between” pre-cinema and early cinema. While its materiality, design and functionality reminds us of certain pre-cinema technologies, its applications rather complemented and supported early (home) cinema developments.



Figure 2.
The Lumière
Kinora and
Cinématographe
displayed
together.¹⁷

13.- Talbot, *Moving Pictures*, 304.

14.- Herbert, “Kinora Living Pictures,” 104.

15.- Auguste Lumière, Louis Lumière, and Benjamin Joseph Barnard Mills, “Kinora Lumière Patent: ‘Apparatus for the Direct Viewing of Chrono-Photographic or Zoetropic Pictures’. British Patent No: 23,183,” 1896.

16.- Herbert, “Kinora Living Pictures,” 104.

17.- Laurent Mannoni, *De Méliès à La 3D: La Machine Cinéma* (Paris: LienArt, 2016).

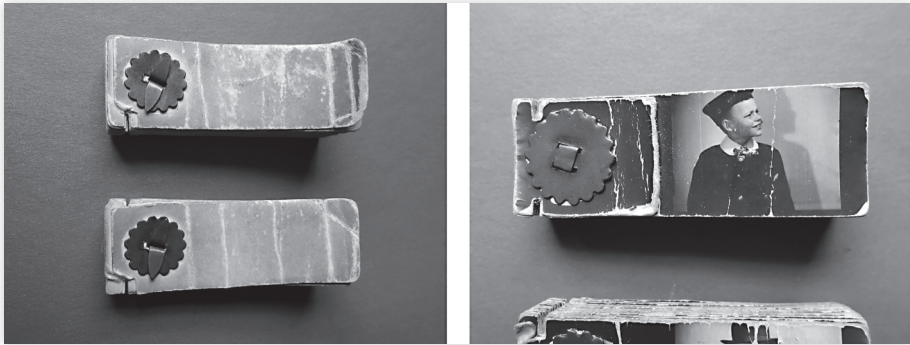


Figure 3. Kinora pictures in the shape of a photo flipbook. Photos © Stephen Herbert, personal collection.

Between film and photography

Secondly, the Kinora is positioned in between film and photography. The original Lumière patent from 1896 refers to the Kinora as “apparatus for the direct viewing of chrono-photographic or zoetropic pictures”.¹⁸ Though not on a large scale, some Kinora reels were even alternatively produced in the form of photo flipbooks, similar to Muybridge and Marey’s chrono-photographic experiments.

Later on, during the 1900s and 1910s, the Kinora was described more generally as a system for “motion photography”, similar to animated photography systems like the Biofix and Filoscope.¹⁹ Accordingly, the Kinora camera was advertised as an instrument for “motion photography”. Its design reminded Talbot of an “ordinary hand-camera” used by amateur photographers.²⁰ At the same time, the camera’s use of unperforated paper film and the sprocket-less roller rather made it correspond to the pioneering cinematography cameras invented by Louis Le Prince (which also made use of light sensitive paper film), William Friese-Greene (which also featured sprocket-less rollers) and Robert Paul (which were also designed to take forty feet of film).²¹

18.- Lumière, Lumière, and Mills, “Kinora Lumière Patent.”

19.- Stephen Herbert, “Animated Portrait Photography,” *History of Photography* 13, no. 1 (1989): 65-78.

20.- Talbot, *Moving Pictures*, 302.

21.- Talbot, *Moving Pictures*, 205 and 303.

