



**Archaeology of
the Moving Image**

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Foreword

This publication is a compilation of postgraduate student research projects written between 2017 and 2021 for a module titled Archaeology of the Moving Image in the Department of Media, Communications and Cultural Studies at Goldsmiths, University of London. Archaeology of the Moving Image is a course that encourages students to undertake independent investigations of the relationship between the past, present and future of moving image culture. It aims to encourage original writing and research that exemplifies a reflexive and innovative approach to the use of archives and databases, and an experimental approach to historiographic method, focused on redeeming overlooked, marginal or neglected practices and technologies related to the moving image. The course shares Siegfried Zielinski's commitment to media archaeology as a practical activity, as the launching of probes into 'the strata of stories' that constitute media history. I've long felt that research and writing produced by students should not vanish in the closed systems of university assessment or the walled platforms of corporate assessment platforms. Writing is meant to be read, and the pathways and connections opened up in this original research should be accessible to others.

The present volume features research on a wide span of moving image practice: cinema-going, film criticism, video streaming, post-cinematic live projection, artist video, iris scanning and a coin-operated visual juke box. In *Sheets of Future*, Mia Parnall considers the cult of the Vocaloid or virtual singer performance. Resisting a telos of screenless media, she examines the Vocaloid performance as a mode of self-effacing screen practice, one which vacillates between visibility and invisibility, simultaneously giving access to a virtual object of desire whilst displaying desire's collective subject on its reflective surface. In *Codecs, Compression and the Digital Image*, Philipp Staab provides an account of video compression protocols as technologies of standardisation. Far from being a supplementary feature of the digital image, Staab argues that the development of proprietary codecs has driven the restructuring of the internet as an expanding but uneven distribution infrastructure dominated by corporate content providers. Jonathan Harris's *Maps and the Moving Image* illuminates the intertwined genealogies of mapping and moving image practices through juxtaposed case studies of the cartographic impulse in commercial film, sports broadcasting and artistic practice.

In *Scattered Roots*, Isabella Skelley explores the scopitone, a long-defunct audio-visual jukebox popularised by Maghrebi diasporic communities in 1960s and 70s France. The excavation of the scopitone provides an entry point into the iconic café spaces owned by Kabyle migrants on the periphery of Paris. Hannah Congdon's article assembles a rich array of sources from police reports and tabloid newspapers to memoirs and the metropolitan gay press. In the spirit of cinema historians Miriam Hansen and Catherine Russell, she collages parallel moments of queer spectatorship in London's West End in a way that thwarts progressivist interpretations of that history. Matilda Agace's article *Eye Contact at the Border* audaciously compares the ocular regimes of the late medieval European church and contemporary biometric technologies, finding a common thread in parallel approaches to reading the eye as a fundamental index of a body's status. Finally, Anyi Xu plucks poignant revelations from the memoirs of ordinary citizens involved in activities organised to denounce cinematic decadence during the cultural revolution in China. She urges us to attend to the discrepant motivations, values and interests of participants as a way of undermining monolithic historical interpretations of the cultural revolution imposed from above.

I am hugely grateful to all the students I have met through this module for constantly proposing new terrain for media archaeological investigation, opening my eyes and teaching me a great deal in the process. I'm especially thankful to the authors published here for their patience and willingness to revisit their work and revise it for publication. A final word of thanks goes out to Jonathan Harris for his invaluable editorial support and tireless encouragement over the long stretch of time from initial idea to this realised collection of articles.

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Sheets of Future: The Vocaloid Dispositif and the Persistence of the Screen

—
Mia Parnall

In multiple cities across the globe, thousands of fans gather each year to witness the ‘live’ performances of the virtual singers known as Vocaloids. These animated characters, originating in a downloadable program of vocal synthesis software released in 2004, were spawned as visual avatars for its various preset vocal types. Subsequently attaining cult popularity, the most successful of these virtual characters was to be the turquoise-haired, sixteen-year-old popstar ingénue named Hatsune Miku, the iconic image of the brand worldwide. However, more than simply three-dimensional anime characters with their own distinct inflections in personality and style, the appeal of the Vocaloids is grounded in a wonder at the technological spectacle of the ‘holographic’ superstar.

Although the characters were initially developed by, and remain in the ownership of, their mother company Crypton Future Media, recent years have seen a proliferation of scholarship around the Vocaloids as ‘participatory’ phenomenon. They are entities which are reified and continually produced by a network of ‘producers’ who, using the various programs available to them - not merely the Vocaloid software but motion articulation software like MikuMikuDance, as well as *doujinshi* drawings and fanfiction – can partake in the being of the actual Vocaloid entity. Since Hatsune’s genesis in 2007, she has appeared not only in fan-made tracks and music videos, but in live-action television commercials as an AR, in the flesh as cosplay, and even as civic ice sculpture in her ‘native’ city of Sapporo. The ability of the character to undergo infinite mutations while still retaining a trademark identity - as a kind of transmedial mascot character known as a ‘kyara’ - has led Jelena Guga and Sandra Annett to consider Hatsune as a Deleuzian Body-without-organs.¹ Literally free from the skeletal framework of any one medium, the Vocaloid drifts like a spirit from platform to platform. It forms the ‘perfect hollow body containing and reflecting ideas, desires and creative forces’, acting through the poiesis of fan-led invention and creation as receptacle for the whims of anyone who chooses to assume her as object

1. Jelena Guga, ‘Virtual Idol Hatsune Miku: New Auratic Experience of the Performer as a Collaborative Platform’, in *Arts and Technology*, eds. Anthony Lewis Brooks, Elif Ayiter, Onur Yazicigil (New York: Springer, 2015), 38; Sandra Annett, ‘What can a Vocaloid Do?: The Kyara as Body Without Organs’, *Mechademia* 10 (2015): 165.

of desire.² I would like, however, to posit a limit to the usefulness of considering Hatsune as a 'body' in this way, which fails to deconstruct the illusionistic rhetoric of the live performances which present her as such. What the phenomenon calls for in scholarship is precisely an archaeology, a focus on the material circumstances of its practice as opposed to the enthusiastic acceptance of the Vocaloid as an embodied - and therefore de-technologised - spectacle.

Hatsune Miku - whose name translates to 'first sound of the future' - is a perfect emblem of the powers of the digital image. Her infinitely manipulable body reflects the technological ingenuity so wrapped up with her actual origins as the mascot of an innovative software. In both physique and commercial deployment, Hatsune is an example of a 'soft' technology: her mild, sweet and impressionable appearance expresses the Vocaloid software's ergonomic serviceability and ease of use, as well as her own transferability across media. In opening Hatsune's character up to public access, Crypton Future fissured the simple closed relation of personification between product and mascot and allowed Hatsune to sprout a soul, moving from inert illustration to object of mass public veneration. Nowhere is this impression of interiority better presented than in her stage performances, which for many fans constitute the reality of their idol, providing a 'live' encounter with Hatsune's holographic Ur-form. Perhaps the most convincing iteration of the reality of the Vocaloid body, Hatsune and her various friends appear alongside real human band members in 'the format of a proscenium-framed rock concert', just like conventional stars.³

In technical terms, however, the Vocaloid is in fact not a hologram. The entrancing illusion of Hatsune's three-dimensionality is merely produced by a double projection upon a flat, transparent screen. In this way, the configuration of the Vocaloid concerts relies on an entirely conventional scopic regime, despite being framed in Western media especially as an exemplary trope of Japanese hypermodernism, a symptom of what is perceived as the nation's technologically accelerated commercialism. As such, Hatsune, as new media object *par excellence*, performs a double masquerade: not only is she technology posing as a human girl, but she is also a fairly standard technological apparatus disguised as a far more complex one. As well as her affected humanoid limitations (for example, her choreography is

2. Guga, 'Virtual Idol', 38.

3. Alex Leavitt, Tara Knight, and Alex Yoshida, 'Producing Hatsune Miku: Concerts, Commercialization, and the Politics of Peer Production', in *Media Convergence in Japan*, eds. Patrick Galbraith and Jason Karlin (Tokyo: Kinema Club, 2016): 220.

often confined by her alleged need to hold a microphone), the holographic rhetoric of the Vocaloid dispositif forms an essential part of its affective power, painting the performance as a materialisation of presence in real time as opposed to the re-presentation of a pre-recorded (or pre-simulated) animation, as pixels in the atmosphere rather than light projected onto a screen. This distinction between hologram and projection, as well as the presence of the screen surface, is essential to understanding the operations of both credence and desire at work in the Vocaloid's performances, which is too often overlooked in favour of treating Hatsune as an autonomous 'body'. It is attractive to see the telos of representational technology as moving towards a screenless world in which reality and virtuality coexist seamlessly in space. However, theorising the Vocaloid performance as a screen practice, which sutures rather than divides the two, not only allows us to think through the continuing relevance of the screen as a *Denkfigur* even in the age of VR, but also, can help us to re-inscribe the Vocaloid phenomenon in terms of a wider history of self-effacing, frameless screen media, of which throughout history we catch the occasional flash.

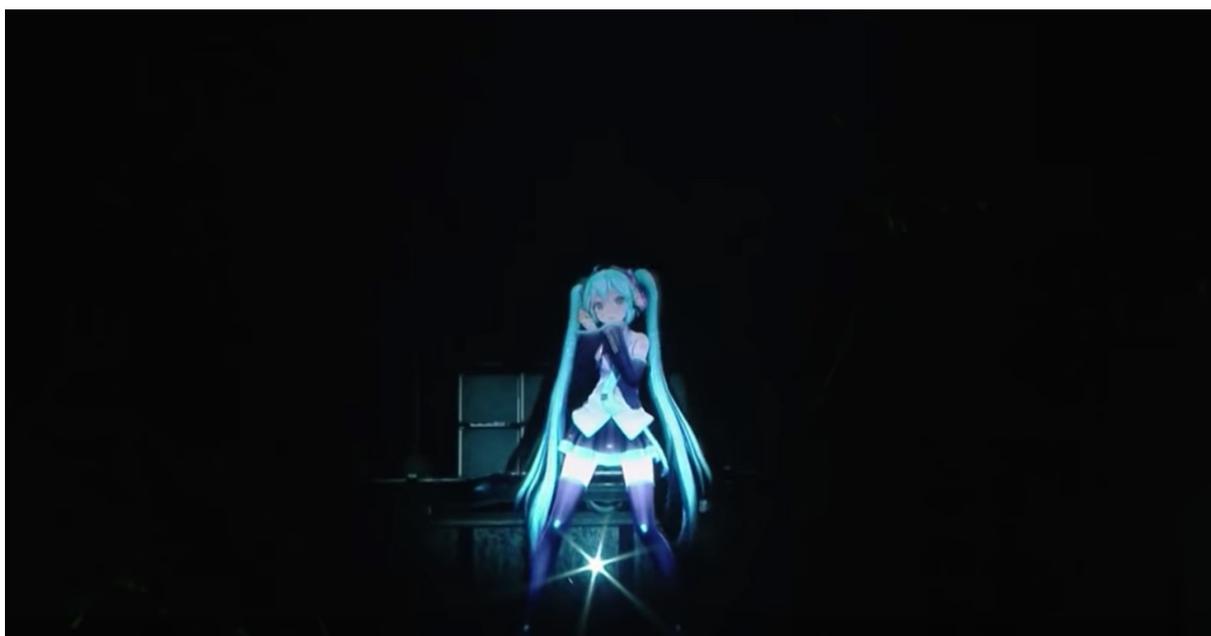


Figure 1. / ニコニコ公式. '[OFFICIAL] NicoNico Music Party 2015 VOCALOID Live'. [Youtube video, 3:05](#).

Posted niconico 24 June 2016.

Beyond the Frame

In regard to the official NicoNicoCho Party of 2015, a concert hosted by Japanese streaming site NicoNicoDouga featuring multiple Vocaloids including Hatsune Miku, a 'behind-the-scenes source' quoted by one blogger revealed that 'the aim was to make it feel like the VOCALOIDs have crossed over from the world behind

our computer monitors into reality' [sic].⁴ The elaborate opening of the show took pains to achieve this very effect: a curtain was lifted from the stage to reveal the image of a laptop computer looming out of the shadows, upon which a spectral image of Hatsune herself appeared on the monitor, barely recognisable in dull black and white (see figure 1). In a climactic moment, Hatsune hammers her way out of the screen using her luminous fists, transforming upon her release into full colour and materialising on the 'real' screen - the translucent mock-holographic screen positioned below the LCD one above (see figure 2).



Figure 2. NicoNico Music Party, 4:05.

Performed to the delight of the cheering crowd, nestled within this stagecraft is a metanarrative on the obsolescence of older screen media in the face of the holographic freedom which the Vocaloids now enjoy; an iconography of media history viewed from a speculative point in the future in which Vocaloids have, as the will of their species dictates, at last joined the 'real' world of human beings. The image functions to great effect within the performance's *mise-en-scène* of credibility, not only claiming the Vocaloid's natural state as existing within reality, but painting the 'holographesque' technology of the Vocaloid projection as superseding the poverty of the conventional, frame-based experience of the PC. Within the monitor, Hatsune appears two-dimensional and in a close crop; whereas when restored to

4. marumain, 'Blog Series Takes Us Behind the Scenes of the NicoNico Cho Party VOCALOID Concert Production.' VNN. Blog post, posted 20 September 2016. Accessed 10 December 2019. <https://www.vocaloidnews.net/blog-series-takes-us-behind-the-scenes-of-the-niconico-cho-party-vocaloid-concert-production/>

her vital glory, she offers us the full extent of her highly mobile and flexible form, animated by a restless spirit with all the exuberance her teenage persona postulates. Her emergence from the computer is an exemplary instance of what Ana Mathilde Sousa calls the ‘e-versive’ tendency of the Vocaloid rhetoric, which ‘turns cyberspace inside-out to create an augmented or mixed reality’. The domain of the computer is literally shattered to make way for a physical world upon which characters can infringe: the ecosystem in which Hatsune Miku takes her root.⁵ Indeed, this great show of feigned technological labour involves a kind of performed duress against invented and imaginary biomechanical constraints. In releasing the image from these constraints, the holographesque apparatus invites the spectator to bask in the soulful glow of Hatsune’s animated body, whose irruption from the machine which confines her surely flirts with the technological fantasy of overcoming the Cartesian mind-body dualism which has plagued subjectivity, and consequently aesthetics, since the onset of modernity. Hatsune presents a materialisation of the postmodern dream - a *heimlich* existence without crisis, friction or dialectic, in which not only mind and body but being and world, technology and *bios* exist in energetic symbiosis. The invisibility of the screen erases this dialectic; presenting the possibility that the real space which the spectator inhabits also provides the conditions of this utopia.

What the Vocaloid apparatus eschews, in this grand gesture, is the ontological limit which the screen represents in traditional cinematic configurations: its function as frame, as something which contains, restricts, and thus does violence to the plenum of reality which it contains. As Jean Louis Comolli writes, the edges of the frame ‘amputate’ its content, capturing what it inside and confining the outside to oblivion.⁶ Here, the screen becomes emblematic of confinement, stricture, and organisation-as-mutilation, a quality typical of ideological evaluations of technology in the twentieth century. In the *NicoNico* opening, these conventions regressively play out in the form of the computer, whose interface is robbed of its novel formal qualities such as overlapping ‘windows’ and interactive pathways, instead doomed to rehearse the visual regime of more primitive forms of media like the screen of film or television. As Hatsune stares through the computer monitor, the representational surface is akin to a window which, as Anne Friedberg’s extensive study has pointed out, has been a persistent metaphor of picturing in the past five hundred years, from

5. Ana Matilde Sousa, ‘Beauty is in the eye of the “produser”: Japan’s virtual idol Hatsune Miku from software, to network, to stage.’ In *Post-screen: Intermittence + Interference*, eds. Helena Ferreira et al., (Lisbon: Edições Universitárias Lusófonas, 2016): 123.

6. Jean-Louis Comolli, ‘Frames and Bodies’, *Afterall* 24 (Summer 2010): 64.

the sectioning-off of the world by Albertian perspective to the layout of the Microsoft desktop. In this formulation, the screen surface is inseparable from the 'delimited bounds of the frame,' in a genealogy which posits the sovereignty of the means of representation - be that artist or technology - over the thing represented.⁷

However, recently scholars have picked up on the conceptual limitations of this limit-metaphor as a framework which seems just as confining in face of the efflorescence of screen technologies as the object it theorises. Francesco Casetti suggests that 'the epoch of the window, the frame and the mirror is largely coming to an end' - and this is sounded loud and clear when Hatsune assumes fleshly, three-dimensional form, appearing, if only periodically, as if freed from the imaginative confinements of such metaphors.⁸ Similarly, media scholar Mark Hansen sees the framelessness of many contemporary media spectacles as replacing the frame with that of the spectator's subjectivity, whose work is 'not to filter a universe of preconstituted images, but actually to *enframe* something (digital information) that is originally formless.'⁹ The frameless screen of the Vocaloid performance, in this sense, is replaced by the 'frame' of fan desire, which in investing in a drive to perceive reality, projects an ontological status onto the viewed.

First Sound of the Future, Last Image of the Past

Timothy Murray also observes an affective shift in media in the move from analogue to digital, which entails 'the archaeological shift from *projection* to *fold*' - presenting a surface which envelops and engages its spectator rather than estranging it.¹⁰ Despite its digital basis, however, the Vocaloid apparatus does not leave behind projection to move away from Euclidean viewing systems, but rather, its affective digitality is simulated through conventions of display inherited from long-established media practices. Erkki Huhtamo sees the nineteenth century 'phantasmagoria' as a precursor to postmodern technologies of holography and virtual reality, which similarly aimed 'to present "free" visual illusions that cannot be traced to a framed screen.'¹¹ Rather than the simulation of a spectral realm, the Vocaloid apparatus conjures a digital one, yet both rely on their audience's adoption of a fairly fixed viewing angle to maintain their illusion.

7. Ann Friedberg, *The Virtual Window* (Cambridge: MIT Press, 2006): 7.

8. Francesco Casetti, 'What is a screen nowadays?' In *The Screen Media Reader*, ed. Stephen Monteiro (London: Bloomsbury, 2017): 36.

9. Mark Hansen, *New Philosophy for New Media* (Cambridge: MIT Press, 2004): 11.

10. Timothy Murray, *Digital Baroque: New Media Art and Cinematic Folds* (Minneapolis: University of Minnesota Press, 2008), 5.

