

William Brown

University of British Columbia

Tachyons, tactility, drawing and withdrawing: cinema at the speed of darkness

As cognitive psychologist James Cutting and his colleagues have demonstrated, Hollywood cinema has over the last 75 years become ‘quicker, faster, [and] darker’ (see Cutting et al., 2011). The distinction between a quicker and a faster cinema is unclear, but as David Bordwell, Barry Salt and various other scholars have thoroughly identified, contemporary Hollywood cinema is indeed defined by a significantly faster cutting rate than classical Hollywood cinema, together with more motion on screen, more movement of the camera and a greater variety of focal lengths (films are more likely to cut between long shots and close ups rather than rest in the mid-range; see Salt, 2004; Bordwell, 2006, pp. 117-189). For this reason, Bordwell terms contemporary Hollywood cinema as a cinema of intensified continuity. Steven Shaviro, meanwhile, goes so far as to suggest that contemporary cinema moves so fast that continuity is lost, meaning that it is defined by ‘post-continuity’ as we see and hear a blur of images of images and sounds that are designed affectively to excite us more than necessarily to tell a coherent story (see Shaviro, 2010).

Where the speed of contemporary Hollywood cinema is well established, however, less has been said about the third term that Cutting et al. use to describe how Hollywood cinema has changed since the classical era, namely darkness. The darkening of mainstream cinema is in some senses counter-intuitive. For, during the first part of the period that Cutting and his team investigate (1940 to 2015), the transition from black and white to colour film would suggest

at the very least an early shift in the opposite direction (that is, from a darker to a lighter cinema), even if cinema has subsequently darkened again. What is more, the ongoing and increasing illumination of the world via electric lighting would equally suggest, as per the work of Wolfgang Schivelbusch (1995), that cinema has increased in its levels of illumination, since cinema involves images taken in, and often of, that same increasingly illuminated world. And yet, not only has cinema got darker in spite of our increasingly illuminated world, but it has done so in a relatively steady fashion – in spite of the shift from black and white film to colour and in spite of living in a world that, simply put, involves less darkness. Indeed, Cutting and his colleagues report that ‘over the span from 1940 to 1960 the films in our sample changed from black and white to color, but there was no average difference between these two film classes grouped across those release years’ (Cutting et al, 2011, p. 573). Furthermore, this change has been ‘essentially linear’ (Cutting et al, 2011, p. 574).

Cutting and his team suggest

several reasons for the long-term luminance decrease. First, analog[ue] film and its digital successor have increased their dynamic range, allowing for darker darks in a given image. Second, and also due to film stock, studio-era films needed to be shot under very bright lights, whereas for contemporary films that is no longer necessary[...] And third, a darker film in a dark theater allows for greater dynamic contrast, which in turn allows for better control over viewers’ attention[...] and the potential of viewers seeing a film even more convincingly as an invisible window into the world in which the narrative takes place. (Cutting et al., 2011, p. 574)

This latter point – that darkness allows ‘better control over viewers’ attention’ – is one to which we shall return shortly. But while Cutting and his colleagues give what amount to technological reasons for why mainstream Hollywood cinema is today darker than it was in the classical era (digital cameras and projectors have different sensitivities/sensibilities to analogue ones), I would like in this article to offer up a more philosophical, or film-philosophical, interpretation of why cinema is today darker than it was in previous eras. For, I shall suggest via detours into physics and philosophy that it is in the darkness of cinema, as opposed to in its light, that we can begin to grasp the nature of cinema and, more specifically, what cinema tells us about the nature of reality itself. That is, by considering how cinema is as dark as, if not more dark than, it is light, we can perhaps grasp how reality itself consists of far greater quantities of dark matter than it does reflective, visible matter. **The darkening of cinema, then, is a visualization of our growing realization**

of the darkness that surrounds us, a growing realization that can in turn be linked to a non-anthropocentric or posthuman turn in contemporary thought.

Writing with darkness?

In terms of its Greek etymology, cinematography means ‘writing with movement,’ while photography means ‘writing with light.’ Given that photography is at the basis of cinematography (in that films historically have involved photographs projected on to a screen at a rate of 24 per second), it should not require too great a leap of the imagination to say that light is as central to cinema as it is to photography, meaning that cinematography is as much writing with light as photography is, and that cinematography is as much writing with light as it is writing with movement. Indeed, light is generally perceived as essential to cinema, in that without light, no images would appear on film stock or on a digital sensor, meaning that we would end up watching black images in a darkened room, meaning that cinema-going would become an exercise in sitting in darkness rather watching images on a wall.