In addition to the technological system, some Kinora practices were described in photographic terms as well. The earlier mentioned practice of having your family Kinora reels made at the company's studio in London, for example, was advertised as making "animated portraits" and a "living portrait album":

*'Your own Animated Portrait! Or that of your Family and Friends! Arrangements can now be made for photographic sittings of individuals or groups for Kinora Picture Reels. Thereby the Kinora becomes a living portrait album – reproducing in movement and with startling semblance to life the features and forms of dear ones. Parents, Husband, Wife, Children, Friends, Pets, LIVE FOR EVER IN THE KINORA.'*²²

The discourse of immortality, so prominent in this Kinora advertisement, connects the art of photography and its ability to capture or freeze time²³ to the promise of film as a medium to capture and reproduce movement. One could argue that the Kinora as a motion picture technology is positioned in between these media. As Herbert puts it: "In a way the paper base of these [Kinora] images ties them to 'Photography' – but in their movement they attempt to deny the inescapable immobility of the photograph".²⁴

Between viewing and screening

Finally, the Kinora can be positioned in between viewing and screening. Similar to the Kinetoscope, Mutoscope and Stereoscope, the Kinora allowed for personal viewing in its original constellation. In terms of Erkki Huhtamo, it constitutes a "peep media" *dispositif*, in which the moving images are experienced by looking through the lens of the viewer one person at a time.²⁵ The Lumière Cinématographe, instead, was aimed for theatrical presentation and so enabled *multiple* viewers to simultaneously watch the images being projected on a screen – a continuation of the "art of projection" as practiced in magic lantern slide performances.

While the Cinématographe and Kinora thus seemed targeted at two rather distinct practices and contexts of use, to differentiate between these moving image screening devices along the lines of personal viewing and collective screening is not entirely historically accurate. As early as 1901, only five years after the Kinora was invented,

22.- Kinora advertisement, cited in Anthony, *The Kinora*, 11.

23.- Roland Barthes, *Camera Lucida: Reflections on Photography* (New York: Hill and Wang, 1981).

24.- Herbert, "Kinora Living Pictures," 111.

25.- Erkki Huhtamo, "Elements of Screenology: Toward an Archaeology of the Screen," *ICONICS: International Studies of the Modern Image* 7 (2004): 17.



Figure 4. Kinora viewer: basic wooden model with single window (left) and cabinet viewer with multiple windows (right). Photos © Antiq-Photo Gallery, Paris.

a luxury viewer model was released that actually allowed for *multiple* viewers.²⁶ In this second “type” of Kinora viewer, Talbot wrote, the “reel is mounted in a cabinet, which is fitted with two or more lenses, so that two or more people can follow the movement of the pictures simultaneously”.²⁷ This cabinet type of Kinora viewer constitutes a rather different viewing practice compared to the first type of Kinora viewer. Unlike the peep media *dispositif*, it allows for multiple viewers to be watching the images from a distance.²⁸

Although the cabinet Kinora viewer with multiple windows made the motion picture technology more suitable for home cinema as a collective viewing practice²⁹, the Kinora reel’s limitation in duration of showing about 30-40 seconds of moving images eventually could not compete with the growing popularity of film projection on a screen, which “became the much preferred method of entertainment over the flip-book style”.³⁰ While the original nitrate celluloid film material exposed in the Kinora camera could technically be used for film projection after development, the

26.- Elias Bernard Koopman, “Kinora Viewer Patent: Improvements in or Applicable to Apparatus for Viewing ‘Living Pictures’ or ‘Animated’ Photographs and the like. British Patent No: 9879,” 1901.

27.- Talbot, *Moving Pictures*, 305.

28.- In the DEMA workshop “Documenting Media Archaeological Experiments,” Erkki Huhtamo spoke about a “television *dispositif*” in relation to the cabinet Kinora with multiple windows. See for the workshop report: <https://dema.uni.lu/documenting-media-archaeological-experiments-report/>.

29.- Herbert, “Kinora Living Pictures,” 105.

