

Compact cinematics

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With tremendous force, and against all odds, a labouring woman shoots a baby from her body like a cannonball, the umbilical cord torn as it rockets through the hospital window into orbit. As the screaming child arches through the skies it rapidly degenerates from a bald pink baby through the various stages of physical maturation into a gray-haired old man, his eyes wide open in fear. The latter shape is only barely assumed when the projectile hurls towards planet Earth where it violently crashes into its grave, leaving of the tombstone nothing but smoke and crumbles. This 52-second clip grabs the viewer's attention like a dog sensing a squirrel; its message is clear: in the age of omnipresent electronic and visual media we can no longer 'Rest in Peace', but are forever reminded of the fact that 'Life is Fast', and we need to 'Play More'.^[1]

Though made for television this soon-to-be-banned advert for the very first X-Box game console from 2002 (now watched on YouTube) arrests the viewer's attention, we argue, on account of specific cinematic qualities: the movement of the images, its affective appeal, the attempt at narrative, and the thickening of time.^[2] Using one of the most interesting cinematic techniques of the time (the digital morph), the clip can easily be linked to both the effects-oriented cinema of post-classical Hollywood and the so-called early 'cinema of attractions',^[3] as it de-emphasises techniques of narrative integration in favour of a different type of magical transformation. At once providing a pleasant experience and posing the threat of a disruption of that experience, the fragment is compelling, we would like to argue, because it is short and compact, sufficient unto itself, somehow recognisably different

from the assemblage of mediated sounds and images of which it is nonetheless intricately part.

In this essay we propose the term *compact cinematics* for the study of the various compact, short, compressed, and miniature (audio)visual artifacts, forms, and practices that circulate in our everyday multimedia environment across technologies, genres, and disciplines. With its roots in *cine* (from Greek *-kinesis* meaning movement or motion), the notion of *cinematics*, like that of cinema and the cinematic, alludes to the moving image. The suffix *-ics* (from Latin *-ica* and Greek *-ikos*) indicates at once a field of knowledge or area of study (like in mathematics, [meta]physics, robotics, politics, classics, aesthetics, or in our case, cinematics) as well as referring, in its plural construction, to a category of characteristic activity (like gymnastics, athletics), or to qualities and operations relating to a particular subject (like acoustics, phonetics). In using the term *cinematics* we thus wish to refer to matters relevant or pertaining to (the study of) the moving image, i.e. to what it *is* as much as to what it *does* – as material form, praxis, and encounter; as an activity. We further posit that format, content, technology, and use are inseparable and suggest *compactness* as a theoretical framework to rethink the cinematic in all its dimensions (time, space, agency), its uses and affordances, as artifacts as well as ecologies, within our present-day bit-sized media culture. Compactness here is thus decisively used to refer to the shortening of the distance between the various components of the cinematic configuration, like the cinematic *dispositif*, which necessarily results in changes of the configuration as a whole. It is this changed (and ever-changing) configuration of the cinematic, and its corresponding field of practices and theories, that we seek to address here.

We will situate the current surge of compact cinematic phenomena against the backdrop of three discursive frameworks: screen studies; current discussions on the economy of attention; the human-technology nexus. These three paradigms provide fertile grounds to unpack some of the critical questions and problematics that compact cinematics invoke. Before turning our attention to the respective sections Screen, Attention, and Capture, we feel a proviso is in order. This piece is intended as a companion-piece or introduction to our forthcoming volume titled *Compact Cinematics: The Moving-Image in the Age of Bit-Sized Media*.^[4] If our examples seem sparse and our argumentation somewhat polemical it is because our observations are fostered by over a dozen thought-provoking short essays on compact cinematic phenomena written by some of the most renowned and

promising scholars and thinkers of our field, with topics varying from short films and micro narratives to modular interfaces and polyphonic archives; from flip books and animated gifs to pocket shorts and mobile cinematics; from the practices of speed-watching and contingent web-surfing to the solitary screens and the transcoded milieux that make up our present-day 'smart' urban realities. In keeping with these essays and the topic as such we have tried to keep this piece, indeed, compact.[5] In order to avoid overburdening the bibliography with forthcoming essays we have decided to use two types of references. Customary references to works cited are placed in footnotes. In addition, we use in-text references when referring to one of the essays in the forthcoming volume, which we have marked 'fc' (e.g. Hesselberth & Poulaki fc). For a full table of contents for the volume please access this link: <<http://www.bloomsbury.com/uk/compact-cinematics-9781501322273/>>.