However, while we might think that cinema cannot exist without light, it is also worth remembering that darkness is an inherent part of cinema. Mary Ann Doane has written about how viewers of analogue films at the cinema sit in total darkness for about 40 per cent of the duration of a film as a result of the fact that in between the frames that we see, the shutter of the projector closes (Doane, 2002, p. 172). It may be that viewers do not consciously perceive these instants of total darkness, instead believing that they see a stream of continuous action on the screen before them. Nonetheless, this darkness is most certainly there. When Doane says that these moments of darkness are ‘crucial to the representation of movement’ (Doane, 2002, p. 172), however, she is perhaps mistaken, since the closing of the projector’s shutter is not necessary for the representation of movement, but simply a technological limitation of movie projectors. That is, the representation of movement does not require moments of darkness; simply, movie projectors have to close their shutters between frames – with projectors in fact being designed to open and close their shutters fast enough for the image not to flicker, rather than projectors being designed to open and close their shutters fast enough for the image to represent movement (which seems to be Doane’s implication; for a more detailed explanation, see Bordwell and Thompson, 2008, p. 10). Indeed, the removal of flickers is achieved by showing each frame twice in quick succession, i.e. by accelerating the speed at which the shutter opens and closes, and thus by increasing rather than decreasing the number of instants that a spectator is plunged into darkness during a film screening.

However, if on one level Doane is mistaken in suggesting that gaps/darkness are ‘crucial to the representation of movement’ – for there are projectors that do not require shutters – she nonetheless uses the way in which cinema hides this darkness to mount a critique of the medium. For, Doane argues that this making invisible of darkness/this removal of flicker by accelerating the rate at which images succeed each other mirrors the way in which cinema emphasizes an ideology of visibility, i.e. a cinema that does not present to us movement with gaps in it (instants of darkness) but a cinema that presents to us movement as if it were unbroken and/or whole (no gaps, since the darkness has become invisible/there is no flicker). Doane links this perceived plenitude (cinema presents to us a world without gaps) to the other ideological aspects of cinema, in particular as they relate to sexuality (since this world without gaps and flaws is straight, then straightness is flawless, suggesting that alternative sexualities are flawed).

If Doane is slightly misleading in suggesting that gaps are crucial to the representation of movement (in that they are only a structural necessity for analogue projectors, not for the representation of movement in general), we might nonetheless continue by adding that gaps are crucial to the perception of movement, and that by extension they are a crucial part of viewing films. For even if projection need not, human vision absolutely does need to involve moments not just of seeing, but also of not seeing. This comes in several forms, including sleep (during which humans switch off vision of the outside world in order to consolidate memories; see Hobson 1995), blinking (when momentarily we close our eyes, not least in order to moisten them so that they do not dry up and cease to function) and saccades (when our eyes move, and during which movements we do not take in visual information). As I have argued elsewhere, then, gaps in vision (which at least metaphorically I might call ‘moments of darkness’) are in fact crucial to the representation/perception of movement not on a screen, but in our brains – and to pretend that they are not is only to engage in a partial understanding of what vision is (see Brown 2018). In this way, even if projectors do not require shutters that open and close, that for a long time they did makes for an easy analogy between analogue film projection and vision itself. We do not see ‘whole’, and what ‘wholeness’ we do see is as a result of our brains ‘filling in the gaps’ of vision. Vision, therefore, is an active process that suggests entanglement with the world, rather than detachment from it (there is no ‘detached observation’).

Digital plenitude?

If the analogue projector must open and close its shutter in order to function, analogue cinema must plunge its viewers temporarily into darkness in order

to work. The same is not true, however, of digital projectors and/or screens. It does remain the case that digital projectors ‘flicker’ in order to produce images – but rather than a single shutter producing an instant of darkness, the digital projector is typically made up of *millions* of tiny mirrors that flicker at different speeds in order to produce the different picture elements (or pixels) that we see on screen, and each of which has a separate colour assigned to it any given moment (see Cubitt, 2014, pp. 217-221). Rather than all changing colour at the same time, though, the digital projector typically changes colour in waves, as do digital screens – which is why when you try to film a digital (or electronic, i.e. television) screen, you will sometimes see vague black shadows sweeping down that screen as it features in the image taken. What the camera is capturing is the flicker of the pixels – but as can be seen at such moments, only a certain array of pixels is changing colour at any given moment in time, not all of them at once. The result is that while some of the screen is technically in darkness at any given moment in time, the projection of light is on the whole continuous for digital and/or electronics projectors and screens.

In his masterly study of technologies of light, Sean Cubitt understands these processes of permanent illumination as being linked to mankind’s desire to control light (Cubitt, 2014, p. 217). As Cubitt and Schivelbusch both outline, the control of light is a long-standing process that is linked to capital. For, with permanent illumination comes the possibility of permanent labour, greater productivity and thus greater potential for profits. This is not without profound consequences for humanity, in that permanent illumination deprives humans of one of the key experiences of existence, namely the experience of darkness. As Jules Michelet noted in 1845 following the development of bright public lighting: ‘[h]ere there is no darkness, into which thought can withdraw, here there are no shadowy corners in which the imagination can indulge its dreams. No illusion is possible in this light. Incessantly and mercilessly, it brings us back to reality’ (quoted in Schivelbusch, 1995, p. 134). Writing of the contemporary age, Jonathan Crary similarly describes capital as working ‘24:7’, such that there is no sleep, which, we might add in light of the necessity for sleep to form memories, means that there is no memory, no dreaming, and thus no possibility of a different future for humans outside of capital – because humans cannot imagine one: ‘[i]t is impermissible for there to be credible visible options of living outside the demands of 24/7 communication and consumption’ (Crary, 2013, p. 50).

