Interview: Film History as Media Archaeology¹

Thomas Elsaesser

Department of Media and Culture of the University of Amsterdam

interviewed by Fryderyk Kwiatkowski

Jagiellonian University and the Faculty of Theology and Religious Studies of the University of Groningen

Abstract

The interview centres around Thomas Elsaesser's book Film History as Media Archaeology and is divided into three thematic blocks. Focusing on the origins of the book and its composition in the first part, the discussion uncovers Elsaesser's engagement in numerous research initiatives, teaching at the University of Amsterdam, and his contribution to the emerging area of early cinema studies. Further exploration of the latter gives an insight into his views on the development of the discipline and outlines his distinct position in the field of media history. The second part concentrates on Elsaesser's approach to the study of cinema and its interaction with other media. With the discussion of study cases presented in the book, speakers explore the ways in which non-teleological models can enhance our knowledge of forgotten or obsolete technologies and their origins. Clarifying his position, Elsaesser shows how these approaches also transform our perception of contemporary media and their history, and how digital technology shapes our understanding and the use of past inventions. The conversation within this group of subjects also touches upon hazards and limitations of

Thomas Elsaesser is Professor Emeritus at the Department of Media and Culture of the University of Amsterdam: from 2006 to 2012 he was Visiting Professor at Yale University and since 2013 he teaches part-time at Columbia University, New York; he is an author and editor of some twenty books, among his recent ones are Film Theory - An Introduction through the Senses (with Malte Hagener, 2nd revised edition, New York: Routledge, 2015, Polish translation 2016), and Film History as Media Archaeology (Amsterdam University Press, 2016). His latest book in English: European Cinema and Continental Philosophy: Film as Thought Experiment (London: Bloomsbury, 2018) and in Polish: Kino – maszyna myślenia. Refleksje nad kinem epoki cyfrowej (2018).

Fryderyk Kwiatkowski is a joint-PhD candidate at the Institute of Philosophy of the Jagiellonian University and the Faculty of Theology and Religious Studies of the University

¹ Transcription of the interview by Barbara Szymczak-Maciejczyk.

applying archaeological perspective to studying media history and moves to the speculations on the future of the archaeological approach in the humanities. In the third part, the interview shifts towards broader issues, in particular: the technological transformations in cinema over the last decade, the significance of digital devices in reconfiguring our relationship with the past, and the potential contribution of media archaeology to the development of non-linear historiographical models in scholarship.

Keywords

Media archaeology, early cinema, digital media, film historiography

of Groningen; he has recently contributed a chapter to the multi-author volume The Gnostic World (Routledge 2018), and published several articles in peer-reviewed journals such as "Canadian-American Slavic Studies" (Brill), "Journal of Religion & Film" (University of Nebraska at Omaha), or "CLCWeb: Comparative Literature and Culture" (Purdue University); he works as an editorial assistant in the "Facta Ficta Journal," and is a fellow member of the "Titus Brandsma Instituut" (Nijmegen) and the "Theology, Religion and Popular Culture Network"; his scientific interest center around the reception of Gnosticism, with particular attention to Hollywood, philosophy, and Western esotericism, and its conceptual as well as historical intersections with utopianism and conspiracy theories.

fryderykkwiatkowski@wp.pl

Facta Ficta Journal of Narrative, Theory & Media nr 2 (2) 2018



Published by Facta Ficta Research Centre in Wrocław under the licence Creative Commons 4.0: Attribution 4.0 International (CC BY 4.0). To view the Journal's policy and contact the editors, please go to factafictajo-urnal.com

DOI: 10.5281/zenodo.3515129

Fryderyk Kwiatkowski: Can we start by talking about the origins of your latest book Film History as Media Archaeology (2016)?

Thomas Elsaesser: The book is the outcome of several occasions and intellectual developments. First of all, it was timed to celebrate the twenty-fifth anniversary of the founding of Film and Television Studies at the University of Amsterdam in 1991. The



Photo published with written agreement of Thomas Elsaesser and Fryderyk Kwiatkowski

book was also to be the fiftieth volume in the book series I edit for Amsterdam University Press, called Film Culture in Transition. The series pays quite a lot of attention to "early cinema", film history, media history, audiovisions, and related topics, focusing mainly on the mutations of the cinematic apparatus and the relocation of cinema. We, in fact, have about sixteen titles that relate broadly to film history and media archaeology by authors like Siegfried Zielinski, Francois Albera, Maria Tortajada, Malte Hagener, Kristin Thompson, Pasi Väliaho, Eivind Rossak and others. So it seemed a good idea to bring the particular approach that Amsterdam has pioneered – both via my series at Amsterdam University Press and with the courses that some of my colleagues and I taught at the University's Media and Culture Department – to the attention of an international public in a concentrated fashion, and to show what distinguishes our approach to "film history as media archaeology" from others who use the term media archaeology. Originally, the book was meant to be a joint publication by the three members of the department teaching media archaeology to the Masters' students: Michael Wedel, Wanda Strauven and myself. But by 2016,

we had all left the University of Amsterdam: Wedel is now professor in Potsdam and Berlin, Strauven teaches in Milan and Frankfurt, and I teach part-time at Columbia University. Wanda Strauven had already edited a multi-authored volume, called the The Cinema of Attractions Reloaded (2006), which celebrated Tom Gunning and André Gaudreault's pioneering work on refashioning how we understand early cinema and what its afterlife and effect has been on the media culture of the present. So in the end I decided to produce a book that was authored only by myself. At the same time I did want to make sure that the discoveries and insights gathered during the years of our joint research project called Imagined Futures were also adequately reflected. So while Film History as Media Archaeology contains a number of chapters that I had already published elsewhere, there are also five chapters specifically conceived and written for the book. For instance, the introductory chapter, called *Media Archaeology*: Foucault's Legacy, a chapter on Cinema, Motion, Energy and Entropy, one called Media Archaeology as the Poetics of Obsolescence and especially Media Archaeology as Symptom, which is both a summary and lays out an agenda for further research, are all original essays. One final point regarding the origins of the book: 2016 marked thirty years since I wrote an article called The New Film History (1986) which was widely discussed as signalling a "turn" in Film Studies to film history and especially a turn to the study of early cinema. The result was a collective volume, which I edited in 1990 as Early Cinema: Space, Frame, Narrative. Therefore, Film History as Media Archaeology is something like a sequel to both my 1986 review essay and my 1990 edited volume.

