

TIME-LAPSE, TIME MAP.

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THE PHOTOGRAPHIC BODY OF SAN FRANCISCO IN DAVID FINCHER'S *ZODIAC*

Halfway through David Fincher's 2007 crime thriller *Zodiac*, a police procedure movie recounting the twenty-year investigation of a serial killer who terrorized California in the 1960s and 1970s, a brief time-lapse sequence shows the construction of the iconic Transamerica building in downtown San Francisco. A 48 floor, 260m high pyramid, the Transamerica tower is perhaps the most prominent building in the city, and was built between 1969 and 1972, designed by William L. Pereira Associates. The time-lapse sequence charts the growth of the building over approximately one year, from 1971-1972, and is accompanied by Marvin Gaye's Inner City Blues (Make Me Wanna Holler) from 1971. In the film's narrative, the sequence segues between the early successes of the investigating team and reporters in tracking and identifying the prime suspect, and the beginning of the story of this group's obsession and dissolution, starting with

the alcoholic reporter Paul Avery (Robert Downey Jr.) The film follows the trials of lead detective inspector David Toschi (Mark Ruffalo) and cartoonist and eventual true-crime writer Robert Graysmith (Jake Gyllenhaal) in their pursuit of the Zodiac, a killer who chose his victims seemingly at random, in different parts of California, whilst sending taunting letters to adversaries via the *San Francisco Chronicle*. Famously, the Zodiac was never conclusively identified, and the film ends unresolved, with only a suggestion (made through a silent encounter between Graysmith and the chief suspect) of any identification, which is later thwarted by retrospective DNA sampling. In order to tell this story, the film uses a number of telescoping devices to narrate the passing of empty time between periods of the film's activity, including an audio montage of pop songs and radio clips over a blank screen, a digital overlay of the Zodiac's letters across the actors in

one scene, and this time-lapse sequence of the Transamerica building. One of the most striking elements of the sequence is its apparent ellipsis of one day, so that it begins with foundations caught in the evening sun, passes through night and through daytime as the building rises, and is topped out as the sun sets and the building is illuminated from within. So one year is presented as one day, which is presented in 30 seconds of screen time. Throughout the sequence, the flickering spider legs of construction cranes circle the construction, their spiraling pattern apparently exposing the individual frames which make up the time-lapse sequence. Importantly, like all time-lapse sequences, it returns cinema to its constituent construction of still photographs, perhaps more so because it interrupts a studio feature film.¹

The time-lapse sequence was completed by Steven Messing and a team at Matte World, and stands out in the film for two key reasons. In the first instance, *Zodiac* was filmed entirely on digital video – the new Thomson Viper Film-Stream, with digital magazines storing all its rushes as data. In addition, substantial elements of the film's production design, including some of the outdoor sets, gunshot wounds and helicopter views of the city, were constructed as 3D digital sets. This included the Transamerica sequence, which was achieved by compositing time-lapse photographs of the sky with a 3D digital model of the building and day/night effects. CGI in cinema often relies upon the physical simulacra of photography in order to attest to the real: lens flare, film scratches and other artifacts of photography are added to the image, and less obvious rendering effects, such as motion blur, make digital creation appear to be photographic capture. In this sense, it is easy to see why the Transamerica sequence has been viewed as a technical flourish, even if this makes director Fincher uncomfortable (Fincher 2007). In all other respects the digital capture, compositing and rendering of the film is intended to be imperceptible, and great lengths were taken to achieve a distinct filmic look, including a digital

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restoration at DTS Digital Cinema, who had previously restored the original *Star Wars* trilogy. (Kadner 2007: 88) The visual texture of the film was heavily influenced by the still photography of William Eggleston and Stephen Shore, two great American photographers who rose to prominence in the 1960s and 1970s, and whose use of colour was at the time something of a radical departure. Whilst it is not unusual for a film to have a visual style guide – indeed effective production design and cinematography depends upon it – what is telling is the evidence of debate over the appearance of the filmic, or photographic, that a digitally shot movie should have. As cinematographer Harris Savides remarked, making the production look like film “was in my mind's eye, but I don't know if I'm necessarily right. Should a movie look like film or something else?” (Williams 2007: 41). Elsewhere he betrays the friction caused by the director's adherence to testing the possibilities of the new Viper camera: “For me the benchmark is film, so why not shoot film? [...] Yet Fincher wanted us to use this technology” (Taubin 2007: 27). Perhaps then the Transamerica time-lapse sequence has a critical role, not just to give the semblance of photography within the feature film, but to naturalise and make unremarkable the considerable efforts the director and his team took to make the production look like film.