And yet, if we are living in a world of permanent illumination, what about the darkened room that is the cinema space itself? Schivelbusch suggests that ‘a camp-fire in the light of day is as senseless, even invisible, as a film projected

in daylight' (Schivelbusch, 1995, p. 221). In other words, for the cinema to work, do we not *need* to see films in a darkened space – regardless of whether films themselves are getting darker or more bright? Again, however, we might counter this nostalgic evocation of classical cinema by remembering that in the digital era we now increasingly watch films in what Gabriele Pedullà calls 'broad daylight', for example out of choice on our computers and smartphones, and not out of choice on the increasing number of screens that surround us in our contemporary spaces. For Pedullà, the current era is characterized, then, by an 'exponential growth of entertainment offerings, the multiplication of stimuli, the prevalence of Pavlovian responses (and hence of the represented over the representation), [and] the impoverishment of empathy and consequently of catharsis' (Pedullà, 2012, p. 126). Singing from the same hymn sheet, Crary links the ubiquity of screen-based and audiovisual media to the growth of rates in autism as we shift from a world that featured darkness to a world of permanent illumination (Crary, 2013, pp. 85-86).

While darkness was indeed a technological necessity for cinema in the analogue age, and while gaps (sleeping and blinking) are structural necessities for vision itself, we now live in an era in which cinema is no longer confined to the black box, but instead becomes immanentized across urban and other spaces, and in which the lights never go out. Whither darkness in such an age of plenitude with regard to digital and electric light?

The spatialization of darkness

The pixel has replaced the frame as the smallest unit of cinema. In some senses, this means that the smallest unit of cinema has involved a shift of emphasis away from time (a frame that lasts 1/24th of a second) and towards space (millions of pixels on a screen at any one moment in time) – as Sean Cubitt has pointed out (Cubitt, 2004, p. 33; for more on the spatialization of time in the digital era, see also Manovich 2001). In the growing amount of darkness in contemporary Hollywood cinema, then, do we not also see that what was once a temporal phenomenon (sitting in darkness for about 40 per cent of a film's duration) has equally become a spatial phenomenon (greater areas of the screen are dark at any given moment in time)?

It is not that Hollywood cinema is devoid of original ideas and thoughts, and that Hollywood thus cannot help in the emancipation of the human – in terms of allowing the human to think, perhaps to remember, and thus to imagine a world different from that of 24:7 capital (indeed, arguing that Hollywood cinema in the digital era has the potential to help us to think, and in this sense

to ‘do philosophy’, is one of the main thrusts of my earlier work; see especially Brown 2013). However, if as Cutting has argued in a different essay that, from the perspective of viewer attention, ‘darker images give viewers fewer options of where to look’, then in some senses the darkening of the image functions as a means of increasing the control that images have over viewers (see Smith, Levin and Cutting, 2012, p. 109). That is, to create only a small area of the visual field that is illuminated serves to increase its salience, which perhaps is an important strategy for attracting attention in an era when viewers are not just looking at one screen (in broad daylight), but instead have their attention (at least potentially) distributed across numerous screens (for more on distributed attention, see Wood, 2007, p. 135).

It may be that artists like Scott Barley create films such as *Sleep Has Her House* (UK, 2017), in which we more or less permanently see darkness. What is more, it may be that we need to watch very dark films like *Sleep Has Her House* in darkness in order to see it, since under both natural and electric illumination the computer screen will simply reflect atmospheric light, making the images impossible to see. (It might also be worth noting in passing how when we do look at a dark computer screen in broad daylight, the image that becomes most salient is our own reflection, suggesting that the computer screen is – shades of Charlie Brooker – a ‘black mirror’. In this way, the digital screen does not open up to us vistas of a world beyond us, helping us to think in a less ego- and/or anthropocentric fashion; rather, it encloses us further within a world of self-absorption and solipsism; even when we can see light on the screen, perhaps we are really only ever looking at ourselves, as we similarly are under surveillance from the machine, which notes down what we watch for the purposes of targeting similar material at us again in the future.)

In contrast to *Sleep Has Her House*, the dark contemporary Hollywood film does not want us to look at the darkness. Instead, it wants us to look at the illuminated areas of the screen – and to ignore the darkness. While darkness may have become spatialized, then, it undergoes a similar occultation to the one it underwent in the analogue era, as per Doane’s analysis. What is more, is it really darkness if part of the screen is in light? That is, while the image may be darker, rarely if ever do we experience total darkness, except perhaps in pre-commodified flotation therapy boxes – where darkness functions as therapy to help us deal with permanent illumination, but which, in being precisely ‘therapy’, also justifies that illumination the rest of the time (which is not to mention how flotation chambers are the exclusive preserve of the wealthy – much like the increasingly expensive black box of cinema). On a related note, as screenings become increas-

ingly autism-friendly by keeping the house lights up for the duration of a film, is there not, after Crary, a feedback loop created whereby permanent illumination provokes autism, which in turn demands permanent illumination – not to assuage it, but precisely to perpetuate it?