Fryderyk Kwiatkowski: So Film History as Media Archaeology also reflects on thirty years of early cinema studies?

Thomas Elsaesser: Yes, early cinema as a distinct subject is now regularly taught at universities and has become an integral part of how we understand the history of the cinema. This is a major shift, because when in the late 1970s and 1980s writers like Noel Burch, Barry Salt, Kristin Thompson, Tom Gunning, Charles Musser, Richard Abel and others started to do archival research, the first two decades of the cinema were still a very neglected field, hardly existing at all. In fact, films from the period were usually denigrated and dismissed as "primitive", hybrid and somehow not really (narrative) cinema. I myself became very involved in the debates, edited the first book that had Early Cinema in the title (Early Cinema: Space, Frame, Narrative, 1990) and a few years later published a volume called A Second Life: German Cinema's First Decades (1996). All this coincided with changes in film archive policies made necessary by the physical state of the films in the archives, their material deterioration, the perishable nature of nitrate stock, and the need to raise public awareness of

our common filmic heritage – a task magnificently fulfilled by the extraordinary festivals devoted to early cinema in northern Italy.

Fryderyk Kwiatkowski: Can you tell a little more about those festivals? What role did they play in the development of early cinema studies?

Thomas Elsaesser: The two most important ones take place in Pordenone, whose Le Giornate del Cinema Muto have been held annually since 1985, and in Bologna, where Il Cinema Ritrovato has been celebrating film restorations and rediscoveries since 1986. It was in Pordenone, during my first visit there in 1989, that I made the acquaintance of scholars, archivists and film specialists from all over the world. The film shows, often well past midnight, allowed one to see a very broad spectrum of films, especially from the period between 1907 and 1917: crucial years, as it turned out, for the cinema's consolidation and internationalisation. But also crucial years for encountering a cinema that was very different from classical Hollywood. One very quickly realised that these films did not want to be either "anti-narrative" or "avant-garde". Rather, their ways of representing the world clearly had their own logic, their own internal rules: working in a rich trans-media environment of sound, image and spectacle, the directors seemed suddenly incredibly inventive and bold, and so it was as if one was discovering a lost civilisation: a cinema that was vigorous, vital and surprisingly self-assured: early cinema.

Fryderyk Kwiatkowski: How archaeological approach was imagined when scholars begun to discuss its application to studying media history?

Thomas Elsaesser: Already in my introduction to Early Cinema: Space, Frame, Narrative, I used the phrase "from linear history to mass media archaeology", and explained that we needed a "new archaeology [...], because of the fundamental changes that film had brought to the notion of time, space and material culture" (1990, 1). But at that moment in time – 1990 – different interpretations of media archaeology were already in circulation. Most originated with German scholars: Siegfried Zielinski initiated a debate with his book Audiovisions (1989; English edition: Audiovisions: Cinema and Television as Entractes in History, 1999) which differed from the more philosophical approach to media history with an archaeological emphasis that first emerged around Friedrich Kittler and his disciples, in Berlin at the Humboldt University, under the name of "Medienphilosophie". Later in Weimar at the Bauhaus University the IKKM was founded, whose name International Research Institute for Cultural Techniques and Media Philosophy indicates yet another direction. However, both Siegfried Zielinski and the schools around Kittler were not

primarily interested in the cinema. The subtitle of Zielinski's book was Cinema and Television as Intermezzi in [Media] History". By contrast, we in Amsterdam still believed that the cinema was the key to understanding both the media configuration around 1900, and the rapid changes that the media landscape was undergoing around 2000. One person who was trying to mediate between those of us who were interested in doing cinema history as media archaeology (the Amsterdam school) and those who were more interested in media archaeology in relation to digital media (the Kittler school) was Jussi Parikka who had studied with Kittler but also spent half a year with us in Amsterdam. But I must not forget that there was also a group of scholars with an interest in media archaeology, but with a primary focus on television. One could count Zielinski's Audiovisions among the inspirational publications, but a person closer to us geographically was William Uricchio at the University of Utrecht, who was a key figure in the study of the origins of (German) television. There were other important figures, for instance, Erkki Huhtamo at Berkley and Wolfgang Ernst in Berlin, and, as several chapters in my book show, media archaeology to this day can mean very different things to those who are engaged in it.

Fryderyk Kwiatkowski: What particular goals did you want to achieve with your team in Amsterdam?

Thomas Elsaesser: Our main emphasis in our research initiatives in Amsterdam – both *Media Archaeology* and Imagined Futures – was on the cinema as the royal road to media archaeology. For Kittler and others, such as Bernd Siegert, it was the genealogy of the digital. Kittler's book *Gramophone*, *Film*, *Typewriter* (1986; English edition 2006) took these three "recording systems" ("Aufschreibsysteme") as possible ways of understanding the technologies that underpin any symbolic system: not just the electronic relays that generate the "on-off", "zero-one" of the digital system, but going back to the materiality of the immaterial, and the technologies of intimacy: alphabet, printing and the personal typewriter, the postal service and love letters, music notation and the gramophone, celluloid and film, mathematics and coding. By contrast, we were primarily interested in the different modes and materialities of vision, of visualisation, and of how these connect to optics as well as to the dispositifs through which the visual is actualised.

Fryderyk Kwiatkowski: Which thinkers have influenced you most? How has your approach to media archaeology developed through time?

Thomas Elsaesser: A strong influence was Michel Foucault, from whom we took the term "archaeology" in the first place. But equally strong was

the presence of Walter Benjamin in my own thinking, and a little later, after I had already published Early Cinema: Space, Frame, Narrative, I discovered Jonathan Crary's Techniques of the Observer (Techniques of the Observer: On Vision and Modernity in the Nineteenth Century, 1990). People I have known and still value personally, and who were deeply committed to both film history and early cinema included: Kristin Thompson and David Bordwell, Geoffrey Nowell Smith, Charles Musser, Siegfried Zielinski and Tom Gunning. But there were also Michael Chanan, Barry Salt and Noël Burch. You cannot imagine two people more different in their intellectual interests and convictions than Salt and Burch, but I found them both extremely – in different ways - inspiring and challenging. When I came to write Film History as Media Archaeology, I wanted to give my respectful due to these friends and colleagues, as well as pay attention to the different strands that made up media archaeology as we currently use the term. But I wanted to put the emphasis on film, cinema and cinema history as they crystallised around the early period between 1895 and 1925, which - precisely because this period was so different - became paradigmatic for how I wanted to study all of cinema, that is, by emphasising cinema's interaction with other media. This makes up the first third of the book. At the same time I wanted to engage with those who were actually thinking through the origins of the digital. So the second third of the book is actually devoted to what I call "tracking the digital" by means of media archaeology. And the last third was to give due attention to those who in the creative field practiced media archaeology, that is, who came from filmmaking and from installation art, and were showing an extraordinary interest in the so-called obsolete media. This interest in obsolete media, which was not just nostalgia for physical, tactile objects in a world increasingly immaterial and virtual, was one of the key aspects of media archaeology in the art spaces, i.e. galleries and museums. So media archaeology has to do with recovering the multiple origins and deeply embedded media contexts of what came to be known as cinema; with accounting for the surprisingly quick and pervasive takeover of communication media by digital tools and digital thinking; and for the way the art world has responded to the - belated - realisation that it was the cinema which was the most vital and important art of the twentieth century.