Screen

Since the advent and standardisation of the theatrical feature-length film, compact audio-visual artifacts have been more or less marginalised in the discussions on the aesthetics, techniques, and experience of the cinematic. Whereas cinema is often considered a 'larger than life' phenomenon associated with the 'big screen' – attracting special attention of mass audiences with disproportionate images of out-of-the-ordinary characters and subject matters – by contrast, and perhaps by contrast only, the notion of the 'small screen' is more commonly reserved for another (then) emerging new medium, i.e. television, which has come to be associated with the domestic, with immediacy, and with the discourses of the everyday.[6] Though the distinction between big and small screen has been put to productive use to differentiate the aesthetics and social appeal of television (and later the internet) from that of cinema, and has engendered valuable insights into the particularity of divergent media technologies, forms, and modes of spectatorship, it is also suggestive of an opposition that we would like to argue is in fact false – a claim to which a rich body of media-archaeological research into the many pre-histories of cinema of the last two decades attests.[7]

Historically stretching from pre-cinematic toys (like thaumatropes and flip books), penny arcades, early cinema actualities, and the flickering shadows of the vaudeville, to short films, avant-garde film, video art, QuickTime

movies, machinima, and animated GIFs, the widespread use and consumption of compact cinematic forms, practices, and artifacts suggests that compactness is not an inconsequential curiosity at the margins of cinema but has existed from even before cinema's standardisation in theatrical form, and in recent years has multiplied and proliferated, taking up an increasingly important part of our everyday multimedia environment. We feel that in this context the disciplinary contest over screen size and modes of spectatorship tends to be counter-productive, as it is prone to fall prey to a boundary fetishism that may in fact hinder our understanding of the role and function of the moving image in our bit-sized media culture today. The notion of cinematics transcends the rigidity of the disciplinary limits of film, television, and digital media studies and emphasises the movement between disciplines and technologies, challenging us to situate the moving image in a constellation of humans, technologies, and environments that is by definition context-specific and from which particular time, space, and agency formations emerge. Short films or micro-narratives, cinematic pieces or units re-assembled into image archives, and looping themes are among the most common forms that compact cinematic content takes. These forms and practices challenge the concepts that have traditionally been used to understand the moving image and call attention to complex and modular forms of expression and perception of which the cinematic partakes. Such forms, in turn, meet the requirements of digital convergence, which seems to have pushed the development of more compact and mobile hardware for the display and use of audiovisual content on laptops, smartphones, and tablets, necessitating new forms of content and an adjusted spatial and bodily interaction with them.

Meanwhile, contemporary economies of digital content acquisition, filing, and sharing equally require the shrinking of cinematic content for it to be recorded, played, projected, distributed, and installed with ease and speed. Our engagement with this content is usually ad-hoc and casual, itself compact one could argue, concentrated so that it can be completed quickly and most likely feed into yet another bit of content, rebooted without an experience of break or discontinuation. Attributes such as the 'giffiness' or 'glueyness' of online videos (McCarthy *fc.*) and the possibility of 'speed-watching' (Alexander *fc.*) expose the cinematic character of compact audiovisual artifacts and practices – not just in terms of their moving image nature and their remediation[8] of film but mainly also in terms of the kinds of viewer engagement they afford, giving rise to new modes of engagement

