Movie Circuits

Curatorial Approaches to Cinema Technology

GABRIEL MENOTTI

Movie Circuits

MediaMatters is a series published by Amsterdam University Press on current debates about media technology and practices. International scholars critically analyze and theorize the materiality and performativity, as well as spatial practices of screen media in contributions that engage with today's (digital) media culture.

For more information about the series, please visit www.aup.nl

Movie Circuits

Curatorial Approaches to Cinema Technology

Gabriel Menotti

Cover illustration: Polliana Dalla Barba (2018)

Cover design: Suzan Beijer
Lay-out: Crius Group, Hulshout

Table of Contents

Introduction: Blind Optics

Abstract

A movie disappears right in front of the audience's eyes. What could be happening? By drawing inspiration from the unsuccessful *première* of the movie *a knife all blade*, this book acknowledges a new critical way of engaging with cinema. It champions hands-on approaches as a means to pierce through medial ideology and access the invisible side of the medium, where the bulk of technological development is accumulated and suppressed. Through the work of mediators such as projectionists and curators, the inconsistencies of the medium are therefore presented as partial but powerful keys for grasping its material reality.

Keywords: Cameraless films, discourse networks, film cultures, medial ideology

As the credits roll, one can feel the hustle of people moving around, impatient bodies readjusting in their seats. But the service lights have not gone on yet. There is still a final short to be screened in that noon session of the *XV Vitória Cine-Video Festival*. With the dim light of their mobile phones, some spectators check the name and duration of the piece in the printed programme they got from a pile outside the theatre. It is an experimental video entitled *a knife all blade*, one minute and fifty-seven seconds long. This was the first time it was going to be shown to the public. It is still open to question, though, whether it was *watched* at that same moment or not.

The theatre was far from empty – in fact, all of its 240 seats were filled, and there were people crowding the aisles, all over the floor. That 25 November 2008 was a day as busy as ever for the local film festival, which was in its heyday. Nevertheless, no one seemed to notice when *a knife all blade* started to be projected. Perhaps more surprisingly, no one took issue when, within about ten seconds, the projection was cut short. The screen went blank and the lights instantly turned on. The show was over. One by one, spectators stood up, rubbed their eyes, stretched their legs, and calmly

started to leave. It was probably a relief to most of them that the last video seemed to be cut out of the session.

A plain description of what happened cannot explain what had gone wrong, if anything. Did a mechanical malfunction make the projector halt? Had some obstruction to the light precluded the image formation? The boring truth is that neither of these theories is true. The devices were all in place, working as intended, resulting in the most accurate reproduction of the piece. The movie nevertheless went unperceived, as did its sudden interruption. Considering the audience's indifference, one would think that it was no accident. In fact, one would assume that nothing had happened at all. Despite having been right in front of their eyes, it was as if *a knife all blade* had never existed. A virtual non-occurrence, which becomes apprehensible only as one steps away from the situation and examines it from a certain distance.

But why would we do that? The conspicuous invisibility of *a knife all blade* makes for a curious incident, but it does not seem special in any meaningful way. It is barely passable as a tale to entertain one's co-workers, as it lacks a proper punch line. What place could it have in a book purportedly about cinema technology? It is not cinema, after all, but rather its failure. It does not express any significant information about the medium, but rather noise apart from it. Singular and inconsequential, the incident does not appear to provide any contribution to a general theory of the cinematographic work. It is the kind of anomaly any barely competent film scholar would remove from her analysis of the movie. Particularly at the time of the screening, when film and screen studies were going through the apex of the crisis effected by the digitization of film, the event seemed completely beside the point. The grand narrative of film history is made clearer through the suppression of this and other similar oddities. With the future of the medium under threat, there is no time to lose ruminating on its operational inconsistencies. Right?

This book is based on a disagreement with this statement. It posits that, on the contrary, the particularities of that 'nonoccurrence' do offer a partial but powerful key for grasping the material reality of the medium. They may even provide a quick fix for the epistemic crisis provoked by 'the digital'. By dwelling on these particularities, one comes to realize that operational inconsistencies are not a rare exception, but are rather commonplace in cinema. The cinematographic work does not have an intrinsic cohesion, nor is its apparatus technologically neutral. The awareness of this material restlessness comes almost instinctively from the engagement with the medium's underbelly. After years working as a curator, chiefly in informal

and often experimental capacities, it seems impossible for me to look past it. Without the support of institutional networks, movies' self-evident objectivity is shown to be largely fictional. Every movie leads a contrived existence, always on the brink of falling apart. It requires a continuing investment – of labour, of energy, of attention – in order to present itself anew. In the exchanges entailed by these processes, the work ebbs and flows, porous to its surroundings.

The tentative methods here outlined seek to provide ways of accessing cinema by the means of its inconsistencies. These methods take inspiration from the work of those committed to the in-betweens of the medium: not its traditional scholars, nor even its usual practitioners, but rather its *mediators*. This results in film and screen studies as if the discipline was created not by those who analyse or produce movies, but rather by those who move them around and make them present. While this description could fit a wide range of both human and nonhuman agents, the main proxies in our endeavour are the complementary figures of the projectionist and the curator. Through their skewed perspective, simultaneously removed and closely bound to the medium, minor singularities can reveal deeper material and political realities. Their idiosyncratic sensibilities can be mobilized in order to supplement the paradigmatic cinema scholarship, calling attention to the *actual* technological and epistemic arrangements of the medium. This approach leads to the exploration of the negative spaces and practices that are systematically denied from our understanding of the medium – in other words, the work that disappears right under our eyes.

Cameraless films and the filmless projector

In hindsight, one might consider elements that were not immediately available – starting from the video itself. *a knife all blade* is an exceedingly simple piece. Its title is inspired by one of Bengali polymath Rabindranath Tagore's most famous sayings: 'A mind all logic is like a knife all blade. It makes bleed the hand that uses it.' There is no soundtrack whatsoever. No opening credits. No dramatic curve. As soon as the video starts playing, the darkness of the screen is filled with dozens of popping grey squares of similar size. Here and there, the squares seem to bleed into straight lines of a murky green or red colour. But it is hard to tell, since they do not stop pulsating, eluding the gaze. In spite of the random rhythms, one can recognize a certain order to their positions, implying a grid. Indeed, each square corresponds to a macroblock, a group of pixels constituting

Gabriel Menotti, still from *a knife all blade* (2008). Digital video, colour, 1'43".

a processing unit of image compression. Their appearance on-screen was not animated in postproduction, though, but was rather prompted during recording.

