Film sound in preservation and presentation
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CHAPTER 2.
Film Sound Traces

2.1 Media Memory

Despite our inevitable subordination to the past, we have freed ourselves at least to the extent that, eternally condemned to know only by means of its ‘tracks,’ we are nevertheless successful in knowing far more of the past than the past itself had thought good to tell us. Properly speaking, it is a glorious victory of mind over its material.
— Marc Bloch

In the previous chapter, I discussed the social and cultural dimensions of recorded sound in general, and of film sound in particular, and their value for individual and collective memory and experience. In this chapter, I consider the value of recorded media for individual and collective memory not in the light of contemporary social and artistic practices, but in light of theoretical interpretations within media and audiovisual studies. In particular, I focus on the interpretation of media records as traces and use the notion of trace as a key concept to interpret the relation between audiovisual recordings and memory in theoretical terms. I focus on the notion of trace because I believe it is hermeneutically useful in the perspective of preservation, since film preservation can be defined as the discipline involved in the conservation of film traces for present and future access.

In order to better define the dimensions of memory and trace in audiovisual media, I will first use Freud’s “A Note upon the ‘Mystic Writing Pad’” as a model. In this text, Freud describes the function of human memory using the model of the Wunderblock, a writing tablet composed by a slab of resin or wax, a waxed paper cover and a transparent celluloid sheet on top of it (fig. 3). Pressing on the surface of the celluloid sheet, one can write on the wax paper and then erase the text or image by a

movement of the hand: the writings are erased from the sheet, but they leave a permanent trace in the slab. What interests Freud in this writing device is that it combines “an ever-ready receptive surface and permanent traces of the notes that have been made upon it.”95 The double function of “unlimited receptive capacity and a retention of permanent traces”96 leads to the similarity with human mind, perception, and memory, which Freud explains in these terms:

[...] the celluloid and waxed paper cover with the system Pcept.-Cs. and its protective shield, the wax slab with the unconscious behind them, and the appearance and disappearance of the writing with the flickering-up and passing-away of consciousness in the process of perception. [...] If we imagine one hand writing upon the surface of the Mystic Writing-Pad while another periodically raises its covering sheet from the wax slab, we shall have a concrete representation of the way in which I tried to picture the functioning of the perceptual apparatus of our mind.97

The metaphor of the mystic writing pad for human mind (perception and memory) is based on these terms. First the wax paper, which symbolizes the perception-consciousness system, has an “unlimited receptive capacity” and is protected by the celluloid sheet, “a protective shield against stimuli”98 which diminishes the strength of excitations coming in. Second, the wax slab, like human memory or unconscious, is capable of retaining “permanent traces.” The unconscious (the wax slab) is the place of storage and retrieval of the traces left by the perceptive stimuli, the mnemic-unconscious traces. According to Freud, the system of the psychic apparatus is composed of the interaction between the perceptual-conscious system (the wax paper) and the mnemonic-unconscious system (the slab); in psychoanalytic therapy, the psychoanalyst recognizes and interprets the mnemic-unconscious traces that emerge in the patient’s verbalization and personal narration as well as bodily expression.

The mystic writing pad model might no longer be considered a convincing model to describe the functioning of the mind, but it can aid in understanding the tracing and memorial capability of recording media.99 Freud himself realizes the relationship

95 Ibid., 209.
96 Ibid., 208.
97 Ibid., 211.
98 Ibid., 210.
99 Following the studies of neuroscience, the contemporary psychological conception of perception and memory has abandoned the psychoanalytic model and developed new interpretations in the light of
between the mystic writing pad model and recording media, and concludes his essay with a mention these apparatuses:

All the forms of auxiliary apparatus which we have invented for the improvement or intensification of our sensory functions are built on the same model as the sense organs themselves or portions of them: for instance, spectacles, photographic cameras, ear-trumpets. Measured by this standard, devices to aid our memory seem particularly imperfect, since our mental apparatus accomplishes precisely what they cannot: it has an unlimited receptive capacity for new perceptions and nevertheless lays down permanent—even though not unalterable—memory-traces of them.  