and forms of spectatorship, whether they be solitary, contingent, accelerated, fragmented, procrastinating, and/or productive. Manipulability seems to be a fundamental quality of such engagement, as small size devices nowadays afford extensive play with and manipulation of even typically large-scale cinematic phenomena like the panorama (an argument developed in relation to 'VR Films' in Bolter & Engberg *fc.*). Moreover, the products and practices of filmmaking seem to be adjusting to a smaller scale as well, giving rise to new kinds of mobile films and pocket shorts (explored through media archaeology in Walden *fc.*), including the 'little thumb films' of our children (Schneider & Strauven *fc.*). These new media practices build on and enrich the miniature aesthetics already fostered in pre-cinematic optical toys like the flipbook, also in early cinema and animation (Horsman *fc.*). In this process the traditional chain of production, distribution, and reception of content also gets contracted, its links folding back upon one another, taking place almost simultaneously (Mademli *fc.*). By the same token cinematic experience is shortened and condensed as well so as to fit the late-capitalist conditions of time, space, and energy distribution characteristic of the current attention economy. This brings us to a second aspect we wish to address: the linkage between compact cinematiks and the new economy of attention.

Attention

Compact cinematic phenomena, it seems, have a differential effect on cinema's acclaimed relationship with the mental faculty of attention. As early as 1916, Hugo Münsterberg posited the claim that the photoplay (as he called cinema) offers a hyper-focused view of the world by visualising the mental act of attention.[9] Cinema, he claimed, offers a cropped image of the world using devices such as the close-up, and as such attracts us to elements that might slip our attention under everyday conditions. *The Photoplay* was published at a crucial point in the history of the moving image, as 1916 is often considered the year in which cinema entered its 'mature' phase of narrative integration, establishing its identity as a medium through the feature-length format and the system of continuity editing. As some have argued,[10] the continuity system evolved through a process of trial and error, in which filmmakers, exercising their intuition, sought to develop and refine the craft of grabbing and retaining the viewer's attention across a

series of cinematic fragments (the film shots) that capture and crop the world for us, using devices such as match-on-action and point-of-view shots, but also of ‘rebooting’ the viewer’s attention across scenes.[11]

How is this classical function of cinema to drive and guide attention across a series of images still pertinent (or not) in light of these emerging compact cinematic phenomena? Even feature-length films nowadays seem to have internalised the tendency of the cinematic to disperse in multiple smaller units, for example by containing modular or micro-narratives and mise-en-abyme plot structures (as reflected in a the essays of Verstraten *fc.* and Bookchin *fc.*); or by being composed of shorter shots and faster cuts – a tendency foreseen by David Bordwell in his essay on ‘intensified continuity’,[12] more recently demonstrated through a software programme called ‘cinematics’.[13] However, as the cinematic no longer seems to be contained by the (feature-length) film format but has rather become dispersed across a proliferating variety of screens – from the micro-scale of the mobile screen in our pockets to the macro-scale of the urban façade (Ekman *fc.*; Rose *fc.*) – there seems to be an ongoing competition, not only to capture the best possible image but for the image to capture our own attentional ‘snippets’ in turn. The attention that is needed to connect frames and audiovisual scenes into meaningful assemblages is the mind’s ‘cinematic labour’, and also the labour of the cinematic, which enables such linking of experience, both on the level of perception (through the connection of still images into a ‘moving’ sequence) and through editing. As a distinctly modern and Fordist phenomenon itself, early cinema participated in the standardisation of time[14] and attracted the crowds in the city by satisfying the need for integration of an alienated and fragmented urban experience. A mechanised process *par excellence*, cinema has been said to have employed and therewith ‘trained’ the physiology of visual perception and attention in the aftermath of the second industrial revolution. Promising the reward of a well-rounded and coherent world, a narrative resolution as well as a spectacle worth to be looked at, cinema – so the argument goes – offered a form of labour that was much more engaging and fulfilling than the one offered by industrialised labour.