In our courses at Amsterdam University we always made a point of starting with – and starting in – the present, taking as examples media practices and media objects that the students were already familiar with. We then made them strange by unfolding a genealogy of these phenomena back to other, earlier incarnations and configurations, while not afraid to draw parallels and even introducing anachronisms. So we had units that were called: "Archaeology of the Screen", "Archaeology of Sound", "Archaeology of the

Camera", as well as "Archaeology of Colour" and "Archaeology of Audiences", but also "Archaeology of Surveillance", for instance, very much in the spirit of Foucault's Discipline and Punish (1975; English edition Discipline and Punish: The Birth of the Prison, 1977). By always teaching the contemporary with an eye to its genealogies and archaeologies, we treated the cinema - its technologies, its institutions, its social and physical spaces - in the way an engineer treats a machine or an appliance: we diagrammatically "exploded", in the manner of a blueprint, the cinematic apparatus into its constituent parts and looked at them separately. But "archaeology" - as I said - of the screen, of the camera, etc. - was the guiding principle and we divided the different aspects up, so that for the fourteen weeks of the semester, we devised seven distinct "archaeologies", devoting two weeks to each. Since the course was obligatory for all MA students, it was structurally conceived in very similar ways to the parallel course that MA students had to take, namely "Film Theory: An Introduction through the Senses", which ended up as a book (2009) co-authored with another former student-turned colleague, Malte Hagener.

Fryderyk Kwiatkowski: Could you elaborate on what was the exact relationship between the courses on film theory and media archaeology that you had been giving?

Thomas Elsaesser: The "Film Theory" course was constructed similarly to "Media Archaeology" course. What in the Film Theory book is "cinema as window and frame", "cinema as mirror and screen", "cinema as eye and gaze", "cinema as sound and ear", "cinema as skin and touch", "cinema as mind and brain" had its counterparts in the media archaeology course: the expanded, exploded cinematic apparatus. So the students had to take these two courses, and it gave them a very good grounding. Not only did they see how film theory and film history connect with each other, once one changes one's angle of approach, but they also realised how the present connects to the past that is never "past" but alive in the present and how film and cinema have always been very aware of how to address and implicate the different perceptual senses, both via technology (the apparatus and the institutions) and via technique (the stylistic and formal means, the rhetoric of narrative, the staging and mise-en-scène). In short, we tried to convey to the students a coherent proposition about how to study cinema in the twenty-first century, without implying or endorsing a fatal break between the "analogue" and "digital", in much the same way we refused a radical opposition between "classical Hollywood" and "art and avant-garde" cinema. We were interested in the common elements - the ontologies and archaeologies of the cinema - not the binary divisions or ruptures and breaks. This was the original idea: to produce a parallel volume to Film Theory on Film History as Media Archaeology, also divided into seven chapters. It never happened, and instead I used the title, but produced an altogether different book. Now that Film History as Media Archaeology ended up being a much broader and more ambitious book, which addresses many more issues, perhaps we can go back and find a way for the three of us – Wanda Strauven, Michael Wedel, and myself – to put together our various lectures and presentations and revise them into a book to be called Media Archaeology – An Introduction through the Senses...

Fryderyk Kwiatkowski: Let's talk about some of the issues that you discuss in your book. Erkki Huhtamo suggests that we can think of media history as an area of constantly recurring phenomena. Tom Gunning perceives film history as a series of parallel histories. Although your approach to film history is slightly different, you also have contributed to this discussion by showing that certain uses of cinematograph from the early period can be seen as anticipatory for contemporary ones. You recall for instance the cartoon vision of Thomas Edison inventing the telephonoscope as an example of nineteenth century Skype. On what basis, however, are we allowed to make such comparisons since in many cases it would be difficult to establish a historical continuity between these forgotten, obsolete media and the contemporary ones?

Thomas Elsaesser: This is a very good question and it is a difficult one. First of all, those parallels - sometimes deliberately anachronistic or counterfactual - function as a kind of "Verfremdungseffekt": they try to make strange what we think we know and usually take for granted, or what we think is "brand new" and has never been thought before. One of the key pedagogical aims of media archaeology as applied to cinema is once more to make the past strange and to emphasise that the past is very different from the present. Even more important is that the past could have had a different future, and often believed it would have a different future from the one that came to pass. In other words, one of the methodological moves of media archaeology, which distinguishes it from film history, is that it assumes history as not necessarily linear, not a line of inevitable progress towards a specific goal, whether this is "greater and greater realism" (in the cinema), better and better technology (in the workplace, the office and the home) or even more perfect democracy (in politics). Therefore, to make these anachronistic comparisons is actually to force the researcher or the reader to ask exactly the question you ask - how can one draw a parallel between two distinct historical epochs? So, it is the shock of that surprise that the past may have had the same problems as the present, the force of the anachronism when the past seems ahead

of the present. In other words, it is also a way of getting you into the frame of mind for thinking that the past is yet to be discovered and not only there for you to derive the present from.

I think one of the most salient lessons we can learn is that the past is not there to service us in the present; we cannot just appropriate the past. And, therefore, the past has an important potential for telling us something that we may either have forgotten, that we may never have discovered, or that we may need to rediscover, in order to think about our own future in new ways. So it is a complicated relationship that we enter into, when we think of the past as an archaeological site, to be unearthed and delicately to be preserved and put on display, rather than something, you know, like a shop window or a shelf, or even a database from which we just serve ourselves. We should not have this hubris of appropriating the past to either legitimate ourselves, or to simply use those parts of the past that we find convenient, because they confirm or flatter us.