The video was made using a mobile-phone camera with the lens covered, so that no light could reach the device's complementary metal-oxide-semiconductor (CMOS) sensor. Still, the camera did produce some images, thanks to the digital compression that took place at the very moment of capture. Without a subject in front of its lens to inform it – a world of light to hold on to – the camera performed just like the knife in Tagore's dictum. The pure logic of video processing went wild, producing a movie that was a trace of nothing but the machine itself. Nokia's low-quality algorithm interpreted the complete darkness as visuals to be processed and stored, generating the grey squares out of nowhere. Thus, inasmuch as it may look like an abstract animation, *a knife all blade* is rather a parade of compression artefacts, which reveals one of the normally hidden formal structures underlying the digital image.

To refuse figuration is a strategy not unheard of in the realm of audiovisual media. Works belonging to traditions such as structural film and video synthesis famously de-emphasize the optical input in favour of direct interventions in the image's medium of inscription, producing rather abstract results. In his stroboscopic *Arnulf Rainer* (1960), Peter Kubelka achieved a sort of minimal cinema by alternating clear and black frames in the filmstrip.

The soundtrack underscores this visual vibration with alternating white noise and silence. Steina and Woody Valsuka's *Noisefields* (1974) performs a similar operation by mixing together two raw video signals. Initially indistinguishable from one another, the signals differ as they go through a colourizer and one is keyed in a circular shape. The result is a continuous flickering of static fitting the electronic medium.

These works tackle the same field as the broader genre of *cameraless films*, which encompasses forms of animation made straight to celluloid. The term reminds us of how much the techniques employed by animators such as Norman McLaren and Len Lye build upon the photograms championed by Man Ray. Film scratching and collage, and later optical printing, are methods for the creation of moving images based less on framing the gaze than on touching the medium. As such, they advance cinematographic grammars alternative to the perspective projection inherited from the Quattrocento. But *a knife all blade*, along with the works by Kubelka and the Valsukas, pursue a more clearly analytical (and even agonistic) relation to the standards of audiovisual representation: they operate by short-circuiting the technological medium. By blocking the optical sensors and preventing a worldview to get into the system, they force the system to output what is already in there.

What come to view are the lesser known parts of audiovisual media. Minimal difference, barely above the signal-to-noise ratio established to that system, reveals the image immanent in its processes of storage and transmission. This is the background against which Friedrich Kittler has said technological media must operate (1999: 45). Here, we encounter language as a set of material operations. Noise, frequently taken as an unwanted side effect of communication channels, ultimately provides the conditions for images to circulate. Traces must be left on the physical medium for a film text to be possible. To deny optical capture is to embrace the bare aesthetics of this writing mechanism, along with its underlying operations. Processes as collateral to filmmaking as the flickering of light, the modulation of electricity, and the computation of data are therefore revealed to be the primary underpinnings of cinematographic practices.

In that sense, the reason for *a knife all blade*'s 'disappearance' seems obvious, if not expected. Bordering pure noise, *a knife all blade* does not look like a 'proper' video, but rather like a spasm of the projection infrastructure. The unprepared audience simply could not recognize it as meaningful information. It must have felt like watching an empty channel. Instead of a cameraless film, *the filmless projector*. Taking to heart the words of Christian Metz, for whom film 'is brought into being by nothing other than the look' (1982: 93), one could assume that, in that moment, *a knife all blade*

literally did not exist. The phenomenology of viewing – so constitutive of cinema – simply could not ensue. It was as if media technology had been deployed not to represent the world, but to present itself. A projector running in a movie theatre during a screening session of a film festival ceased to be a cinematographic apparatus. There was nothing left to do but to shut it down.

However reasonable this explanation may be, it does not fully account for the absurdity of the situation. After all, *a knife all blade* may not look like a movie, but it certainly is one. Had the video been left to run, the public would have realized, sooner or later, that those popping squares were not accidental. Questions about what they were watching would barely have the time to form in their heads. In less than two minutes, closing credits would have shown up on the screen, stressing that the previous images were in fact a cinematographic work. The audience's initial dissociation from the apparatus, and their ensuing uncertainty about the medial character of those images, would thus be confronted by forced identification. The escalating conflict between the filmic content and the exhibition context would be defused by the authorial declaration implied in the closing credits.

This ambiguous journey of awareness about the cinema situation could be said to constitute the primary narrative of *a knife all blade*. A film festival, as a setting often reliant on cinema's conventional viewing regime, but nonetheless committed to unusual programmes, would be a most suitable environment for this narrative to unfold. The festival curators certainly had this in mind when they included the movie in one of its screening sessions. They knew that the context of exhibition allowed for a metatextual experience that was not possible in other segments of the film industry. It was not necessary to tell the audience about it beforehand; they were in for the surprise. However, the curators apparently failed to communicate that plan to the projectionist. It was this normally inconspicuous functionary who ultimately denied the condition of cinematographic work to the traces on screen. Probably uninformed about the aesthetics of *a knife all blade*, the projectionist could not recognize the movie as itself. Even though everything in the projection booth could have seemed to be working properly, the visual evidence told her the opposite. What appeared on the screen was a sign that mediation was lacking, akin to a DVD menu or an empty frame of light, allowing the infrastructure to come into view. Mistaking it for a damaged copy of the video, the projectionist did what was expected from her as a professional and shut the machine down. The audience, even if they had any suspicion that the compression artefacts stood for a proper movie, assumed that they did not, because the projectionist (who should have been better informed) interrupted everything.

The performativity of media in the circuit

The cascading failure of *a knife all blade* brings some nuance to the understanding that the audience's imagination is the cornerstone for the film to appear. This notion dates as far back as 1916, when Hugo Münsterberg argued that the machine underpinning the cinematographic spectacle did not work on its own, but ultimately resorted to the spectators' attention. In his opinion, the projected scenes were something 'we believe that we see' but in fact 'only our imagination supplies' (apud Langdale, 2013: 75). A similar idea informs classic apparatus theory, expressed for example in the Metzian concept of the imaginary signifier. But, as the case of the botched screening shows, the visual phenomenology of the film rests upon a more complex arrangement of elements, most of which are not immediately available.