Walter Benjamin described cinema’s system of perception – or this ‘work of cinema’ – with ambivalent feelings, concerned as he was about the uses to which such a powerful tool could be put.[15] A similar ambivalence cannot escape us when considering his view on cinematic labour as a model for understanding the equivalent, yet divergent, ways in which compact

cinematic phenomena engage contemporary 'contingent' (Casetti *fc.*) or 'solitary' (Väliaho *fc.*) viewers in acts of speed-watching (Alexander *fc.*) or productive procrastination (McCarthy *fc.*), directing and arguably distributing his or her attention across a continuous, yet intermittent surge of audiovisual materials. These developments show that the cinematic 'attentional machine' indeed may not just work in the context of movie-watching but also in that of watching-on-the-move, i.e. in the process of assembling discontinuous audiovisual bits, linking our attention to them into a compacted yet plural dispersed and heterogeneous cinematic experience.

Within our contemporary bit-sized media culture viewers have become prosumers or pro-ams[16] who are invited to stitch together their own personalised cinematic 'spectacles' (Mademli *fc.*) by linking compact bits and short samples to other bits, chunks, and segments of moving images, sharing and collecting them in online platforms, blogs, social media archives, and profiles – as if this stitching process is an acquired competency to keep our attention dispersed yet continuously flowing. The Fordist task of recycling labour through cinematic leisure has become the personalised task of post-Fordist subjects who, living constantly on the margins of leisure and labour, willingly and pro-actively accept the challenge of recycling their own attention by attaching it to a multiplicity of available objects – short but self-contained audiovisual units to be combined and recombined into a plurality of possible sequences.[17] Movement here is not just an inherent quality of images alone but also of the mode of their capture, reception, and combination. This is perhaps the cinematic effect *par excellence*: images set in motion by way of their linking. Throughout this process attention needs to be anchored. Contemporary cinematics retain the function of gluing attention between the fragments of everyday experience, even as the 'suture' of classical cinematic continuity is transformed into a 'stickiness' that demands the viewer to attune and respond to the loading and buffering of images in real time. Ironically, a certain sense of anxiety in this process still seems to be linked to the threat of discontinuation, albeit in a different form; whereas in classical cinema suture is achieved through the interlocking of shots so as to secure the continuity of time and space and therewith the position of the subject within discourse, thus diverting the viewer's anxiety over the discontinuation of the story world; within our present-day bit-sized media culture the viewer's anxiety seems to coincide with the prospect of 'missing out' or losing access (the frustrations of buffering, of no access to the internet),[18] while continuation is secured through ever-

accelerating broadband widths, the precipitation of portable devices, and the accompanying upsurge of compact cinematic phenomena that assure the viewer the possibility to glue (or be glued) to the screen.

The experience of discontinuity, unavoidable in our contemporary hyper-mediated environments, thus persists as a threat, as a sense of void or 'dead time' – a term used in systems theory to describe the time after a discrete event during which a system is not able to detect or record another event, a moment when nothing is happening except for the constant attempt to reboot (think of the flash of a camera that has to recharge after taking a photograph). This is what makes contemporary cinematics sticky (and the serial form such a persuasive trend); in our response to the rhythms of our everyday media environment we find ourselves 'spellbound by tidbits' (Väliaho *fc.*) of images, as each discontinuation potentially pulls us into a mental experience of a void that needs to be filled in, and therefore a voided no matter what, and a bodily experience of strain that needs to be released into a new feedback cycle.[19] Compact cinematic bits and pieces, thus, are useful, productive even, in the sense that they allow for the (potentially seamless) filling up of voids, thus recharging the interaction that sustains the system. This brings us to a third angle that we wish to broach in relation to contemporary cinematics – the human-technology angle, which we will address through the notion of capture.