30.- Eric Faden, “Kinora and Double Kinora (Mutoscope),” *Early Cinematic Objects*, January 1, 2011, <https://digitalcommons.bucknell.edu/cinematic/9>.

non-standard dimensions and the lack of perforations on the edge(s) prevented the negative from being printed on standard 35mm positive film. The images were therefore usually watched in the Kinora viewer only.³¹

Conclusion

By positioning the Kinora in between pre- and early cinema, photography and film, viewing and screening, we can re-assess its place within film and media historiography. Or at least bring forward another perspective on the Kinora as an early twentieth-century media technology and its histories of use. Among others, it shows us the connections between the materiality, design and use of the Kinora and other media technologies, both synchronically (within its time of use) and diachronically (across and beyond its time of use). Making these diachronic and synchronic connections and relationships to other media technologies explicit reveals the continuities and discontinuities of moving image technologies and their user practices from a long-term historical perspective.³² This subsequently provides valuable insights into the historical and contemporary ways in which we engage and have been engaging with moving images. Furthermore, it shows how these interactions have been shaped by the technological affordances of the medium as well as its surrounding discourses. The earlier mentioned advertising phrase “live forever in the Kinora” for example not only exemplifies the discourses of continuity and immortality, associated with moving image technologies, but also pertains to the circular design of the reel and the technological affordance of the Kinora as a mechanical apparatus to keep the images moving without the need of rewinding.³³

I would like to argue that experimental media archaeology, as a methodological approach, is particularly valuable for analysing such interrelations between the practical, the technological and the discursive. It allows for shifting the attention from the “configured user”, who is represented by the technological patents, advertisements and other historical sources, to the “re-enacted user”.³⁴ Doing historical re-enactments with past media technologies enhances our historical understanding of them, how they worked and how they were used. In the case of the Kinora, the hands-on “thinking” and 3D replication practices arguably brought me closer to how users may

31.- Talbot, *Moving Pictures*, 303 and 305.

32.- Cf. Tim van der Heijden, “Hybrid Histories: Technologies of Memory and the Cultural Dynamics of Home Movies, 1895-2005” (PhD, Maastricht, Maastricht University, 2018).

33.- The Kinora advertisements highlighted this ease of use: “When finished, [the Kinora reel] continues to repeat itself without rewinding”. Cited in Anthony, *The Kinora*, 17.

34.- Fickers and van den Oever, “Doing Experimental Media Archaeology.”

have experienced the illusion of the moving image in the early twentieth-century.³⁵ At the same time, it is important to emphasize that we can never actually authentically re-experience or re-enact what this viewing experience was truly like. While some of the images may continue to live forever in the Kinora, the historical experience has inevitably faded through time. As Herbert argues: “Despite our overfamiliarity with moving pictures, the experience of viewing a Kinora reel is unknown to virtually everyone today.”³⁶ At best, I would add, hands-on experimentation potentially brings us a little bit closer to those by now obsolete virtual worlds of early (home) cinema.

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35.- See for more reflections: van der Heijden and Wolf, “Replicating the Kinora.”

36.- Herbert, “Kinora Living Pictures,” 104.

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ABSTRACT

"Live Forever in the Kinora": fotografia en moviment entre el precinema i el cinema dels orígens.

Originalment inventat i patentat per Auguste i Louis Lumière el 1896, la Kinora va ser una versió adaptada del mutoscopi que, similar al kinetoscopi d'Edison, funcionava com una màquina de visualització individual. Aquesta contribució, basada en la investigació històrica i l'exploració pràctica, argumenta que la Kinora, sent una de les primeres tecnologies cinematogràfiques dissenyades per a ús domèstic, es troba en una posició única entre el precinema i el cinema dels orígens, la pel·lícula i la fotografia, la visualització i la projecció.

"Live Forever in the Kinora": fotografía en movimiento entre el precine y el cine de los orígenes.

Originalmente inventado y patentado por Auguste y Louis Lumière en 1896, la Kinora fue una versión adaptada del mutoscopio que, similar al kinetoscopio de Edison, funcionaba como una máquina de visualización individual. Esta contribución, basada en la investigación histórica y la exploración práctica, argumenta que la Kinora, siendo una de las primeras tecnologías cinematográficas diseñadas para uso doméstico, se encuentra en una posición única entre el precine y el cine de los orígenes, película y la fotografía, la visualización y la proyección.