Let's take an example of how, because of a new phenomenon in our present – say, digital 3D cinema – we might rediscover parts of the past that previous generations thought obsolete and overcame: the stereoscope was in the nineteenth century a very sophisticated form of popular entertainment, in the sense of providing a very credible impression of multidimensional space by tricking the eye into thinking it was seeing depth, when it was just seeing parallax. And panoramas and dioramas were the IMAX of the nineteenth century. Obviously, they are not exactly the same, but, again, such anachronistic parallels are there to cure us of our linear, continuous, mono-causal way of explaining the world and explaining media. We have very different technologies at different stages, having different forms of reality, but answering to similar needs, desires, and hopes.

But the parallels can also demonstrate how adaptable human beings are in "naturalising" the unnatural and "moving with the times", so that there often is no need for dystopic visions, for technological doom scenarios or media panics. The example that I always give is from the history of photography. When by the mid-nineteenth century photographers moved out of the studio, abandoned portrait photography, and took their cameras into the street to take pictures of life in the city and of people, in other words, when exposure times became short enough to capture snapshots, people, including Charles Baudelaire, were at first shocked. They were disoriented by the amount of detail that could be represented in the photograph. And they feared that the human brain or the human perceptual apparatus could not take in so much detail without getting confused. It was assumed that such photographs were actually bad for you, they caused vertigo and headaches because there was too much detail or, as Baudelaire put it, "there was a riot of detail" — "une émeute

de detail" – an "insurrection of detail". His choice of words was not accidental, because he did want to allude to the political implications as well. Now, to us this seems bizarre and extreme, until we remember that when the cinema first came on the scene in the eighteen nineties there was the same panic: too much detail, too much information, too many different sense impressions in the moving picture: the famous rushing out of the theatre when L'arrivée d'un train à La Ciotat (Lumière & Lumière 1896) was shown. And now, we have the same thing with digital media. People say we have to protect our children from staring at the screen all day – they suffer from eye strain and develop attention deficit disorder. In other words, the fear of sensory overload has, within the last one hundred fifty years, created panics at least three times over, across very different media: photography, cinema and now computer games and digital media. So again, we have to be very careful not to draw these linear, mono-causal sequences in order to explain specific phenomena.

Fryderyk Kwiatkowski: And also, by addressing this issue from another angle, we could say that by using this anachronistic mode of perceiving past inventions and technologies we could also understand better why some of them have been forgotten.

Thomas Elsaesser: Yes. This is an important issue, which I already touched on briefly. Namely, what did the past imagine its own future to be like? We tend to assume that because something happened that it "had to happen", i.e. that it was inevitable. And of course it did happen, we cannot change that, not even if we were to time travel! Yet, nonetheless, there is a place for so-called "counterfactual history". At the University of Amsterdam we deliberately called our second research project "Imagined Futures" precisely in order to return to the past its own future or at least to try and reconstruct what previous generations might have imagined their own future to be, rather than assuming that what happened was also what they expected to happen, because history is tied to the irreversible direction of time's arrow. Film history as media archaeology actually tries to break open this unidirectional flow. And what one then discovers is that the mid-to-late nineteenth century was actually imagining something quite different from what we assume they were imagining. Therefore, the heuristic value of seeing in the telephonoscope the wish for the contemporary Skype is to realise that because of where we are now, we do understand some of the things in the past in a new way. We can then leapfrog and return to the past with a different appreciation of what might have gone on in the minds of the people who were thinking about the future around the 1880s and 1890s. The evidence that you gather from certain books, cartoons, that is illustrations and imaginings that were half-serious and half-playful, is

very often that the new media technologies which made the largest impact on the popular imagination at that time were the telephone and the telegraph – including fantasies of television – and not chronophotography or what we now understand by the cinema.

Fryderyk Kwiatkowski: Can you specify how those who invented chronophotography imagined its use?

Thomas Elsaesser: Chronophotography was actually seen by its pioneers as an instrument of scientific inquiry. It was not regarded or envisaged as a possible entertainment medium. And so, once you realise that it might have been something else, you also realise that chronophotography was only a temporary technological support for moving images and for the creation of the illusion of movement, because now, of course, most of our images, both moving and still, are based on an entirely different technology - digital imaging, relying on mathematical calculus. But you could also say that our contemporary visualisation techniques are actually dependent much more on the telephone, the telegraph, and wireless or radio transmission than they are on photography, which once more connects us to those technological fantasies of the late 19th century, bypassing chronophotograhy and the cinematograph. In addition, it is electricity and electronics, relays and circuits that "produce" our images, rather than optics in the Newtonian sense, or the mechanics of the transmission of motion and energy. I address this in several chapters of my book, and it once more underlines that we can now understand the late nineteenth century differently because our technologies have not so much made theirs obsolete and useless, but because their technologies - and the ideas attached to them - can give us a different perspective on our own (media) technologies. Suddenly, it is the cinema that seems the odd one out, and we can appreciate how extraordinary it is that the cinema developed the way it did, or even that it was "invented" at all. And while some people go as far as to say the cinema was a "detour", that it was already obsolete when it was invented, I argue in the book that this so-called "obsolescence" is actually a golden opportunity for the cinema to continue into the digital age.

Fryderyk Kwiatkowski: Can you elaborate on how this is possible?

Thomas Elsaesser: It is a complicated argument, and I spend many pages in the book on explaining how I see it. Especially, the concluding chapter *Media Archaeology as Symptom* tries to lay out my reasons. Basically, it is my way of saying that there is a special pay-off or benefit for the present, once you assume an archaeological perspective and liberate yourself from a linear model of history,

which goes beyond having simply a more respectful attitude to the past. But it is only now that we have digital media, which on the face of it represent such a major rupture and so many radical breaks, that we are free enough from thinking that there is only one way of writing media history, one way of conceiving film history. Some scholars, of course, accept the rupture as terminal and declare the cinema dead. Others consider digital projection or watching a film on a laptop "not cinema".