Freud observes that the mind performs this double function of receiving and storing input better than the technical apparatuses designed on the functioning of perception human organs, such as spectacles, photographic cameras, and ear-trumpets.

Film scholar Thomas Elsaesser applies the mystic writing pad model to recording media, arguing that Freud could be considered a media theorist “because he thought of the body/mind as a storage and recording medium as well as an input/output device, where what interested him were the parameters of sensory input (sound, vision mainly) and its output, representability (vizualisation, narrativization, and linguistic representation, including slips of the tongue, the parapraxes or Fehlleistungen).” Interpreting Freud’s writing, Elsaesser observes that the affirmation of the unconscious can be interpreted as a way to combine transmission and storage functions:

Freud is arguing that our senses, along with our brain, when taken together as the “psychic apparatus,” are able to accomplish something that for technical apparatuses is apparently impossible to achieve, namely to combine the function of (sense-data) transmission and the function of (sense-data) storage. It is as if psychoanalysis had to be invented to bridge this gap and to explain – via the positing of the unconscious – how the “perception-consciousness system” receives but does not retain perceptions, while the

behavioral psychology, cognitivism, behaviorism, and evolutionary biology. Freud’s legacy on this topic in the psychological field is analyzed in John Forrester, Dispatches from The Freud Wars: Psychoanalysis and its Passions (Cambridge, MA: Harvard University Press, 1999), and Frederick Crews, ed., The Memory Wars: Freud’s Legacy in Dispute (Oxford: Granata Books, 1997).

Sigmund Freud, “A Note upon the ‘Mystic Writing Pad’,” 208.

“system of the unconscious” preserves, not perceptions, but “excitations,” which become “permanent,” in the form of mnemic traces.102

Unlike Freud, who maintains that technical apparatuses are “imperfect” compared to the human apparatus, Elsaesser puts human and technological apparatuses on the same level. He uses the mystic writing pad model “to picture the relation between input, storage, and processing”103 in all apparatuses involved in the transmission of information: human, artificial, but also biological, like the ones that transmit DNA information. Elsaesser bases his model on the distinction between two levels, the level of the transmission of information and the level of storage of information:

an apparatus, considered as archive or memory, needs to clearly differentiate and separate the transmission function (mirror) and the storage function (memory). Between perception (and immediate forgetting) and the unconscious (unlimited storage), Freud, as it were, comes close to specifying the machine requirements for an input/processing/output system.104

From this model, Elsaesser outlines a media/memory constellation:

a theory of the visual and aural media that sees them more from the side of reproduction, as a problem of generation and replication, of storage and processing, which is to say as a general mode of information transmission, of which “memory” in its widest sense (including history and cultural memory) is the special human form, but which, at the limit, encompasses the transmission of all information, including biological information (and thus allows for non human forms of memory).105

This passage suggests a relation between different forms of memory: human forms of memory, as individual and collective memory (cultural memory), but also non human forms of memory, such as biological memory (DNA transmission) and artificial memory (the memory of technological apparatuses).

Following Elsaesser’s suggestions, I will define media memory as the memory generated through audiovisual recording media. The recording, storing and repeating of

102 Ibid., 99.
103 Ibid.
104 Ibid., 108.
105 Ibid., 102.
experiences and events in sound and images are the fundamental activities that, producing media mnemic traces, ensure our individual, collective, and cultural memory. Following Elsaesser’s media/memory constellation, I suggest a close relation between media memory and individual or collective memory based on the fact they all function on similar principles of transmission and storage of information. This close relation was already identified discussing sound souvenirs in the first chapter.

In the frame of this research, it is productive to consider the theoretical model of the mystic writing pad as a metaphor for interpreting film sound preservation and presentation. The two levels of the mystic writing pad model, transmission and storage, can in fact be productively used to decode film preservation and presentation practices: film preservation can be considered as a process of information storage, while film presentation can be regarded as a process of information transmission. This metaphor will be further developed in the theoretical elaboration of the findings of the research in chapter five.