The noirification of cinema

Influenced by German expressionism, made by many directors fleeing Germany, and produced in the aftermath of a war that ended when atomic light created traumatic moments of total illumination in Hiroshima and Nagasaki (see Lippit, 2005), *film noir* clearly functions as an important precursor to the growing darkness of contemporary cinema. If, as scholars like James Naremore (2008) have outlined, the darkness and mystery of *film noir* reflect not just a masculinity in crisis but also a growing sense of bewilderment with a world in which total illumination creates devastation, then the recent development of global *noir* would seem to reflect the globalization of permanent illumination, which as we have seen equates to the globalization of capital (for studies on global *noir*, see, *i. a.*, Pettey and Palmer, 2014; Shin and Gallagher, 2014).

With this in mind, we might interpret the ‘darkening’ of contemporary film narration as being connected to a widespread sense of disorientation with regard to the increasingly globalized and connected world that digitization has helped to bring about. Overwhelmed by information, the reliability of which is hard to ascertain, the darkness of contemporary Hollywood and other cinemas might be said to reflect the difficulty of achieving a steady subject position in the contemporary world – a difficulty that is mirrored in the narratives of many films in which the subject itself is unreliable (films in which protagonists are variously dead, inhabit a simulated or false world, or are not who they think they are or claim to be). In this way, we can easily tie the *noirification* of cinema to the rise of the contemporary ‘mind-game’ or ‘puzzle’ film that is a staple of contemporary Hollywood (see Elsaesser, 2009; Buckland, 2014).

The darkness in such films thus gives expression to uncertainty and disorientation in the post-truth era, in which alternative perspectives on reality (including those of ‘minority’ voices, such as the feminist, the queer, the postcolonial and the posthuman) have been deprived of their emancipatory potential in order for all perspectives now not to be equal in their difference, but instead to be deniable because of their difference, and thus ignored or, worse, annihilated. As I have suggested elsewhere, the darkening of the screen thus becomes once again not an opening up to difference, but a narrowing of vision, as we concentrate only on the illuminated areas of the screen (much as we concentrate only on the visible

aspects of the world), and ignore the darkened areas, even though the darkness is right there before us, hidden, as it were, in plain sight (see Brown, 2014).

The *noirification* of cinema reflects, then, the way in which swathes of the world are shamelessly excluded and rendered invisible (even if in other senses those swathes are also under the permanent illumination of 24:7 labour). Furthermore, this *noirification* also reflects the way in which light becomes something not to be shared around, but something threatened by darkness and thus to be protected. With darkness as something to fear, the darkened screens of contemporary Hollywood thus serve to reinforce the logic of permanent illumination, or what Doane refers to as visibility – while at the same time occulting through (unsustainable!) denial those who remain invisible to the workings of contemporary global capital (unsustainable because one cannot deny except through shamelessness what is clearly there for all to see, namely the rendering invisible of large swathes of the planet). Light is not to be shared around; rather, darkness is a threat to be destroyed. Rather than a move away from (nuclear) war, then, the *noirification* of contemporary Hollywood cinema suggests a move towards it: the blinding light that will end the darkness – not through democratization, but through enslavement to labour under permanent illumination and the destruction of thought that takes place as no new memories can be formed or alternative ways of thinking developed. Again, the darkness of contemporary mainstream cinema is not something that we might embrace and enjoy, as per Barley's experimental film; it is rather a technique used to narrow attention, to increase control, to minimize thought, and to perpetuate the 'enlightenment' logic of capital.

Cutting and his team mention how 'by far' the darkest film that they found in their survey was *Harry Potter and the Deathly Hallows: Part 1* (dir. David Yates, UK/USA, 2010), the penultimate film in the initial *Harry Potter* cycle (see Cutting et al., 2011, p. 574). The *Harry Potter* films in fact have a relatively ambivalent relationship with darkness, in that the stories do not simply posit darkness as evil and light as good – as happens in, say, the *Star Wars* franchise. In spite of his name, and the initial belief that he is a bad guy, Sirius Black (Gary Oldman), for example, turns out to be a good guy. Meanwhile, the Deluminator that Albus Dumbledore (Michael Gambon) bequeathes in the film to Ron Weasley (Rupert Grint) is a tool that does not create light, but rather absorbs it in order to cover its user in darkness. Nonetheless, visually the film (and others in the franchise) regularly feature light-emitting wands and other devices that help illuminate the wizards as they move through darkness, with Lumos being a common spell cast to help the protagonists to see, while evil creatures like De-

mentors extinguish light sources in order to attack under cover of, and in some senses with, darkness.