11. Erkki Huhtamo, 'Screenology, or Media Archaeology of the Screen'. In Monteiro, *Screen Media*, 86.

Indeed, although nebulous and self-effacing, the screen still remains operative as a light-bearing surface within the Vocaloid performances. Less visible in the official edits of the NicoNico concerts uploaded by the network's official channel, the corners of the Dilad projection screen are often illuminated by the lighting of the stage, as seen in versions of concerts` uploaded to YouTube by fans from the perspective of the audience. While the screen is large, it does not fill the entire proscenium, confining the acrobatics of the characters on a lateral axis, as well as their more evidently restricted movement along the Z-axis of depth. Similarly, although portending to transparency, its surface is tangibly glossy.

Nevertheless, these glimpses of the apparatus do not seem to hamper the enjoyment of the spectators. The screen has no real border, merely edges, and these are not terminations of the image but rather simply delimit a field upon which the luminous bodies of the characters can dance. The figures are in fact surrounded by a liminal expanse of raw, naked screen which remains for the most part entirely empty. The borders of the image never coincide with the borders of the frame, which is of course a vital consideration in the impression of life in the animated figures, who appear homeostatic, maintaining like human beings the integrity of their bodily contours. In digital media value is often placed on the coherence of the image with the bounds of the screen, which are elastically attracted to the edges of the device in the manner of liquid, as in the LCD. Huhtamo writes that one of the challenges of studying screen practice is that 'in media culture the screen is always connected with something else.'¹² However, the novel visibility of the naked screen in the Vocaloid apparatus allows us to critically interrogate its role. Its liminal presence not only rejects such an easy hylomorphism of the screened image but alerts us to the function of all media as transition zones between two ontological grounds.

It is this cross-contamination of ontological spheres of the real and virtual, rather than their total erasure, which lies at the affective heart of the Vocaloid spectacle. It is usually considered that the invisibility of the screen is that which, through a suspension of belief, stages this confusion as blind acceptance in the audience. However, its occasional visibility, rather than rupturing the hypnotic delusion that Hatsune is 'real' in which the audience are ensnared, in a way acts as a de facto frame - one that the screen of cinema lacks, in the form of a mediating zone, rather than strict divide, between image and real space. Jean-Louis Baudry describes the frame of cinema as 'bordered with black like a letter of condolence', separating the realms of the spectator and film like those of the living and the dead, and thus

12. Huhtamo, 'Screenology', 79.

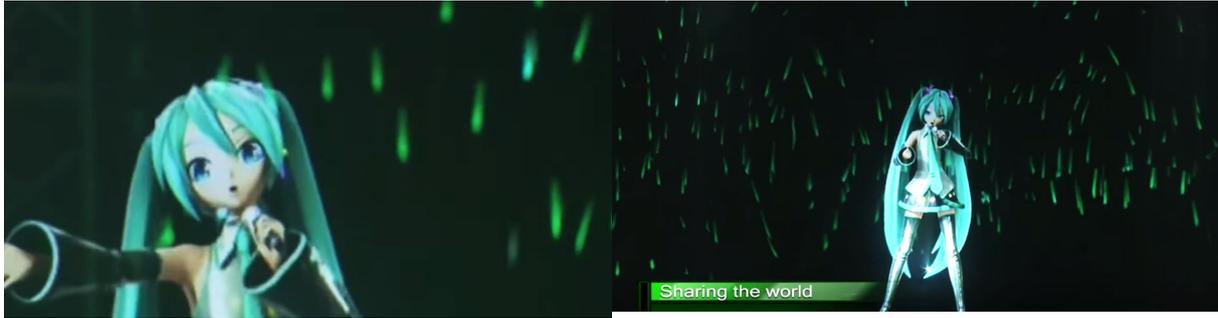
setting up a dialectic of unresolved desire vis-à-vis the screened image as a condition of tragic isolation.¹³ In contrast, the vacillation of the Vocaloid's screen between visibility and invisibility mediates rather than severs this affectionate connection, reflected in Hatsune's particular star image upon which her fans' desire orients itself - not a glamorous aloofness, like the icons of the silver screen, but the approximating cuteness of the idol, its ability to be shaped and interacted with by the viewing subject.

The shifting and liminal nature of the 'frame' of the Dilad screen places it in unexpected coalescence with Jacques Derrida's conception of the frame of painting as 'parergon', not as accessorial to and therefore separable from what it contains, yet neither as mere marker of intrinsic limits. Derrida highlights the ontological ambiguity of the margins of the frame with the pertinent question of how one might categorise 'absolutely transparent veils', indeed like the Dilad screen itself, which is similarly 'distinguished from two grounds, but in relation to each of these, it disappears into the other.'¹⁴ If the Vocaloid spectator concedes that she is watching (holographic) figures on a stage, the screen fades into milieu. If one acknowledges that one is watching a (post)cinematic representation, the screen rises as a surface upon which the figures play. The noticeability of the frame stands in inverse relation to the impression of reality in the image, and indeed, the object's ontological borders are malleable according to the perceptual expectations of the viewer. Therefore, much as the Vocaloid is a body constituted by a technological apparatus of projection, she is also a body whose reality is constituted by the psychological projection of desire. Derrida's imagination of the frame-as-veil brings us back to the historical definition of the word 'screen' as elaborated by Huhtamo, a surface which conceals as much as it reveals.¹⁵ In this way, we can see the desire of the Vocaloid fans as sustained rather than disturbed by the spectacle's titillating dialectic between real and unreal, a veritable ontological erotics which the screen surface both suspends and coheres.

13. Jean Louis Baudry, *Ideological Effects of the Basic Cinematographic Apparatus*, trans. Alan Williams, *Film Quarterly* 28, no. 2 (Winter, 1974-1975): 44.

14. Jacques Derrida, 'The Parergon', trans. Craig Owens, October 9 (Summer, 1979): 24

15. Huhtamo, 'Screenology', 82.



Figures 3 & 4. John Alexander. 'Miku Expo Shanghai 2015 初音未來上海演唱會HD'. Youtube video, 4:49, 4:45. Posted 30 June 2015.

It is not only the borders of the pellucid Dilad screen but its surface too which hovers between visible and invisible. Bearing a semi-reflective quality, the reflection of the audience upon the screen which the Vocaloids inhabit is often apparent. This is the case due to a key difference in the Vocaloid dispositif from historical invisible-screen media like the phantasmagoria: the audience are not shrouded in total darkness, but rather the majority are equipped with coloured glowsticks known as *otagei* (see figures 3 & 4). The glowsticks are official fan merchandise, interactively wired to the lights of the concert and often changing colour, dependent on the colour scheme of the stage, thus participating in its dispositif yet also illuminating the screen and exposing its essential flatness. Appearing like little dancing stars overlaid, hovering around the image of the dancing star, the reflected lights configure what Sousa refers to as the 'deep reciprocity' of the relationship between the fans and the singer.¹⁶ This depth is not merely deferred outside the realm of the arena, to the homes and personal devices of her fans, but is figurally inscribed across the two-dimensional surface of the screen. To replace Stanley Cavell's 1971 conception of the screen as 'barrier' which 'screens me from the world it holds', I wish to draw on the contemporary artist Tavi Meraud's conception of the screen as a 'coherence mechanism', facilitating a form of desire which she terms 'transintimacy.' Not only does the screen afford access to the object of desire but allows the spectator to 'bask in the screened image of [their] love'.¹⁷ In this way, Hatsune not only projects herself into our world of flesh and blood, but draws us into her world of images.

16. Sousa, 'Beauty', 123.

17. Stanley Cavell, *The World Viewed*. (Cambridge: Harvard University Press, 1979), 24; Tavi Meraud, 'Iridescence, Intimacies'. In *eflux* 61(January 2015). Accessed 10 December 2019. <https://www.e-flux.com/journal/61/60995/iridescence-intimacies/>

Domesticating the net-work: homemade Vocaloid projections

Akira Lippit, writing on the phenomenon of 3D cinema, writes that the striving of the image to extend the bounds of the screen transforms the latter from surface into ‘a kind of prosthetic extension, like an eyeglass or skin graft... from a perceptual filter to a porous membrane.’¹⁸ This unification of spectator and image, in which the screen becomes a medium of approximation, is tangible not only in the live Vocaloid concert but in another screen-oriented fan practice: when devotees attempt to recreate the apparatus in private venues, bedrooms, clubhouses; aspiring to varying degrees of professionalism. There are numerous tutorials and forums which concern the optimum setup for these kinds of shows, most often concerning the best fabric to use for the projection, which can range from a simple mosquito net, to a more high-end, specialised projection film. One such film advertises itself as ‘PepperScrim’, in reference to the Pepper’s Ghost illusion, a ‘screenless’ descendant of the original Phantasmagoria associated with the scientist John Henry Pepper in the 19th century.¹⁹ In this way, we see that the working of the apparatus among fans is entirely demystified, and the fabrication of a makeshift screen becomes a method



Figure 5. Arfi Satria. ‘Miku hologram using Mosquito net’. [Youtube video, 0:07](#). Posted 29 June 2013.

18. Akira Lippit, ‘Three Phantasies of Cinema—Reproduction, Mimesis, Annihilation’, Paragraph 22, no. 3 (November 1999): 217.

19. One fan’s query is particularly telling: ‘Perhaps with fervent prayers, incense and file transfers, I could conjure her hologram-ready likeness. Is [the apparatus] a Pepper’s Ghost configuration ...or is it simple rear-projection to the perpendicular holo-film?’ ClaudeVonFacePunch. ‘I’m Building a Temple of Miku (Holographic Stage) At Home’. Reddit post, accessed 20 December 2019. https://www.reddit.com/r/hatsune/comments/49br3r/im_building_a_temple_of_miku_holographic_stage_at/.

of appropriation which replaces the interactive technologies of the various softwares as a way of engaging with the character. The translucent curtain is an exemplary *software*, drawing the fan closer to the 'fibre' of Hatsune's being.

May Adadol Ingawanij has written about the itinerant projection of films in sacred, religious sites in Thailand, which bear 'a logic of transmission that associates presence and transformation with the exchanging and channeling of forces between the human and non-human.'²⁰ Similarly, the makeshift Vocaloid screens, no matter what form they may take, allow for the 'channeling of forces' - in the form of affect and desire - between the human and avatar. Almost in the manner of a transubstantiation, the material and the ephemeral work in a mutually affirming interplay - the ultimate act of fan devotion being to cobble together the correct accumulation of materials to demonstrate dedication to this imaginary creature. It is thus essential to consider to what extent a navigation of the world of things; a repurposing of household objects or even an acquisition of extensive equipment in order to generate the projection, is linked to a desire to capture or ground the ephemeral Hatsune who so prodigiously evades, in her leaps across media, being pinned down. In the often extremely low-resolution DIY projections, the vacillation between surface and representational content is clear - neither gain precedence over the other (see figure 5).

In this instance of transforming the domestic space into a viable ecosystem for a world of characters beamed from the beyond, the screen appears to mark an epistemological shift away from the rigid discourse of the frame. In these homemade projections, the dichotomy of inside and outside [of the screen] are profoundly complicated by the introduction of a virtual outside into the familiar inside of the home. As Marcel Proust aptly wrote in relation to his own childhood magic lantern toy that 'substituted for the opaqueness of [his] walls an impalpable iridescence,' the homemade Vocaloid screen renders the borders between real and virtual a topological seam or suture, rather than clear divide.²¹ While frame without screen is simply the world enclosed and sectioned off, a screen alone merely stipulates the conditions of a possibility of presence; a virtuality. The screen of the Vocaloid allows us to consider the materiality of the screen itself as participating in the illusory materiality of that which it represents. The screen confers by osmosis its own materiality upon its represented, inviting us to reconsider the rigidity of our ontological categories.

20. May Adadol Ingawanij, 'Itinerant Cinematic Practices In and Around Thailand during the Cold War'. *Southeast of Now: Directions in Contemporary and Modern Art in Asia 2*, no. 1 (March 2018): 11.

21. Marcel Proust, 'Swann's Way', in Monteiro, *Screen Media*, 219.

Conclusion

Tom Gunning, cites a statement which is strangely prescient as regards the phenomenon of the virtual idol, from the Symbolist dramatist Maeterlinck, who upon seeing a phantasmagoric display, asks: 'Will the human being be replaced by a shadow? A reflection? ...a being who would appear to live without being alive?'²² More than any other postmodern anthropomorphic phenomenon, the Vocaloid best embodies this condition, eschewing the corral of representation in order to reach a state of being which borders uncannily upon life.

If, as for Derrida, the frame of painting can be seen to echo the classical body; the frame of cinema the modern, striated, Lacanian body, then perhaps the frameless, borderless or invisible screen of 'holographic' technology reflects a contemporary situation in which the body has finally been dissolved, dispersed, effaced: replaced by the virtual avatar. A closer look at the technology used in this exemplary post-human spectacle, however, reveals that the body, like the material apparatus, is not entirely foregone but simply metamorphosed, refracted, scattered not only into the ether of the network but into the materiality of the screen itself. Norman Bryson wrote of this incumbent 21st-century body at the cusp of the millennium as 'a set of radiant energies that sublimate the thing-of-flesh into a spirit made of (celluloid) light.'¹ While celluloid in the photographic sense may well be a thing of the past, the screen as a light-bearing surface is the thread which runs through the genealogy of moving-image practice, from projection, to pixels, to the Vocaloid as the hybrid offspring of the two.

22. Tom Gunning, 'Illusions Past and Future: The Phantasmagoria and its Specters', *Media Art History* (2004). Accessed 10 December 2019.
<http://www.mediaarthistory.org/refresh/Programmatic%20key%20texts/pdfs/Gunning.pdf>

Codecs, Compression and the Digital Image

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Philipp Staab

Since the 2010s, video streaming has made up more than a third of global internet traffic. For video platforms like YouTube, and streaming services such as Netflix, AmazonPrime or Spotify, to be able to provide their content, it has to be compressed into small data packages in order to run smoothly. With this article I want to consider the mobility of digital images. What are the infrastructures and software protocols that allow images to instantly move between different regions of the world? What influence do images in turn have on the development of these infrastructures? My inquiry draws on research on the technologies¹ and infrastructures² of cinema in order to make a ‘critical shift away from the analysis of screened content alone and towards an understanding of how content moves through the world and how this movement affects the content’s form.’³ Therefore, I want to focus on video compression technologies, so called codecs, and their significance for an archaeology of the moving image. A codec is a software protocol that allows such packaging of images, videos or audio files into digital formats like mp3s, flvs and jpegs. The ubiquity of audio-visual content on the internet has been enabled by ever more efficient codecs that reduce the bandwidth needed for watching a livestream or downloading a sound file.⁴ A codec ‘moves images further and faster in media networks than they would otherwise.’⁵

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1. See for example Laurent Mannoni, *The Great Art of Light and Shadow: Archaeology of the Cinema* (Exeter: Exeter University Press, 2000); Jonathan Crary, *Techniques of the Observer* (Cambridge: Cambridge University Press, 1990); Friedrich Kittler, *Optical Media*, trans. Anthony Enns, (Cambridge: Cambridge University Press, 2010).
 2. Lisa Parks and Nicole Starosielski (eds.) *Signal Traffic. Critical Studies of Media Infrastructures*,
 3. (Urbana: University of Illinois Press, 2015); Brian Larkin, *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria* (Durham: Duke University Press, 2008).
 4. Parks & Starosielski, *Signal Traffic*, 6.
 5. For an account of the transformation of major parts of global internet traffic to mainstream streaming media which has become akin to 20th century television broadcasting see Christian Sandvig, ‘The Internet as the Anti-Television. Distribution Infrastructure as Culture and Power’, in Lisa Parks & Nicole Starosielski, *Signal Traffic*, 225-245.

Work from the fields of software studies, media archaeology and infrastructure studies will support my inquiry of how images are distributed through media networks and watched simultaneously in different regions of the world. I aim to embed digital cinema in a broader picture of economic expansion. Following media theorists Jonathan Sterne and Wolfgang Ernst, I will argue that technologies of compression should not be seen as supplementary to the images themselves, but as a constitutive element that influences the aesthetics, economic models and geopolitical implications of digital images.

I will describe what a codec is, how it is implemented into media networks and how it affects the audio-visual content it transmits. Drawing on work from Keller Easterling will help to shed light on codecs as an instrument of standardisation that strengthens telecommunication infrastructures. With arguments from media theorist Wolfgang Ernst, I will describe their role in shaping the networked models of contemporary streaming services. Finally, codecs will be shown to be a crucial factor in the analysis of digital images.

Technologies of Compression

Film theorist Lee Grieveson pleads the case for a technological history of cinema that is embedded in a wider economic background. Grieveson explains that he is not interested in technological histories per se, but in analysing what function technologies of cinema exerted in imperialist expansion and how they continue to do so. Looking at the very technologies and practices of cinema is ‘to push thinking in the direction of addressing cinema’s role in a broader technological, and so therefore necessarily economic and political, history. [...] What were the ways that media as a system was integrated with new capitalist practices?’⁶

Grieveson focuses on technologies of the 19th and 20th century such as cinematographs and film projectors. How could this agenda be continued for understanding how *digital* networks of movie distribution are involved in economic expansion? Since the 2010s, the video streaming market is a major factor in global internet traffic. To understand the economic and technological models of streaming services, it is vital to consider the distribution infrastructures they rely on rather than solely their production or their reception.

6. Adrian Mackenzie, ‘Codecs’, in Matthew Fuller, *Software Studies. A Lexicon* (Cambridge, Mass: Cambridge University Press, 2008): 50.

With the turn to distribution infrastructures, I attempt to de-familiarize individual digital images and videos⁷ and take account of the conditions of their mobility in networks of fibre-optic cable, data compression protocols and consumer electronic screens. As internet traffic relies on standardised protocols of transmission, the flow of audio-visual content on the internet relies on the standardisation of codecs, that is, compression protocols.⁸ Media theorist Jonathan Sterne states that every image and sound that ‘comes through a digital format has encountered some kind of compression,⁹ yet most humanities scholars, still understand compression as something that happens after the fact, as supplemental to communication and its purposes, to perception, to interaction, and to the experiences attending them.’¹⁰ In the following part, I want to follow Sterne’s call for a detailed description of compression technologies.