2.2 Audiovisual Traces

In light of the suggestions concerning media memory and mnemic traces elaborated above, in this section I further explore the nature of media traces. Reflection on the concept of trace is crucial for understanding the nature of film sound and how it can be preserved and presented. In general, a trace can be defined as a sign inscribed on a carrier in the past and that remains in the future. In this research, I will attribute a double meaning to the notion of trace when applied to film. First, the term physical trace refers to the audiovisual signal recorded on a carrier, which allows the audiovisual information to be preserved for future access. The second meaning relates to the mnemic trace, intended as the trace that film leaves in individual and cultural memory through its reception. The physical and mnemic trace are both very relevant in film sound preservation and presentation practices, as will be discussed in the next chapters: the physical trace recalls the material dimension of film sound, while the mnemic trace pertains to what I previously defined as memorial dimensions of film sound. The investigation of the conditions for the inscription of mnemic traces, which can be defined as traceability, offers more elements to understand how a particular form of
media trace, film sound, can be preserved and presented. This passage is therefore preparatory for the definition of film sound as trace, which will be elaborated in the next section.

Maurizio Ferraris’ theory of documentality offers an interesting interpretation of the notion of trace. According to Ferraris, registration and inscription are the conditions of existence of the spirit – in a philosophical sense – and of human society: we live in a society of registration/recording, and this is the condition of possibility for a society of communication and information. In other words, communication and information are just consequences of the possibility of registration. Ferraris revises the Derridian principle “nothing exists outside the text” to “nothing social exists outside the text,” meaning that each social role and social act is based on registration and memory. He bases his theory on the axiom Social Object = Inscribed Act (Oggetto Sociale = Atto Iscritto), according to which inscription is the condition of existence of social objects; inscription allows an object to transition from the domain of nature to that of culture. Therefore, inscription can be considered as a fundamental characteristic of cultural objects’ nature.

Moreover, inscription is the act through which human beings leave traces through time: this action refers to writing, but also painting, building, constructing, and other practices that produce traces with a cultural, historical or artistic value. Inscription is the act that produces cultural traces, which can be differentiated in documents, heralds of historical value, and monuments, heralds of artistic value, even if they often share both natures in different proportions. The cultural traces of the past are interpreted within the disciplines of archeology, historiography, art history, and literature.

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106 “There is no spirit without inscriptions, the spirit depends on traces as much as traces depend on the spirit.” My translation from the original: “Non c’è spirito senza iscrizioni, lo spirito dipende dalle tracce almeno quanto le tracce dipendono dallo spirito” Maurizio Ferraris, Documentalità. Perché è necessario lasciar tracce (Roma: Laterza, 2009), 45.

107 “We live in a society of registration, and this is the condition of possibility of a society of communication, and indeed of information.” My translation from the original: “Siamo in una società della registrazione, e questa è la condizione di possibilità di una società della comunicazione, e ovviamente dell’informazione.” Ibid., 202.

108 See ibid., XIII.

109 Tracing a transcendental ontology, Ferraris describes a list of the world’s objects, dividing the objects into natural (oggetti naturali), ideal (oggetti ideali) and social objects (oggetti sociali). “The beauty of objects is that we can classify, collect, archive them; this is the most natural thing in the world, so ontology as a theory of objects expresses a spontaneous tendency towards collection and cataloguing.” My translation from the original: “Il bello degli oggetti è che possiamo classificarli, collezionarli, archiviandoli; è la cosa più naturale del mondo, sicché l’ontologia come teoria dell’oggetto manifesta una tendenza spontanea verso la collezione e il catalogo.” Ibid., 12.