The psychophysical complicity between the public and media technology needs to be modulated by their conditions of engagement, which in turn depends on factors both external and internal to the cinema situation, such as the curators' decisions and the projectionist's actions. Taken together, these elements put the multilayered, performative character of the medium in relief. Challenging the understanding of film as a self-contained, self-evident, and autonomous form, they present it as something akin to a speech act uttered by the machine. The physical traces in which moving images had been inscribed must be excited and technologically enacted for the film to appear. The resulting sensorial effects must be accommodated within a discursive frame that allows for their continuing decodification as a cinematographic work.

These dimensions of the medium cannot be seen isolated from one another. As Vilém Flusser has argued, discourse pervades media apparatus by the means of their programming (2000: 14). While in Flusser's work this served as a metaphor for how technical and scientific processes are embodied in visual devices, programming has now become the literal supporting structure of a medium increasingly running on software abstractions. Audiovisual content distribution by digital networks, whether in the form of theatrical projection, video-on-demand services, or social media platforms, is largely contingent on asymmetrical client-server relations. Particular operating rules may be imposed on the screening client by the means of the same protocol infrastructure through which it receives content. Thereby, the distribution server is able to directly control in which circumstances a given film is available and under which conditions it may be accessed, according to arbitrary determinations.

At the same time, discourse is organized around media technology by the means of its many adjacent mechanisms. Different sorts of paratexts, apparently disconnected from the communication system's core, collaborate with it in the constitution of a meaningful media environment. Jonathan Gray remarks how fundamental these ancillary elements are to negotiate the interaction between texts, audiences, and the industry (2010: 23). Drawing from literary theorist Gerard Genette, he suggests that paratexts form a descriptive threshold without which texts cannot exist (2010: 25). Endowed with their own physical reality, paratexts contribute to the continuing performance of a movie. They promote certain readings, crystallize meanings accrued to the work after its release, and effectively draw separations between its inside and the outside where it circulates. In that sense, paratexts are integral to what Hans Ulrich Gumbrecht dubbed the materiality of communication: 'those phenomena and conditions which contribute to the production of meaning, without being meaning themselves' (2004: 8).

In a way fitting Kittler's concept of discourse networks (1990), the interactions between media devices, films, and their paratexts provide conditions for the cinematographic work to exist. The case of *a knife all blade* illustrates how the phenomenological experience of cinema is underpinned by systems of notation responsible for the storage, transmission, and decodification of media. The lack of a component to indicate more clearly the movie's beginning, such as an opening title, was partially responsible for the way it failed to stand out from the technological context of its screening. The synopsis printed on the festival's programme, on the other hand, allowed the movie to exist in spite of its absence. Having read it, the spectators acknowledged its omission from the session, and asked each other about it upon leaving the theatre. It was also by the means of this simple external component that the occurrence became a constitutive part of *a knife all blade*. From then onwards, every synopsis that went along with a copy of the movie incorporated the history of its disappearance. Thereby, singular events in the trajectory of the work may feed back into it, driving the way it is perceived by the public.

The myriad of elements relevant to the experience of film, both within and without the screening situation, asks for a reconsideration of the classic idea of the cinematographic apparatus. They imply an ensemble combining multiple physical realities that cannot be reduced to the technologically neutral notion of a 'mental machinery' (Metz, 1982: 7). The apparatus, as the metaphysical expression of an anthropocentric model for ideological propagation, is inscribed in a growing network of meta-programmes committed to one another in many other, nonhuman scales. These circumstances are

described by Flusser as a potentially infinite stack underlying the fabrication of every media device: the camera is programmed by a photographic industry which, in turn, is programmed by the industrial complex which, in turn, is programmed by the socioeconomic complex – 'and so on' (2000: 29). Actual systems of geopolitical governance, policy, and legislation are likely to appear right after in the sequence.

The competition between systems running on different scales prevents this hierarchy of programming to operate as a top-down chain of command. Silicon Valley-style 'disruptive' industries, insofar as they affect the socioeconomic status quo and challenge state sovereignty, are a compelling example of how multidirectional feedback may exist across these layers. The rhetoric of disruption was deployed by Dina Iordanova and Stuart Cunningham to encapsulate how online media has affected global film distribution in spite of the established industry (2012). These conflicts stemming from technological development manifest not only disputes for market control, but also the continuing negotiation of media standards.

To our comprehensive notion of the cinematographic apparatus, the importance of standards cannot be reduced to their role as molecular gate-keeping mechanisms. As they allow for the coupling of different devices into a reflexive circuit of production, distribution, and consumption, standards bear epistemic implications. Jonathan Sterne remarks their function in the constitution of *mediality* not as a quality proper to any specific media device, but rather as the 'collectively embodied process of cross-reference' amidst different elements (2012: 9-10). According to this perspective, the boundaries of what constitutes cinema would not be set a priori, from the outside, as a fixed frontier of specificity. Rather, they would exist as a pervasive gravitational field that 'bind[s] together "different perspectival scales, technologies, epistemologies, rhythms, and affordances"' (Sterne, 2012: 23), ebbing and flowing according to the ecology of meta-programmes. In that sense, even when singular, the apparatus is always plural. Whether by the umbilical residues of its fabrication, whether by the deficits that allow its connections to other devices, each cinematographic apparatus implies the broader, contradictory circumstances of the technological system in which it is embedded.

The systems that allow for the circulation of films are therefore the same that embody cinema as a fractal expression of its own mediality. They constitute a self-reflexive circuit underpinning not only the phenomenology of the cinematographic work, but also of cinema proper. The very notion of 'cinema' is an effect of material technologies. The development of these technologies performs the medium as an institution to be historicized

inasmuch as their joint operation performs moving images as meaning-ful information to be experienced. Disconnected from this network of processes, *media* apparatus cannot exist as such, since they lose their *medial* characterization. The filmless projector fails even before being shut down because it is already an empty, practically isolated device: a machine that throws light onto a screen with no cinematic implications.

The reflexivity of media and medial ideology

The self-reflexivity of the circuit is articulated in the relationship Jean-Louis Comolli traces between cinema and a social machine which 'manufactures representations' as it 'manufactures *itself* from representations' (1985: 741). The apparatus involved in this double operation are not only the more conspicuous 'machines of the visible', but also systems that delegate power, social imaginaries, and modes of relational behaviour. Relying on the aware-ness of the spectators to bring the cinematographic spectacle to completion, the circuit addresses them deliberately through all of these various instances. Factors such as the authority of film critics, the allure of movie stars, and the conventions of moviegoing cooperate in the construction of the relation between audiences and the media. Even in the absence of images on a screen, these promotional apparatus may prepare (as they *prepare for*) the film experience.