Codec is a portmanteau of *encoding* and *decoding*. Codecs package video and audio files into digital bit streams (encoding) and recompose them again afterwards so that they can be watched or listened to on media players (decoding). This is done by a pair of two complementary algorithms that set a standardised procedure for eliminating all visual information that is redundant in a movie. Rather than storing the information of each individual frame, they analyse recognisable differences between frames. Broadly speaking, in the encoding process, the image gets partitioned into macroblocks. An algorithm then predicts how these blocks will develop over time in terms of brightness and colour, which turns each frame more into a ‘set of movement instructions than an image.’¹¹ MacKenzie explains this procedure as follows:

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7. Lee Grieveson, ‘What is the Value of a Technological History of Cinema?’, in *alphaville: Journal of Film and Screen Media*, 6, 2013.
 8. ‘A focus on infrastructure foregrounds processes of distribution that have taken a backseat in humanities-based research on media culture, which until recently has tended to prioritize processes of production and consumption, encoding and decoding, and textual interpretation. [...] Critical analysis of infrastructure involves interrogating the standards and formats necessary to route content across these systems, whether compression technologies or Internet protocols.’ Parks and Starosielski, eds. *Signal Traffic*, 5.
 9. Sean Cubitt, ‘Codecs and Capability’, in Geert Lovink and Sabine Niederer, eds, *Video Vortex Reader: Responses to Youtube* (Amsterdam: Institute for Network Cultures, 2008).
 10. Jonathan Sterne, ‘Compression. A Loose History’, in Parks and Nicole Starosielski, eds. *Signal Traffic*, 32.
 11. Sterne, ‘Compression’, 47.

Many adjacent pixels in an image of a landscape will be very similar, and it wastes storage space (on a DVD) or bandwidth (on satellite transmitters or internet) to repeat the same pixel over and over. A sky could be mostly blue. Rather than transmit an extra replica of the sky, why not use an algorithmic process that transforms the blue sky into a quasi-statistical summary of the distribution of blueness?¹²

Accordingly, a movie can be transmitted with less information while preserving high-definition image frames. This is the purely ‘economic’ objective of compression technologies: minimizing data packages in order to maximize their mobility. From this double function of codecs, Alexander Galloway infers that, regarding bitrates, processing power, resolution and electricity usage, there are ‘expensive’ movies, with high visual complexity that demand large data packages, and ‘cheap’ ones which might have as many frames but less complex imagery and few details.

Highly detailed textures are ‘free’ for the camera obscura and its derivative forms (analog photography, or even, in reverse, the magic lantern), but they are ‘expensive’ if you try to render them with a computer. [...] Simply apply brute economic realism to the computer and the ‘ideal’ image of computation quickly shows itself. The ideal computer image is an empty frame. Ideal computation is emptiness.¹³

The pricing of visual complexity indicates how compression technologies in turn affect the future production and aesthetics of moving images. While a steady camera reduces ‘the number of pixels that change from frame to frame’ and allows for high definition at lower data rates, ‘encoding artefacts are increasingly likely in hand-held sequences when the prediction system is more likely to predict wrongly.’¹⁴ The streaming of videos with high bit rates is prone to interruptions and frequent buffering. It therefore poses a problem for subscription-based streaming providers. Around a hundred different audio and video codecs are currently in use on smart phones, laptops, DVDs and Blu-ray discs, websites, file sharing and streaming platforms.¹⁵ Their algorithms are complex, and it often takes several years for large committees of developers to publish updated versions. Most importantly, codecs are

12. Mackenzie, ‘Codecs’, 49.

13. Mackenzie, ‘Codecs’, 50f.

14. Alexander Galloway, ‘Empty Frames’, blogpost on 9 Oct 2018, accessed on 01 Jan, 2020, <http://cultureandcommunication.org/galloway/empty-frames>

15. Mackenzie, ‘Codecs’, 48.

designed for the standardisation of online traffic, or in Sterne's words: 'Compression is the process that renders a mode of representation adequate to its infrastructures. But compression also renders the infrastructures adequate to representation.'¹⁶ Without these standardised protocols, sending moving images, embedding them on websites and watching live streams would not be possible. The most widely implemented codecs of the last two decades, including MPEG-2, MPEG-4, H.264 and HVEC, are license-bearing codecs. They are instrumental for playing videos on YouTube or, like Google's codec VP7, for webcam chats on Skype. While all codecs are designed for compression, some specifically aim at high-definition (HEVC – *High Efficiency Video Coding*) while others focus on small bitrates for greater mobility through networks (H.263, VP8). The latter type of formats are optimized for videos with little on-screen movement like videoconferencing.

Codecs are a powerful tool for controlling internet traffic. Which compression protocol gets widespread application is often fought out in legal cases between different patent-holders.¹⁷ Since the early 1990's, the Moving Picture Expert Group (MPEG) has set the global standards for video compression. Since the codecs of MPEG are royalty-bearing, the group thereby privatized digital video: 'Economically, MPEG-2 is a mosaic of intellectual property claims (640 patents held by entertainment, telecommunications, government, academic and military owners). The large patent pool attests to the economic significance of MPEG-2 codecs.'¹⁸ In the last two decades, a vast proportion of internet usage has been transformed from text-based communication to the transmission of audio-visual content.¹⁹ Compression technologies are a crucial economic factor for the investment in media infrastructures. After all, protocols, that is, software standards are able to inscribe proprietary regulations into the infrastructures of everyday internet use. They confirm Matthew Fuller's assertion that 'often software is a social relation made systematic and unalterable.'²⁰

16. Mackenzie, 'Codecs', 50.

17. Sterne, 'Compression', 35.

18. One prominent example is the so-called Codec Wars of 2011 where Google was able to circumvent the patent-encumbered H.264 codec, developed by MPEG, by establishing their own royalty-free alternative, see Charles Arthur, 'Google's WebM v H.264: who wins and loses in the video codec wars?', in Guardian, 17 Jan 2011, accessed 22 Jan 2019, <https://www.theguardian.com/technology/blog/2011/jan/17/google-webm-vp8-video-html5-h264-winners-losers>

19. Mackenzie, 'Codecs', 49.

20. See Sandvig, 'The Internet as Anti-Television'.

Codecs and standardisation

Software protocols are a crucial factor in reifying uneven geographies of power. They often reinforce the unevenness of infrastructures, for example, the bandwidth between rural and urban regions that affect the everyday lives of internet users. Furthermore, they are instrumental in infrastructural colonisation and the attempt to develop new markets and help in state-led information control. I follow Lee Grieveson in thinking about the infrastructures of economic expansion that enabled liberal capitalist states to distribute movies in the Global South. Grieveson states that with the Industrial Revolution emerged

...developments in transportation and communication technologies – now automobiles, airplanes, telegraphs, telephones – and the construction of large modern technological systems that subtended new economic forms of ever more rapid circulation. [...] circulation of materials on rails, roads, international canals, airways; and macroeconomic policies that developed safeguards for intellectual property rights, facilitated monopolisation, and weakened worker and subaltern resistance.²¹

Moving images were not only enabled by networks of distribution but they were instrumental for further infrastructural expansion.²² This is also the case for digital video. The promise of extensive use of bandwidth through video streaming supported investments into fibre-optic infrastructures. It was largely due to compression protocols which allowed for the transmission of audio-visual content, as opposed to the HTML messages of the early web, that necessitated a restructuring of internet architectures.²³

A single set of standards like those set by MPEG, the Moving Picture Experts' Group, facilitated the circulation of video and audio recordings on the Internet, but they also facilitated the development of new technologies of storage and transmission, like the video compact disc satellite radio, and the DVD. Once again, it is not just communication adjusting to infrastructures, but infrastructures modified by phenomena of compression. We could say the same of technologies of storage and transmission in general.²⁴

21. Matthew Fuller, *Software Studies*, 3.

22. Grieveson, 'What is the Value?'

23. See also Larkin, *Signal and Noise*.

24. Sandvig, 'The Internet as Anti-Television'

Compression standards have been a prerequisite and driving force in the restructuring of the internet from a decentralized point-to-point architecture to a broadband network capable of distributing mass entertainment from large corporations. Equally, high-efficiency codecs continue to be developed in order to bring the product of uninterrupted streaming to regions with infrastructures with low bandwidth, making them a necessity for the expansion of markets.²⁵

The MPEG protocols are developed by an international group of private and governmental actors. The Moving Pictures Experts Group is a subcommittee of the International Organization for Standardisation (ISO) and the International Telecommunications Unit (ITU). As Sean Cubitt explains, the ITU was established in 1865 and is widely regarded as the ‘oldest intergovernmental treaty body still functioning today.’ Among its tasks are ‘ensuring the interoperability of telecom systems, pricing regimes for international calling, and infrastructures for audio-visual services, including moving image encoding’.²⁶ Likewise, the ISO ensures the compatibility of technical and engineering protocols across the world. Keller Easterling sees the ISO as a ‘global meta-organization’ that convenes a ‘UN-style assembly of member nations as well as private entities [...] most of which maintain a currency in standard making.’ The standardisation of protocols and technologies enables a continuous flow of information and content through media networks which might bring access to information to many regions of the world, yet Easterling warns against overlooking the fact that the ISO is ‘a private, voluntary nongovernmental organization – a business that sells its standards, protects its clients, and maintains no public archive.’²⁷ The MPEG incorporates the double effect of infrastructural development when it, on one hand, stimulates exchange and communication, while on the other institutes a ‘private form of governance’ that establishes ‘opaque bureaucracies’ without public political dialogue.²⁸

The role of codecs in infrastructure development

Yet the role of codecs in telecommunication infrastructures is different from analogue networks of distribution. The recomposition of a bit stream into moving images is a performative act that produces and shapes the video every time anew.

25. Sterne, ‘Compression’, 47.

26. Many of Netflix’s future markets have much slower internet speeds. Netflix has said that it wants to be in all countries around the world by the end of 2016. Expanding to India, Africa and the Middle East in many cases means taking a mobile-first approach, or dealing with much slower wired internet speeds. Cubitt, ‘Codecs and Capability’, 46.

27. Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London: Verso, 2016): 93.

28. Easterling, *Extrastatecraft*, 93.

The technical aspect of digital formats, Adrian Mackenzie explains, ‘pulls apart and reorganises moving images’ in a way that ‘goes further than simply transporting images.’²⁹ Since codecs define the ‘price’, the mobility and aesthetic quality of moving images, their function goes beyond mere transmission. Media theorist Wolfgang Ernst asserts, with digital archives and video portals, ‘the traditional separation between transmission media and storage media becomes obsolete.’³⁰ The fact that in the realm of the digital, moving images are encoded and decoded algorithmically and stored in caches, not only concerns the realm of distribution but also the storage of videos. Geographical range, demand and user behaviour constantly feed back into the production, future investment and storage of moving images. In this sense, telecommunications infrastructures are what Ernst calls a ‘transarchive’, a dynamic archive, ‘the essence of which is permanent updating.’³¹

With digital archives, there is, in principle, no more delay between memory and the present but rather the technical option of immediate feedback, turning all present data into archival entries and vice versa. The economy of timing becomes a short-circuit. *Streaming media* and storage become increasingly intertwined. Differential archives (as we might call this new type) are self-learning, adaptive archives transitive to their respective media (formats), *metadating* (temporally, rather than static ‘data’), flexible.³²

Codecs are protocols not only for the mobility, but also for the storage, access and resolution of moving images within fibre-optic networks, which makes the distinction between storage and transmission collapse, or in Ernst’s words, causes ‘an implosion of storage into processual data flows.’³³ Therefore, codecs are not only crucial for understanding live transmission of content but also for the streaming of pre-recorded images in databanks. This becomes tangible, when looking at the strategies of economic expansion of streaming companies like Netflix. By 2020, Netflix is available in over 190 countries. Five years earlier, the service reached only North America, parts of South America and Europe. When the company announced in 2015 that they wanted to bring the service to markets in India, Africa and the Middle East, an essential problem was how to enable streaming without interruption

29. Mackenzie, ‘Codecs’, 62.

30. Wolfgang Ernst, ‘Archives in Transition: Dynamic Media Memories’ in *Digital Memory and the Archive*, edited by Jussi Parikka (Minneapolis: University of Minnesota Press, 2013): 83.

31. Ernst, ‘Archives’, 93.

32. Ernst, ‘Archives’, 98.

33. Ernst, ‘Archives’, 98.

in networks with much slower internet speeds than in the US.³⁴ While comparatively small files like cartoons might have run smoothly in regions with lower bandwidth, action movies would have caused problems. The company's engineers reacted with efforts to re-encode the whole catalogue. Videos were re-encoded in varying versions to meet the different bandwidths of internet connections.

Netflix's service has been dynamically delivering these versions based on a consumer's bandwidth needs, which is why the quality of a stream occasionally shifts in the middle of a bingewatching session. [...] It cuts every title into numerous slices, making it possible for multiple servers to crunch away on it at the same time, significantly speeding up encoding. [...] a true title-by-title approach, where every single movie and TV show episode gets its own encoding settings.³⁵

Conclusion

A theory of communication that adequately accounts for codecs sees distribution infrastructures and compression technologies as a determining factor for the production and reception of media content. Following Rasmus Fleischer's analysis of the economic model of Spotify, one could say that it is important to acknowledge that Netflix doesn't sell individual movies, it offers consumers 'only one commodity: the subscription.' From an economic point of view, for streaming services, individual movies or songs are supposed to support the actual product, that is, the subscription. Thus, analyses of user behaviour, securing of infrastructures and widespread bandwidth all support the unified goal of maintaining subscriptions. Codec technologies play a crucial role not only for the reach of the service, but also for securing uninterrupted streaming. To come back to Grieveson's agenda of a technological history of cinema: codecs play an important role for analysing how moving images are part of larger networks of economic expansion and uneven geographies of power. In this article, I have tried to show how codecs play an instrumental role for the economic models of streaming services. Compression technologies not only distribute moving images but shape them in effective ways. They are part of standardised telecommunications architectures that establish uneven geographies of power and enable economic expansion for streaming services like Netflix.

34. Janko Roettgers, 'Inside Netflix's Plan to Boost Streaming Quality and Unclog the Internet' Variety, 14 Dec 2015, accessed 23 Jan, 2020, <https://variety.com/2015/digital/news/netflixbetter-streaming-quality-1201661116/>

35. Roettgers, 'Inside Netflix's Plan.' Rasmus Fleischer. If the Song has no Price, is it still a Commodity? Rethinking the Commodification of Digital Music, *Culture Unbound* 9: 2 (2017): 146-162

Maps and the Moving Image

Jonathan Harris

The Bourne Cartography

Athletes, like circus performers, display their skills. The rules of games are designed to show prowess, quick judgement, finesse and grace, speed, endurance, strength and teamwork.¹

Richard Schechner, in *Performance Theory*

A man, who has no belongings other than the clothes on his back and a handful of cash – both given to him by a sailor who rescued him from the Mediterranean Sea – looks fixedly ahead as he passes in front of an oncoming tram; he neither alters the cadence of his footsteps, nor allows himself to be distracted by the warning chimes of the tram's bell. He has no recollection of his past, does not know his own name and at this juncture has only a destination and an array of hand-eye coordination and problem-solving abilities to help him get there. This is a premise obliquely reminiscent of Tom Ripley, a character portrayed by Matt Damon three years before *The Bourne Identity's* release in 2002, who has a special set of sociopathic skills which allow him, on the one hand, to procure a decadent lifestyle for himself by illicit means, but which, on the other, disqualify him from participating in that milieu with any kind of naturalness. *The Talented Mr. Ripley* is a psychological thriller whose eponymous hero is a charlatan who struggles to integrate into one coherent personality both his desire for luxury and the monstrous facility with which he achieves his objectives. The *Bourne* films have only a tenuous interest in psychology. Instead, they express the fantasy of decentred, itinerant anonymity, prizing efficiency over virtuosity, unlike most action films. According to Foucault, a statement 'figures at a definite point, with a specific position, in an enunciative network that extends beyond it,'² and Jason Bourne, Robert Ludlum's 1980 fictional creation, is a statement that re-emerges at the turn of the century within an enunciative network which is deeply permeated by cartographic practices. In this article, I will uncover some of the intersections between mapping and the moving image, indicating shared genealogies where they occur, but more importantly, I will

1. Richard Schechner, *Performance Theory*, (Oxford: Routledge, 2004): 45.

2. Michel Foucault, *Archaeology of Knowledge*, (London: Routledge, 2002): 112.

map a discursive network of cartographic ideas across different media: commercial film; sports broadcasting and contemporary art.

Bourne, considered from the vantage point of the year 2017, is a human smartphone, registering and computing data across a number of applications simultaneously. In a service station scene from the *Bourne Identity*, Bourne tells his accomplice, and soon-to-be love interest, Marie, that he has memorised the number plates of the cars outside, has mapped the area for exits, threats and locations where firearms may be found, and knows how far he can run at the current altitude before his hands start shaking. Moments before the film's car chase centrepiece, he scans a map of Paris. Even Bourne's return to his apartment for the first time since the episode which caused his amnesia is an exercise in mapping: he reads the terrain for signs of outside interference while Marie is able to glean very little biographical information about him, suggesting that Bourne had led a kind of amnesiac existence even before his identity vanished. In a sense, then, the humanities' turn from the historical to the geographic finds its embodiment in Jason Bourne. The void left by memory-loss is filled by a perpetual real-time mapping process that recalls the 'perceptual' framework of the modern smartphone, 'covertly foundational, always 'on', even if only in the background, on our location-aware devices.'³ In this section, I will plot the emergence of the amnesiac subject in relation to his environment: how is space transformed, how is it represented, and where might this lead us?

As Bourne steps in front of the tram, he is in the process of drawing the shortest possible line between two points in space. Bourne operates in what O.F. Bollnow would call 'mathematical space'. Bollnow defines this concept according to two characteristics:

1. No point is distinguished above any other. The coordinates in this space have no natural origin, and for reasons of practicality one can make any point as required the origin of a coordinate system by means of a simple shift.
2. Likewise, no direction is distinguished above any other. By means of a simple turn, any direction in space can be made into the axis of a chosen coordinate system.⁴

3. Shannon Mattern, 'Gaps in the Map: Why We're Mapping Everything, And Why Not Everything Can, Or Should, Be Mapped', (September 2015). Accessed 28 December, 2017. <http://wordsinspace.net/shannon/2015/09/18/gaps-in-the-map-why-were-mapping-everything-and-why-not-everything-can-or-should-be-mapped/>

4. O.F. Bollnow, *Human Spaces*, trans. Christine Shuttleworth. (London: Hyphen Press, 2011): 18.

Bourne's cognitive map is not a *mappa mundi* which puts Jerusalem at its centre, nor is Bourne's map *oriented* towards the East, as the medieval T-O map places Asia in the larger top segment of the spatial arrangement. Like Google Maps' egocentric navigational mode, whose perspective swivels with the smartphone rather than being framed according to where North is, Bourne is the centre of his world. Likewise, Bourne does not respect spatial interdictions: he drives into an underground carpark past a sign marked '*Sortie*'; he ignores a 'Danger – do not enter' sign to evade capture; he scales a wall; he trespasses. Westphal notes that transgression is historically related to hubris, and that 'hubris [in Ancient Roman culture] is a crime, because by it divine nature and human nature cease to be distinguished'.⁵ But Bourne's transgressions are part of a different social economy. Certainly, they make him attractive. We watch Marie fall for him at the precise moment he declares that he doesn't know whether he has any family, and, moreover, evinces a total lack of interest in finding out. Bourne is radically unrooted, decentred, without history, and for a woman who is presented as having perhaps *too much* history, with a complicated past pieced together by the intelligence services through information provided by various state bureaucracies (one of which she is shown battling with at the beginning of the film), Bourne's egocentric rather than allocentric orientation is an invitation to transgress. Bonnie and Clyde for the new millennium perhaps. However, transgression is not a mark of hubris but a privilege of the amnesiac moral agent, as the *differentiation* of places safeguarded by the state, with its omniscient purview of events all over the world, is forfeit by the state's moral frailty. Jason Bourne runs through our sitting room and we hardly care, so long as we capture it on our smartphone's camera.