The second reason for the sequence to stand out has more to do with the filmic than even the strenuous efforts made in pre- and post-production. CGI features often make pointed use of metaphors of

photography, and this has been particularly so in the first few years of digital feature production. *Vidocq* (2001), the period crime thriller directed by Pitof and starring Gerard Depardieu, was shot entirely on digital video, and has some astonishing CGI effects sequences, even for its time. But it is the *modus operandi* of the vampiric serial killer which provides the movie's important metaphor for the passing of the photographic image in cinema: the killer wears a mask made of mirrored glass, so that his visage is not unlike the appearance of a daguerreotype. The daguerreotype, one of the earliest and most successful photographic processes, was a piece of highly polished copper and silver plate, upon which the image appeared. When a viewer looked directly at the plate, they saw themselves only in its mirrored surface.² The Transamerica sequence provides just such a reflection on photography in *Zodiac*. As the critic Amy Taubin describes, it is a film in which the “relationship between the analogue past and the digital future has to do with knowledge and its empirical basis and representation in codes and data” (Taubin 2007: 24). For Taubin the film is historically significant because of its digital production and its attention to accuracy, even if this means breaking the connection between the photograph and its object – the precious indexical connection upon which so much of our trust in photography is based. But is also significant because it is a story about the distance travelled in terms of technology, and its relationship to evidence, between the 1960s and the present, in that the use of photography as evidence is presented as an after-thought (one of the surviving victims is shown a mugshot of the suspect only after two decades have passed), whilst the collection of data is hampered by jurisdiction problems and inadequacies of communication technologies. In a similar manner, the Transamerica sequence narrates the gap between the technologies of CGI and 3D digital filmmaking and the analogue source photographs of the building's construction, which were shot across the city from a vantage point owned by Francis Ford

Coppola. The apparent signs of photography, most importantly the flicker created by the rotating cranes, demonstrate something else about photography (and especially cinema) that must inevitably undergo a further revolution: They demonstrate how reliant we are upon photography and cinema to provide us with a way of comprehending time.

The relationship between photography, cinema and time has been explored by a number of film critics and philosophers, with perhaps the most influential being the French philosopher Gilles Deleuze. His two books on cinema – *The Movement-image* and *The Time-image* – describe cinema as a process of constructing an expression of time which follows closely our *modern* comprehension, with time appearing to flow logically from movement in space. (Deleuze 1997 and 1994) For Deleuze, the cinema “conveys a relief in time, a perspective in time [...] This is why time essentially takes on the power to contract or dilate, as movement takes on the power to slow down or accelerate” (Deleuze 1997: 24). Profoundly influenced by the philosophy of Henri Bergson, Deleuze saw the photograph as a still image, an immobile section, from which a particular logic of cinema was developed. The still images are captured in sequence, which are strung together as shots, with editing proceeding from this to create our classic idea of narrative. Cinema narration evolved from film by using a succession of still images as a false movement. It is a system reliant upon how it replays our sense of time back to us, so that the shot reconstitutes time in a way that will appear to be our own time, making the reconstruction invisible. In Deleuze’s work, the photograph almost always appears as a metaphor for stasis, insolubility and stagnation. In his work with the psychoanalyst Félix Guattari, the photograph is used to describe a competent “tracing” of identity, in antithesis of the growing, changing individual for whom *coming-into-being* is an ongoing project. Hence psychoanalysis is the practice of taking “photos of the unconscious” in the manner of a snapshot. (Deleuze and Guattari 1996: 13) This is opposed

to *mapping*, which is offered as a process that rhizomatic, and sensitive to growth, since it is always “detachable, connectable, reversible, modifiable, and has multiple entryways and exits” (Ibid. 21). In what ways, then, might a photograph be a map, rather than a tracing?

In his book on cinema and the photograph, *Between Film and Screen*, Garrett Stewart reminds us that the flicker in cinema is invisible, suggesting audiences have only very rarely ever marveled at, cared or even known about photography’s role in cinema. (Stewart 1999: 260) Time-lapse photography then may be the only time the photograph within cinema becomes visible, or even wondrous, and it may be this release from its invisible role in cinema which allows it to express other representations of time than the snapshot. As David Lavery has noted, time-lapse photography is a technique which is well known and often visible in our everyday visual culture – including in corporate identity and advertising, feature films, as well as scientific applications. (Lavery 2006: 1-3) Time-lapse is an often-used practice in contemporary art and in amateur production, to the extent that amateur or ‘prosumer’ video equipment now have specific time-lapse functions. This should hardly be surprising since many of the pioneers of time-lapse photography have emerged from the amateur, rather than the professional, sphere of filmmaking practice, including the interdisciplinary application of time-lapse photography in botany and the life sciences. These include pioneers such as Wilhelm Pfeffer and Roman Vishniac, but perhaps most famously the American small-town banker John Nash Ott. It was Ott’s home experiments, his employment by schools’ boards, scientific and medical bodies, and his prodigious public lectures, which perhaps cemented in the public mind the idea of time-lapse photography as a technical flourish by competent amateurs. Ott’s work in particular specialized in botanical growth normally difficult to observe in human time, and it is perhaps this focus on growth as wondrous and playful (he describes, in his autobiography, making a film of ‘dancing

primroses) that has done much to further naturalize our cinematic understanding of time. (Ott 1958: 19-21) Even in Peter Greenaway’s *A Zed & Two Noughts* (1985) the use of time-lapse is an experimental, interdisciplinary leap by the film’s twin zoologists from the study of animal behaviour to the study of animals in death and their decay.