Outlined in such a way, cinema does not resemble a fully formed system of audiovisual communication or art form. There seems to be no cohesive medium in front of which a knowing Cartesian subject may stand, ready to apprehend the reality as it is represented to her autonomous senses. Rather, cinema feels like a socio-technical assemblage in continuing formation. There is a constellation of elements of different qualities, among which we may perceive various degrees of proximity and tension. One is immersed full-body within this constellation and must engage with these elements in order to make sense of them first, before reaching for any world beyond.

In this sphere of technological mediation, not even the sheer act of *seeing* is elemental. To watch a movie, as innate as it may feel, is a historical opera-tion one must learn. It depends on acknowledging through which effects a particular device conveys representation; how these effects account for what is represented; and in which ways they can be told apart from other irrelevant, material contingencies of the underlying infrastructure. The anecdote about the spectators frightened by the reality of the Lumières' *L'Arrivée d'un train en gare de La Ciotat* (1895) has already been disproven

as a historical fact, but it is not entirely false. Even though it is unlikely that anyone really mistook the image for an actual train, Martin Loiperdinger and Bernd Elzer (2004) have pointed out that the spectators were nonetheless thrown off by its *hyperreal* quality. The moving image's deep focus and distorted proportions were unfamiliar features that assaulted the audience, displacing the more traditional grammar of perspective representation to the background of their perception. Not surprisingly, it was these raw effects of film projection that became the major appeal of the *cinématographe*'s early spectacles, not the machine's capability to represent the world (Loiperdinger and Elzer, 2004: 101-102).

L'Arrivée d'un train endures as a myth about how the mediation of a given technology relies on the accustomation of the audience to the technology's operation. The unaware spectator mistakes the underlying infrastructure of communication for the information it is meant to convey. In the case of the Lumières' 'invention without any future', the elements that should constitute information were not known in advance, but the sheer material effects of projection were still impressive enough to make it into an object for commercial exploration. As years go by, increasingly sophisticated grammars are built upon the moving image, cinema grows into a fully fledged medium, and, in the not entirely dissimilar case of *a knife all blade*, the technological real emerges as an uninteresting banality.

Cinema thus stands in accordance to the way it is codified in the public. The acknowledgement of the media infrastructure sets the parameters for an informed engagement with it. Sean Cubitt speaks about this as an isomorphism between projection and 'audiencing' (2004: 172). But perhaps a better way to described it is as a state in which 'human beings function as a function of the apparatus' (Flusser, 2010: 34). The media subject is characterized by Flusser as a functionary bound to pre-programmed possibilities; even those who master programming are ultimately prescribed by the rules of other meta-programmes (Flusser, 2010: 26, 29). This vocabulary provides a broader account of how the conjuncture between audience and projection takes place. It implies that 'audiencing' is not wholly contained nor automatically provoked by the singular screening device one encounters. Rather, that it is a function diffused across the many apparatus that surround and constitute a screening, both directly and indirectly. Directly, in the way these apparatus inform the audience how to acknowledge and react to projection. Indirectly, in how these apparatus condition other media subjects to perform their own functions in relation to the audience.

It is possible to see these interactions operating in the micromanagement of a movie theatre. Vignettes and trailers screened before the feature, for

instance, are often used to inform the audience of behaviour guidelines (turn off your phones, locate the exits in case of an emergency, etc.) and to persuade them to return for upcoming releases. The audience's physical relation to the theatre screen as well as their perceived interests, on the other hand, inform filmmakers on how to prepare their works, and exhibitors on what kind of content to programme. As reductive as these examples may be, they nonetheless demonstrate how a particular cultural form we acknowledge in cinema is not essential in itself, but rather the epiphenomenon of wider metacultural articulations. The practice of moviegoing is established by the way it is addressed by surrounding discourses and has its own sphere of activity endorsed by other, counterposing practices. In that sense, the moviegoer exists in a way fitting Michael Warner's interpretation of the public, consisting primarily of norms of behaviour and conventions that undergo circulation (2002: 91). Likewise, so do other functionaries within the cinematographic circuit: filmmakers, critics, historians, curators, projectionists, theoreticians, camera manufacturers, theatre architects, system engineers, etc. Each of these practices subscribes to the same rhetorical fiction about the medium, insofar as they acknowledge one another as complementary modalities of engagement with its technology.

On her work about film cultures, Janet Harbord (2002: 3) has argued how cinema is constrained by a range of spatial practices, which are in turn affected and conditioned by infrastructures of circulation. Drawing on Pierre Bourdieu's thesis about how tastes are mobilized in tensions in the social field, Harbord posits that the definition of film either as object or as experience is never fully traced in any site. Rather, that films, as parts of a system of social reproduction, go through continuing metamorphoses as they travel between text and audiences. She underscores the role of film journals, screening venues, media events, marketing, and policy in this process. Written texts are 'a further form of institutionalization and cartography' (Harbord, 2002: 26), supporting particular cultures of exhibition, lineages, and purposes for film. Screening sites indicate 'modes of production, distribution, and exchange of film within different institutional frameworks' (Harbord, 2002: 42), enforcing distinctions between avant-garde and studio productions. Film festivals 'entwine film culture within the organization and materialization of national and regional space' (Harbord, 2002: 61), and thus secure routes of distribution and exhibition. In these and other ways, cinema comes up as a culture that 'extends beyond the discrete boundaries of texts into the myriad practices of everyday life' (Harbord, 2002: 16).