In this way, darkness regularly does feature as a threat in the *Harry Potter* films, with the darkness naturally increasing towards the end of the franchise as the protagonists necessarily face their biggest challenge/experience their most precarious situation yet. If there is a rising trend in global *noir*, and if horror remains a staple of Hollywood's output, it stands to reason that darkness increases in contemporary cinema, especially darkness-as-threat. But as cinema becomes dominated by franchises, which must indeed involve ever-greater threats to humanity/their heroes as each film bids to outdo the last, then it is only logical for films to get visually (and thematically?) darker. What is more, the dominance of outer space as a component of the *mise-en-scène* in that other Hollywood blockbuster staple, the science fiction film, equally means that darkness will be a regular feature of the screen.

Depictions of outer space may suggest a posthuman and/or non-anthropocentric perspective, in that we are reminded of our rare and precarious position in the universe. But while this may be so, a film like *Gravity* (dir. Alfonso Cuarón, UK/USA, 2013) is in some ways also about the threat posed by the darkness of space to Ryan Stone (Sandra Bullock) as she endeavours to find her way back from outer space and on to Earth. Furthermore, while the *Star Wars* films also feature much space travel, not only is the so-called Dark Side figured as a threat to those who would use the famous Force as a tool for good, but we also see how the films are about the control of light for the purposes of defeating darkness. This comes not just in the form of laser beams, which, as examples of Light Amplification by Stimulated Emission of Radiation, mean that each blaster in the franchise is a kind of mini nuclear weapon. It also, by the time of *Star Wars: The Last Jedi* (dir. Rian Johnson, USA, 2017), comes in the form of the deliberate weaponization of the series' famous light speed travel capabilities as Vice Admiral Holdo (Laura Dern) flies her rebel ship through attacking First Order vehicles at light speed in order to split them in half. An impressive set piece within the film, this use of light as a weapon, nonetheless signifies the logic in the film of the control of light for the purposes of eradicating darkness as a threat.

Notably, in the original *Star Wars* movies, achieving light speed was something that the Millennium Falcon regularly failed to do, meaning that the protagonists often struggled to get where they needed to go. Meanwhile, in *Star Wars: The Force Awakens* (dir. J. J. Abrams, USA, 2015), not only is light speed readily possible, but it is also deployed in the film both as a means of immediate escape (the Millennium Falcon jumps straight into light speed from within

the Eravana in order to escape attacking Guavians, Kanjiklub and rathtars) and as a means of immediate attack (the Millennium Falcon enters the atmosphere of the Starkiller Base planet at light speed towards the end of the film). That is, these sequences suggest not only that light has become more easily controlled, but that light speed logically demands the eradication of empty/‘dead’ time, in which heroes solve problems, as the film prefers instead to jump simply from action set piece to action set piece. In other words, light is associated with speed and movement as a means also to ward off darkness and death – through the eradication, or the making invisible, of gaps in the action. This in turn suggests that the franchise is driven by a logic of visibility, even if many scenes feature darkness in the *mise-en-scène* in the form of outer space.

Having suggested that contemporary Hollywood cinema employs darkness as a means paradoxically to reinforce the dominance and the domination of light, I wish now to change tack, and to suggest that we can still wrestle something philosophically progressive from the darkened screens of contemporary Hollywood cinema – something that might help us not shamelessly to declare ourselves separate from the world, but to understand our entangled nature with it and with our fellow human beings. We shall do this by looking at the physics of light and darkness and by considering darkness not just as a spatial phenomenon that we can see in the *mise-en-scène* of many contemporary films, but also as a temporal phenomenon that has its own speed.

Faster than light

‘Why should we be at all interested in the obscurity that emanates from the epoch?’ asks Giorgio Agamben (2009, p. 45). For Agamben, the answer to this question lies in his argument that to be able to perceive the obscurity and darkness of any given era is more properly to understand it. Properly to understand an epoch is for Agamben to be *contemporary* with it: ‘[t]he contemporary is he who firmly holds his gaze on his own time so as to perceive not its light, but rather its darkness. All eras, for those who experience contemporariness, are obscure. The contemporary is precisely the person who knows how to see this obscurity’ (Agamben, 2009, p. 44).

We can perhaps read Agamben’s sense of the contemporary as simply being the ability to see through the hype that typically circulates in any era promoting it as the best era that the world has ever seen. Rather than being uniquely brilliant (shining, luminescent), all eras in fact have a dark side – and the contemporary is thus simply someone who sees and understands this: ‘[t]he ones who can call themselves contemporary are only those who do not allow themselves to be

blinded by the lights of the century, and so manage to get a glimpse of the shadows in those lights, of their intimate obscurity' (Agamben 2009, p. 45). More pertinent to the present discussion, however, is the link that Agamben makes between the perception of darkness and both physiology and physics.

The absence of light, writes Agamben,

activates a series of peripheral cells in the retina called 'off-cells'. When activated, these cells produce the particular kind of vision that we call darkness. Darkness is not, therefore, a privative notion (the simple absence of light, or something like nonvision) but rather the result of the activity of 'off-cells', a product of our own retina. This means [...] that to perceive this darkness is not a form of inertia or of passivity, but rather implies an activity and a singular ability. (Agamben, 2009, pp. 44-45)

For Agamben, to perceive darkness is an act of participation, or what we shall refer to shortly as entanglement.