Among all the forms of cultural traces, I focus on audiovisual traces, the cultural traces made by audiovisual recording media. These media can be defined as time-based media since they have the peculiarity of registering (inscribing) and replaying time as a flow of acoustic and visual data. With the invention of the gramophone and cinematograph, it became possible to record and store the flow of time. As Friedrich Kittler observes:

What phonographs and cinematographs, whose names not coincidentally derive from writing, were able to store was time: time as a mixture of audio frequencies in the acoustic realm and as the movement of single-image sequences in the optical. Time determines the limit of all art, which first has to arrest the daily data flow in order to turn into images or signs. What is called style in art is merely the switchboard of these scannings and selections.\footnote{Friedrich Kittler, \textit{Gramophone, Film, Typewriter}, 3.}

The capacity to record and store time becomes the defining feature of old and new media, or what Siegfried Zielinski named “time media”: photography, telegraphy, telephony, phonograph, motion picture camera and cinema, electromechanical television, computer and Internet.\footnote{Time media are “all techniques for reproducing existing worlds and artificially creating new ones” Siegfried Zielinski, \textit{Deep Time of the Media}, 31.}

Audiovisual media record the time of events and what happens in front of them. Much more than other technological marvels, the photograph, phonograph and cinematograph changed individual and collective experience by providing the possibility to capture a person’s likeness by recording images and sounds, assuring them a life after death that was very different from the one dependant on writing and printing traces.

According to Elsaesser, after the invention of the phonograph, which allowed the recording of vocal and aural data on wax cylinders and tinfoil, Edison “developed the kinetoscope originally to complement the phonograph and synchronize it with an image machine.”\footnote{Thomas Elsaesser, “Freud and the Technical Media: The Enduring Magic of the Wunderblock,” 107.} Elsaesser argues that Edison gave “priority to sound recording, understood as the laying of tracks of physiological data, than the cinematic image is the index of a sound emanation or of a physiological-somatic presence, and only secondarily the
imprint of a perception.” Elsaesser’s interpretation stresses that audiovisual media were first intended to record the “physiological-somatic presence” of people and that the cinematic image was first intended by Edison as a complement to voice recordings.

The importance of audiovisual media for individual and collective memory was then first recognized in their ability to record and store images and sounds of people that would remain even after their death. The value of audiovisual media for preserving the memory of dead people is recalled by Elsaesser as follows:

> Once storage media can accommodate optical and acoustic data, human memory capacity is bound to dwindle. Its “liberation” is its end. […] Once memories and dreams, the dead and the ghosts, become technically reproducible, readers and writers no longer need the power of hallucination. Our realm of the dead has withdrawn from the books in which it resisted so long.  

From their first appearance audiovisual media were included in the social process of remembering the deceased. We remember our loved ones through the use of photos, video and audio recordings, which preserve their physiognomic appearance and protect it from oblivion. This process established a first link between audiovisual media and individual memory.

The analogy of the phonograph, the first device that produced time media traces, and human memory was already perceived during the first diffusion of audiovisual media, years before Freud’s note on the Wunderblock. “The soul is a notebook of phonographic recordings:” this is the title of an article that Jean-Marie Guyau cites in his essay “Memory and Phonograph” (1880), as reported by Friedrich Kittler. 

Here Guyau outlines analogies between the storing capacity of the phonograph and the brain, sustaining that the brain is “an indefinitely perfected phonograph – a conscious phonograph.”

If the phonographic disk had self-consciousness, it could point out while replaying a song that it remembers this particular song. And what appears to us as the effect of a rather simple mechanism would, quite probably, strike the disk as a miraculous ability: memory.

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114 Ibid.
115 Ibid., 10.
117 Ibid., 33.
[...] If the phonograph could hear itself, it would learn to recognize the difference between the voice that came from the outside and forced itself onto it and the voice that itself is broadcasting and which is a simple echo of the first, following an already grooved path. [...] The principal difference between the brain and the phonograph is that the metal disk of Edison’s still rather primitive machine remains deaf to itself; there is no transition from movement to consciousness.118

Commenting on this article, Kittler recognizes in the phonograph the first machine that combines writing and reading, storing and scanning, recording and replaying:

In principle, even though Edison for practical reason later separated recording units from replaying ones, it is one and the same stylus that engraves and later traces the phonographic groove. Which is why all concepts of trace, up to including Derrida’s grammatological *ur*-writing, are based on Edison’s simple idea. The trace preceding all writing, the trace of pure difference still open between reading and writing, is simply a gramophone needle. Paving a way and retracting a path coincide.119

Kittler indicates the phonograph as the first medium capable of writing as well as reading or playing a trace; he proposes the notion of *trace* as the place where writing and reading coincide. The phonograph can be considered then as the first *tracing time media*, followed by cinematography, discography, videography, and more recent forms of digital time-based media.