The circulation across many different apparatus, practices, and sites affects not only films' cultural meaning and value. Circulation also entails contingent

feedback processes which eventually crystallize as technical standards and ways of doing, shaping the cinematographic work's common physical format. This mechanism can be clearly seen operating in the way regulatory agencies programme technical guidelines for the medium, particularly when new industry paradigms must be cemented. Let's consider, for instance, the role of the North-American Academy of Motion Picture Arts and Sciences in stabilizing the early 4:3 'academy' aspect ratio for professional cinematography (Friedberg, 2006: 131), or the more recent work of Hollywood's Digital Cinema Initiative (DCI) in setting the 4K resolution as the benchmark for digital cinema (Kriss, 2015: 1396). The medium specification, however, takes place in an emergent fashion. Dynamic adjustments transpire in conjunction with these industrial determinations of the film format and means of operation. Even though the incremental character of these changes makes them hard to be traced, they can still be perceived and acted upon from particular places within the circuit. Connections to open-source culture, for example, made some filmmakers realize from the outset how informal file sharing and online streaming were paving the way for digital film distribution. The Brazilian Bruno Vianna was one to advance this possibility with the pioneering release of his fiction feature *Cafuné* on the Internet as early as 2006. Likewise, film curators are able to track from up-close the general fluctuations in film production trends, and occasionally take responsibility for them. From his work in programming the *Tiradentes Film Festival*, Pedro Maciel Guimarães became aware that the duration of shorts has been unmistakably driven by the time limits set by contemporary film festivals in a continuing feedback loop. 'The filmmaker's desire to make a longer film feeds the expansion of the festival's time limit and vice-versa' (Carmelo, 2016).

Cases such as these demonstrate that the circuit is a network that not only provides the conditions for the existence of films, but is also an environment where these conditions are negotiated. Devices and practices programme one another according to a number of actors, institutions, and individuals. Features considered essential to the cinematographic work – such as its physical format, visual definition, means of material transmission, and temporal duration – are in fact collateral to the continuing readjustments across its apparatus. In that sense, a *technical becoming* underpins media's seemingly fixed ontology.

The circuit reflexivity could thus be associated with Gilbert Simondon's theory of individuation, according to which the individual is not the cause, but rather an effect of collective processes in a metastable environment. Simondon defined the individual technical object as 'not this or that thing, given *hic et nunc*, but that of which there is genesis' (2017: 26). The genesis

consists of the specialization of functions achieved by growing synergies between compatible unities (Simondon, 2017: 38). This process results in the increasing concretization of the object as it becomes individuated in relation to an associated milieu (Simondon, 2017: 60). The final outcome is not the complete separation between object and milieu, but rather the organization of these elements as belonging to one another. The characteristics proper to an object would be precisely those 'of consistency and convergence in its genesis' (Simondon, 2017: 60); others remain contingent or accidental.

Simondon's theories reframe the operation of the medium in a way that calls for some exploration. They shed new light on how a cinematographic work stands out as a discrete object with integral boundaries, apart from the material processes of circulation and the paratexts composing it. Likewise, the notion of technical becoming could explain how cinema itself is formed as a specific field of mediation, separated not only from the myriad of practices in which it is embedded, but also from other audiovisual forms with which it interacts. The process of becoming outlines the topography of the circuit. Our very experience of cinema is reasoned according to its genesis. Some elements protrude distinctively and are recognized metonymically as expressions of the medium: the camera, the film, the screen. Others remain inconspicuous, partial to the synergies in which they are embedded. Thus, technical individuation sets the particular signal-to-noise ratio which allows the public to be aware of the spectacle. Awareness, in that case, does not simply imply telling meaningful information apart from an underlying channel. Rather, it entails identifying how the scattered elements that make the cinematographic work available account for its actual presence. Some might seem integral to the object; others, to its infrastructure of circulation. The vast majority of them, however, appear to be nothing more than environmental contingencies.

Comolli has spoken of the latter in terms of an 'invisible' part of cinema technology: 'black between frames, chemical processing, baths and laboratory work, negative film, cuts and joins of editing, sound track, projector, etc' (1985: 745). To this list, one could add the discursive devices necessary to the continuing programming of apparatus. As constitutive of cinema as these elements may be, they still fall short of a certain threshold of presence which would allow us to recognize them as such. This informed ignorance lends itself to the experience of the medium. It enables the audience to cope with the radical heterogeneity of technological circumstances and entertain the particular kind of communication cinema conventionally expresses. Among the many elements supplying 'film', *only* the impression of light on the screen seems to account for it. But, paradoxically, *not really*. Not the flickering, the

residual heat, the luminance, the scratches, the compression artefacts. By the means of this complex management of presences, the medium acquires phenomenological consistency. The circuit thus makes way for imaginary signifiers independent of their own technological circumstances.

Individuation similarly provokes a partial understanding of the medium. Elements ingrained in certain apparatus, as well as the processes which put them in place, recede to a sort of negative space in the circuit. The camera, as the privileged entity which 'represents, informs, and programmes the medium', becomes a model according to which its functions are entirely reduced (Comolli, 1985: 746). Comolli suggests that critical theories about cinema cannot properly analyse this situation insofar as they subscribe to the *ideology of the visible* resulting from it (Comolli, 1985: 746). For him, this stems from the fact that the medium's system of representation is bound to the hegemony of the eye and to Western logocentrism. Moreover, our very ability to grasp cinema as a distinctive medium, and thus the object of a particular history, seems compromised by its genesis. The specificities implied in the individuation of cinema obfuscate the medium's performative operation in the name of technical objectivity. By embracing an identity for what the medium is, one is driven away from the processes that actually bring it into existence. 'Film' thus comes to stand as a metaphysical horizon of presence curtailing our means to perceive the circuit.

In that sense, the mindset nourished within the cinematographic circuit could be better characterized as a *medial* ideology. Matthew Kirschenbaum coined this term to describe an ideology 'that substitutes popular representations of a medium, socially constructed and culturally activated to perform specific kinds of work, for a more comprehensive treatment of the material particulars of a given technology' (2008: 36). Medial ideology would be one of the reasons behind 'the prevailing bias in new media studies toward display technologies' (Kirschenbaum, 2008: 31). This 'screen essentialism', which Nick Montfort first detected in the analysis of early electronic texts (2005), clearly shapes our understanding of cinema. The fact that it seems just natural and unquestionable expresses how little importance we attribute to the circuit in the formation of every single image. The issue is not simply the way screen essentialism curbs the interpretation of cinematographic works. Rather, it is that screen essentialism often detaches cinematographic works from the material politics in which they are inevitably implicated. In a world of growing environmental imbalance and programmed infrastructures, it is imperative to foreground these connections. Thus, the task at hand for cinema studies is: how to pierce through medial ideology and reach for the medium's technological unconscious?