Capture

The way in which images move in our contemporary media-saturated landscape is indicative of the cinematic's transformation from a mechanical technology to a systemic (or cybernetic) one.[20] In his well-known essay 'Surveillance and Capture', information theorist Phillip Agre provides a useful distinction that can help us understand this transformation. Referring to what would be now called ubiquitous computing, Agre signals a shift from what he describes as the centralised and optical model of 'surveillance' towards the decentralised model of 'capture' which, he argues, is more neutral in the sense that it requires the complicity of all its components, both sentient and non-sentient. Agre uses the term *capture* to refer to the (computational) models on the bases of which computers process information. Information, Agre argues, is captured in accordance with the ontological categories of the computer program that are at once predetermined (i.e.

they are programmed) and yet can continuously (be) adjust(ed) to accommodate to new elements and situations, thus making the system increasingly more complex.[21] Whereas the classical cinematic apparatus has often been theorised in terms of voyeurism and panoptic surveillance, we feel the term capture, in Agre's nuanced terminology, is more apt to describe the present situation in which compact cinematic phenomena partake of an increasingly more complex ubiquitous network of (audiovisual) capturing technologies.[22]

The coupling of the psychic and technological apparatuses of compact cinematics forces us to take into consideration the mutual cycle (or loop) of interaction that sustains this dynamic. Here, both Münsterberg's conceptualisation of cinema as visualising thought and the Benjaminian understanding of film's potential to (either or both) attune the modern subject to industrial capitalism and/or preserve humanity in the face of modernity's uniforming apparatuses return with a difference (and all the more political urgency), as we are now constantly invited to externalise our faculties of thought and perception in audiovisual units of content that we link and share in the online or physical realm in acts of precarious labour. Whereas early cinema's relation to labour is perhaps best captured in the satirical figure of Charlie Chaplin's Little Tramp – whose sensory-motor scheme in *Modern Times* (1936) runs amok after suffering from a nervous breakdown from screwing nuts onto pieces of machinery at the ever-accelerating speed of the assembly line[23] – the contemporary cinematic labourer willingly offers him or herself to be captured in turn, posing or adjusting his or her movement and position, like a minimalist Little Tramp, to match the machine's various checkpoints and sensors (with selfies, vines, tags, and check-ins being among the more obvious examples). A dramatic change of scale is certainly noted as the huge machinery of the conveyor belt, demanding the 'Little' Tramp's standardised bodily adjustment to it, has now dispersed into small, friendly, and almost invisible gadgets that allow the contemporary Tramp or Rube[24] ultimate flexibility. Minimal bodily gestures are sufficient to both capture and be captured, fed into the system without strain in an almost seamless matching and a much less standardised but arguably equally anxious pursuit of nuts to be screwed (life is short, play more).

As part of cyber-cinematic systems, contemporary view(s)ers are always alert to capture the next bit of audiovisual stimulation, which will find its place in personal or shared databases and archives. In so doing they enable their embodied 'gaze'[25], 'glance'[26], or 'graze'[27] to be captured in turn,

prolonging the interactive loop between them as viewers and their viewing apparatuses.[28] This loop is further amplified by the web's mass connectivity, where the capturing behaviour of humans and algorithms comes together, extending its dynamics by expanding in time and space into what Manuel Castells has called a 'space of flows'.[29] The search engines through which we often access and reassemble compact cinematic bits and pieces invite the redistribution of every successive thought, perception, memory, or imagination with every search, generating a line of assembled tags and possible screens contained within a larger screen (and a soon to be (de-)personalised algorithm), each one of which can be accessed and 'screened' nonlinearly and archived in search histories as discontinuous series of past thoughts – a testament of distraction which, within a day's use, might not even make sense to its own user. Screening our thoughts continuously, images thus 'move' even when they are themselves not moving.