The media theories described above make use of the concept of trace to understand and describe the nature of recording media. I will further elaborate on the notion of trace, applying it to the field of film preservation and presentation. Ferraris’ notion of inscription and Kittler’s consideration of trace as the writing and reading of a record served as inspiration for my first description of audiovisual trace in preservation. The term *audiovisual trace* refers to the *form of inscription of aural and visual information on a carrier*. In the instance of a music recording, the trace represents the way in which the song is recorded (e.g. analogue, magnetic or digital format) and stored (e.g. on a disc, a tape or a CD). In other words the trace depends on the recording format and the material carrier of the information. As far as film is concerned, the audiovisual trace represents the way in which the recorded event is transformed into

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118 Ibid., 31-32.
119 Ibid., 33.
visual and aural information that can be reproduced, played, stored, and transmitted for future access.

From the film preservation perspective, the term trace can be productively related to the dimensions of storage and transmission described by Freud and Elsaesser. Audiovisual trace can be defined as that ideal entity that should be preserved in order to ensure the transmission of the cinematic information for future access. In this sense, it is important to understand the conditions that allow for traceability, intended as the possibility to inscribe, store and transmit audiovisual traces for future access. The survival of the audiovisual trace guarantees the possibility for the film to be experienced in the present and future, and therefore also its persistence in individual and collective memory. The audiovisual trace is determined mainly by the following factors: the carriers that store the information (e.g. film, magnetic tape, digital drive), the recording format (e.g. analogue, magnetic, digital), and the devices that allow for recording and replay. Therefore the traceability – the condition for recording, storing and replaying the audiovisual trace – depends on these three factors.

The first condition is the durability of the material carrier. The importance of the carrier emerges also in the dictionary’s definition of trace, which designates it as a physical modification or alteration of a specific support or carrier. If the material carrier of the trace is corrupted or destructed, the transmission of the information is partially or totally affected. In other words, if the film stock is damaged, the visual and aural information recorded on it can also become mutilated.

Another condition resides in the technological device that reads and plays the trace. The audiovisual trace is also affected if it is not possible to find a suitable playback device in working condition to play it. For instance, if the audiovisual trace is stored on a U-matic recording videocassette, and it is not possible to find an U-matic reader because it has fallen into disuse, the transmission of the trace is compromised.

A third condition to ensure the survival of the audiovisual trace lies in the human work involved in the playback and handling of the trace. If the human capability to operate the device or handle the material carrier is lost, the transmission of the trace is in danger as well. In the previous example, if the U-matic cassette and the U-matic reader survive, but the human subject has lost the knowledge to use them, the trace cannot be experienced and transmitted.
These kinds of situations will be further explored in the case studies. For now, I want to stress that the conditions of survival of audiovisual traces are the field of action of film and audiovisual preservation, and the precondition for future access.

### 2.3 Film Sound, Preservation, and Presentation

The theoretical definition of media memory and audiovisual traces and their value in film preservation are the premises for the inquiry on the object of this research, film sound preservation and presentation. Before reaching the heart of the research through the analysis of case studies, it is necessary to clarify the terms film sound on one hand, and film preservation and presentation on the other. Regarding the definition of film sound, Rick Altman suggests:

> It has never been easy to capture in words the phenomenon of sound. While philosophers and technicians have developed concrete languages for describing images, sound has often seemed to require a more abstract terminology, drawing on the language of myth and the sacred rather than that of three-dimensional reality.\(^{120}\)

This general difficulty in describing sound phenomena, related to the aforementioned “ocular permeation of language,” has a repercussion in the confusion and vagueness of terminology regarding film sound in film studies, as was argued in the introduction.