A history of *cinemas*

Throughout the 2000s, the massive digitization of cinematographic work arrived at its final stages with the widespread of digital projection. This transformation brought some distress both to the medium and its field of studies. Suddenly, the bedrock upon which cinema rested for more than a century was undone. The very photographic ontology that distinguished cinematographic moving images disappeared. What would become of film if film was no more? In his timely analysis *The Virtual Life of Film*, D.N. Rodowick forecast 'no inherent discontinuity cleaving the digital from the analogical arts' – 'while film disappears, cinema persists' (Rodowick, 2007: I). Indeed, in retrospect, the situation went no further than a brief disarrangement. Cinema's many functionaries were soon adapted to working with its new material underpinnings. The controversial bulk of technological development was cast to the medium's negative space. Film studies, after a moment of productive uncertainty, became confident in its object once again.

This case illustrates how difficult it can be to overcome medial ideology. Following the radical displacement of one element within the circuit, others tend to resettle in order to preserve their medial relations. Performing the history of cinema, researchers advance this conservative mindset insofar as they subordinate alternative technological configurations to the genesis of the medium. The question of indexicality, once considered a primary indicator of cinematographic specificity (see for instance Doane, 2007), fades into the background. After the fact, the crisis of digitization becomes normalized as another transitory stage in the narrative of film's ultimate progress – a stepping stone in an otherwise smooth process of individuation. The handle 'film' lingers as a vestigial sign that this endogenous development is more relevant to the technical distinction of the medium than any external material cause.

The practice of media archaeology entails a form of resistance to this kind of teleological determination by attempting to approach apparatus from the past on their own terms. Another useful tactic is the epistemological displacement achieved by practitioners who engage critically with the medium. Contemporary artists in particular occupy a position of continuing difference that makes them prone to escape the self-determination of media. Some works of avant-garde filmmakers from the 1960s and 1970s succeed in challenging the material limits of the cinema from their time, raising debates over the possibility of a cinema without film. It was a hot topic for an era when the growing popularization of video multiplied moving images without cinema. Jonathan Walley gathered these practices under the term

paracinema: 'an array of phenomena that are considered "cinematic" but that are not embodied in the materials of film as traditionally defined' (2003: 18). Some of the works Walley speaks about, such as the flicker films of Paul Sharits and the film-based performances of Tony Conrad, purposefully short-circuit the medium. Their presentations show that even a filmless projector is never empty, nor disconnected. The bare machine can have cinematographic implications.

Nonetheless, the extent to which practices like paracinema are able to subvert medial ideology is restrained precisely by their exceptional character as artworks. The fact that they need to be available within the circuit, engaging the actual apparatus they mean to reinterpret, can be a huge drawback. After all, they are not an easy fit for more conventional cinematographic venues. And just as media historians tend to isolate technological reconfigurations of the medium in the past, curators often bring this kind of work to very specific settings. Events such as experimental film festivals and contemporary exhibitions are much more welcoming to their presentation, besides reaching crowds better attuned to their proposal. This is in fact what transpired to *a knife all blade*. Some months after its failed *première*, the film was featured in the *Les Rencontres Internationales* festival at Centre Georges Pompidou, in Paris, during a programme entitled *Dark Light*. A year later, it was presented during the *Glitch Festival Chicago*. In these places, the screenings ensued without any trouble. Compression artefacts did not surprise the audience. On the contrary, they were very much expected – and this is where the issue lies.

Harbord has already remarked on the connection between the systems through which a work circulates and the particular traditions of knowledge and taste in which it is localized (2002: 143). As the circumstances of exhibition of *a knife all blade* led it to specialized venues, for instance, they inscribed it in fields such as contemporary art and glitch art. This mechanism progressively establishes places where phenomena such as compression artefacts and projection performances can be seen as normal. Yet the epistemic mapping is twofold. It simultaneously excuses their removal from hegemonic cinematographic venues and thus from the more comprehensive notion of 'film'. Insofar as these phenomena become the aesthetic shibboleth of a certain ghetto, their friction against the medium's distinctive logic loses footing. In that sense, the whole process of localization could be seen as a form of soft management of medial ideology, reducing direct antagonisms to a mere question of positions. According to its rationale, no cinematographic poetics or means of engagement is necessarily *wrong*. There are, however, big chances that it might be *inadequate*. The conflict

can be solved by finding or creating the proper place for it within the circuit (but often outside proper cinema).

One can see this process culminating in the development of a discursive field of variations around the medium, popularly acknowledged by the notion of 'expanded cinema'. To the extent that it seeks to accommodate works and practices not fit for conventional cinematographic circumstances, the concept of expanded cinema challenges the medium's individuality. It must be remarked, however, how it simultaneously contributes to the medium's individuation. As a means of accounting for variations, 'expanded cinema' conforms to Jacques Derrida's logic of the supplement. For, while it is 'a surplus, a plenitude enriching other plenitude', expanded cinema is also 'an adjunct, a subaltern instance' (Derrida, 2016: 157). In other words, to characterize a work as an *addition to* cinema makes it simultaneously *removed from* and likely *secondary to* the medium. In that sense, the concept of expanded cinema actually prevents the concept of cinema to be expanded. It allows for any art form or practice which emerges from the medium's negative space, challenging medial ideology, to be completely cast out of it. As a further stage in cinema's individuation, this conceptual articulation (which is both discursive and curatorial) preserves the medium's phenomenological consistency and reinforces a hegemonic understanding of its technology.

From where we stand, the first thing that should be done is to reclaim cinema as an epistemic playing field. Not only the *concept* of cinema, but all of its sites, practices, apparatus, functionaries, and objects. In summary, *all of its circuit*. It is not a new idea; it is a way to embrace a fundamental indetermination others have already articulated in relation to the medium. If the underpinnings of cinema are in fact 'discontinuous and fragmentary' (Machado, 2002: 21), and its field of studies cannot really sustain 'permanent claims on its disciplinary territories' (Rodowick, 2007: 23), then any certainty we may have about it is just conventional. Indeed, even the medium's most distinctive features are contingent on a continuing technical genesis. The circuit, as the place where this genesis unfolds, is also where we may better analyse it. In order to do so, we ought to make an effort to *deindividuate* cinema. We must untangle it from predefined categories and underscore the material and discursive disputes inherent to its development in opposition to other media systems and art forms.

One of the categories we must sidestep right away is *film*. As a means to address the cinematographic work, 'film' creates the wrong impression of a fixed material determination. It is necessary to substitute this term with another, one that makes clear that what defines the object of cinema is in continuing negotiation. The more general idea of *moving image*, however, fails to grasp the institutional tension implied by this process. Furthermore,

'moving image' suggests a morphological *a priori* which does not do justice to the sensorial multiplicity entailed by the cinematographic work. For these reasons, we should rather adopt a term that for many people might sound vulgar: *movies*.