Agamben goes on to query why the night sky exists, in that if there are that many stars in the universe, then the night sky should be filled uniquely with the light from stars, thereby meaning that there would be no darkness, but instead total and permanent illumination – albeit at different times from different sources (from the sun during the day and from a multitude of other stars during what we typically refer to as the night). The reason why we have darkness, however, is because

the most remote galaxies move away from us at a speed so great that their light is never able to reach us. What we perceive as the darkness of the heavens is this light that, though traveling toward us, cannot reach us, since the galaxies from which the light originates move away from us at a velocity greater than the speed of light. (Agamben, 2009, p. 46)

For Agamben, the contemporary perceives this light that cannot reach us in the darkness that otherwise surrounds us – at a time when the light that can reach us is used to drown out that same darkness. If you will, the contemporary is able to see not just her own time, but also the times of other galaxies that will never make contact with ours.

Now, Agamben is useful for two reasons, which I hope to show are interlinked. Firstly, he is useful for suggesting that the perception of darkness is an active process that suggests entanglement with, rather than estrangement from, nature (darkness is not just 'out there'; it is also partially 'created' by the physiology of the perceiver via off-cells; if darkness is both out there and in the perceiver, this sug-

gests that the ‘out there’ and the perceiver are connected with each other, i.e. entangled). And secondly, he is useful for suggesting the possibility that some things move faster than light. This latter is in particular important, since, as we shall see, light is generally considered to be the limit of speed. That is, nothing moves faster than light – and so to posit that something does is in effect to posit the impossible.

Perhaps we can get at this impossibility, however, by considering that light exists both as particles and as waves (photons), while darkness does not have a material existence. I should (pun hard to avoid) ‘highlight’ a difference here between darkness, dark matter and dark energy, although in some senses the latter two are conceptually useful for this essay. Dark matter accounts for ‘85 percent of the matter in the Universe, while ordinary matter – such as that contained in stars, gas, and people – constitutes only 15 percent’ (Randall, 2015, p. xiii). Dark matter is not dark so much as simply indifferent towards light, which does not affect it when they meet (Randall, 2015, p. 6). But even if dark matter does not interact with light in any way that humans can currently measure, dark matter is nonetheless still matter. Dark energy, meanwhile, has no material existence in that it is simply energy and not matter, even if like dark matter, dark energy is spread evenly throughout the universe (and accounts for about 70 per cent of the universe’s energy density; see Randall, 2015, p. 8). In that ‘billions of dark matter particles pass through each of us every second’ (Randall, 2015, p. 3), and in that ‘dark energy density – energy not carried by particles or matter – remains constant’ (Randall, 2015, p. 8), both dark matter and dark energy are conceptually useful here, since they tell us that there are invisible substances (dark matter) and forces (dark energy) that surround us, which constitute not only an important but perhaps even the majority of the matter and energy in our universe (85 per cent of matter is dark matter; 70 per cent of energy is dark energy), and yet which we cannot see.

Nonetheless, neither dark matter nor dark energy is quite the same as the darkness that I wish to describe/define here, in that here I want to use the term darkness to refer to that which lies outside or beyond the speed of light. That is, if light is the limit of speed, and yet if galaxies are moving away from us at speeds that are faster than that of light (since the light from those galaxies cannot/does not reach us), then how are we to account for, or to describe, that speed? To move at a speed faster than that of light is, I shall suggest, to move at the speed of darkness.

The speed of darkness

Particles that move faster than light, typically referred to as tachyons, are to the best of our knowledge only hypothetical and not real. Indeed, physicist Lisa

Randall suggests that if a theory of the universe contains a tachyon, then it is by definition incomplete (see Randall, 2006, p. 286). Whether or not incompleteness is in fact a structural necessity in our universe à la Kurt Gödel's famous incompleteness theorem, in which something that is unprovable can still be true (see Penrose, 1989, pp. 138-141), remains beyond the scope of this essay. Nonetheless, I want to work at least conceptually with the tachyon, since if the tachyon were to exist, it would not be visible to us. But more than this, if tachyons were to exist, then they would simultaneously always be receding from our field of view (because moving faster than light, they would always be moving away from us) while at the same time always acting as an ever-thinner but always existing veil between us and the light that we do see (because the darkness would by definition of its faster-than-light speed have pre-existed the light and thus always already be there).

Now, it may seem ridiculous (or an intellectual imposture) to hypothesize something that is thought not to exist (even if being unprovable does not mean that it does not exist). And yet, in always existing as a veil between us and that which we do see, while also always moving away from us, the invisible tachyon – be it unreal, non-existent or otherwise – is always withdrawing, much like the galaxies that Agamben describes. While light comes towards us, darkness always recedes from view while also always remaining invisibly within view. In always withdrawing, darkness requires us actively to imagine it, in the process suggesting not only the role that the mind plays in the construction of reality, but also the way in which the human and the universe are entangled rather than being divorced and separate the one from the other.