Film sound is often confused with the term *soundtrack*, but it is much more than that. The term *soundtrack* is also not specific: it can indicate every type of recorded music that is synchronized to a movie, a television show, a videogame, a commercial, or every form of moving image. To be more specific, one should use the term *film soundtrack* to designate the sound of a particular film, the audio track synchronized to the images of a specific film and composed by dialogue, music, and sound effects. The film soundtrack is also often confused with the musical score of the film, which is only one component, or the commercially released soundtrack album of the music of the film (*music soundtrack*).

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\(^{120}\) Rick Altman, *Silent Film Sound*, 5.
I consider the film soundtrack as the physical trace of sound recording on a specific carrier, which allows the sound to be played in synchrony with the image. The soundtrack can also be referred to as *film sound trace* in order to emphasize the fact that film sound is experienced and remembered through traces. The existence of sound trace is strictly related to the material carrier. When the material carrier of film sound is film stock, the sound trace designates the physical area of the film base where sound is recorded optically (optical soundtrack) or digitally (digital soundtrack). The sound trace can also be recorded on other material carriers (disc, compact disc, magnetic tape, digital drive).

With the term *film sound* I indicate the sound played when the film is projected in a space, in most cases a movie theatre. In other words, *film sound* refers to the sound as heard and experienced by the audience; it consists of the sound waves that are diffused and amplified in the space during projection. The term film sound can also be used in a much wider sense, referring to technological, stylistic, productive, and receptive aspects of the recorded sound. As the title of this dissertation indicates, the object of this research is *film sound* rather than the soundtrack. The case studies will demonstrate that the soundtrack is to be considered just one dimension of film sound, that is, the one related to the materiality of the carrier.

I also clarify here the terminology regarding film preservation and presentation that will be used in this research. First, it should be noted that both film preservation and presentation pertain to the field of *film archiving*, which is defined by film theorist Giovanna Fossati as follows:

Film archiving is the practice of collecting, preserving, and presenting film heritage. It is the practice of collecting and preserving the analogue past of film (120 years of film reels impressed with photographic images, as well as sounds recorded on vinyl, optical, or magnetic tracks) and the digital present of film (encoded images and sounds conveyed through ever-changing digital formats stored on ever-changing digital carriers). It is the practice of restoring films and copying them to new media (film, digital, hybrid) in a way that makes them suitable for presentation. It is, finally, also the practice of presenting films in new contexts.¹²¹

Film sound preservation and presentation will turn out to be two very interrelated and interdependent activities throughout this research. Despite this close interconnection, for analytical reasons I will consider them separately in the scope of this research. With the term *film preservation* I refer to the practices and activities aimed at the preservation of film heritage in its material and textual dimensions, in order to ensure future access to the visual and sonic film components. The main activities related to film preservation are passive preservation, active preservation, restoration, and reconstruction. For the definition of these terms I recall the words of film archivists and curators Eileen Bowser and John Kuiper:

Preservation may be considered as having both an active and passive dimensions. Passive preservation is synonymous with ‘storage,’ i.e., keeping the material in an ideal environment and not subjecting it to any mechanical risk through use. Active preservation includes such practices and procedures as technical examination, technical selection, conservation, methods of storage in correct environments, housekeeping and collection control procedures (such as maintenance of technical records, surveillance, labeling, etc.), technical restoration, rejuvenation, duplication and quality control.  

In the processes of passive preservation (conservation, storage) and active preservation (duplication), human intervention is minimal, and it is limited to the safekeeping of the film as it was found. Instead, restoration and reconstruction, which are aimed at recreating a specific version of the film, entail a strong intervention and relevant changes in the material and textual dimensions of film. As film restorers Paul Read and Mark-Paul Meyer observe:

The terms conservation and preservation are used in either an active way or a passive way and can therefore mean storage or even duplication without particular interventions and in principle without any loss of photographic information. The terms restoration and reconstruction are usually used when differences are created between the materials you start with and the materials you end with, through manipulating the process of duplication (restoration) or through editing sequences in a different order (reconstruction).  