The fact that time-lapse presents to us different blocs of time which are normally beyond our endurance (or simply our patience) illustrates how much time itself is a psychological concept. Alexey Alyushin, for example, has written of how Bergson’s philosophy of perception (which influenced Deleuze) understood it to be a kind of mental snapshot photography, drawn up in sequence, which is uncannily close to the concept of temporal neurophysiological frames in modern brain science. (Alyushin 2010: 440-441) Time-lapse extends our temporal frames, in that we see or perceive through photography a larger wholeness of time which we might ordinarily enter or leave at any point, since we are unlikely to experience this whole directly. Time-lapse therefore exposes time as hodological – a mental bloc of forces through which actions exist as pathways. This is developed from the concept of hodological space introduced by the psychologist Kurt Lewin. (Lewin 1935) Tarja Laine has explored the notion of film providing a hodological space in Lars von Trier’s *Dogville* (2003), since the film eschews sets and props in favour of an empty sound stage:

The primary significance of objects [in hodological space] is not that they exist as conceptual entities (defined by their general properties such as size or shape). Instead, they are functional entities which are understood through their capacity as instruments (that are used in order to obtain certain goals)...By removing the setting in *Dogville*, von Trier leaves the ordinary Euclidean space behind and creates a hodological field of force instead. (Laine 2006: 131-2)

We can propose a concept of hodological time if we remember Deleuze’s argument that time is represented by movement in space. It is for this reason

that his theory of cinema based on logic and action (the action-image) is one based on the hodological. He writes that “the action-image presupposes a space in which ends, obstacles, means, subordinations, the principle and the secondary, predominances and loathings are distributed: a whole space which can be called ‘hodological’” (Deleuze 1994: 203). So the hodological space of cinema is one of resolution and structure, a *way-space* through which the narrative moves in time, toward a conclusion. However, the abstract nature of time-lapse photography complicates this, since it makes immediately apparent the reality that objects as functional entities are really bodies in time. Whether demonstrating this as growth from seed to flower, or in decomposition from animal to cadaver, time-lapse makes explicit the identity of the object as a temporal one, which needs a different sense of the whole of time in order to comprehend.

For this reason, time-lapse landscapes, such as we see projects such as Godfrey Reggio’s *Koyaanisqatsi* (1983) or Ron Fricke’s *Chronos* (1985), are images of bodies which form over millennia, and each of which is perhaps difficult to determine as one body from another. They also delimit the body from the landscape, so that the image maps new bodies over others. For example, in the timelapse cityscape, roads, buildings and streets become bodies and bloodstreams in time-lapse photography, and this is exactly what the Transamerica sequence in *Zodiac* aims to show: to demonstrate how the city grows each building as a new child. *Zodiac* is therefore indebted to the experimental nature of Fricke’s work on *Chronos*, on his later film *Baraka* (1992), and as director of photography on *Koyaanisqatsi*. It was this work which opened up time-lapse as an explicitly contemplative form of photography for its own sake, and as a part of specifically filmmaking practice.

Koyaanisqatsi, part of a trilogy of films under the direction of Godfrey Reggio

including *Powaqatsi* (1988) and *Naqoyqatsi* (2002), has been described as a ‘visual-tone-poem’, and is indeed a film with no explicit conventional narrative, characters, or even personnel; but only a sequence of images with a musical score. (Ramsey 1986:62). Images of America, filmed using various types of motion picture photography including speeded up and slowed film, infra-red film, and

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aerial photography, are presented with a musical soundtrack (composed by Phillip Glass). *Koyaanisqatsi* presents its images *as* images, its sounds *as* sounds, and, as Michael Dempsey notes, the “impactful” images are “doubled by the score”, to create a richness of experience that Reggio himself admits can only be appreciated fully through memory “revisited” (Dempsey 1989: 5). *Koyaanisqatsi* is full of images of the body, and particularly the face, that dominates even in the landscapes that appear. It is difficult not to scan the surface of the screen looking for distinguishing features that might help identify the deserts of Arizona, or the cityscape of New York. The buttresses of Monument Valley or the building’s of Manhattan’s skylines are landscapes that become recognizable as faces, just as any human face might instantly be scanned for features to identify it. Similarly, the faces of Vegas croupiers might be real faces, but they are not as clear as those instantly recognisable faces of the Vegas streetlights. In this way, *Koyaanisqatsi* turns the undoubted intensity of its images into one act of signification as a whole, just as its time-lapse photography is so regulated that it turns even out its various intensities of motion. As Ron Gold noted on its release: “The one constant in *Koyaanis-*

qatsi is motion...a cohesiveness or flow... This undulating motion carries from one camera speed to another, whatever the subject” (Gold 1985: 70). *Koyaanisqatsi* had a troubled production, lasting over seven years, and involving the participation of various cinematographers (often taking the directorial controls for a time), and a producer, Reggio, whose directorial input was not fully realised until the project was nearing completion.