For the rest of us, the digital may not be such a technological rupture -I have called it: "everything changes and everything stays the same" – but instead a unique chance to rethink cinema altogether. It liberates us to see all the possibilities and thereby to see certain historical figures who have so far been relegated to a very minor role in a new light: someone like Georges Demenÿ, or other forgotten pioneers like William Paul and many, many others. We can now see the richness of their imagination, and their determination to pursue a certain vision. From which we can conclude that not every use of the cinematograph has to end up in the movie house. The result is that in recent years we have seen enormously productive research being done into non-entertainment uses of moving images and the cinematic apparatus. In my book series "Film Culture in Transition" we published Films That Work (Films That Work: Industrial Film and the Productivity of Media, 2009), edited by Vinzenz Hediger and Patrick Vonderau, about industrial films, about advertising films, and many other "operational" genres of filmmaking. There is also valuable research on medical films and on the use of the cinematic apparatus for surveillance, especially for military uses. For instance, think of the filmmaker and installation artist Harun Farocki, who has devoted a large part of his career to the investigation of "operational images" - sometimes taking his lead from theorists like Vilem Flusser and Paul Virilio. In other words, we have considerably diversified our understanding of the moving image. For this, I coined a number of shorthands, talking about the "S & M" uses of the cinematic apparatus. By "S & M" I obviously do not mean sado-masochistic but: "Science & Medicine", "Sensoring & Monitoring", "Surveillance & the Military", and, of course, Gilles Deleuze's senso-motoric understanding of the cinematic apparatus. In other words, there are the typically Foucauldian dispositives of power and control, matched and meshing with human physiology and the senses, involving the whole body, or if you like "the body as a total perceptual surface".

So, you can see that suddenly this obscure past of the origins of cinema can open up into an incredibly wide field of networks and interconnections whose links we clearly see today, but which already existed throughout the nineteenth century, except that by trying to make the cinema into a high art form, historians of cinema isolated the films and the filmmakers from their contexts and connections, blocking them and even suppressing the facts. Once liberated from

the twin obsession of the "Seventh Art" – with its goals and teleologies, with its masterpieces and pioneers, its "firsts" and "great auteurs" – and of history as driven by linear causality and mono-causal explanations, we can finally take a fresh look at all of this, and paradoxically, it is the digital turn that has to some extent helped us open the door.

For instance, we can now place the so-called "coming of sound" in a much broader spectrum once it is known again that right from the start the cinema was never silent. There is now extraordinary evidence that makes it clear that, from the 1890s onwards, engineers and film manufacturers had been trying to synchronise sound with images. After all, Edison invented the kinetoscope as a companion apparatus to the phonograph, and not the other way round, but in both cases, sight and sound were always thought together. So, you see how, when you shift your attention, not only does the past open up onto new facts, but to what is considered to be pertinent facts, making this past so much more diverse, because you see new connections. The confusion and profusion of today is somewhat "tamed" when you discover the diversity of the past: scholars began to connect wax-museums and the cinema, they saw the links between Spiritism and the cinema, between hypnotism and the cinema, between world fairs and the cinema, between colonialism and the cinema. It was this tremendous liberation that we experienced, first with early cinema and then with media archaeology, once we no longer had to debate whether the cinema was "invented" by Edison or by the Lumière Brothers, and once we no longer clung to the idea that cinema developed from silent to sound, from sound to colour, and from 2D to 3D. Sound, colour and 3D were already in place around 1900, both as ideals and as practical experiments, but they were not ready for full implementation. What matters, however, is that their existence, even as failed experiments, shows that there is no linear progress to the history of cinema. And it was the shock of the digital turn that made it blindingly obvious. So, rather than saying that digital cinema is the death of cinema, I argue that the digital liberated the cinema in all its richness of the diverse pasts, which also implies that we cannot possibly know what the future of cinema holds, because only now do we really get a sense of its pasts, and discover new pedigrees and genealogies leading to the present.

Fryderyk Kwiatkowski: In your book you discuss several types of revisionism in film archaeology. One is aimed at re-examining the origins of cinema. But scholars have different approaches to this issue. What prompted film scholars to start asking new questions relating to the early years of cinema?

Thomas Elsaesser: Yes. One prominent revisionist trend has been to study the history of cinemas as opposed to studying the history of films. Which is

to say to study the physical spaces of cinema in the urban environment: where were movie houses located? What was the economics of selling snacks and soft drinks? Were the first cinemas in working-class districts or always aimed at middle class audiences? Were they in business districts, so people could catch a film after work? How did we get from penny arcades to multiplexes? What is the symbolic significance of the architecture of movie palaces, i.e., what does it mean that movie houses often have neo-gothic facades, Egyptian facades, sleek modern design or conjure up Orientalist associations, like the famous Grauman's Chinese Theater in Los Angeles?

Another aspect that has raised new questions for scholarship: what was the constitution of audiences? Was the cinema for women and children? Was it for family audiences? Was it for young men? Was it a place where you could furtively meet with members of the opposite sex? All those things have now become part of what we understand by the history of cinema or reception studies, with a special interest in recent years in the "film experience", which in turn relates to a film-theoretical interest in emotion, affect, empathy, atmosphere, embodiment.

All of this can be regarded as a turn to a more materialist film history, putting the emphasis not on the films, but on the conditions and structures that made films possible – the study of the mode of production, the studio system, business models as they differ from classical to post-classical cinema, or aspects of hegemony and globalisation in the cinema, and how to address very diverse audiences.

Scholars like Kristin Thompson, for instance, studied early cinema by also examining the figures for the export and import of celluloid, and of trade agreements, in order to determine the "influence" of American cinema in Europe. She took account of many other aspects that traditional film history never showed any interest in. From these apparently marginal but material aspects she was able to draw some very important conclusions about the migration of cinematic styles, of how and when the style of Hollywood film-making entered Europe. She also tried to explain how and why certain directors moved from France and Germany to Hollywood: Ernst Lubitsch, Friedrich Murnau or Maurice Tourneur – countering the idea that all foreign directors in Hollywood were political refugees or "exiles".

Fryderyk Kwiatkowski: What is your particular approach within these discussions? So how did you approach studying cinema as a narrative medium?

Thomas Elsaesser: For my part, I always wanted to combine an understanding of films and an understanding of the contexts of film: production, exhibition, distribution, and so on. I have always wanted to see them as connected.

What helped me was that I was influenced by Michel Foucault and Walter Benjamin. They taught me to read films as social texts and to understand film form as responding to certain external pressures as well as internal constraints. The example that has become very typical was the attempt to understand why and how the cinema became a narrative medium. Early cinema studies – notably by Charles Musser and Tom Gunning – established beyond any reasonable doubt that this was not a natural occurrence, this was not the inevitable destiny of the cinema, but was instead the result of an interplay of many different factors: some of them technological, some of them determined by the power relations between producers and exhibitors, some of them having to do with trying to capture a particular kind of audience, namely the "bourgeois" spectators used to the theatre, rather than to appeal to a working class audience that was interested in gags and showmanship: this is where Gunning's "cinema of attractions" has one of its roots. So these different revisionisms that you mentioned, may have tended to downplay the significance of the film itself, but by offering a materialist explanation for narrative they can and did lead back to the films.