This brings us to the relationship between mathematical space and its representation. The genealogy of mathematical image-making is traced by Edgerton as far back as Ptolemy, whose *Geography* was 'the first recorded instance of anybody – scientist or artist – giving instructions on how to make a picture based on a projection from a single point representing the eye of an individual human beholder'.⁶ The distinction is then unfolded between 'geography', the mathematical approach whereby one 'survey[s] the whole in its just proportions',⁷ and chorography, the evocation of local places. For all the *Bourne* franchise's globe-hopping, the places shown within it are made to conform to its main character's mode of cutting

5. Bertrand Westphal, *Geocriticism: Real and Fictional Space*, trans. Robert T. Tally (New York: Palgrave Macmillan, 2011): 42.

6. Peta Mitchell, *Cartographic Strategies of Postmodernity: The Figure of the Map in Contemporary Theory and Fiction* (New York: Routledge, 2008): 35.

7. Mitchell, *Cartographic*, 35.

through space in the most efficient way possible, and as a result, they appear largely homogenous. Just as navigating Berlin with Google Maps is a somewhat interchangeable experience to navigating Bucharest with Google Maps, the Bourne films effect a kind of rationalisation, whereby one place ends up resembling another. The travel writer Paul Theroux describes the notion of ‘traveling as a version of being at home’, whereby ‘Spain is Home-plus-Sunshine’ or ‘Ecuador is Home-plus-Volcanoes.’⁸ Following this model, the Bourne locations could be described as ‘Bourne-plus-Gare du Nord’ or ‘Bourne-plus-Waterloo Station’.

The ‘rationalising’ psychology of the franchise’s protagonist is concretised in the visual style of the director of the second, third and fifth films in the series, Paul Greengrass. Unlike deep focus or the long take, which favour contingency, Greengrass’ quick cutting signals the rhythm of Bourne’s rapid decision-making. In a handy cue for the media archaeologist, Greengrass confesses that he had never expected to find himself working in the commercial mainstream, and in response to his own puzzlement he offers an interesting hypothesis. During shooting in Waterloo Station, he noticed that the ‘18 to 25 year-olds who are the movie audience’⁹ were filming what was happening on their mobile phones. ‘What had happened [...] was that technology was allowing young people to make their own images, and their images were much more permissive, much more raw, than the images that conventional drama gave them.’¹⁰ Like Greengrass, these phone-users were capturing ‘Bourne-plus-Waterloo-Station’, and like the phone-user navigating Friedrichshain with Google Maps, their mobile phones were acting as an interface between themselves and the world. There are two conclusions that I wish to draw from this situation:

1. When the chorological experience of local place is substituted by mathematical space, as in the *Bourne* experience of the world, it is *re-enchanted* by the spectacle of the live event. The literary critic Northrop Frye describes the significance of the detective genre in ‘low mimetic’ art in terms which resemble the operation carried out by Greengrass: ‘The detective story begins in the Sherlock Holmes period as an intensification of the low mimetic, in the sharpening of attention to details that makes the dullest and most neglected trivia of daily

8. Kasia Boddy, “The European Journey in Postwar American Film”, in *Voyages and Visions: Towards a Cultural History of Travel*, eds. Jas Elsner and Jean-Paul Rubiés (London: Reaktion, 1999): 233.

9. ‘Paul Greengrass: The Shaky-cam, Quick-Cut Director Who Redefined Action’, *The Economist*, (27 July, 2016). Accessed 28 December 2017. <https://www.economist.com/blogs/prospero/2016/07/film>

10. ‘Paul Greengrass’, *The Economist*

living leap into mysterious and fateful significance'.¹¹ Bourne's spatial transgressions, not to mention his ability to turn a ballpoint pen or a rolled-up newspaper into lethal weapons, coerce banal, disenchanting objects and places into playing a 'Bourne-plus-...' role for the benefit of an improvising camera operator.

2. This deictic use of video technology supplants a more representational, or as Greengrass calls it, 'conventional' method of filmmaking. The bystander at London Waterloo filming the shooting of *The Bourne Ultimatum* on her mobile phone opts to watch with a camera rather than with her eyes. Here, Greengrass' choice of the word 'permissive' is revealing. The guerrilla camerawork points a finger, declaring 'this happened'. The camera, in a world such as that of the *Bourne* franchise, in which institutional authority is questionable, apparently acts as a countermeasure, as a way of 'sticking it to the man'. This is perhaps most abundantly clear in the widespread use by news outlets of user-generated content; principally, videos shot on mobile phones. Or, alternatively, this trend could also perhaps speak for Section 76 of the Counter Terrorism Act, which in 2009 made it illegal to photograph the police. A moral undertow is at force which should not be ignored.

Hawk-Eye Knows the Score

In December 2017, former Premier League referee Mark Clattenburg revealed that he had entered a critical match at the tail-end of the 2015-16 season between Chelsea and title contenders Tottenham Hotspur with a game-plan. As he himself explained, 'There should have been three red cards to Tottenham, but I allowed them to self-destruct so all the media, all the people in the world, went "Tottenham lost the title'.¹² If I'd sent three players off, what's the headlines? "Clattenburg cost Tottenham the title.'" Sports journalist Brian Reade, writing for the *Mirror*, encapsulated the media backlash against Clattenburg by bemoaning the referee's narcissism, comparing him to television talent show judges who seek to steal the limelight from the stars on whose performances they adjudicate, and citing Clattenburg's attempt to selectively apply the law in order to protect some vestige of footballing verisimilitude as further proof of the nefarious, self-serving agenda pursued by referees; this being the stuff

11. Northrop Frye, *Anatomy of Criticism* (Princeton: Princeton University Press, 1990): 46.

12. Brian Reade, 'Nice Work Mr. Clattenburg – Your Gobsmacking Battle of the Bridge Confession Confirms Fans' Worst Fears about Referees', *The Mirror* (6 December 2017). Accessed 28 December 2017. <http://www.mirror.co.uk/sport/football/news/well-done-mark-clattenburg--11650377>.

of fans' nightmares, he claims.¹³ In linking the *Bourne* franchise to professional sports, I intend to uncover a common discursive network in which two seemingly unrelated modes of video capture (Paul Greengrass' shaky-cam cinematography and Hawk-Eye) are connected by a shared purpose: to provide a visual challenge, operating within an abstract, perfectly mappable space, to the old hegemony of human institutional authority. The range of technologies could be expanded further still: to helmet-mounted cameras in military operations, facial recognition software that plots the face as a terrain of interconnected points, or the cameras fitted to the cars of driving instructors, which, like Sanborn maps of the late nineteenth century, are examples of optical media applied innovatively for insurance purposes. To use Richard Schechner's terminology, in this section I will look at optical media, not as representational tools which weave 'symbolic time' for an audience, but as co-spectators that perceive the 'set time' of a live event along with us.

The sports field offers a singular opportunity to realise the Borgesian notion of the map which is exactly coextensive with the territory it represents. A playing area is a map of sorts, and Hawk-Eye, an adjudicative apparatus whose view is triangulated by seven cameras pointing at each goal (in the case of football), purports to see and, moreover, enforce the meaning of the lines of play more accurately and objectively than any human referee. Over Clattenburg's initiative-based method of refereeing, a technological approach is preferred which tellingly reduces the relationship between the law and gameplay to binary decisions (in-out; goal-no goal). The question, therefore, is the extent to which the technology alters attitudes towards the games themselves, and whether these attitudes do not in fact exist in some other more general form outside sport, making the timing of Hawk-Eye's integration into the various games a statement of the technology's position in a wider discursive network.

There are two timelines which need to be delineated at this juncture; one short and one long. Hawk-Eye was created initially for cricket and was introduced in 2001; it was first used in tennis at the 2006 US Open; but it wasn't until the beginning of the 2013-14 season that Hawk-Eye was adopted in football. Perhaps following Kittler, who chastises Villiers de L'Isle-Adam for making the Edison of his novels wonder why the phonograph had not been invented sooner when it had been eminently possible in technical terms¹⁴, we should consider that the historical a priori was not

13. Reade, 'Nice Work.'

14. Friedrich A. Kittler, *Gramophone, Film, Typewriter* (Stanford: Stanford University Press, 1999).

yet in place in the first decade of the millennium for a sport as widely watched as football to be penetrated by Hawk-Eye's gaze. Its appearance in cricket could never have made visible, in the Foucauldian sense, a developing network of ideas – from the deterioration of trust in sources of authority to the rise of social media and user-generated content – in the way football has. Cricket, as a less visible social phenomenon, does not carry the burden of reflecting back to us the concerns of the day. However, in 2017, as Mattern writes, Google, 'with its extraordinary cartographic empire' has 'replaced national agencies and international organizations in becoming "the referential map of the world."'15 Bourne, the human smartphone who made an anti-climactic return to the big screen in 2016, has been deposed by the smartphone itself. By the start of the 2013 season, the discursive network was in place for Hawk-Eye's assimilation into football's highly visible regime.

The second, much longer, timeline concerns the history of the cartographic line itself. Ronnie Ellenblum, in his essay, 'Were there borders in the Middle Ages?' argues that the medieval organisation of space was not linear but concentric, in which zones of influence radiated out around fortified centres and people often lived without knowing who their rulers were. By contrast, 'Crossing an imaginary line, which often is not even on the actual border [...] brings the modern traveller to a different world, full of political and nationalistic symbols.'16 This modern, linear logic reaches its zenith with Hawk-Eye, whose publicity material states that 'The system accuracy is not affected by any variances in the painting of the goal line or if the posts are not perfectly vertical.'17 In other words, Hawk-Eye does not *see* the line as we do, rather it *knows* where the line ought to be according to its virtual map of the playing area. In their paper on the public's skewed understanding of Hawk-Eye, Collins and Evans make the point that 'In real life, the edge of a line painted on grass cannot be defined to an accuracy of a millimetre'18 (as Hawk-Eye would have us believe). The result, an extension of a cartographic tendency that begins in the Renaissance and develops through the Enlightenment, is that the law is not enforced by a referee who sees the same real space we do, but rather we allow ourselves to be governed by a virtual geography with a 'grotesquely token foot [...] in the world of

15. Mattern, 'Gaps in the Map'.

16. Ronnie Ellenblum, 'Were there Borders and Borderlines in the Middle Ages?', in *Medieval Frontiers: Concepts and Practices*, ed. David Abulafia and Nora Berend (Aldershot: Ashgate, 2002): 105.

17. BBC Football, 'How Hawk-Eye Technology Will Work'. Accessed 28 December, 2017. <http://www.bbc.co.uk/sport/football/22104312>

18. Harry Collins and Robert Evans, 'You Cannot Be Serious! Public Understanding of Technology with Special Reference to "Hawk-Eye"', *Public Understanding of Science* 17: 3 (2008): 301.

the physical.¹⁹ Enlightenment cartography places mapmaking firmly on the side of science, as opposed to art, and contemporary football photography marks a current offshoot of this genealogical line, which ought to be very familiar to the media archaeologist: teleology and the rhetoric of perfectibility obscure the distortions, the strategic decisions made, and political ramifications of technology's (mis) apprehension of reality.

Cartography's original sin, in this regard, is the distortion caused by projection of the Earth's three-dimensions onto a two-dimensional plane. 'All maps lie flat, therefore all maps lie' goes the saying. Ptolemy himself conceded that it would be preferable to represent the Earth in the form of a globe, but this has the drawback of disallowing a simultaneous omniscient perspective, something which Descartes also considered highly important. More recently, GIS has been culpable of masking its distortions, as Peta Mitchell explains: 'Although geometry and physics moved away decades earlier from the notion of space as passive, the concept of scientific objectivity, and the pursuit of absolute 'truth', GIS remains within the linear narrative of scientific progress.'²⁰ Hawk-Eye's strategic distortion is statistical. Collins and Evans explain that the cameras, in a form of chronophotography, plot the position of the ball over time, using statistical software to extrapolate the ball's line of flight. The accuracy of the device therefore is limited, firstly, by the frame-rate of the camera, and secondly by factors such as the speed at which the ball is travelling and, in cricket, for instance, the distance it travels before contact is made with the batsman's pad. This is illustrated by Australian bowler Mitchell Starc's 'ball of the twenty-first century' (*Figure 1*), which hit a crack in the pitch that helped deviate the ball from a projected course that would have missed leg stump to its actual course, which hit off stump. In theory, had the batsman, James Vince, taken a long stride towards the ball and been struck on the toe or pad, then Hawk-Eye's prediction would have been wildly inaccurate, if a referral had been called for.

Statistics, as a mode of visual analysis, also offer a panopticon view of the game, taking in at a glance not only the entire playing area, but also the full duration of the game. John Berger's comments on the frustration felt by the television viewer when viewing a painting in its entirety are also applicable to football.²¹ The primary view from a camera mounted on a stand over the halfway line is itself only a partial

19. John Pickles, *A History of Spaces: Cartographic Reason, Mapping, and the Geo-coded World* (London: Routledge, 2004): 27.

20. Mitchell, *Cartographic Strategies*, 71.

21. Berger, *Ways of Seeing*, broadcast BBC2 1972. Accessed 28 December 2017. https://www.youtube.com/watch?v=OpDE4VX_9Kk

representation of the whole space. The live transmission cuts frequently to close-ups, which satisfy the viewer's desire to see details, as in the case of the person looking at Bruegel's 'The Procession to Calvary'. However, behind the primary view, which is a kind of perspectival, bird's-eye view map, is another view: the statistical view, which is the descendent of a later cartographic tradition known as the 'zenithal gaze'. Pickles explains that it is through the 'zenithal gaze' or 'master plan' that urban cartographers at the end of the nineteenth century come to study and administer urban populations.²²

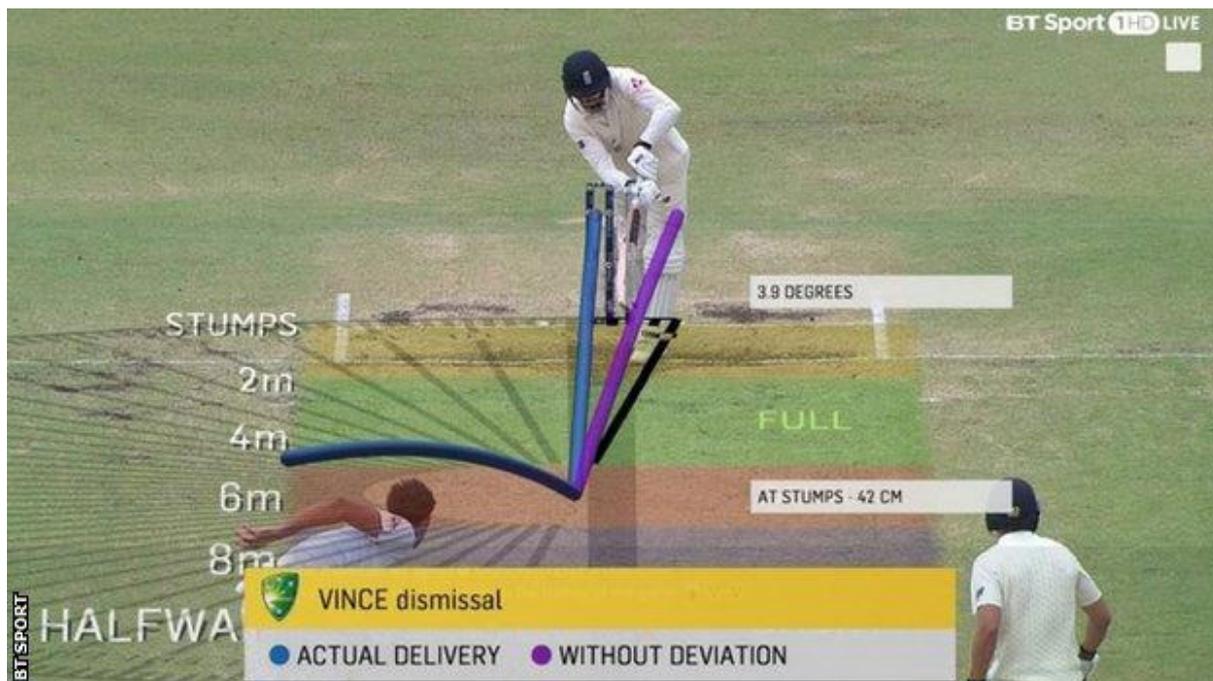


Figure 1. Mitchell Starc's 'Ball of the Century'.

Although the statistical master plan is not the perspective given to the Sky Sports subscriber at home, its geometrical basis infiltrates the way we watch games, appreciate the space and assess the performance of the players on the pitch. As in the *Bourne* films, television coverage of football shows us mathematical space. *Bourne* can even be considered as a dramatization of the kind of thought process demanded of any successful professional footballer. If an attacking midfielder makes a run off the ball to draw a defender out of position, this will create space for the player on the ball to run into. Jason Bourne, in a scene from *The Bourne Identity*, fires a round from his shotgun into the air to divert the attention of an adversary, forcing him to reveal his position, while allowing Bourne to approach unseen. In both cases, space is a medium to be traversed, 'unstructured in itself, and regular throughout,'²³

22. Pickles, *A History of Spaces*, 129.

23. Bollnow, *Human Spaces*, 18.

and the psychological orientation of those who play within it is to move as efficiently as possible, exploiting the space better than one's opponent. Statistical maps, such as the one below (Figure 2), clearly illustrate this principle of efficiency. There is therefore a relationship between the optimisation of optical technology, the application of statistics and sporting performance. This is evidenced by the claim by Sky's head of operations, James Clements, that there is a direct correlation between innovations in slow-motion photography and the quality of punditry in Formula One.²⁴ Meanwhile, Hawk-Eye endeavours to improve the accuracy of its statistical device by increasing the frame rate of its cameras. Broadcasters, like Sky, do their bit by broadcasting at higher frame rates across their HD platforms and television manufacturers aspire to imagery distinguished by an ever-greater fluidity of movement; again, this is facilitated by the interpolation of extra frames.