Just like capture in the context of computer ontologies is concerned solely with information that can be mathematically represented (and manipulated), capture in the context of human perception refers to our ability to select from all the affordances in a given environment only those that are relevant for our survival (much like the car driver's scope is selective perforce, registering only that which is directly relevant to his or her purposeful action, a sort of instrumental viewing).[30] This begs the question how 'relevance' can have any bearing under the conditions of the surplus of mediated sounds and images that we are confronted with in our present-day media-saturated environments, in which we are constantly sidetracked by scraps of information, narrative probings, and audiovisual attractions. In such environments users do not only capture what is directly relevant for their immediate survival; rather, we survive post-industrial capitalism in constant distraction, attaching our attention to the audiovisual apparatuses that turn leisure activity, as Bill Nichols has put it, into 'commodity experience'.[31] The time of leisure thus becomes commodified, as we lend our time and faculties to its cause. *Compact Cinematics* calls attention to such packaging of attention into audiovisual content rejoinders and sets out to question the social and political ramifications of such packaging.

As the regulatory system of cybernetics has gradually progressed into a new type of governmentality (a position held in more recent critical theory[32]), a question that arises is what kinds of strategies compact cinematics can adopt within our present-day hyper-mediated realm to generate envelopes of time, space, and affect that are not complicit with the overarching

ideology of the (media consuming) system that generates them (a system in which discourses of connectivity,[33] quantification,[34] self-tracking [35] and bio-sensing technology[36] prevail). Historically, short and compact film formats have offered fertile ground for filmmakers to experiment with the conventions of (cinematic) time and space, calling forth new ways of world-building (McGowan *fc.*), time compression (Gunning *fc.*), and viewer-engagement (Raskin *fc.*) that arguably have the potential to escape and subvert the rational and (neo)liberal discourses of time, space, and agency formation. While it may be argued that in the present-day context it is not so much the *compact* form but rather its counter-part (i.e. of the slow contemplative cinema of protracted minimalist narrative and no attractions to speak of) that holds the promise of denting the system, the various cases dealt with in our forthcoming volume demand a more nuanced view. Sure enough, while many filmmakers, media artists, and view(s)ers nowadays fully (though not necessarily uncritically) embrace the possibilities offered by the cybernetic media system in which the cinematic participates, others have found ways to scrutinise its constraints; for example by making intensified use of its potential at the risk of ‘over-heating’ or exhausting it (e.g. the ‘good’ hacker’s ethic, or political memes[37] gone viral), or by adopting a more disengaged nostalgic view (this would be the cinephiliac’s stance, who rejoices in the use of analogue technologies, a position eloquently discussed in Horsman *fc.* and his reflections on the linkage between the tactility of the flip book, the game console, and contemporary ‘cinematic’ cartoon drawing).

Another strategy employed in the compact cinematic practices and modes of engagement addressed in the forthcoming volume is the use of available techniques against the logic of technology, so as to circumvent or expose (and therewith possibly destabilise) its regulatory workings. We see such strategies reflected in the ‘ethics of repair’ enabled by the repurposing of archival footage discussed by Cubitt *fc.*; in Ascott *fc.*, and Bastajian *fc.* reflections, in praxis and theory, on respectively the codification of urban space and the interactive documentary as a reflexive threshold; in Ekman *fc.* and his deliberations on the disorganised complexity of screen-transcoded milieux; and in Bookchin *fc.* and his adaptation of the aesthetics of social media, in a tactical move, to counterbalance contemporary media’s erosion of the social. Though by no means restricted to the field of compact cinematics alone such strategies are interesting within the present context, as

they give pertinence to the question what other function the moving image may fulfill within our present-day bit-sized media culture.

Conclusions

Compact cinematics challenge us to reconsider object-oriented approaches to the moving image; while encouraging us to revisit early (film) theory's interest in the faculty of attention vis-à-vis moving image technology, it coerces us to rethink (with some political urgency) the processes of subjectivation of which the cinematic partakes. A focus on compact cinematics requires taking into account the specific context in which something can be viewed as compact, as well as the conditions and spatiotemporal configurations of the environment that renders it compact. Compact cinematics thus requires an ecological approach.[38]