My particular contribution, if you like, was to examine these broader questions around certain specific films treated as case studies. I like to demonstrate how tightly film form and actual film content can be correlated with what appear to be entirely external factors. So, in my book there were to be three such case studies: one of a so-called "silent" film from 1914, a German film by Franz Hofer called Weihnachtsglocken 1914 – Heimgekehrt. Unfortunately, for reasons of space, it had to be left out, but it has been published elsewhere, in English (1999), German (2002), and French (2006). Included is the case study of an early German sound film from 1932 Das Lied einer Nacht (Litvak), which was a very popular musical, but shows an extraordinary degree of reflexivity about the relation between body, voice and technology. Also featured in the book is a case study of Walter Ruttmann and the "optical wave", once again considering a completely different context for how we can apply fresh thinking to sound and image, avant-garde and mainstream, animation and real live action.

Fryderyk Kwiatkowski: Let's talk about another topic, which you partly touched upon, but by referring it to transformations in film narrative and aesthetics. In your book you show that some of the technologies, that were advertised as "new", like 3D, were not such at all. Could you elaborate on how these technologies have been recently used by filmmakers and what effect they have on contemporary aesthetics and cinematic experience?

Thomas Elsaesser: I'll give you an example that struck me: the film *The Revenant* (Iñárritu 2015), which I found interesting for two reasons. One is that I've worked a lot on 3D and there's a whole chapter in the book that discusses

what it might mean that this typical technology of the "cinema of attraction" has come back, after it had "failed" in the 1950s. Among the things I noticed, was that in 3D films filmmakers like to shoot in an environment that does not have a horizon line; stories that are set in outer space, in a kind of jungle-world, on the high seas or in desert landscapes - these are all environments without a clear horizon. Because 3D works much better if you do not have a horizon line or if you can immerse yourself in a natural element that slightly disorients your usual upright-forward linear orientation - examples that come to mind are water in Life of Pi (Lee 2012), primeval forest in Avatar (Cameron 2009), the emptiness of space in Gravity (Cuarón 2013). All these films try to create this non-bounded frame, to naturalise the absence of a frame, which allows 3D to surround and immerse you, because as soon as you feel the image is wider than your field of vision, you lose this sense of enframing and with it, your sense of mastery and control. Now, what happens in The Revenant is that you do get this wide-screen, empty-spaces, no-horizon feeling, as the hero traipses through the snowy wastes, but you also have a different aesthetic at work which I call the "go-pro aesthetic": being very close, being absolutely viscerally close, because this, too, disorients us. Being too far without the horizon and being too close to have our own distance can produce a very intense impact. The Revenant, whatever you may think about its story, and obviously it is also a classic narrative (after all what is more classical than a revenge story?), uses this Aristotelian narrative architecture as a sort of scaffolding, because otherwise the visuals would be too disorienting. In this sense, the narrative is ultimately less interesting than what the filmmaker is able to do to us, and to our senses, by combining IMAX aesthetics with go-pro aesthetics. Most of the scenes with the bear and when the hero is struggling with the elements at close quarters is the go-pro aesthetics, whilst the other scenes, where he is a tiny speck in these vast open spaces, is the IMAX aesthetics. As far as I know, nobody has talked about this film in that way, but The Revenant would be my example of how a contemporary Hollywood blockbuster can be avant-garde, or whatever you would like to call it, because some directors set themselves technical challenges which are also aesthetic challenges, and the reasons for these challenges are a combination of external demands or pressures and internal constraints or self-imposed limits.

Fryderyk Kwiatkowski: Media archaeology is usually presented in the context of its methodological advantages and even superiority over previous theoretical approaches to media history. Little attention, however, has been paid to its limitations. Do you think that media archaeology can lead to an overestimation of "lost" or "forgotten" inventions and practices?

Thomas Elsaesser: It is a very good point – both methodologically and with respect to nostalgia, or if you like "dead media necrophilia". In my book I try to address both aspects. On the one hand, I make it very clear that media archaeology, as a discipline or as a subject, cannot solve our methodological or our historical problems. This is why I have a whole chapter called *Media Archaeology as Symptom*. It is a symptom – the very fact that we now have something called media archaeology is a symptom that we are no longer comfortable with traditional notions of history. And this is partly because of what we have been talking about, namely our primary models of history – linear and mono-causal or multi-causal teleological models of progress, of improvement, of "better and better" or always chasing the "new". And we know that those models do not work, not only in film history. We know this in so many fields: while we are making enormous progress in some areas, such as life expectancy and medicine, this very progress is often coupled with potentially very negative consequences, such as cloning, or designer babies.

But we are also having our doubts about history because of the function that memory now occupies in our society. Not only as individuals we now have a tendency to think of memory as more authentic and truthful than history. Partly because so many individual lives are marked by very traumatic events which lodge themselves in our minds in a more distributive, non-chronological form. But also because we have so much machine memory through our computers, hard drives, cloud computing and so on, that we tend to overestimate the power of memory. We also tend to privilege random access to information over lining up information in a sequential way, which taken together with associative and traumatic memory gives us a sense that history as sequence of events no longer tells us what we need to or want to know. In fact, there is a real competition between memory and history.

In film and media studies, we are not the only ones grappling with new historiographical models. Sociologists, but also biologists or risk managers, tend to think and use history as an accumulation of data from which one can extract information about the past in order to predict or model the future. But as I have said before, this is a very limited way of dealing with the past. And so, history has in some sense come under a lot of pressure and suspicion, which means that we tend to overestimate or privilege non-linear ways of accessing information. And media archaeology — within the discipline of film studies but also within the discipline of media theory — is precisely a non-linear way of accessing the past. But we should not necessarily assume that this gives us a more accurate picture of the past: it simply means that we are now using and preferring a different organising system. History is basically a particular organising system of information strung along a time-line. Until now it has been a particular organising system that privileges linearity,

mono-causality and uni-directionality – teleology in other words. And it has served us well for a hundred and fifty years. But maybe it has come to the end of its useful life...

Fryderyk Kwiatkowski: What other types of organising systems can you name?