Figure 2. Football statistics. The 'zenithal' view.

24. Porter, Jon. 'The Fast and the Framerate: Why Sky's Ultra HD F1 Seasons Is Its Biggest Challenge Yet', Techradar (10 March 2017). Accessed 28 December 2017. <http://www.techradar.com/news/the-fast-and-the-framerate-why-skys-ultra-hd-f1-season-is-its-biggest-challenge-yet>

However, there is no such thing as a perfect circle; not at the macroscopic level of the Sun, nor at the microscopic level of an electron particle. The impulse of scientific accuracy towards an unrealisable infinity is allied with the deceptive sophistication of imagery created by those whose job it is to make the maps which interpret reality for us. Jan Broek argues that ‘it was the very craftsmanship and persuasive quality of maps that meant that map users have often overlooked the actual practices of map design and map making.’²⁵ Likewise, Collins and Evans warn against the high-fidelity graphics of Hawk-Eye, which, they argue, could soon deceive the sports fan into believing that they are looking at a photographic image rather than a simulation.²⁶ Finally, and inexorably, hyperreality even transforms the event itself. There is a funny symmetry between Wayne Rooney’s hair transplant and the technology of top-tier football pitches, ‘where artificial fibres are stitched into the pitch vertically, and then grass seed is oversewn, creating a condition that allows the grass plant to anchor to the fibre, creating a stable playing surface.’²⁷ Never does one see a footballer in need of a haircut and neither, in the context of cartography, can one escape the impression that the trend among players for extensive tattoos responds to a desire to write on the map, to fill in its blank spaces. Every portion of mathematical space must be made visible in perfect clarity to the eye. The turf underfoot, the bare flesh of a forearm and even the wispiest patch of unwanted neck hair must be civilised for the gaze of the HD camera. Where space is made abstract and emptied of history, the human subject is compelled to write on her own body. As Mitchell writes, ‘In a world in which the real is no longer a given, the map becomes a key metaphor for the negotiation (physical and cognitive) required in order to derive meaning from our environment.’²⁸ Having begun with one film amnesiac, Jason Bourne, we can end with another, the protagonist of Christopher Nolan’s *Memento*, who adapts to the effects of memory loss by tattooing his own with body the coordinates of the life he intends to live.

25. Pickles, *A History of Space*, 35.

26. Collins and Evans, ‘You cannot be serious!’, 301.

27. Foster, Richard. ‘The Unseen Work of Football Ground Staff, Who Ensure The Grass Is Always Greener’, *The Guardian* (8 July 2016). Accessed 28 December 2017. <https://www.theguardian.com/football/the-agon-y-and-the-ecstasy/2016/jul/08/football-ground-staff-grass-euro-2016-premier-league>.

28. Mitchell, *Cartographic Studies*, 3.

Matthew Barney

In this coda, I wish to briefly suggest an antidote to the cartographic tradition which is driven by a sense of teleology – that lineage of maps, which, like the Van Sant map, purge every cloud from the sky in a bid for perfection. The *mappa mundi* is a storage medium for diverse information from a vast range of sources, which perhaps is due to its anchorage in a tradition far removed from optical media; that of the *ars memoria*. The Hereford *mappa mundi*, for instance, is replete with references to the Bible, the medieval bestiary, the flora and fauna of exotic places, foreign peoples, and the life of Alexander the Great. As Kline explains,

Each text, each image informs and dispels a fear of the unknown and replaces it with authoritative evidence, and the limited number of spatial interstices dispel the horror of the vacuum (“horror vacui”). The idea of the map was to fill the spaces, to prove that the world was contained within the framework of Creation, Judgement and Redemption.²⁹

Unlike later cartographic traditions, for which space was not ‘contained’ but infinitely extensible, the *mappa mundi* follows an Aristotelian conception of space. It is the ‘hollow space bounded by a surrounding cover, and therefore it is necessarily exactly as large as the thing that takes it up’³⁰. For this reason, space is finite and there is no such thing as empty space. Matthew Barney’s *Cremaster Cycle*, a series of films made between 1994 and 2002, has certain affinities with the *mappa mundi* tradition. In the first instance, Barney describes the process of the work’s creation in terms reminiscent of the medieval conception of space: ‘I made *Cremaster 1* (1995), in some way to establish a kind of boundary. *Cremaster 5* (1997) came next ... the other boundary’.³¹ Within this finite space, Barney densely packs layer upon layer of historical and mythical allusion. A map is conceived in which Celtic mythology, freemasonry, the construction of the Chrysler building and human sexual anatomy, to name but a few components, are plotted in a personal, associative network.

Not only is the world of *The Cremaster Cycle* rich with mnemonic connections drawn across the five geographical sites which Barney chose as filming locations before embarking on the work, it is also shaped by those locations. The locations act not

29. Naomi Reed Kline, *Maps of Medieval Thought: The Hereford Paradigm* (Rochester, NY: Boydell Press, 2003): 90.

30. Bollnow, *Human Space*, 30-31.

31. Hans Ulrich Obrist, *Matthew Barney* (Cologne: Verlag der Buchverhandlung Walther König, 2013): 15.

as an abstract arena to be re-encharmed by the spectacle of a live event, as in the *Bourne* franchise. Instead the places relate to the human body as the macrocosm does to the microcosm. Barney talks of the relationship between the athlete and the football stadium: 'In the way that Jim Otto is a psychological aspect of the field which the stadium holds – how quickly the stadium becomes a body'. Spaces offer resistance; resistance generates a form of process, such as 'the ascending sine curve of growth and recovery'³² which occurs in the muscles over the course of a weight training regime; and ultimately, 'these ways of mapping the processes within the body' become 'a way of describing a larger aesthetic system.'³³ In other words, a kind of allegorical exchange takes place between Barney's conception of the stages of his artistic process and the spaces with which his body interacts. The audience therefore pays close attention to what it is shown, not because the images have the scopic lustfulness of high definition, but because 'every location in experienced space has its significance for human beings.'³⁴ Experienced spaces and mental dispositions are not separate, as they are in mathematical space.

One final way in which Barney upsets the tradition in which maps and video are allied to make mathematically precise images is his interest in sound. For Descartes, the eye was the noblest of the senses. Barney, however, collaborates closely with the composer Jonathan Bepler, whose music was usually recorded before the shooting of the *Cremaster* film for which it was made. Sound precedes and determines Barney's imagery. This is significant when we consider that television coverage of football minimises the ambient sound in the stadium to allow the commentary, an interpretive adjunct to the image, to be heard. Hawk-Eye replays are entirely soundless. Moreover, the mobile phones used by the passers-by in Waterloo Station to record glimpses of Matt Damon during the shooting of *The Bourne Ultimatum* would have been equipped with microphones of far inferior quality to the cameras that captured the images.

I have included this coda as an indication of an alternative media archaeological project. The history of maps and moving images can be told, as I have attempted here, in relation to a visual project that Heidegger referred to as the framing of the world as *ta mathemata*. This, in recent times, has involved a discursive network which favours the abstract authority of borders, lines and a computerised, statistical gaze over human adjudication. This is perhaps natural when the parameters of

32. Obrist, Matthew Barney, 38.

33. Obrist, Matthew Barney, 38

34. Bollnow, Human Spaces, 19.

the project are defined by relevancy to the moving image. However, Matthew Barney gives the media archaeologist one example of audiovisual mapping whose cartographic forebear is the chorological *mappa mundi*. The *mappa mundi*, as a storage medium, recalls the anthological memory of storytellers, and so perhaps an alternative historical thread presents itself: the relationship between cartography and recorded sound. Steps have already been taken in this direction, as Aboriginal songlines have been acknowledged in recent years by Australian Land Commissioners as legal evidence for territorial claims. Maybe cartography's preference for sight over sound also explains why Jason Bourne doesn't have a favourite song.

Scattered Roots: Tracing *el ghorba* Through the Scopitone Screen

—
Isabella Skelley

‘Much of the evidence about the slot machine users’ attitudes has disappeared without a trace, not being considered worth recording,’ writes Erkki Huhtamo. ‘We know the machines and the companies quite well, but not what people thought about them.’¹ The scopitone, a visual juke-box style slot machine — and subject of my research project — appears to have suffered a similar fate. Popular in Parisian cafes in the 1960s and 1970s, and commonly referred to as a close ancestor of the music video, the scopitone is operated through inserting a coin and selecting the song/video of one’s choice. Both the appearance and user interaction of the scopitone are thus comparable to more typical forms of arcade games, both in their ‘pre-cinematic’ form, and the modern slot machine of today.

For the first decade of its existence, the scopitone was found in central Parisian bars and cafes and was treated with bemused interest by establishment cinephiles: In a 1963 *Cahiers du Cinema* article, François Mars asks jovially if the scopitone could be ‘la neuvième art’ [the 9th art of the French classification system].² But the scopitone’s presence in the bourgeois city centre was short-lived. And although the device did attract some well-known French directors and singers of the time — Claude Lelouch and Serge Gainsbourg are often referenced — it was not in mainstream French culture that the scopitone proved most popular.

In what appears to be the only published history of the scopitone, Jean-Charles Scagnetti’s *L’aventure scopitone* details how, upon witnessing the declining popularity of the scopitones in central Paris, Roger Dauchy of the SMC (Société des Machines Cinematic) had the idea, in 1967, to move the scopitones out to cafes in more peripheral areas of the city.³ The areas chosen were those home to large North African communities, and Dauchy hoped that this move would bring about a new scopitone audience. He approached Salah Sadaoui, an Algerian singer, to act as artistic director in this new endeavour.

1. Erkki Huhtamo, “Slots of Fun, Slots of Trouble: An Archaeology of Arcade Gaming”, in *Handbook of Computer Game Studies* (Cambridge, Mass.: The MIT Press, 2005), 21.

2. François Mars, “Scopitones” in *Cahiers du Cinéma*, 24, no. 120, (1963) : 40-41, accessed 20 November 2020, <https://archive.org/details/CahiersDuCinma/Cahiers%20du%20Cin%C3%A9ma/140/page/n5/mode/2up..>



Le « scopitone » sera-t-il le neuvième art ?

Figure 1. The Ninth Art. Source: Cahiers du Cinema, Vol. 24, No. 120, 1963.

While the North African scopitones created in this period are often referred to together, as one mass (which in itself is arguably a staunchly western perspective), I have chosen to focus my research especially on the Kabyle scopitone output, an Amazigh (Berber) Algerian diaspora in Paris whose relationship to the scopitone I believe is unique to their cultural history. Scopitones made by this demographic accounted for 90% of scopitone output by 1971,⁴ a forgotten cultural history within a forgotten technological history. In considering the interlocking histories between the scopitone and the Kabyle diaspora, it is also important to note that at no point was the scopitone introduced into Algeria, where strict censorship policies were in place. The machine and its filmic content were thus (at the time) unique to the culture of the Kabyle diaspora, not to Kabyle culture as a whole.

While Scagnetti's scopitone history has proven invaluable to my research, offering important statistics and a historical timeline of events unavailable elsewhere, I would like to take my research beyond historical linearity. To do so, I have gathered

3. Jean-Charles Scagnetti, *L'aventure Scopitone, 1957-1983* (Paris: Autrement, 2010): 134

as many resources as possible, from both academic sources and specialised blogs and magazines to piece together the many fragments that have in various ways contributed to this largely forgotten cultural intersection between the scopitone and Kabyle culture in France. I would like to challenge Scagnetti's view that the movement of the machines out from central Paris and into the demographically diverse suburbs 'never erased the functioning principle [of the scopitone], which remained identical, that of hearing and watching dedicated artists and shared themes.'⁵ To illustrate the unique functioning of the scopitone within Kabyle culture, I have split my research into four areas.

Echoing Michel-Rolph Trouillot's notion of silenced pasts and uneven traces,⁶ I first want to examine the history behind the Kabyle diaspora in France, and how the preceding decades of political turbulence in Algeria gave rise to the exiled Kabyle voice. This voice, although not actively silenced in France, as it was in Algeria, was still marginalised, especially in terms of television screen-time; the only visual media outlet available to Kabyle people at the time thus became the scopitone screen. Next, I will consider a geographical history of the Kabyle scopitones, looking at the locus of the cafe, a significant cultural site in both French and North African culture. I will address the Parisian cafe as a centre for the Kabyle community, and how this spatiality played into the subsequent thriving scopitone production. I will then turn to the actual scopitone films and their content, looking at their various themes and aesthetics in order to analyse both their significance to the Kabyle and wider North African communities in Paris, to understand to what extent this 'side' of scopitone history fits in to the ready-made narrative. Finally, I will briefly consider the impact that this rich and varied scopitone culture has had, not only on the commercial music video, but more widely throughout both North African and French culture.

In covering these divergent aspects of Kabyle scopitone output, I hope not to recreate a linear chronology, but instead to elucidate the web of cultural components at play; ultimately, not to portray the scopitone as a futile relic of a bygone era, but to convey how its material existence became significantly entwined with Kabyle migrant culture in France, a significance whose various traces can be witnessed even today.

4. Scagnetti, *L'aventure*, 102

5. Scagnetti, *L'aventure*, 134

6. Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Beacon Press: Boston, Mass. 1995).

***El Ghorba* and the Scopitone Screen**

The two predominant cultural themes within Kabyle history that warrant examination when considering the significance of the scopitone to the Kabyle diaspora in France are the long-intertwined histories of Kabyle music and *el ghorba*, the notion of exile. These are two deeply embedded aspects of Kabyle culture that elucidate the history behind the popular *chansons d'exil* (songs of exile) widely featuring on scopitone screens in Parisian cafes. To understand the cultural significance of Kabyle scopitone output, one must extend the lens of inquiry back to Algeria's colonial past, namely to the French occupation, and consider how past events in Algeria's turbulent history eventually came to fruition on the scopitone screen. While it is possible to trace hostility between Algeria's ethnic groups all the way back to Antiquity, and the region has been subject to colonial conquest for centuries, it was during French rule, and the French 'divide-and-conquer' tactics that the acrimony between the Amazigh and Arab peoples within Algeria was greatly exacerbated. As Mohand Tilmatine writes, 'the Arab/Berber dichotomy was a fundamental tenet in the colonial worldview and discourse'.⁷ In propagating the 'Berber myth', through which France differentiated the Amazigh population from their Arab counterparts, the French managed to destabilise what it meant to be Algerian, thus facilitating French efforts to intervene in Algerian politics. The Imazighen [Berber peoples] were deemed to be less hostile to French rule, and as such, were subject to preferential treatment in attempts by France to win their support.

This ethnic and cultural distinction that was played on by the French colonial powers in the North African region resulted in aggressive policies towards Amazigh culture when Algeria gained independence from France in 1962. From that year, the Algerian government followed a policy of Arabisation, the idea being 'to assimilate all Algerians into a unified new nation, consolidate power, and demonstrate cohesion and unity with the other newly independent nations of North Africa'.⁸ This policy targeted both the French language and the Tamazight language, with the aim of erasing both any French colonial influence, and any memory of Algeria's pre-Islamic past; 'public places, street names, stores and all kinds of sign boards were renamed...all names linked to Berber identity or reminiscent of the colonial past were obliterated.'⁹ Amazigh culture and language was stifled to make way for the notion of one country, one culture, a policy that eventually led to the Berber Spring protests in 1980. Throughout this period, several attempts were made by

7. Mohand Tilmatine, "French and Spanish Colonial Policy in North Africa: Revisiting the Kabyle and Berber Myth". *International Journal of the Sociology of Language*, 2016 No. 239 (May, 2016): 97

Imazighen from within Algeria to keep their culture and languages alive, such as the Imazighène monthly bulletin, popular with Kabyle students, which aimed to recover and publicise notable Amazigh historical figures, bringing cultural awareness to a youth largely cut off from its heritage. Attempts to maintain widespread access to Amazigh culture, however, became increasingly difficult as the process of Arabisation took hold, as seen for example through the fate of Chaîne 2, Algeria's only Kabyle radio station, whose influence 'from the 1970s onwards...was constantly reduced and the station was diminished and discriminated against.'¹⁰

Thus, it is amid this cultural and linguistic silencing that was occurring within Algeria that the importance of diasporic Kabyle voices becomes evident. With Kabyle voices within Algeria being actively silenced, and an entire state programme dedicated to the eradication of Tamazight, it was in fact on foreign shores that Kabyle culture was allowed to thrive. As Fazia Aïtel writes, 'exile...furnished a space and venue for this new immigrant Kabyle voice, facilitating the expression of dissent and a constructive reformulation of Algerian politics and the nation.'¹¹ Essentially, it seems that no excavation of the Kabyle scopitone output that took place in France would be extensive without giving due attention to the political and socioeconomic landscape in which both Kabyle singers and spectators alike found themselves, many of whom had emigrated to France not out of choice, but in exile from their homeland. Turned away by their own nation, labelled as cultural dissenters, their assimilation into French culture brought with it not only difficulties of assimilating into a foreign culture, but equally a huge sense of nostalgia and homesickness for a homeland they did not necessarily want to leave, but where they no longer felt welcome. As Banning Eyre writes, 'it is important to understand that the whole subject of Berber music and culture is profoundly coloured by Berber people's longstanding struggle to achieve basic language rights in modern North African societies.'¹² It should be noted that Tamazight was only recognised as an official language of Algeria in 2016.

And so, in considering the Algerian socio-political landscape, and the context of exile in which many Algerians found themselves emigrating from their homeland, one can appreciate both the importance for the Kabyle diaspora of sustaining its cultural practices and heritage. Being a culture centred largely on music and oral tradition,

8. Fazia Aïtel, "Between Algeria and France: The Origins of the Berber Movement." *French Cultural Studies* 24, no. 1 (February 2013): 64.

9. Aïtel, "Between Algeria", 65.

10. Aïtel, "Between Algeria", 70.

11. Aïtel, "Between Algeria", 72.

the *chanson d'exil* epitomised this for many Kabyles in France, and it was on the scopitone screen that the imagery of the *chanson d'exil* came to life.