'Movies' is a word that has always been part of cinema's vernacular. Its use for marketing purposes has produced a degree of *discursive emptiness* that will come in handy for our epistemic manipulation. It allows us to speak about cinematographic objects which do not have a specific material cause and might not even be visual, but are *cinematographic* nonetheless. In that sense, 'movie' is an *institutional* category above anything else. All that the term implies is *movement*, which indeed might be their most relevant proto-characteristic. Not as *moving images*, but as *images that move*: those that circulate within cinema and across its negative spaces.

This broad institutional horizon sets the ground for the first chapter of this book, *What is a movie?*, which attempts to examine the conditions of circulation of cinematographic works across different technological regimes. From film to video and digital computers, the chapter follows a concise history of systems of moving image storage and transmission. By evoking movies which openly engage the material negativities of cinema, the chapter means to underscore the performative character of these systems. Movies are thus shown to be not forms that circulate, but rather forms resulting from circulation. At the same time, the chapter explores how the threshold of presence of cinematographic works differs according to the multimodal developments of the circuit. As the technical means of circulation change, new categories emerge to restate the movie's objective coherence in relation to its many constitutive traces. Circulation remains in the background.

The very staging of cinema's technological development is analysed next, in *The becoming of cinema*. Drawing from Simondon's philosophy of technology, this chapter explores the constitution of the medium as a technical ensemble. It shows how aspects conventionally underpinning cinematographic specificity can be thought of as the epiphenomena of its individuation. These aspects express successive stages in cinema's becoming, culminating in the epistemic formations particular to the medium. By the means of these epistemic formations, the circuit is underwritten to a hierarchy of presences, effectively organizing new elements within or without cinema. Following even the most radical technological changes, there is a reorganization of epistemic paradigms which advances medial ideology. Functionaries stay bound to their functions, in spite of deep rearrangements of the circuit. This effects a sort of metaphysical closure, which precludes the medium's subject to fully grasp its becoming.

Hands-on approaches to the medium

And here we reach a methodological *impasse*. If disciplinary cinema studies are a by-product of the medium's technical becoming, what is their actual capacity to deindividuate cinema? The obvious problem was already remarked by researchers including Gumbrecht (2004) and Gray (2010): interpretation and close reading, cinema's traditional methods of objective analysis, are insufficient to understand the material and discursive constitution of movies. Even when the discipline develops means to account for the medium's effects of presence, it nonetheless remains restricted to fixed positions within the circuit. Awareness of the medium's material underpinnings does not allow cinema studies to perform along with them. At the same time, the discipline remains ignorant of its own discursive functions, neglecting the role it has in the processes of technical individuation. How to get around these shortcomings?

Perhaps we can rely on *a knife all blade* one final time for some inspiration. After all, for the brief moment in which it tethered on the brink of existence, the movie undeniably provoked some disengagement from what Comolli (1985: 746) has called 'the ideological heritage of the camera'. This is quite a feat, considering the current context of widespread simulation. Film industry's heavy reliance on visual synthesis and digital compositing has turned even the cameraless condition into one of total compliance with the logic of perspective projection. Regardless, *a knife all blade* manages to achieve a sort cinematographic degree zero by withdrawing image capture from the optical systems to which it has been subsumed since the Renaissance. In doing so, the movie shows that, even blinded, cinema can be *visual*. When the circuit is denied external worldviews, it outputs what is already in there, highlighting the technological particulars of moving-image circulation. This sort of blind optics can be deployed as a heuristics to *produce momentarily the presence* of the media system (Gumbretch, 2004: xiii). It causes the spectator to face the devices at hand instead of whatever they mean to represent. One is confronted with what Richard Grusin (2015) has termed the experiential *immediacy of mediation*.

The problem is that, as we have already seen, the spectator rarely cares. As a subject who thinks she knows what there is to see, she is not concerned with technological contingencies. In order to overcome medial ideology, one must also overcome this knowing attitude. Luckily for us, the *a knife all blade* anecdote also involves another character, with a very different role in what transpired. For the *projectionist*, the question has never been what the traces of light on the screen represented. Rather, it was *whether they should*

be there or not. For the brief instant that blind optics led this functionary to doubt her function, the purported coherence of the medium faltered for her. She was made aware of the becoming of cinema against the grain, as both an arbitrary decision to be taken and a technical operation to be acted upon. In that sense, the committed position of the projectionist, deeply embedded in the machine, seems to enable an unparalleled relationship with the circuit. It could thus provide a model for displacing the knowing subject of cinema into a sphere of critical uncertainty.

A major sign of the epistemic displacement proposed here is a change of the sense primarily engaged in movie analysis from the gaze to the *touch*. It is a change that, on the one hand, reaffirms the fundamental continuity between the world and its representations through the means of information storage and transmission. It urges us to appreciate moving images first as traces of the contact between different devices, all their visual information being subordinate to processes of transduction and energy transfers. Nonetheless, this sensorial change also implies approaching movies by direct manipulation, as if fumbling in the dark, unaware of what they are supposed to mean. We do not let ourselves be seduced by their obvious visual effects or by the compelling discourse networks already laid around them. Instead, we try to build awareness of the operations they require, most likely by performing these operations ourselves, in the process of re-presenting the works. It is the knowledge that comes from *handling* the medium. Our findings feed back into the circuit as others are invited to engage these representations and reposition themselves in relation to them.

The third chapter – *Projection studies* – makes a case for this methodology, which could be broadly described as a curatorial approach to understanding the medium aesthetics and technology. The chapter proposes a practice-led solution to the shortcomings of more traditional film and screen studies in dealing with the technical genesis of cinema. It acknowledges the material situatedness of research practices and encourages the exercise of their inherent curatorial dimensions. For the curator, the contingencies of movie circulation are primary concerns that cannot be easily brushed off. In that sense, the curator is in a privileged position to appreciate how the presence of cinematographic works comes into being. Furthermore, the chapter underscores the advantages of an exhibition over a text as a means to share research results, pointing to the way it rearranges elements within the circuit (even if temporarily). It concludes with a call for researchers to perform critical experiments of *media museography* as a way to intervene in the becoming of cinema.