If the preceding discussion of tachyons is too speculative, however, we can use some more established physics in order to push the argument further. For while it is accepted that light is the 'fastest' phenomenon in the known universe, there nonetheless remain unilluminated aspects of the physical universe that defy light as the limit of speed – and which convey the interconnected nature of matter in the contemporary universe. For example, polarized particles have been proven simultaneously to respond to stimuli – at a speed faster than it would take light to travel from one particle to the other, a phenomenon that baffled Albert Einstein, who referred to this process as 'spooky action at a distance' (see Zeilinger, 2003). This spooky action at a distance would seem to affirm what Karen Barad (2007) might refer to as the entangled nature of all matter, in that matter is connected across space and time in a fashion that suggests a universe not of separation but of what physicist Niels Bohr called complementarity. Where Werner Heisenberg famously identified that an observer affects the result of an experi-

ment (for example, determining whether a photon is a particle or a wave), such that we can never be certain as to the ‘true’ nature of a photon (the so-called ‘uncertainty principle’), Bohr suggested that there is no true measure beyond the human, and that the uncertainty, or rather the way in which the human affects the experiment, is, as it were, the truth. In other words, for Bohr, humans are not fundamentally excluded from reality, but entangled with it; the two are in this way complementary.

Tachyons do not solve the riddle of spooky action at a distance. Nonetheless, the two have in common the idea of faster than light movement, or what I am calling the speed of darkness. Notably, this spooky action has been demonstrated as taking place not just across space at speeds that are faster than light, but also across time. ‘Quantum steering into the past’ involves photons affecting each other’s behaviour in the past from the present, and thus also from the past and into the future (see Ma et al., 2012; Megidish et al., 2013). In other words, spooky action at a distance would suggest that information can cross space at a speed that is faster than light – and at a speed that also goes against our everyday understanding of time. If you will, like the tachyon that is always withdrawing while also remaining in the same place, quantum entanglement suggests a universe in which information, like galaxies, withdraws from us, while at the same time remaining connected to us – much like a wormhole connects spaces and times that according to our anthropocentric dimensions are impossibly far apart.

Indeed, it is important to note that the so-called Einstein-Podolsky-Rosen (EPR) pairs, which are the spooky pairs of entangled particles discussed above, have of late been equated precisely with wormholes, which are also referred to as Einstein-Rosen (ER) bridges, and which, as mentioned, connect distant points in space and time. Proposing that ‘ER = EPR,’ physicists Juan Maldacena and Leonard Susskind suggest a new understanding of black holes as possibly being, or connecting to, wormholes. Originally, black holes were understood to be phenomena that are so dense, and which thus have such a strong gravitation pull, that no information nor light can escape from them (hence their blackness). However, since black holes ‘evaporate’, clearly they give off some information, which after Stephen Hawking is referred as Hawking radiation. Maldacena and Susskind effectively suggest that the Hawking radiation is connected to its parent black hole via wormholes, which could in certain circumstances be traversable and which also are consistent with quantum entanglement (see Maldacena and Susskind, 2013; Wolchover, 2017). In other words, the universe is woven together across both time and space via a whole physics that exists beyond the realm of light and in the realm of darkness.

It is not simply that films like *Contact* (Robert Zemeckis, USA, 1997) and *Interstellar* (Christopher Nolan, USA/UK, 2014) depict wormholes and/or information (including in the form of humans) passing through a black hole (in the latter film with the help of a tesseract, or a cube consisting of not three but four dimensions). More importantly, it is that we can read the darkening of contemporary Hollywood cinema as a cinema that visualizes through darkness these alternative speeds that exist beyond, or outside of the speed of light.

Existing beyond or outside of the speed of light, the darkness of contemporary Hollywood cinema is in this way a digitally-enabled phenomenon that pushes up against the limits of cinema itself. For if cinema is the control of light (for the purposes of controlling attention), then the incipient darkness of cinema suggests cinema's outside, or the non-cinematic. The darkness suggests cinema withdrawing, while perhaps also remaining before us (we are still seeing films, but cinema perhaps hastens away from us). Or put differently: a cinema that moves beyond the speed of light is a cinema that ceases to be one that we can see, but rather one that we feel. That is, after Shaviro, it is a post-cinema of affect rather than cognition, a cinema of tachyons that is tactile rather than uniquely visible. In the era less of the kino-eye and more of what Lev Manovich calls the digital kino-brush (Manovich, 2001, pp. 307-308), it is a cinema not of photographic representation, but a cinema of digital painting, or drawing. As drawing necessarily entails entanglement, in that the artist must actively make the drawing rather than 'objectively' take the photograph, so does the darkness of contemporary digital cinema suggest 'withness' through drawing, a with-drawing that equally suggests our entanglement with the image, as we come to recognize rather than to overlook its darkness, and to recognize how the darkness complements the light, rather than seeking to extinguish the darkness for the purposes of the light. Furthermore, cinema is perhaps itself a wormhole, a machine that connects us to different times and places existing in galaxies and universes that are not our own, and which we could not reach except via wormholes since they are withdrawing from us too rapidly to get there via the speed of light. These times and places are not real, but they perhaps are complementary to and entangled with our own. In this way, a darkened cinema suggests that our universe consists of darkneses and gaps that are unprovable, but which are in other senses true, or real. Fiction is, as it were, as true as reality; ours is a poetic as much as a scientific universe, with cinema perhaps always synthesizing the two.