The Kabyle Cafe Space

Having explored the history behind Kabyle immigration into France, and context of exile that was embedded into this migratory movement, and ultimately into the scopitones created by Kabyle musicians, I will now embark on a geographical approach to further trace Maghrebi scopitone culture. In other words, to investigate the spatiality of the scopitone not through the European context of a cafe, and the associated clientele and machines, but through Maghrebi cafe spaces. For while the movement of scopitones from cafes in central Paris to cafes in more peripheral positions may seem like a negligible detail in their linear position as the precursor to the music video, the machines in fact endured a significant migration of their own. And with this migration, the culture surrounding them shifted dramatically, vastly increasing the scopitone's web of influence.

Neil MacMaster writes that the cafe had acted as a centre for local proletarian politics in Paris for centuries, and that 'the first wave of Algerian migrants who established cafes during and after the First World War were embedded in this working-class milieu and reflected its structures and practices.'¹³ As such, one could read the importance of the cafe space to the North African diaspora as an extension of French working-class practice. But on further examination, the significance of the cafe space for the Maghrebi population in Paris is not simply an extension of the French working-class space, but is a crucial aspect of Maghrebi, and particularly Kabyle cultural practice. In his analysis of Pierre Bourdieu's structuralist study on Kabyle habitus, Paul A. Silverstein relates the Kabyle practice of *tajmaât* — the space of the male village assembly — which would traditionally take place in a dedicated village building, to the metropolitan cafe, a place which 'came to serve as sites for informal village assemblies',¹⁴ not only for the Kabyle diaspora in France, but also for those who had been displaced from rural villages, now residing in Algerian city suburbs. As such, it becomes clear that while there is no doubt some link between the use of the cafe by the French working classes and their North African counterparts, the significance of the cafe for at least the Kabyle population extends

12. Banning Eyre, "Amazigh Grace: An Introduction to the Music and History of the North African Berbers", *Sing Out! The Folk Song Magazine* 47 No. 1, (Spring 2003): 48.

13. Neil MacMaster, "The Algerian Café-Hotel: Hub of the Nationalist Underground, Paris 1926–1962", *French Politics, Culture & Society* 34, No. 2 (Summer 2016): 58.

beyond their arrival in France and arose through the displacement and exile they experienced from their native region of Kabylia. In short, for lack of any appropriate *tajmaât* site in newly Kabyle-lived areas, the cafe came to fill this spatial role. And it is right in the heart of this repositioned *tajmaât* space that the scopitone lies. This question of *tajmaât* also brings to attention the idea of gendered spaces, and how this traditional split between the female, domestic (private) space and the male, socio-political (public) space¹⁵ has been replicated, not only in the locus of the cafe, but incidentally, in its user demographics; cafe culture, and thus the scopitone, represented male cultural activities.

Also striking is that many Kabyle singers were themselves cafe owners. One online blog dedicated to the notorious Algerian hub, Barbès Café, names Dahmane el-Harrachi, Salah Sadaoui and Akli Yahiatene as examples, the latter two of whom started out as factory workers upon immigrating to France.¹⁶ What this makes clear is that both the cafes and the singers themselves functioned not *above* the working-class Kabyle communities in Paris, but *as part of* these communities.

It is necessary to mention that, given Algeria's prior colonial status as being a part of France, in contrast to its neighbouring countries being protectorates, Algerian citizens, until independence, were considered French citizens. This meant that until 1962, it was much easier for Algerian migrants to obtain a Licence IV - the licence required in France to own a bar and sell alcohol — than it was for migrants from other countries of the Maghreb.¹⁷ This, combined with the decades-long history of the Kabyle migratory route of exile from Algeria to France, perhaps explains why so many North African cafes in France were Kabyle-owned. It may also explain why the scopitone screen-space was disproportionately represented by Kabyle singers, a minority group who seemingly had a large cultural impetus within the wider North African community.

As for what the once integral cafe spaces have since become, fate has, perhaps predictably, not been too kind. Barbès cafe, mentioned earlier, has been transformed into a trendy brasserie, an apparent symptom of the area's gradual gentrification (and, being close to Montmartre, tourism). The name, 'Barbès café', however, has lived on past its physical space, resurrected in the name of a musical spectacle that

14. Paul Silverstein, "Of Rooting and Uprooting: Kabyle Habitus, Domesticity and Structural Nostalgia", *Ethnography* 5, no. 4 (December 2004): 563.

15. Pierre Bourdieu, *Outline of a Theory of Practice*, (Cambridge: Cambridge University Press, 1977)

16. <http://lezebre.info/barbes-cafe/>

17. Scagnetti, *L'aventure*, 110.

has taken place over multiple years at the Cabaret Sauvage, a variety show that pays homage to the musical culture of the Franco-Maghrebi community (albeit at €20-25 a ticket).¹⁸ Another principal cafe, whose importance was illustrated in a documentary I later discuss, in which many people congregated to watch back on rediscovered scopitones, was called 'Le Cervoiser'. Again, there is scarce retrievable information on the history of Le Cervoiser. The cafe is mentioned in a 2004 article in *Libération* on the bar-club 'Rouge Platine', which took over Le Cervoiser. The magazine describes the latter as 'a ragamuffin bar in escheat.'¹⁹ This is five years after the release of the documentary in which it features, and there is no publicly available record of exactly when Le Cervoiser closed down nor an explanation as to why. As for the site's fate today, it appears that the building has now been converted into an apartment block, a sad repurposing so common to many entertainment buildings; especially those that do not lie within mainstream entertainment spaces and are thus not deemed worth preserving as cardinal sites of cultural heritage.

Scopitone Content

Having undertaken a broad 'excavation' of both the histories and geographies surrounding the Maghrebi diaspora during the scopitone period, I will now address the fragments of scopitone content that I have gathered, mainly through documentary footage and online blogs. A website that has proven invaluable in my research has been scopitonearchive.com, which contains a huge catalogue of Arab, Kabyle and Berber scopitones. Despite the list not being complete, it is notable that the number of North African scopitones listed on this archive exceed all the French, American and other European output put together.

In terms of retrieving actual scopitone footage, by far the largest collection of films I could find was compiled by two French film directors, Michèle Collery²⁰ and Anaïs Prosaic. Their documentary-film, entitled *Trésors de Scopitones arabes, kabyles, berbères* (1999) (The Treasures of Arab, Kabyle and Berber Scopitones) consists of a selection of scopitones that they discovered while making a documentary on the history of Judeo-Arabic music. The film is viewable on Nedjma, an online Algerian magazine, where it is accompanied by an article by Michèle Collery. Choosing between which

18. Veronique Montaigne, "Dans les cafés arabes, on aimait chanter", *Le Monde* (17 May, 2011), accessed 8 January 2021: https://www.lemonde.fr/culture/article/2011/05/17/dans-les-cafes-arabes-on-aimait-chanter_1523317_3246.html

19. Alexis Bernier, "Rouge Platine" (16 April, 2004), accessed 8 January 2021: https://next.liberation.fr/culture/2004/04/16/rouge-platine_476209

20. Michèle Collery, "Mémoire Émigré: Scopitones Arabes", accessed 8 January 2021: <https://nedjma-djazairiya.com/memoire-emigree-scopitones-arabes/>

scopitones to include in the film, she writes, was ‘essentially based on the image and sound quality’ of the 16mm film rolls that they found. With this in mind, one can see how even those films that were salvageable are but a few of the many that were filmed and perhaps do not represent the actual proportions in terms of genre. For example, there are numerous sources which suggest that scopitones were made not just as films to accompany music but also as comedy sketches, a genre and history which would be fascinating to explore alongside that of the music video, and one which is seemingly unique to North African scopitone culture. There is however, only one comedy sketch that features in Collery and Prosaic’s collection.

Among the scopitones that have been retrieved, there is huge variety of genre, set, and themes. On the one hand, there are those that address the hardships of exile, of manual labour, unemployment, racism — of these, Mohamed Mazouni’s ‘Clichy’, filmed on a construction site, his lyrics poignantly addressing all the aforementioned themes, is perhaps most impactful. However, as Scagnetti writes, scopitones also ‘served to break the monotony of exile and offer a visual and cultural escape a thousand miles away from work, from the slum...or everyday suffering.’²¹ In keeping with this function, there are many films that, similar to the mainstream French scopitone output, offer the (male) viewer an escape from the mundane, often through the imagery of female dancers. It is worth noting that, although the audience of the Maghrebi scopitones was almost exclusively male, men and women seem to feature almost equally in the films. At one point in the documentary, the French-Algerian director Belkacem Tatem, upon watching the scopitones, describes how looking back, seeing girls dance in mini-skirts is not at all shocking, but at the time it was rather ‘terrifying’ to view something so at odds with one’s cultural practices. A similar trope can be seen in the several films which feature the singers drinking alcohol, singing in an inebriated state. These cultural clashes serve to elucidate how, for the Kabyle diaspora living in Paris, it was through the scopitone, essentially the only widely accessible form of visual media available to their demographic at the time, that they first tackled the disparities between the home culture they had left behind and their current surroundings.

21. Scagnetti, *L’aventure*, 140.



Figure 2. Salah Sadaoui. Source: [Ted Swedenburg's Blog](#).

Another essential factor when considering the scopitones available to view is that, while the singers themselves were of North African descent, the film director, Alain Brunet, and producer, Daidy Davis Boyer, were not. And for Roger Dauchy, the SMC CEO, the geographical repositioning and shift from French musical output to North African was a financial decision. As such, the filmic content requires scrutiny, as, alongside the films which seem to sincerely visualise the powerful lyrics of the *chanson d'exil*, there are many which appear to mimic the French yé-yé pop music, itself heavily influenced by American pop and rock-and-roll culture. This trend seems mostly to have been taken up by the younger generation of Kabyle singers such as Idir, whose musical career only began in the mid 70s. In Idir's case, however, his age did not seem to have any impact on the themes of his songs, nor on the emotional ties he felt to his homeland, Algeria, nor on his Kabyle roots, a heritage which has remained clear in his music throughout his career. Whether this thematic and aesthetic westernisation was an artistic decision of the artists themselves, wanting to homogenise their content and reach a wider spectatorship, or whether this was an economic decision made by the production company to profit further from the growing Franco-Maghrebi music industry, remains unclear. There does appear to be, however, clear parallels to be drawn between this commercialising aspect of the North African scopitones, and the later commercialising function of the MTV music video.



Figure 3. Mohamed Mazouni. Source: Exhibition trailer for Album, Cinemateque Tangiers, a project by Yto Barrada. Walker Art Center.

Scopitone Traces

The lasting influence that the scopitones had both directly within Kabyle culture, and more widely within France and North Africa is vast. 'Rai, Rap, & Ramadan Nights' is an article that deftly maps the history of the Algerian folk-music genre,

raï, tracing its roots from the rural towns of 1920s Algeria to all the way through to its influences on French rap, an internationally renowned musical export that seemingly owes much to its Algerian origins. The authors write, ‘both rap and rai are vehicles through which Franco-Maghrebis identify simultaneously with French and Arab cultures and resist French ethnocentrism and Algerian conservatism.’²² They fail, however, to mention at any point the part that the scopitone had to play in this process of cross-culture identification. Although raï was not a genre that featured itself on the scopitone screen, its growing popularity in France in the 1980s cannot be considered without glancing back a decade; Cheb Khaled, perhaps the most world renowned raï singer, the aptly dubbed ‘King of Rai’, even features in Collery and Prosaïc’s scopitone documentary, as one of the many people who had come to Le Cervoisier to look back at the old films. Surely the apparently forgotten scopitones can lay claim to having a significant role in bringing Maghrebi singers, music styles, and cultural practices into French public awareness, and into mainstream French media channels.

Even today, it is still possible to find traces of the music and imagery that featured on the scopitone in music and visual culture. Guillaume and Jonathan Alric, together forming *The Blaze*, an electronic music duo who place heavy emphasis on their music’s accompanying visuals have won awards for their music video *Territory* (2017). Set in Algeria, as Jonathan Alric explains in an interview, ‘*Territory* tells the story about a young guy going back to his family after a long time...this situation is never easy — you sometimes have to fight to feel home again, in a place you don’t belong anymore. It’s a strong feeling of joy, and contradiction.’²³ The familiar themes of exile, nostalgia, and feeling culturally split are powerfully played on in their music video and evoke similar emotions to those first displayed by the poignant *chanson d’exil*, first visualised through the scopitone screen.

22. Joan Gross, David McMurray, Ted Swedenburg, “Rai, Rap, and Ramadan Nights: Franco-Maghribi Cultural Identities”, *Middle East Report*, No. 178 (Sep/Oct. 1992): 15

23. Aimee Cliff, “Get To Know The Blaze, The French Duo Making Music Videos As Good As Movies”, *Fader*, accessed 8 January 2021: <https://www.thefader.com/2017/04/07/the-blaze-territory-interview>



Figure 4. Reworking the chanson d'exil. Source: Screenshot from *Territory* by The Blaze.

Fortunately, not everyone has forgotten the significance of the scopitone to the Maghrebi diaspora in France. There have been a few exhibitions and events of recent years in which the scopitone has featured. Notable amongst these is the Franco-Moroccan visual artist, Yto Barrada's exhibition, *Album, Cinematheque Tangier*, featuring a collection of scopitone films in her attempts to piece together, through remnants of visual media, Morocco's fractured and forgotten past.²⁴

Conclusion

Through my research into various fields, I have attempted, like Yto Barrada, to piece together the cultural crossover between the scopitone machine, and its decade-long position in the mainly Kabyle-run cafes of certain Parisian districts. In the collecting of these various fragments that have contributed to, or been influenced by, the Kabyle scopitones, I hope to have conveyed the both the breadth and depth of this rich media history. Although it is undeniable that the movement of the machines into North African cafe spaces was a decision made to economically benefit the SMC, much of the visual content that arose from this movement remained unique to the culture to which it became associated. And even though these scopitones can be said to share the commercialising function of the earlier French scopitones and the

24. Exhibition Trailer for *Album: Cinematheque Tangier*, a Project by Yto Barrada, Walker Arts (21 November 2013) accessed 8 January 2021: <https://walkerart.org/magazine/album-cinematheque-tangier-a-project-by-yto-b>

later MTV videos, their adoption into Kabyle, and wider North African music culture, denotes layers of significance both within the diaspora and beyond. In 'Material Culture after Text: Remembering Things', Bjørnar Olsen writes, 'archaeologists should unite in a defence of things, a defence of those subaltern members of the collective that have been silenced and "othered"...I want us to pay more attention to the other half of this story: how objects construct the subject.'²⁵ I hope that, in this media archaeological excavation of the scopitone, I have not only dug up parts of the silenced material history of the machine itself, but have also, through this object, brought to light to the complex histories, geographies and cultures of its silenced subject.

25. Bjørnar Olsen, "Material Culture after Text: Remembering Things. Norwegian Archeological Review, 36:2 (2003): 100.

‘Clean Up This Cinema of Vice’: The Policing of Queer Spectatorship in Early and Post-War British Cinema

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Hannah Congdon



Figure 1. The Biograph Cinema. Source: [Cinema Treasures website](#).

In 1967 a reporter from the tabloid paper, *News of the World*, received a complaint from concerned Londoner Mr Robert Yates about the 'attentions' he had been offered by men during a film screening at Victoria's Biograph Cinema. Unwittingly or not, Yates had stumbled across one of London's most popular gay cruising spots. In response, the reporter undertook what he described as a 'nauseating – but necessary' investigation into the cheekily nicknamed *Biogrope* on Wilton Road and the subsequent article decried this 'shameful blot' on London society, frequented by 'pervert patrons' that used the space to 'indulge their tastes.'¹

1. Cinema Treasures, 'Clean Up This Cinema of Vice', accessed 27 December 2020

Almost fifty years earlier, Lord Frederick Nicholas Charrington – a Christian vigilance campaigner – filed a report to the Home Office concerning deeds of ‘gross immorality’ taking place in several of London’s West End cinemas. The reports of Charrington’s agents complain of the sexual conduct of men with ‘lads’ in the auditoriums. One agent relayed how men would approach the lads stood in the gangways with an ‘overcoat on their arm thus screening their actual movements but it was quite easy to be absolutely sure of what was taking place’, whilst others would congregate in ‘the same WC...under no kind of supervision.’²



Figure 2. ‘Clean Up This Cinema of Vice.’ Source: Cinema Treasures website.

Ostensibly these two reports come from radically different social contexts and distinct moments in cinema history. At the time of Charrington’s writing, ‘indecenty’ between men was illegal thanks to the Criminal Law Amendment Acts of 1885 and 1912 and London’s newly formed cinema industry was booming.³

2. The National Archives, HO 45 24570: 1909 - 21: Improper Behaviour in London Cinemas: Reports received by department – Action taken by police and local authorities. Further references to this document are referred to as ‘The Charrington Report’ followed by the section number.
3. Matt Houlbrook, *Queer London: Perils and Pleasures in the Sexual Metropolis 1918-1957* (Chicago: University of Chicago Press, 2005): 19.

In contrast, the 60s saw the gradual reform of attitudes towards homosexuality leading to the legalisation of gay sex in private in 1967, and the dramatic shrinking of the cinema industry thanks to the increasing consumption of television. But, in the spirit of film historians like Miriam Hansen and Catherine Russell whose research draws parallels between visual culture at the beginning and end of the 20th century in order to locate the ‘invisible history of the spectator subject,’⁴ I propose that a juxtaposition of these two reports might shed light on the disjointed evolution of queer spectatorship in London cinemas. Harnessing the potential of media archaeological methods to unearth ‘suppressed and neglected histories,’⁵ in this essay I plan to show how gay men forged a space of physical and imaginative safety in the auditoriums of early and post-war London cinemas and the respective – though strikingly similar – backlashes to this. By looking at these two periods in tandem I hope to disrupt notions of linear progressivism, instead drawing attention to the mechanisms with which society repeatedly forces queer film spectators to the margins of the cinematic space and – in turn – of film history.

It is worth stating at this point that, though the focus of this essay is on sources relating to gay men’s activities in cinemas, I use the term ‘queer’ to emphasise the scope of an investigation of this kind. My understanding of this term is rooted in the oft-cited definition provided by formative queer-theorist Eve Kosofsky Sedgwick:

the open mesh of possibilities, gaps, overlaps, dissonances and resonances, lapses and excesses of meaning when the constituent elements of anyone’s gender, or anyone’s sexuality aren’t made (or can’t be made) to signify monolithically.⁶

Historical discoveries about gay film spectators inevitably have implications for the wider LGBTQ+ community, whose varied perspectives I am signposting with the collective term ‘queer’.