As a particular configuration of time, space, and agency, the cinematic creates an ecology for itself; but it also functions within larger ecologies of social, mental, physical, and technological infrastructures that make up everyday lived environment. Within this larger environment (our engagement with) the moving image is increasingly dictated by the economic conditions of late capitalism and the decentralisation that digital networks have brought about, as well as by the mobility and portability of new 'connected' viewing technologies and the modes of engagement they afford. It is within this wider scope that the moving image demands our attention from the point of view of the compact. A focus on compactness not only encourages us to reconsider the moving image in light of the short, condensed, compressed, miniature, and compacted cinematic artifacts, practices, and modes of engagement that challenge traditional models for its theorisation; it also offers a framework to critically examine the politics of subjectivation specific to this historical moment of which the moving image partakes, as well as to address the strategies used to defy it. This is in the hope of turning today's solitary screens, so powerfully addressed in Väliaho (fc.), into tomorrow's solidarity screens.

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Notes

- [1] The clip is available at: <https://www.youtube.com/watch?v=kNccPX03XaY> (accessed on 10 May 2016).
- [2] For a reflection on the cinematic in these terms, see Hesselberth 2014; 2012.
- [3] Gunning 1990.
- [4] Hesselberth & Poulaki, fc. 2016. We are grateful to Bloomsbury for allowing us to publish this preview here and want to express our sincere thanks to the many contributors to the volume for pushing our thoughts in new and often unexpected directions in their response to our question of what a compact cinematism might entail. We also wish to thank NECSUS for their willingness to publish this preview here, as well as to the anonymous reviewers for their productive commentary. The linkage between the respective themes of this special section on Small data and our project on Compact Cinematics simply seemed too opportune to let the occasion go by.
- [5] The volume on Compact Cinematics is a follow-up to a special issue on 'Short Film Experience', edited by Pepita Hesselberth and Carlos M. Roos for *Empedocles: European Journal of the Philosophy of Communication*. We are greatly indebted to the contributors and co-editor of this special issue as well, for sparking off the discussion on compact audiovisual forms vis-à-vis cinematic experience. Hesselberth & Roos, 2015.
- [6] See for example Bennett 2016; Creeber 2013; Morley 1988; Palmer 2010; Spigel 1992; Thomson 2013; Thumim 2002.
- [7] Carels 2015; Crary 1990; Gunning 2015; Zielinski 1999.
- [8] Bolter & Grusin 1999.
- [9] Münsterberg 2002 (orig. in 1916), p. 87.
- [10] Anderson 1996, p. 11.