Thomas Elsaesser: Let me put it in a slightly different way. What we now have are both different tools and different tasks, and it is their combination that requires new organising systems. Among the different tools are the computer, databases, the digitisation of vast amounts of information, of data, sources, forensic evidence — as I said, the explosion of information and the expansion of what we now call "evidence", available at the click of a mouse or when consulting a database or having on-line access to a university library. These are the new tools which have radically changed the way we actually manipulate or organise knowledge. If you think of history as itself an organising principle in charge of managing (ordering) and manipulating (shaping data into a narrative), then it becomes clear that the tools of history may also have to be adapted: media archaeology is one such adaptation of the tools that change our state of knowledge.

But we also have different tasks, and among these tasks are how to not only understand but to manage and control processes happening in so-called "real time" and to appreciate the interaction of very different factors at different types of velocity and intensity. In other words, we know that events are shaped by a confluence and conjunction of very specific factors and variables that have different speeds, different intensities, different directions, different causes, et cetera, et cetera. And we need models that actually are multi-directional and multifaceted rather than mono-directional, models that can handle both negative (self-regulating) and positive (recursively amplifying) feedback loops.

Fryderyk Kwiatkowski: So what might be the role of media archaeology in this particular context?

Thomas Elsaesser: The relationship between tools and tasks has shifted and this means that media archaeology is one of the examples – or symptoms – of such a reconfiguration of these different tools and tasks. But it also means it only ultimately reflects those tools and tasks and not some higher truth or insight – which is why I sometimes call media archaeology also a "place-holder": it gives us a sense of where the problems are, but it does not necessarily provide us with an answer. And there are many of those who ac-

tually practice media archaeology who say it should not become a discipline, it should not actually rigidify into a discipline. Its openness, in the sense of, and similar to "open software", is what actually keeps it alive. And then, there are scholars who write books that I would consider to be contribution to media archaeology but who would not call themselves media archaeologists. For instance, Jonathan Crary does not call himself a media archaeologist, and Mary Anne Doane's book The Emergence of Cinematic Time (The Emergence of Cinematic Time: Modernity, Contingency, the Archive, 2002) is a very important contribution to media archaeology, but she would not call herself a media archaeologist. So media archaeology is both a powerful way of reconceptualising the relationship that we have with the past, but it also signifies the relationship that we have with digital technologies as well as how artists deal with obsolete technologies, when they are resurrected as art objects or artistic practices. If some thinkers feel that they would rather not use the term because they do not want to limit themselves to its connotations, then they simply confirm what I find exciting about the field and the concept of media archaeology: namely that it actually has not consolidated and solidified into one specific thing. As a symptom or place-holder, it can actually be more productive than if it now forms a separate discipline that cuts itself off from film analysis, from cultural studies, from film history, media theory, art history, digital media studies and several other disciplines. It actually exists in order to both interact with these other disciplines and to give and receive new impulses.

Fryderyk Kwiatkowski: How do you imagine the future of media archaeology? Do you think that its explanatory power and lifespan are solely dependent on numerous crises of our culture, which you discuss in your book, such as the crisis of history and causality, the crisis of narrative, and so on?

Thomas Elsaesser: Yes and no. This is where, I think, the use that artists make of media archaeology complements and complicates what I have been saying so far. The interest that artists have shown in what I have called obsolete technologies is relevant under at least two separate headings. On the one hand, what attracts not just artists to the objects of media archaeology, is the fact that they are physical, tactile, they are materially present. As part of a new value assigned to materiality, the fascination with obsolete objects can either be explained by saying that such a materiality is only possible because of the digital – rather like the fact that vinyl records are only possible because of CDs and mp3 files – or it can be seen as a countermove and corrective to the digital world, as a protest against the latter's tendency to make everything

virtual, abstract, conceptual, indeed invisible and untouchable. Electricity is not visible, you cannot touch it, in fact you would hurt or kill yourself if you touched it. In a world dominated by electricity, electronics and mathematics we are now very much attracted to objects, machines, and technologies that are physical: where you have wheels, cogs and mechanisms that turn, connect and interact. So the sheer physicality or the sheer sculpture qualities of a media machine that is no longer in use, such as the sixteen millimeter projectors that now proliferate in museums, elicits strong affective responses, as well as possessing philosophical value, and if it becomes "vintage" or a "classic", it even acquires monetary value.

This is one aspect of what I call in the book the poetics and politics of obsolescence. But the other aspect is that when media technologies or media practices become obsolete, they are liberated from economic constraints, they do not have to make money anymore for their owners and they are free from their ideological constraints - they do not have to "represent" something. So the fact they are no longer means to other ends but become ends in themselves lets us appreciate them as indeed ready to be reworked or valorised as works of art or as suitable materials for art works or installations. Because art is that which is no longer useful, therefore art has different ways of being in a world. If you follow Walter Benjamin you can claim that the origins of art are objects that once were either of practical use or were used in a religious cult, but which have outlived their uses or have been displaced from the site of a cult, as with so much so-called primitive art during colonial rule. In other words, art objects shed their ideological significance, their religious cultic significance or their economic uses. Once these are lost or stripped away, the object or practice can develop different qualities - which for Benjamin could include utopian qualities. And so, when artists now pick up sixteen-millimetre cameras or install slide projectors or display typewriters, they are probably trying to tap into the energy or potentialities inherent in these objects and these practices, but that were hidden while they had been put to use economically or ideologically. So this is where I see the place for obsolete technologies and obsolete practices and thus the advantage of media archaeology in the specific area of contemporary art spaces.

Fryderyk Kwiatkowski: Regarding the teleological paradigm in film history, we can recognise a major tendency in our culture – or at least it has been presented as such – which shows that we have been constantly trying to create augmented reality technologies for a very long time. The emergence of cinema, 3D, Google Glass, the effect of immersion into virtual reality by interacting with CGI or by using Oculus can be seen as very recent examples of this phenomenon.

Thomas Elsaesser: You can have different ways of responding to the idea of a teleology, or goal orientation. There have always been two ways that human beings think about reality and their relation to or interaction with it. One is, if you like, the Platonic one and the other the Aristotelian one. The Aristotelian one has the most direct, material, pragmatic engagement with reality. And this would favour a generally goal-oriented approach, of which greater and greater realism would be the cinematic version. But let's be careful: there is realism and realism, one that wants to get deeper into the heart of things and gives priority to the material world, and there is one that wants to feel more real, i.e., seeks a more engaged, more immersed, more participatory experience, and does not mind that these "realism effects" are achieved by simulation, by tricking our senses, or otherwise transporting us into "heightened" states of consciousness.