Several scholars have pointed to the raucousness of early London cinemas that began to crop up around the city from 1906 onwards. Luke McKernan describes the ‘convivial, sociable, often boisterous nature of the early cinema’, which served

4. Catherine Russell, ‘Parallax Historiography. The Flaneuse as Cyberfeminist,’ in *A Feminist Reader in Early Cinema* (Durham: Duke University Press, 2002): 552.

5. Thomas Elsaesser, *Film History as Media Archaeology: Tracking Digital Cinema* (Amsterdam: Amsterdam University Press, 2016): 353.

6. Eve Kosofsky Sedgwick, *Tendencies* (Durham: Duke University Press, 1993): 8.

predominantly working-class communities.⁷ And Alex Rock has argued that the ‘darkened intimacy of the cinema’ rendered it a highly sexualised space, with young women flocking to auditoriums to assert their growing sexual independence in the years 1915-1918.⁸ But the presence and significance of specifically *homo*-sexual activity in London’s early cinemas has been largely overlooked, with the exception of Matt Houlbrook’s research on which this essay builds.⁹ Lord Charrington’s reports – found in a Home Office registered file in The National Archives – are vital evidence that the cinema became a site of expression and resistance for the gay community in the first decades of the cinema industry (roughly 1900-1920). The reports from April and May 1916 indicate that the presence of gay men in London cinemas was far from anomalous, citing acts of ‘immorality’ in an array of cinemas across the city including: the Arena Picture Palace,¹⁰ the Carlton and the Majestic,¹¹ the Imperial, Pavilion, The Star, Cinema de Paris, Cinema Cupid and The Angel.¹² Houlbrook goes as far as to say that the reports expose ‘a remarkable, unabashed and extensive sexual culture’¹³ in the cinemas.

To understand this culture, it’s important to view it in the context of a burgeoning cinema industry whose customs and audiences had not yet been established. The cinemas that emerged in London between 1900 and 1910 were – despite the efforts of the London County Council (LCC) – largely unregulated. According to historian Jon Burrows, of the 168 cinemas in London pre-1909 only 16 operated with the required licenses.¹⁴ The majority of those cinemas were simply converted shopfronts, borne out of a tradition of small penny theatres and basement entertainment venues which had been operating since the 1830s.¹⁵ It is within this period that the cinema may have emerged as an (initially) safe meeting space for gay men. Added to this is the backdrop of a time which has been acknowledged by historians of queer culture in Britain as a ‘near revolutionary change in the legal categorisation and

7. Luke McKernan, ‘Diverting Time: London’s Cinemas and Their Audiences, 1906-1914’, *The London Journal* 32:2 (2007): 136.

8. Alex Rock, ‘The khaki fever moral panic: Women’s patrols and the policing of cinemas in London 1913-19’, *Early Popular Visual Culture* 12:1 (2014): 64.

9. Matt Houlbrook, *Queer London: Perils and Pleasures in the Sexual Metropolis 1918-1957* (Chicago: University of Chicago Press, 2005).

10. The Charrington Report, Section 1.

11. The Charrington Report, Section 3.

12. The Charrington Report, Section 4.

13. Houlbrook, *Queer London*, 58.

14. Jon Burrows, ‘Penny Pleasures: Film Exhibition in London During the Nickelodeon Era, 1906-1914’, *Film History* 16:1 (2004): 69.

15. Burrows, ‘Penny Pleasures’, 72.

punishment of homosexuality.’¹⁶ Amendments to the Criminal Law in 1885, 1898 and 1912 introduced the public order of “persistently importuning for an immoral purpose” which was used to suppress gay men’s use of public spaces.¹⁷ It requires little imagination to understand why the cinema, with its economic accessibility, lack of regulation, dim-lit auditoriums and ties to London’s subcultures, represented something of a haven for a community of gay men being increasingly targeted by London’s police.

A report like Charrington’s can be read as part of a wider determination from the LCC and government authorities to impose greater control on the space of the cinema. The 1909 Cinematograph Act had already introduced stricter health and safety standards, resulting in a boom in the building of purpose-built cinemas: 78 large cinemas with cost-tiered seating were constructed in 1910 alone.¹⁸ Increased legislation around the cinema brought with it further social regulation, with Charrington’s report being just one example of a number of surveillance campaigns carried out by the National Union of Women Workers and the Metropolitan Police, among others.

If the Charrington report points to the widespread presence of gay men in the audiences of London cinemas in 1916, we can only speculate about the popularity of the less regulated cinemas in the capital among the queer community pre-1909. As historian Michel Rolph Trouillot points out, archival material is defined by active ‘mentions or silences’ which create imbalances of power across the stages of historical production.¹⁹ Given the stigma around homosexuality at the time, it is unsurprising that the evidence of same-sex romances in this period arrives via incriminating police reports rather than accounts from the queer men who visited the cinemas at the time. Far from indicating that gay men were absent from cinemas before 1916, the silences in the archives create windows of possibility. If the cinemas were already commonly-known spots for gay sociability and cruising by 1916, it doesn’t seem much of a leap to guess that this was a tradition that had evolved from the earliest days of British cinema. And if this is the case, the economic and cultural contribution queer spectators made to the development of London’s early cinema industry place them not simply on the periphery of British film history, but in fact at its centre.

16. Sean Brady, *Masculinity and Male Homosexuality in Britain, 1861-1913* (Basingstoke: Palgrave Macmillan, 2005), 85.

17. Houlbrook, *Queer London*, 19.

18. Burrows, ‘Penny Pleasures’, 86.

19. Michel-Rolph Trouillot, *Silencing the Past* (Boston: Beacon Press, 1995): 48

I would like, now, to turn to our parallel scenario in 1967. In the decades following the Second World War, the cinema seems to have emerged once again as a site of queer expression. My research focuses on The Biograph cinema, but as the News of the World article kindly points out, The Biograph was by no means the only cinema popular among gay men: ‘other places have the problem.’²⁰ Thankfully, unlike with the cinemas used by gay men to meet in the early twentieth century, the increased acceptability of homosexuality in recent decades means we are able to hear from queer men themselves about The Biograph cinema and its meaning to them. Accounts about the cinema can be found from anonymous contributors on gay news outlets,²¹ to household names like queer filmmaker Derek Jarman and pioneering gay psychiatrist Donald West.²² Their testimonies recall, typically with a tinge of nostalgia hedged by a concession of its seediness, this ‘grubby, run-down, sordid, glorious place.’²³ BBC Radio presenter Robert Elms – who visited The Biograph with his gay friend Michael Smith – described the cinema as ‘right up there, or down there, or wherever you place 1980s down and dirty gay cruising culture.’²⁴ West remembers how ‘Groping went on constantly. The door of the toilet was constantly swinging open and shut, and there was even a distinct odour of the place.’²⁵ Whilst Jarman alludes to the cinema’s accepted codes of behaviour:

The rules were strict: to change seats so you could sit next to someone you fancied, you walked up the aisle to the toilet which was right up against the screen. The old men with torches would flash them and throw you out if you disobeyed this unwritten law.²⁶

The well-rehearsed routines and secret codes strikingly resemble those mentioned in the 1916 report, which describes the ‘chief immorality [which] goes on in the queues adjacent the wall inside the cinemas’ where the agent observes a tried and tested ‘modus operandi’ between the men.²⁷

20. Cinema Treasures, ‘Clean Up This Cinema of Vice’.

21. The Gay UK, ‘Remembering sexual encounters at Biograph cinema’, accessed 27 December 2020 <https://www.thegayuk.com/gay-history-remembering-sexual-encounters-at-biograph-cinema/amp/>. Further references to this document are referred to as ‘The Gay UK Anonymous Article’.

22. Speak Out London Archive, Extract 1:2.34 – 6.52: Gay London in the 1950s. The A&B Club, Biograph Cinema, Speakers Corner. Further references to this document are referred to as ‘Donald West Interview’.

23. The Gay UK Anonymous Article.

24. Robert Elms, *London Made us: A Memoir of a Shape-Shifting City* (Edinburgh: Canongate Books, 2020).

25. Donald West Interview.

26. Derek Jarman, *At Your Own Risk: A Saint’s Testament* (New York, Vintage, 1993).

27. The Charrington Report, Section 3.

As with the cinemas mentioned in the Charrington report, an understanding of how The Biograph became a gay meeting place and why this is of interest requires a zoom out to look at the context in which this developed. Ostensibly, the 1910s and the 1960s look like very different moments in cinema history. Whilst the early 20th century saw the rapid construction of official and unofficial film auditoriums, cinemas were in decline from the 50s onwards. UK cinema attendance fell from 1.6 billion in 1946, to 1.2 billion in 1955 and eventually to 327 million in 1965 due to factors including increased affluence, greater television ownership and a wider range of leisure activities to choose from.²⁸ Though the developments of post-war cinema are the reverse of the trends 50 years prior, there is nonetheless a clear parallel: both were periods in which the cinema's purpose and social make-up were being (re)negotiated. Historian Sam Manning argues that by 1965 'the cinema held a far more marginal existence in the nation's leisure habits'²⁹ and – especially since television sets were beyond the means of many working-class households – the cinema returned at least in part to serving the marginalised communities it had in its infancy. Alongside the backdrop of immense social change, especially with regards to the treatment of gay men, this might explain the resurgence of the cinema as a meeting place for queer people.

The 1950s and 60s marked a time of critical transition for gay rights. But progress – if it can be called this – was uneven and contradictory. In 1954 greater visibility of homosexuality, primarily due to the rapid social changes resulting from the Second World War, was generating a kind of moral panic, with prosecutions of buggery, gross indecency and assault dramatically spiking in the mid-50s.³⁰ Concerned by the increasing conspicuousness of both homosexuality and prostitution, Home Secretary Sir David Maxwell Fyfe decided to bring the issues to the cabinet. Inadvertently, the 1957 Wolfenden Report Maxwell Fyfe commissioned contributed to a better, though still woefully condescending, understanding of homosexuality. It recommended the legalisation of sex between consenting adults in private that was eventually enacted in the Sexual Offences Act of 1967.³¹ But, as *The News of the World* article attests to, attitudes to homosexuality were far from reformed by the legal changes. The distinctions of public and private sex made by the 1967 Act placed those gay men

28. Sam Manning, *Cinemas and Cinema-Going in the United Kingdom: Decades of Decline 1945-65*, (London: University of London Press, 2020): 51

29. Manning, *Cinemas and Cinema-Going*, 1

30. Brian Lewis, *Wolfenden's Witnesses: Homosexuality in Postwar Britain* (Basingstoke, Palgrave Macmillan, 2016): 5.

31. Lewis, *Wolfenden's Witness*, 9.

that *did* interact in public spaces at greater risk. In fact, the recorded prosecutions of indecency between men doubled between 1967 and 1977.³² We can begin to notice, then, the parallel patterns and contexts in which the cinema evolved into a queer meeting place in both the early and post-war cinema periods. Much like 1916, 1967 was a year where the public consciousness of - and threat to - the gay community was heightened. And in each era, the purpose and meaning of the cinema was being newly established. These conditions coincide to afford the cinema a liberating symbolism for the gay community in both snapshots in time. If the two reports - of Lord Charrington in 1916 and the *News of the World* in 1967 - attest to the popularity of the cinema as a meeting space for gay men in these two periods, they also serve as evidence of the repeated policing of queer spectatorship in Britain. These are by no means isolated examples: the controlling of queer bodies, behaviour, spaces and perspectives has been happening throughout time and across global societies, within the film industry and elsewhere. That I have chosen to focus on two examples from distinct moments in British history is simply to demonstrate that the development of queer spectatorship 'is not a linear progression and consolidation' but instead happens in ways that are 'recursive and anachronistic.'³³

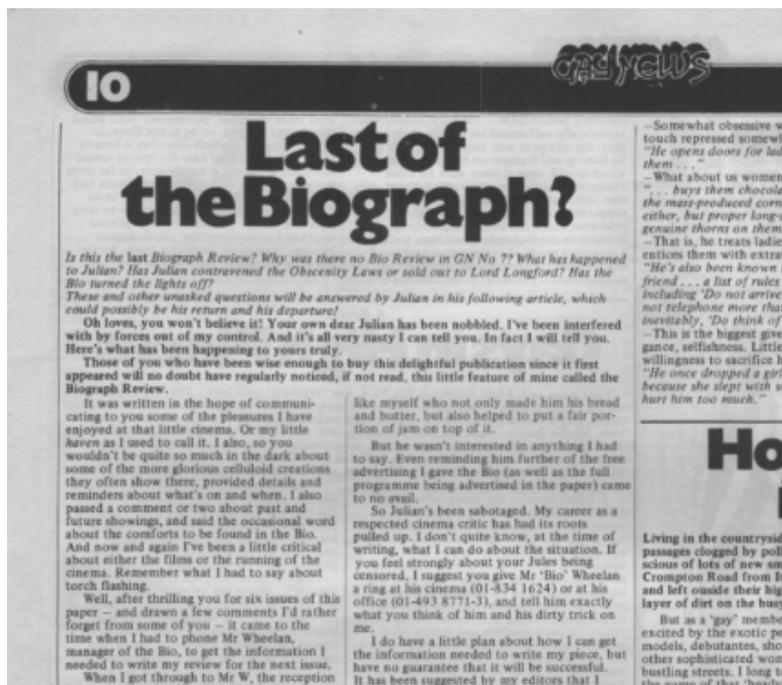


Figure 3. 'Last of the Biograph?' Source: Gay News, 1st October 1972. Gay News Archive.

32. Houlbrook, *Queer London*, 263.

33. Susan Potter, *Queer Timing: The Emergence of Lesbian Sexuality in Early Cinema* (Champaign: University of Illinois Press, 2019), Introduction.

As mentioned earlier in this article, the Charrington report was part of a number of surveillance campaigns that arose from anxieties about the use of public spaces in the early 20th century, in particular the cinema. The impact of those surveillance campaigns can still be felt today; they changed not only the demographics and behavioural standards of the cinema, but also their physical make-up. From 1916, licenses demanded ‘shaded light along the side so audiences can see each other’ and supervision by staff ‘each with an electric torch to frequently patrol the gangways... to defect any improper acts.’³⁴ Visibly gay audiences were thus, in as much a physical sense as a figurative one, driven from early British cinema history.

In the wake of the *News of the World* article about The Biograph, something very similar appears to have happened. Whilst the accounts I’ve discovered about the cinema convey the sense of sexual freedom the space offered, they almost all mention the growing resistance their presence in the cinema was met with. An intentionally provocative 1972 article in *Gay News* entitled ‘Last of the Biograph?’, which was an extension of the writer’s series ‘The Bio Review’, flirtatiously criticised the owner of the cinema a Mr Wheelan:

When I got through to Mr. W the reception wasn’t quite the one I had anticipated. His greeting was somewhat curt, to say the least, and when I asked him for the forth-coming programme I was told that he felt he would rather not have the Bio mentioned or written about by me in this paper...I reminded him that it was patrons like myself who not only made him his bread and butter, but also helped to pit a fair portion of jam on top of it.³⁵

The article relates the hypocrisies of a film industry that has profited both financially and culturally from queer spectators – more than we will likely ever be able to know given the archival gaps – and yet shuns them. As an article in the *GayWest* archive magazine explains, the growing hostility towards the goings-on at The Biograph eventually forced it to shut its doors: ‘the owners (must have) panicked and in August 1983 the cinema closed down.’³⁶ The cultural erasure of queer spectatorship was

34. Houlbrook, *Queer London*, 58.

35. *Gay News* Archive, ‘Last of the Biograph?’, 1 October 1972, accessed 27 December 2020 <http://gaynews.fighting-words.co.uk/issue-8/>. Further references to this document are referred to as ‘Last of the Biograph?’.

36. *GayWest* Magazine, ‘The Biograph Cinema’, March 2016, accessed 27 December 2020 <https://gaywest.org.uk/wp-content/uploads/2016/02/GW-Mag-Mar-16.pdf>. Further references to this document are referred to as ‘The Biograph Cinema’.

calcified with the literal destruction of The Biograph. Elms recalls how ‘it was the sudden appearance of the bulldozers, shortly before the building was about to be listed, that finally robbed us of this odd old institution.’³⁷ The inevitability implicit in West’s comment is perhaps the most revealing of the recurrent seizure of queer public spaces: ‘eventually of course it was closed, and now no longer exists.’³⁸ The queer audiences that may well have helped to keep London’s cinema industry alive at a time of sharp decline in attendance were quickly shown the door, and The Biograph – which had housed the memories of hundreds of gay men – was demolished forever.

Aside from simply the social intolerance of homosexuality, why were queer spectators deemed to pose such a threat to cinema (and to popular film history) that the very buildings they attended were forcibly altered or destroyed? Miriam Hansen’s seminal theorising of film spectatorship can offer us some answers here. Juxtaposing what she calls pre- and post-classical forms of spectatorship (loosely pre-1920 and post-1950), Hansen argues that these two eras ‘provided the conditions for an alternative public sphere.’³⁹ Early cinema, when ‘the “proper” relations among viewer, projector and screen...were part of a cultural practice that had to be learned’⁴⁰ created the potential for the cinema to ‘function as a matrix for challenging social positions of identity and otherness, as a catalyst for new forms of community and solidarity.’⁴¹ But the regulation and standardisation of the cinema industry in the early 20th century brought with it a standardisation of spectatorship:

the spectator emerged along with the set of codes and conventions that has been analysed as the classical Hollywood cinema... As reception was thus increasingly standardised, the moviegoer was effectively invited to assume the position of this ideal spectator created by the film, leaving behind...an awareness of his or her physical self in the theatre space, of an everyday existence troubled by social, sexual and economic discrepancies.⁴²

37. Robert Elms, *London Made Us: A Memoir of a Shape-Shifting City* (Edinburgh: Canongate Books, 2020).

38. Donald West Interview.

39. Miriam Hansen, ‘Early Cinema, Late Cinema: Permutations of the Public Sphere’, *Screen*: 34:3 (October 1993) 208.

40. Miriam Hansen, *Babel and Babylon: Spectatorship in American Silent Film* (Cambridge: Harvard University Press, 1991), 25.

41. Hansen, ‘Early Cinema’, 207.

42. Hansen, *Babel and Babylon*, 23.

43. The Charrington Report, Section 1.

The queer audiences reported on by both Charrington's agents and the *News of the World* journalist radically antagonise the standardised conception of spectatorship. Their sexual behaviour in the cinema not only flies in the face of the heteronormative social values of their respective eras, but also marks a refusal to conform to the imposed conventions of the classical film spectator.