- [11] Since Münsterberg, different accounts of how cinema visualises or replicates the mind's processes of perception and attention have preoccupied film psychology. Tim Smith has recently suggested an 'attentional theory of continuity editing' to give a scientific account of continuity in film (2005), which explains the effect of continuity editing on attention by what in developmental psychology has been described as 'existence constancy'. (Michotte 1995) For a critical approach on certain premises of (contemporary) film psychology, particularly regarding its tendency to naturalise continuity editing, see Poulaki 2015.
- [12] Bordwell 2002.
- [13] CineMetrics is a software programme written by Gunars Civjans which allows for the online or offline calculation of average shot lengths of films. CineMetrics can be accessed at cinemetrics.lv, which also functions as a database of shot lengths for movies users have parsed.
- [14] See Doane 2004.
- [15] Benjamin 1968 (orig. in 1936).
- [16] Leadbetter & Miller 2004; Manovich 2009.
- [17] There has been a surge of publications in the last couple of years that link the emergence of a so-called participatory digital media culture to questions concerning immaterial labour, social and affective capital, and measurable attention. See for example Scholz 2012, 2016; Fuchs 2014; Huws 2014; and Dyer-Witheford 2015.
- [18] For a brilliant essay on buffering see Alexander (forthcoming in *Cinema Journal* in 2017).
- [19] A similar argument is made in relation to machine gambling in a thought provoking study by anthropologist Natasha Schüll titled *Addiction by Design*. Schüll demonstrates that players find themselves pulled into a trance-like state they call the 'machine zone', where the aim is not so much to win but to stay 'in the zone', for as long as possible, 'where nothing else matters'. See Schüll 2012, p. 12.
- [20] For our understanding of this development we draw on Nichols 1988.
- [21] Agre 1994.
- [22] While the focus of this book is on the audiovisual components of capture and captured content, it is important to note that capture is not per se audiovisual but rather computational, thus accommodating a variety of different modalities such as textual, haptic, kinaesthetic, etc. However, the predominance of visual and audiovisual content is something that makes more pertinent the discussion of the particular cinematic qualities of capture within a larger multimodal and poly-aesthetic (Engberg 2014) context of mediation.
- [23] If it seems hard to come up with a present-day counterpart of a canonical figure that embodies the relation between cinema and labour equally well, it is perhaps because, as Bergson has argued, for the one who laughs from the position of *Élan vital* laughter is explicitly linked to automation – i.e. comical relief, or laughter, in Chaplin is invoked by something mechanic en-crusted upon the human body. In a time and age in which we so willingly allow for the exploitation of our *Élan vital* in acts of liking, clicking, (re)assembling, and sharing, we can wonder what such a position to laugh critically from would look like. As we have become part and parcel of the cinematic cybernetic system (and digital labour has largely substituted immaterial labour within our post-Fordist economies), it can be argued that it is perhaps not so much the human figure's internalisation of machinic manners but the computerised rendering of humanoid gestures that triggers this kind of laughter, albeit with a difference. As a running gag in the course of writing this piece we sent animated GIFs back and forth to comment on our progression and procrastinations. Typically these GIFs would originate from a site called PhD Stress and comment on the highs and lows of academic writing, with clips of human activity cut short and endlessly repeated in loops with suggestive titles like: 'writing a joint article' (first one, then two people slipping on a bowling alley, over and over again); 'starting writing that analysis' (two GIFs); 'how I plan it' (acrobatic turner); 'what normally happens' (crashing paraglider); 're-searching' (Segway takes off with clinging man, legs all tied up); 'writing' (endless attempt of a car to leave its parking spot); 'when meeting the deadline for submitting an article' (high jumper misses mat); 'when finally getting that article finished and emailed' (American football player

running like an eight-year-old school girl, chasing the ball, successively overlaid with the flickering words 'OMG', 'lol', 'cool', 'yay', 'wut', and 'Luvit'). If we would have been asked to make a short film of our endeavor this is probably what it would have looked like (at the risk of stretching matters too far, we ask ourselves while writing these words if the reader's perusing of them constitutes what might be called a compact cinematic experience?). Available at: <http://phdstress.com/> (accessed on 23 May 2016).

- [24] Elsaesser 2006.
- [25] Mulvey 1975.
- [26] Ellis 1982.
- [27] Creeber 2013, p. 124.
- [28] This links to Lev Manovich's argument on the parallelism between cinema and the computer when it comes to their trajectories as capture/inscription and projection/entertainment technologies. He argues that computers and new media are cinematic in that sense. See Manovich 2001, p. 21.
- [29] Castells 2000; 2004. Castells describes the 'space of flows' as the material arrangement 'made up first of all of a technological infrastructure of information systems, telecommunications, and transportation lines'. Castells 2000, p. 19.
- [30] Originally coined by J.J. Gibson in his ecological psychology of visual perception, the term affordance was appropriated to the field of human-machine interaction by Donald Norman, who used it to refer to the possibilities for action perceptible to the participant. Gibson 1982 (orig. in 1977); Norman 1990.
- [31] Nichols 1988, p. 33.
- [32] See for example Galloway & Thacker 2007; *The Invisible Committee* 2015.
- [33] Terranova, 2004; Dijck 2013.
- [34] Lupton 2016.
- [35] Neff & Nafus 2016.
- [36] Nafus 2016.
- [37] Shifman 2013.
- [38] The reference here is not to the aforementioned ecological psychology but to Matthew Fuller's *Media Ecologies* (2005) and the more environment-oriented approaches to the cinematic as developed in for example Hesselberth 2014 (taken a major step further in Ekman *fc*).