Indeed, Gold’s account of the filming of *Koyaanisqatsi* places much emphasis on the autonomy of Fricke as a cinematographer, particularly for those sequences (many of the aerial and time-lapse shots) that required heavy experimentation. In these, it appears, it was more often the technology that

provided the impetus than any narrative, thematic, or even generic considerations. This strikes a significant parallel with Savides and Fincher on *Zodiac*, for whom the discussion focused, as we have seen, on producing an image that was filmic in appearance. At the same time, Savides insisted on testing the new digital equipment to the edge and beyond of its technical limits, always comparing it with the capabilities of analogue film. (Williams 2007: 36) It is this experimentation with technology which begins to shape cinema as an apparatus rather than a specific technology, so that different capture modes (analogue or digital) become subordinate to a particular set of ideas and a particular representation of time. The photograph as the constituent of cinema is replaced by the temporal frame, in the same way that the reference photographs of the real Transamerica building are replaced by simulations that allow us to witness the construction of the building as a body of the city.

The production of bodies leads to a hodological space in cinema, in which objects gain identity and purpose. The location and synchronization of sound is a part of this, so whilst the image and sound remain unconnected (time-lapse cinema is, after all, silent) the image re-

mains in a pre-hodological state. Cinema that explores the body also remains pre-hodological, and so Deleuze, for instance, points to the role of children or clowns in cinema as something that disturbs (“haunts”) the creation of hodological space. (Deleuze 1994: 203) This is also the case with the vision of the growth of plants, or of the decay of the animal body; they complicate the creation of resolved space. The photographs, for an attenuated moment of wonder, map time rather than trace its path. *Zodiac* is a cinema of bodies – mostly the victims, but in particular the haunting presence of the Zodiac as a character from the Grand Guignol. The building of the Transamerica tower – as a real building and as a 3D digital model – neatly parallels the piecing together of the Zodiac’s identity by the Graysmith in particular, who collects circumstantial evidence as a network of pathways which can be mapped to locate the killer. The film collapses this decades-long process into two and half hours, and it is then collapsed further into the piecing together of the Transamerica building over 30 seconds. This is a conceit of digital cinema which is only achievable through 3D technology, which replicates what the photographing camera might have captured in 2D. Nevertheless, despite the fact that the building is not photographed the *building* of it is still achieved, and reduced to the temporal frames of the still image from which film prints (as well as video) are still reconstituted.

Whenever cinema encounters the photograph it is always reflecting upon its own ontology, its own analogue base. However, where this is normally seen in the act of filming the photograph or in the freeze-frame, which stalls on the constituent still images of cinema, it is in the time-lapse sequence that attenuates the wondrous as part of its construction. What I have tried to show in this article is how a digital revolution in cinema is nonetheless indebted to the photograph, beyond any reliance on the index or the causal real. The time-lapse sequence in *Zodiac* neatly diverts attention away from the role and use of digital technologies in production design and compositing,

as well as image rendering to produce the “filmic” appeal of a period film. But it does more than this: it introduces the body to digital cinema in a manner which is reliant upon the digital’s photographic legacy. The photograph within cinema gives the sequence a mechanics by which it can digitally build in three-dimensions, a mechanics based on the stringing together of still images to make up the cinematic shot. The sign of the photograph is no longer the still image, but is instead the flicker generated by this succession. At the same time, it provides for the digital image a contiguity with the photograph no longer based upon the analogue capture but now based upon the apparatus as a set of photographic ideas. Whilst digital production may have left the analogue far behind, the exploration of the photographic, and of the sense of time and space it gives us, may yet continue. ■

Notes

* Editor’s Note: This essay included still frames (screenshots) of *Zodiac* as a support to the arguments explained by the author. However, the current distributor of the film in Spain, Warner Bros, has not authorized the publication of those images, neither, as alternative, has provided free use promotional images.

1 In preparing this article, I am grateful for discussions on time-lapse with the online community *Film-Philosophy* (film-philosophy.com), especially Henry Miller.

2 I discuss this film in greater depth in SUTTON, Damian (2009). *Photography Cinema Memory: The Crystal Image of Time*. Minneapolis, MN: University of Minnesota Press.

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