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Besides the activities related to film preservation, the other focus of this research is film presentation. With the term *film presentation* I refer to the exhibition activity that allows film to be accessed and experienced by the audience in a theatrical or public space.

The distinction between preservation and presentation is used in the investigation of the case studies for analytical purposes. The problems and issues related to film sound preservation are different from those related to film sound presentation, so the two activities bring out different aspects of film sound. For this reason, film sound preservation is predominantly discussed in chapter three with cases of early sound systems, while film sound presentation is examined in chapter four through the analysis of the presentation activities of a film archive.

The differentiation between preservation and presentation will also be used as a key concept for elaborating the theoretical model in chapter five; there I will argue that preservation and presentation are the two main activities that define the field of work of film heritage institutions. I will interpret the relation between preservation and presentation through the concepts of transmission and storage as elaborated in the mystic writing pad model: preservation is the activity that guarantees the storage of the audiovisual trace, while presentation deals with the transmission of the trace to a contemporary public. A complete definition of film preservation and presentation will be developed in chapter five, in the light of the analysis of case studies.

### 2.4 The Work of Film Heritage Institutions

In the definition of the terms film preservation and film presentation another central element of the research emerges: film heritage institutions, intended as the places where the work of film preservation and presentation is performed. The distinction between preservation and presentation can be associated with the distinction between archive and museum. In the domain of cultural heritage institutions in general, archives are institutions that have the primary mission of collecting and preserving historical documents and cultural objects related to individual and collective memory. Museums are institutions with the primary mission of presenting, exhibiting, and displaying historical documents and cultural forms to the public; yet their activities also include the collection and preservation of the materials for future presentations.
When applying these notions to the cinema field, the relationship between archive-preservation and museum-presentation became problematic. Nicola Mazzanti, Director of the Cinémathèque Royale de Belgique, defines this problem as “the never fully resolved chiasm of conservation-exhibition”\textsuperscript{124} or, in the terms used in this work, of preservation and presentation. The contrast between preserving and presenting dates back to the first institutionalization of film archives. This was especially demonstrated by the diverging attitude of Ernst Lindgren, first curator of the BFI National Film and Television Archive, and Henri Langlois, co-founder of the Cinémathèque française. While Lindgren gave absolute priority to preservation by maintaining a policy of non-projection of original prints unless properly copied and preserved, Langlois’ aim was to show as many films as possible, regardless of the uniqueness of the copy.\textsuperscript{125} The contrast between Lindgren and Langlois has become legend in the narration of the emergence of film archives as institutions,\textsuperscript{126} but the matter is indeed more complex than the dramatization of the opposition between the paladin of preservation and the paladin of presentation.

The two contrasting positions have both contributed to the definition of the role of film archives and museums. The FIAF (International Federation of Film Archives) code of ethics represents, in the words of film archivist and curator David Francis, “a distillation of the point of view of both Lindgren and Langlois.”\textsuperscript{127} Nevertheless, Caroline Frick observes that “unfortunately, professionals working in moving image archives continue to struggle with moving beyond their now ‘traditional’ binary opposition in which preservation poses an opposition to access.”\textsuperscript{128}

The predominance of the preservation or the presentation dimension is also detectible in the name of the institutions: film archives are usually focused on preservation, while film museums and cinémathèques concentrate on presentation. Nevertheless, these two activities are in practice complementary, or, in most cases, mixed. Archives also undertake presentation projects even if they do not have their own

\textsuperscript{125} See Penelope Houston, \textit{Keepers of the Frame. The Film Archives} (London: British Film Institute, 1994), 49-59.
\textsuperscript{127} David Francis, “From Parchment to Pictures to Pixels Balancing the Accounts: Ernest Lindgren and the National Film Archive, 70 Years On,” \textit{Journal of Film Preservation} 71 (2006).
theatre, and film museums and cinémathèques also collect and preserve films even if they do not have equipped vaults for this purpose. Ideally, film institutions should do both, first preserve and then show, as pointed out by Dan Nissen, former director of the Danish Film Institute:

> It is definitively right that the physical material should be preserved before it is shown in order to be able to ensure future access to the films for future generations [...]. But it is also definitively true that films do not live merely by being preserved, but only in their encounter with a viewer and an interpreting consciousness. Preserving and showing are two sides of the same coin, then. Preserving without presenting is an inert activity, and showing without preserving is dangerously shortsighted.  