We live in an era characterized by communication at the speed of light and 24:7 labour. Light has been controlled for the purposes of capital. To get outside of this era of light, we must enter and embrace the darkness. To move faster

than light is perhaps not really to move at all; while I have written of the 'speed' of darkness, perhaps darkness exists more in a realm outside of speed and thus outside of time. If for Gilles Deleuze the time-image was a means for cinema to counter the controlling effects of the medium, it did so by showing time, or by showing that light itself is the limit of time (see Deleuze, 2005). As we move towards a cinema that is not cinema, as we move towards darkness, we must in some senses move beyond Deleuze and beyond the time-image. Indeed, we must move towards what Andrew Culp might term a 'dark Deleuze': '[t]here are those who have hitherto only enlightened the world in various ways; the point is to darken it' (Culp, 2016, p. 14). The point, then, might be to create a non-image cinema, or a non-cinema.

At the start of *Sleep Has Her House*, titles explain how the last few humans withdraw into the forest at the end of times, thereby inviting us to contemplate and to embrace the darkness. Meanwhile, in contemporary Hollywood cinema and in the global *noirification* of cinema more generally, it would seem that the darkness that rises is a darkness that is subjugated to light for the purposes of controlling attention for the purposes of perpetuating capital. That is, darkness is here a threat to the digitally-enabled, 24:7 culture of permanent illumination and must be extinguished, or at the very least rendered as a threat so that its constitutional/structural necessity remains overlooked and so that exploitation can continue to happen unabated. However, the rising of the darkness would also suggest the unsustainability of permanent light and thus of capital – with the digital also enabling this increased darkness, suggesting perhaps not only the internal contradictions of capitalism in the digital age, but also the way in which the digital era sees capitalism come up against its own limits. Regardless of the role that darkness plays in the individual stories that contemporary Hollywood plays out to us (i.e. regardless of where cinema's different wormholes lead us), the rise of darkness in contemporary Hollywood demonstrates how the struggle for our very future is played out on the different screens of contemporary audiovisual culture. May the darkness always co-exist with, rather than be subjugated to, the light. And may it connect us to and entangle us with other worlds and realities – worlds that never existed and which show us the neverlands and the neverseas outside of time, and which prop up the capitalist world that exists within our time. For, these neverworlds will enrich our own temporary world in ways that the permanent illumination and the relentless exploitation of capitalism, which does not sleep and so which does not dream, could by definition never dream of.

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Abstract

Longitudinal, quantitative analyses of cinema have established how Hollywood is getting 'quicker, faster, darker'. While in some senses the 'intensified continuity' of contemporary Hollywood narration is a given, the increased darkness of contemporary mainstream cinema remains unexplored – especially with regard to how its speed and its darkness might be inter-related. If to darken the majority of the screen during a film helps to draw our attention to the salient aspects of the image that are better illuminated, then of course this also allows for a faster cutting rate: in principle, there is 'less' information for the viewer to have to take in during each shot, meaning that the film can then cut to subsequent images more rapidly.

However, there are other ways in which we can interpret this ‘darkening’ of contemporary film narration. For example, it perhaps ties in with a widespread sense of disorientation with regard to the increasingly globalized and connected world that digitization has helped to bring about, and which is equally reflected in the rise of the contemporary ‘mind-game’ or ‘puzzle’ film that is a staple of contemporary Hollywood. The darkness in such films thus gives expression to uncertainty and disorientation.

More than this, though, we might use physics to understand the darkness of contemporary cinema in a more ‘meta-physical’ fashion. While it is accepted that light is the ‘fastest’ phenomenon in the known universe, there nonetheless remain unilluminated aspects of the physical universe that defy light as the limit of speed – and which convey the interconnected nature of matter in the contemporary universe. For example, polarized particles have been proven simultaneously to respond to stimuli – at a speed faster than it would take light to travel from one particle to the other, a phenomenon that baffled Albert Einstein, who referred to this process as ‘spooky action at a distance’. Not only does this process suggest what Karen Barad might refer to as the entangled nature of all matter, but it also suggests speeds beyond, or at least different, to that of light. In this essay, then, I shall theorise a ‘speed of darkness’ that can help us to understand how the darkening of contemporary cinema ties in with the interconnected, invisible (‘spooky’) and ultra-rapid nature of the digital world. Perhaps it is not in the light but in the darkness that we can identify the key to understanding contemporary mainstream cinema and the globalized, digital world that produces it.

Key words: speed cinema, tactility, darkness