But there is also a historical point to consider: the cinema became an object of serious academic study at the same time as Italian neo-realism and other, even more politically explicit modes of realist aesthetics, such as Brechtian techniques, were predominating. In other words, in the years between 1945 and 1965, when some of the European foundations of our discipline were being laid in France, Germany, Italy, Poland and Britain, realism was indeed the overriding concern. André Bazin and Georges Sadoul in France, Jerzy Toeplitz in Poland, or Ulrich Gregor and Enno Patalas in Germany, or Eric Rhode in England were all writing film history around realism, which means they tended to disregard other aspects, such as animation, and they adhered to a kind of orthodox binarism between "realism" and "fantasy", among which they favoured realism.

However, you could say there has also been a more Platonic way of thinking, which has to do with the idea that reality is only a simulation and that we can go straight to the simulation in order to get a more intense and possibly even more spiritual appreciation and experience of the world. So what in traditional film history are two contrasted tendencies - the Lumière tendency of realism and the Méliès tendency of fantasy - have to be seen in a much broader philosophical context. And what we are experiencing now is quite difficult to actually classify: are we more Aristotelian with our simulation techniques or are we more Platonic with our simulation techniques? But to line them up in one continuous strand is to seriously foreshorten and even falsify the complicated history of these different forms of realism and representation. What is also not fully appreciated is that there is a third strand of how we approach reality. It is to think of our reality as potentially modelled through mathematics, through codes. The paradox of digital media is that their "impression of reality" is generated by mathematical modelling, but they can simulate both Aristotelian realism, where it's all about tactile, haptic contact, and also Platonic realism, in that we think we have these intense experiences, that we can "feel" digital images and seem much more bodily involved. What we tend to forget is that digital media are simulation media: we allow ourselves (and even beg) to be seduced and duped, so that we end up not unlike the prisoners in Plato's cave parable who prefer to return to the cave, even after they have been "liberated" from their shackled state, because the cold light of reality is just too harsh and stark. Consequently, what makes digital images so difficult to classify in terms of either realism or fantasy is that they draw on both, while being determined by neither, and instead they demonstrate the mysterious capacity of mathematics to model the world increasingly in real time. And sticking with the Greeks, this points more to Pythagoras, to the Gnostics, to all kinds of ways of thinking about the world that are neither captured by the Platonic nor by the Aristotelian world view. What we are seeing now is this fascination with how far we can actually simulate the world through mathematical formulas or - as they are now called – algorithms, and get "real world" effects and results. This is where we encounter AI, which basically is made up of huge interconnected networks of algorithms that model the external world, so we can send men to Mars, predict climate change, manipulate the stock market, conduct global trade, etc. But algorithms also model our subjectivity, our likes and dislikes, our intentions, our thoughts. And the danger is that this modelling of the external world and the modeling of the inner world increasingly "mirror" each other and are "synchronised" with each other, creating the "bubble" that shields us from the "real", but also seals us from the real.

Fryderyk Kwiatkowski: Professor Elsaesser, it was my pleasure to be your guest and thank you for your insights.

Thomas Elsaesser: Thank you.

Works cited

Cuarón, Alfonso, dir. (2013), Gravity, Warner Bros. Pictures.

Litvak, Anatol, dir. (1932), Das Lied Einer Nacht, UFA.

Lee, Ang, dir. (2012), Life of Pi, 20th Century Fox.

Lumière, August, Louis Lumière dir. (1895), L'arrivée d'un Train à La Ciotat, Société Lumière.

Cameron, James, dir. (2009), Avatar, 20th Century Fox.

Crary, Jonathan (1990), Techniques of the Observer: On Vision and Modernity in the Nineteenth Century, Cambridge MA: MIT Press.

- Doane, Ann Mary (2002), The Emergence of Cinematic Time: Modernity, Contingency, the Archive, Cambridge MA: Harvard University Press.
- Elsaesser, Thomas (1986), "The New Film History," Sight and Sound: 4 (55), pp. 246–251.
- Elsaesser, Thomas, Adam Barker, eds. (1990), Early Cinema: Space, Frame, Narrative, London: BFI Publishing.
- Elsaesser, Thomas, Michael Wedel (1996), A Second Life: German Cinema's First Decades, Amsterdam: Amsterdam University Press.
- Elsaesser, Thomas (1999), 'Sounds Beguiling: Franz Hofer and the Transformation of Music Genres in Early German Cinema, in: Leonardo Quaresima, Alessandra Raengo, Laura Vichi (eds.), Udine: Forum, 391–406, online: http://www.thomas-elsaesser.com/images/fulltexts/sounds%20beguiling%20-%20franz%20hofer%20%20genre.pdf [accessed: 15.12.2017].
- Elsaesser, Thomas (2002), Betörende Töne. Franz Hofers Weihnachtsglocken, in: Thomas Elsaesser, Filmgeschichte und Frühes Kino: Archäologie eines Medienwandels, München: text + kritik, pp. 171-190.
- Elsaesser, Thomas (2006), 'La notion de genre et le film comme produit « semi-fini » : l'exemple de 'Weihnachtsglocken' de Franz Hofer (1914)', 1895. Revue d'Histoire du Cinéma: 3 (50), pp. 67–85, online: http://journals.openedition.org/1895/1262 [accessed 15.12.2017].
- Elsaesser, Thomas, Malte Hagener (2009), Film Theory: An Introduction Through the Senses, London: Routledge.
- Elsaesser, Thomas (2016), Film History as Media Archaeology: Tracking Digital Cinema, Amsterdam: Amsterdam University Press.
- Foucault, Michel (1977), Discipline and Punish: The Birth of the Prison, New York: Pantheon Books.
- Hofer, Franz, dir. (1914), Weihnachtsglocken 1914 Heimgekehrt.
- Hediger, Vinzenz, Patrick Vonderau (2009), Films That Work: Industrial Film and the Productivity of Media, Amsterdam: Amsterdam University Press.
- Iñárritu, G. Alejandro, dir. (2015), The Revenant, 20th Century Fox.
- Kittler, A. Friedrich (2006), *Gramophone*, *Film*, *Typewriter*, Stanford CA: Stanford University Press.
- Strauven, Wanda (2006), *The Cinema of Attractions Reloaded*, Amsterdam: Amsterdam University Press.
- Zielinski, Siegfried (1999), Audiovisions Cinema and Television as Entr'actes in History, Amsterdam: Amsterdam University Press.