As analysis of the case studies will demonstrate, preservation and presentation are two activities closely interconnected and reciprocally influenced: the choices made during preservation influence presentation possibilities and the considered prospects for presentation influence preservation decisions.

If the term film archive recalls the preservation dimension while film museum and cinémathèque recall that of presentation, the term film heritage institution seems to reconcile this double nature, and refers to all of the forms of institutions: film archive, film museum, cinémathèque, and the like. Film heritage institutions are the cultural heritage institutions that have the mission of preserving and presenting film heritage. I use the term institutions in the sense of cultural institutions, recalling the definition of film scholar Karen Gracy:

> Cultural institutions regulate the diffusion of knowledge, acting as a gatekeeping mechanism for access to information as it exists in tangible forms, and serving as locus points for the legitimation of knowledge systems. [...] Although we are most likely to see cultural institutions as physical repositories for cultural objects, in fact such organization

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129 Dan Nissen et al., ed. *Preserve Then Show* (Copenhagen: Danish Film Institute, 2002), 9.

130 One of the first extensive uses of the term film heritage institution (FHI) instead of film archive can be found in the professional study *Digital Agenda for European Film Heritage* commissioned by the European Commission and conducted by Nicola Mazzanti. See *Challenges of the Digital Era for Film Heritage Institutions*, 2011, http://ec.europa.eu/avpolicy/docs/library/studies/heritage/final_report_en.pdf, accessed July 2013.
as libraries, museums, and archives are only the most discernible signifiers of what a cultural institution represents.  

In reference to the main concepts evoked in this research, I define film heritage institutions as having the mission of preserving and safeguarding film as material object, as dispositif, and as audiovisual trace (preservation side). Moreover, film heritage institutions keep the experience of the cultural object and of the memory of the audiovisual trace (presentation side) alive. In these terms, film heritage institutions construct the space and context for the cinematic experience and preserve the different temporalities of film. This definition will be further illustrated in the theoretical elaboration in chapter five.

The above definition is based on the notion that film heritage institutions preserve and present audiovisual traces by working through the temporal dimensions of present, past, and future. Moreover, film institutions also evolve over time and are subject to similar temporal processes as to those of the objects that they preserve. Film heritage institutions are marked by movements of transitions and transience, where the first term refers to what they bring with them in the next stage or phase, and the latter to what they leave behind. The transitions of a film heritage institution are often technologically, economically, and politically driven and, thus, influence the preservation and presentation work performed in the institution. This topic will be addressed with a further elaboration in chapter four.

In conclusion, I would like to stress the fact that in the debate between preservation and presentation described in this section, which was central for the definition of film archival theories, the issue of film sound is not specifically called into question or addressed. This absence is additional proof of the lack of consideration for film sound in film preservation theories, as I described in the introduction of this research.

The theoretical observations on film sound, preservation, and presentation made in this chapter are the premise of the investigation of the nature of film sound in

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131 Karen F. Gracy, *Film Preservation: Competing Definitions of Value, Use, and Practice* (Chicago: The Society of American Archivists, 2007), 63. Gracy also maps the field of film institutions and archives, distinguishing between commercial entities (studios with film libraries and stock footage libraries) and non commercial organizations (larger non-profit film archives, specialist archives).

132 For an elaboration of the term transition applied to the film preservation field see Giovanna Fossati, “Film archival Field in Transition,” in *From Grain to Pixel*, 149-210.
preservation and presentation practices, which will be addressed in the following chapters through the analysis of specific case studies.