The following chapters are accounts of things I have learned and shared about the cinematographic circuit using such curatorial methodologies. The fourth – *Performing medium specificities* – follows the history of the Brazilian film society *Cine Falcatrua*, from its early stages as a pirate cinema up until it was made into an artist collective (2003-2005). Cine Falcatrua's experience shows how features deemed distinctive of the medium might be affected by alternative technological arrangements, employing personal computers and peer-to-peer networks. The case underscores the role of paratexts and ancillary practices (such as subtitling and promotion) in establishing the proper experience of cinema. Moreover, it demonstrates how the displacement within the medium might provide the knowing subject with a clearer perspective about its becoming. By taking on the position of projectionists, the participants of Cine Falcatrua got to perceive the controversies around digital cinema as an opportunity to reprogramme the medium. By following their actions, one can see how the property of cinema might be disputed, as anomalous media practices struggle with structures already established in the circuit.

Finally, the fifth chapter shows how curatorial interventions may deliberately challenge medial ideology as well as propose new epistemic formations within the medium. It takes its name – *Denied Distances* – from a video exhibition that brought together works from different years, formats, and genres, all of which engage with the negative spaces of cinema. These pieces were organized in the screening programme according to their spatial scale of operation, going from the thickness of the screen to the density of the circuit. Therefore, the exhibition attempted to propose an alternative to the predefined categories that inscribe these works outside the cinema, suggesting a continuity between the medium and other moving image practices instead. The chapter narrates the making of this event while providing an exegesis of its programme. In doing so, it highlights the way circumstances of production and exhibition delimit the availability of works, displaying the role of material contingencies in the shaping of curatorial discourse.

Strategies such as these seek to advance an ontography of cinema. They frame the medium as an entity in continuing transformation and whose technical becoming implicates us as functionaries. To the extent that this book exists within the same circuit that it addresses, it configures another one of those strategies. If the analysis it offers about media seem non-reductive and often contradictory, it is because they do not mean to prescribe an overarching interpretation of this subject. Instead, they hope to inspire readers to find their own ways of displacing themselves and taking responsibility over the making of other cinemas out of cinema.

Bibliography / works cited

Carmelo, Bruno, 'Como são escolhidos os curtas-metragens da Mostra de Tiradentes? O curador Pedro Maciel Guimarães explica', *Adoro Cinema*, 3 February 2016. Available at <http://www.adorocinema.com/noticias/filmes/noticia-119074/>. Last access 25 August 2018.

Comolli, Jean-Louis, 'Machines of the visible', in *Film Theory and Criticism: Introductory Readings*, 3rd edition, ed. G. Mast and M. Cohen (New York City: Oxford University, 1985), 741-760.

Cubitt, Sean, *The Cinema Effect* (Cambridge, MA: MIT, 2004).

Derrida, Jacques, *Of Grammatology*, corrected edition, trans. G. C. Spivak (Baltimore: John Hopkins University, 2016).

Doane, Mary Ann, 'The indexical and the concept of medium specificity', *Differences: A Journal of Feminist Cultural Studies*, 18(1) (Durham, NC: 2007), 128-152.

Flusser, Vilém, *Towards a Philosophy of Photography* (London: Reaktion Books, 2000).

Friedberg, Anne, *The Virtual Window from Alberti to Microsoft* (Cambridge, MA: MIT, 2006).

Gray, Jonathan, *Show Sold Separately: Promos, Spoilers, and Other Media Paratexts* (New York: NYU, 2010).

Grusin, Richard, 'Radical Mediation', *Critical Inquiry*, 42(1) (Chicago, IL: Autumn 2015), 124-148.

Gumbrecht, Hans Ulrich, *Production of Presence: What Meaning Cannot Convey* (Palo Alto, CA: Stanford University, 2004).

Harbord, Janet, *Film Cultures* (Thousand Oaks, CA: Sage, 2002).

Iordanova, Dina and Stuart Cunningham (eds.), *Digital Disruption: Cinema Moves On-line* (St. Andrews, UK: St. Andrews Film Studies, 2012).

Kirschenbaum, Matthew, *Mechanisms: New Media and Forensic Imagination* (Cambridge, MA: MIT, 2008).

Kittler, Friedrich, *Discourse Networks: 1800/1900* (Palo Alto, CA: Stanford University, 1990).

Kittler, Friedrich, *Gramophone, Film, Typewriter* (Palo Alto, CA: Stanford University, 1999).

Kriss, Michael, *Handbook of Digital Imaging* (Hoboken, NJ: John Wiley & Sons, 2015).

Langdale, Allan (ed.), *Hugo Munsterberg on Film: The Photoplay: A Psychological Study and Other Writings* (London: Routledge, 2013).

Loiperdinger, Martin and Bernd Elzer, 'Lumière's arrival of the train: Cinema's founding myth', *The Moving Image*, 4(1) (Minneapolis, MN: 2004), 89-118.

Machado, Arlindo, *Pré-Cinemas e Pós-Cinemas*, 2nd edition (São Paulo: Papirus, 2002).

Metz, Christian, *The Imaginary Signifier: Psychoanalysis and the Cinema* (Bloomington, IN: Indiana University, 1982).

Montfort, Nick, 'Continuous Paper: The Early Materiality and Workings of Electronic Literature', *Continuous Paper: MLA*, January 2005. Available at <https://nickm.com/writing/essays/continuous_paper_mla.html>. Last access 21 November 2018.

Rodowick, D.N., *The Virtual Life of Film* (London: Harvard University, 2007).

Simondon, Gilbert, *On the Mode of Existence of Technical Objects*, trans. Cécile Malaspina and John Rogove (Minneapolis: Univocal, 2017).

Sterne, Jonathan, *MP3: The Meaning of a Format* (Durham, NC: Duke University, 2012).

Walley, Jonathan, 'The material of film and the idea of cinema: Contrasting practices in sixties and seventies avant-garde film', *October*, 103 (Cambridge, MA: Winter 2003), 15-30.

Warner, Michael, *Publics and Counterpublics* (New York City: Zone Books, 2002).

a knife all blade, Gabriel Menotti, 2008.

Arnulf Rainer, Peter Kubelka, 1960.

Cafuné, Bruno Vianna, 2006.

L'Arrivée d'un train en gare de La Ciotat, August and Louis Lumière, 1895.

Noisefields, Steina and Woody Valsuka, 1974.