In the set of sources relating to the two eras in question, the writers draw attention to the fact the gay men attending the cinema have eyes for much more than just the screen. Charrington's agent stresses that,

I have been to the [Arena Picture Palace] many times since and have always found something of the kind going on but this does not refer to the body of the hall.⁴³

He seems at pains to make a distinction between the audience members in the space of proper spectatorship – 'the body of the hall' – and those that linger in its aisles and toilets. The distracted viewing of gay men attending the cinema for sex defies the quietly-seated, eyes-pinned-to-the-screen, ideal spectator that has been formed by classical cinema conventions. The gay men that write of their experiences in *The Biograph* seem to revel in this act of resistance: West jokes that, 'I don't think anybody watched the films!...The films were totally uninteresting, but it was...you went there for...er...contacts,'⁴⁴ the anonymous contributor to *The Gay UK* writes unapologetically that when the cinema was emptier 'you watched the films before going to the toilet to wank off',⁴⁵ and Elms says,

if I had actually gone there to see *Honky Tonk Freeway*, I would have been more than a little put off by the furtive shuffling and frantic coming and going, or should that be going and coming, between the stalls and toilets.⁴⁶

The accounts have a hint of joyful relish in just how much the men who visited *The Biograph* ripped up the rulebook of cinema-going. This kind of resistance emphasises Hansen's argument that, there remained a significant margin between textually constructed models of subjectivity and their actualisation on the part of historical viewers.⁴⁷

44. Donald West Interview.

45. *The Gay UK* Anonymous Article.

46. Elms, *London Made Us*.

47. Hansen, *Babel and Babylon*, 90.

A 'significant margin' between constructed spectatorship and its actualisation feels like something of an understatement in relation to The Biograph's viewers, and to the community of queer film spectators who – whether in multiplexes, porn shops or sex clubs – continue to defy conventional modes of viewing.

The role cinema has played in queer imagination and liberation throughout the 20th century, in Britain and elsewhere, has not gone unnoticed. To give just a few examples, Anthony Slide has commented on the homoeroticism and campness seen in early American silent films,⁴⁸ Susan Potter has discussed the emergence of lesbian representation in films of the 1920s,⁴⁹ and Stephen Bourne has traced the genealogy of queer characters in British films from the 30s through to the 70s.⁵⁰ Theorists of queer spectatorship like Brett Farmer have attempted to offer more concrete conclusions about why cinema has provided 'a singularly fertile source of gay subcultural capital':

Apart from the fact that cinema and identity-based homosexuality are, broadly speaking, historical contemporaries, they share a number of striking discursive similarities. Both are centrally invested in psychosocial formations of the erotic and the perverse; both occupy liminal spaces situated – often ambivalently – across key social binarisms; and both have strong structural tendencies toward semiotic excess and disruption.

Farmer concludes that, despite its history of homophobia, 'cinema – and, by implication, spectatorship – is marked by a profound queerness.'⁵¹

The examples I have focused on illustrate just a small part of the wider story of queerness and the cinema. The fact I've chosen to focus on gay men who used the cinema as a sexually interactive space is by no means to suggest that queer spectatorship is limited to these viewing practices. Instead, I chose to focus my research on examples of cinemas that gained notoriety as gay cruising spots in order

48. Anthony Slide, 'The Silent Closet', *Film Quarterly* 52:4 (pp. 24-32), 26.

49. Susan Potter, *Queer Timing*, Introduction.

50. Stephen Bourne, *Brief Encounters: Lesbians and Gays in British Cinema 1930 – 1971* (London: Bloomsbury Academic, 2016).

51. Annamarie Jagoese, 'Hollywood Homosexuals: Annamarie Jagoese interviews Brett Farmer about His New Book, *Spectacular Passions: Cinema, Fantasy, Gay Male Spectatorships*', University of Colorado, 1 February 2001, accessed 27 December 2020 <https://www.colorado.edu/gendersarchive1998-2013/2001/02/01/hollywood-homosexuals-annamarie-jagoese-interviews-brett-farmer-about-his-new-book>

to reveal that a tradition of gay liberation and resistance was established within the walls of London's earliest cinemas, and continued to have repercussions for the British cinema industry ever since. The viewing habits of gay men in London's early and post-war cinemas can be read as actively resisting the standardised practices of cinema-going that were being established in the decade following the 1910 Cinematograph Act. And, sadly, the policing of those viewing habits and of queer spectatorship more generally hasn't reformed neatly in sync with the gay liberation movement across the 20th century. Instead, the sources I have looked at demonstrate how patterns of oppression resurface within wholly different social contexts.

Why does any of this matter today? It matters because popular narratives of film history suggest that queer audiences are only *now* beginning to be absorbed into the mainstream, with little acknowledgement that queer spectatorship has played a vital financial, cultural and even architectural role in British cinema from the very start. And because the cycles of subjugation that have repeatedly forced queer spectatorship onto the fringes continue to operate into the 21st century – perhaps most obviously in the gradual closure of London's remaining porn cinemas under the guise of gentrification.⁵² Finally, it matters because it exemplifies a media archaeological line of enquiry that has gone under-explored: what if the glare of the big screen has distracted us from some of the best kept secrets of film history, hidden in the dim-lit aisles and locked WCs of the cinema itself?

52. John Lucas, 'Will London's Porn Cinemas Survive the Coming Wave of Gentrification?', *Vice*, 20 May 2014, accessed 27 December 2020 <https://www.vice.com/en/article/vdp3p4/london-porn-cinemas>

Eye-Contact at The Border: The Medieval Optics of an Iris Scanner

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Matilda Agace

The eye is the lamp of the body; so then if your eye is clear, your whole body will be full of light. But if your eye is bad, your whole body will be full of darkness. If then the light that is in you is darkness, how great is the darkness!

Sermon on the Mount, Gospel of Matthew 6:22, King James English Bible.

The problem of recognizing the signature of a given iris as belonging to a particular individual, or deciding that s/he is an imposter, can be formulated within the framework of statistical pattern recognition and decision theory.

US Patent no. 5,291,560, Biometric Personal Identification System Based on Iris Analysis, John Daugman (inventor), 1994, p.13

1. Introduction

Standing at a European border, whether in an airport or refugee camp, the eye is instructed to focus and to make contact with a camera. The camera looks back, scanning and encoding the face's features and running them through an algorithm, matching your body against your identity documentation – either you can pass, or you are rejected. United across two millennia, the Christian biblical prophet Matthew and the inventor of the iris scanner John Daugman each share a concern with the eye as a material index of the self. To trace an archaeology of the iris scanner, this article asks why the eye and eye-contact, have been isolated by both the late-medieval church and the border biometrics industry. What model of contemporary looking can be drawn from this historical bond? And in what way is the looking-body mediated and transformed by its contact with biometric technologies?

Whilst it might be tempting to analyse this contact through tracing a linear history of related technologies - that of the camera, identity documents, algorithms, or biometrics - much can also be learnt by asking how iris scanning re-activates older modes of looking and being in the world; modes that may seem strange and unfamiliar.¹

In this article I turn to two different regimes of looking and make a case for their connection: that embodied by contemporary biometric technologies like the iris scanner, and that acted out in the medieval church in Northwest Europe. Both of these two regimes embrace the materiality of vision, focus on the quality of the eye, and privilege the act of looking above seeing. Through this connection, I would like to suggest that iris-scanning realises the medieval church's centuries-old efforts to materialise the soul in the eye and then evaluate it. This tie has implications for how we understand what biometrics *do* to the human body. It also challenges simplistic narratives that describe digital technology's progressive rationalisation of sight and the body.

2. How do you Scan 'The Lamp of the Body'?

2.1 The Development of Iris Scanning.

In the Sermon on the Mount, Jesus describes the eye as 'the lamp of the body,' an idea popularised in descriptions of the eyes as 'windows to the soul'. Here analysing the eye can tell us something about the person's goodness, and their ability to pass into heaven. The iris scanner renders the eye as a contemporary 'window to the soul', the basis for establishing identity, judging illegality, and policing movement. Before turning to explore the connection between these two ocular regimes, we must first address how the technology of iris scanning was developed.

The birth of biometrics, and its corresponding production of the legible body, is traditionally located with anthropometry and then fingerprinting in 19th century Paris.² It was not until 1987 that the American ophthalmologists Leonard Flom and

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1. For a history of the development of identity documents, and their increasing drive to close the gap between the body and identity see Mahmoud Keshavarz, *The Design Politics of the Passport: Materiality, Immobility, and Dissent* (London, 2008): 22 & 43.
 2. Bithaj Ajana, *Governing Through Biometrics*, 26-34.

Aran Safir patented the use of iris pattern as a personal identifier.³ Their invention was designed to exploit the then-recent discovery that each iris has a unique and permanent ‘fingerprint’ of freckles, blood vessels, muscles, filaments, collagens, crypts, and tissues [Fig.1]. This, matched with the iris’s immutability and external visibility, made it ideally suited to perform identification. Flom and Safir developed a system of illumination that allowed legible images of the iris to be captured [fig.2].⁴

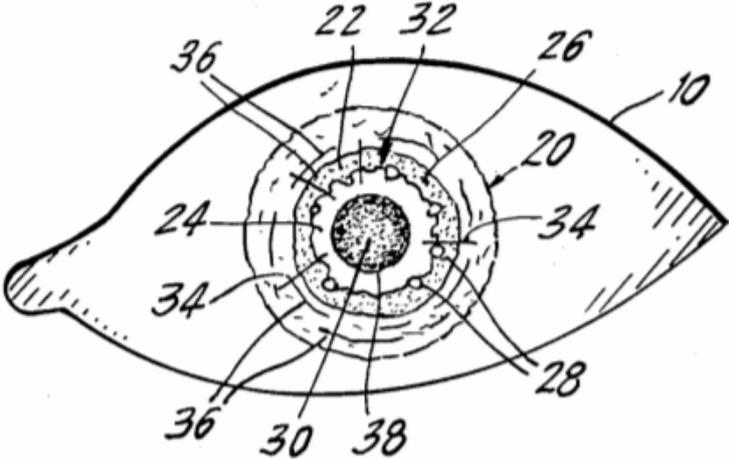


Figure 1. The eye in Leonard Flom and Aran Safir’s patent. Patent Number:US 4,641,349.

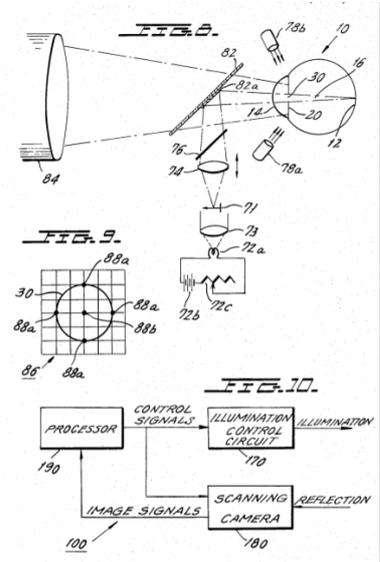


Figure 2. The illumination system of Flom and Safir’s patent.

From here the unique pattern could be mapped and coded to form a biometric signature for establishing or confirming identity.

In 1991 the British-American computer scientist John Daugman, sponsored by the company Iris Scan inc., developed and improved the algorithmic technology for an iris-scanning identification system, automating the process of identifying and verifying the iris.

3. Curiously, Flom is now researching infant irises and whether they could be used as a stable identifier from birth, alongside the possibility of radar mediated skeleton biometrics: Cindy Mindell, ‘Two Connecticut doctors inducted into National Inventors Hall of Fame’, CT Jewish Leger, June 2013, accessed 9 January 2018 <http://www.jewishledger.com/2013/06/two-connecticut-doctors-inducted-into-national-inventors-hall-of-fame/>
4. Leonard Flom and Aran Safir, Iris Recognition System, US Patent no: 4,641,349, (granted 1897).

His 2D Gabor wavelet-based iris recognition algorithm forms the basis for all current public iris recognition programmes.⁵ Alongside the material qualities of the iris, Daugman cites a host of reasons that make iris-scanning ideal for automated identification: the unobtrusiveness of taking a scan, the ability to use a standard video camera, the minimal level of cooperation needed from the subject, and the ability to discriminate between ‘genuine living subjects and imposters employing non-living duplicate identification means.’⁶

The technology Daugman proposes, is summarised in a flowchart [fig. 3]. First, the camera retrieves several images, and the algorithm selects the one with the clearest eye-contact and straightest head tilt to use. Next, by excluding sections of the iris occluded by the eyelids, lashes, and reflection from the camera illuminator, the software defines a series of annular bands within the iris image. A neural network analyses and encodes the iris lying inside these bands according to their polar coordinates from the pupil. Then, these coordinates are translated into a reference code and stored on a large database within which an algorithm can make a rapid search to determine or confirm the identity of an individual. The universal format of all iris codes means they can be compared efficiently with each other, searching a pool of 80 million iris data sets for a match in one second.⁷

A system for rapid and automatic identification of persons, with very high reliability and confidence levels. 21 Claims, 12 Drawing Sheets

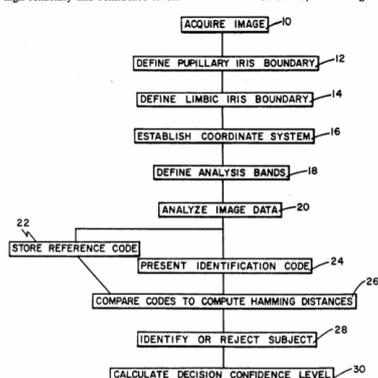


Figure 3. Daugman's iris scanning flowchart. Patent no:US 5291560.

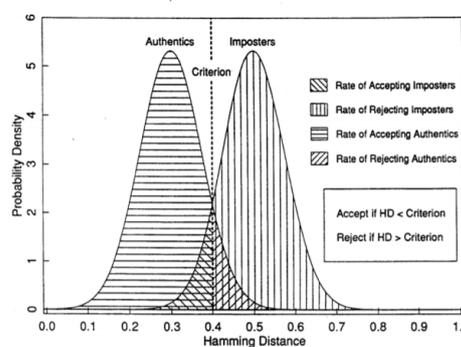


FIG. 6

Figure 4. Graphic rendering of how changing probability density is related to the hamming distance.

5. John Daugman, 'How Iris Recognition Works', IEEE Transactions on Circuits and Systems for Video Technology, 14.1 (2004): 21.
6. John Daugman (inventor), Iri Scan Inc. (Assignee), Biometric Personal Identification System Based on Iris Analysis, US Patent no. 5,291,560 (granted 1994): 14.
7. Daugman, Biometric, 18.

There will always be a slight difference, the ‘Hamming distance’, between each encoded scan of the same iris whether due to light conditions, head angle or a partial blink. For ‘authentics’ this rarely differed by more than 2%, whereas ‘imposter’ irises differ from their given identification by a far larger percentage. The algorithm’s tolerance levels for this can be adjusted on a sliding scale from ‘liberal’ (universally accepted) to ‘conservative’ (universally rejected), perhaps to allow for changing national security priorities [fig 4].⁸

2.2 Border Industries and the Use of the Iris Scanner

Patents after Daugman’s tend to either refine the iris scanner hardware, fine-tune the algorithm, invent mechanisms to help achieve eye-contact between the subject and the camera, or adapt it to specific contexts.⁹ Several patents address the use of iris scanners as a tool of identity confirmation at national borders.¹⁰ The border as the context of iris scanning is where we will now turn.

Javier Sánchez-Monedero’s work with the Data Justice Lab on the datafication of EU borders and the management of refugees describes how iris-scanning is deployed at Europe’s externalised borders. Sánchez-Monedero work investigates The United Nations Refugee Agency’s [UNHCR] new ‘identity management ecosystem’ [PRIMES] which utilises iris scans of refugees stored under its biometric system. It has initially been deployed in Africa and the Middle East and aims to log access to aid and services, as well as track the movements of individual refugees.¹¹ PRIMES collects both an iris scan and fingerprints, along with any available identity information, to form a system of identification [fig.5]. The UNHCR also uses IrisGuard systems in its EyeCloud project in Jordan’s refugee camps, requiring refugees seeking financial aid to go to an ATM fitted with iris-scanning technology to verify their identity and distribute cash.¹²

8. Daugman, Biometric, 21.

9. For example, IriTech, a company based in California, patented a ‘vision guide’ to focus the viewer’s iris to the centre, and a moving camera that is automatically aligned with the subject’s eye, Dae Hoon Kim, and Jang Soo Ryoo (inventors), IriTech Inc. (assignee), Iris Identification System and Method Of Identifying A Person Through Iris Recognition, Patent number: US 6,247,813 (granted 2001).

10. For instance, Sensor, a technology sponsored by the US-government, fine-tuned the technology for use at the border through creating the means for the user to self-align their eyes to the camera, and a leaner algorithm that matched the subject directly against their ID card, rather than trawling the whole database of irises. Richard P. Wildes et al. (inventors), Sensor Inc. (current assignee), Automated, Non-Invasive Iris Recognition System and Method, Patent Number: US 5,572,596 (granted 1996).

11. UNHCR, ‘3.6, Registration Tools’, <https://www.unhcr.org/registration-guidance/chapter3/registration-tools/>

12. Javier Sánchez-Monedero, The datafication of borders and management of refugees in the context of Europe (working paper, 2018) 7, accessed 9 October 2018 <https://datajusticeproject.net/wp-content/uploads/sites/30/2018/11/wp-refugees-borders.pdf>.



Figure 5. A Congolese woman uses an iris scanner for biometric identification to receive food in Uganda, under the UNHCR procedures. Source: Iritech Inc. website. Photo: WFP/Claire Nevil, 2018.

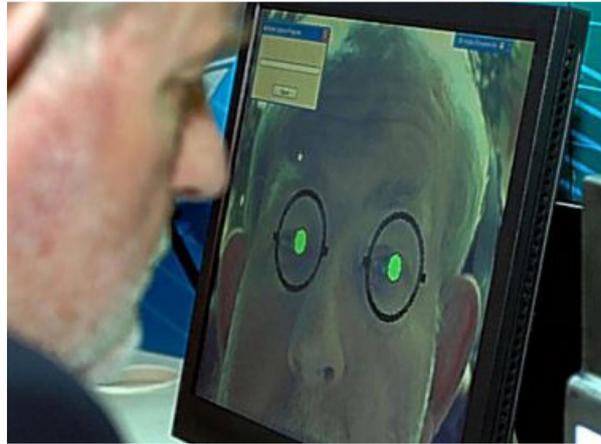


Figure 6. Former Home Secretary Charles Clarke sits at an IRIS project iris scanner. Source: [Daily Mail](#), February 2012. Photo: Press Association.

PRIMES and IrisGuard are both examples of iris-scanning being used by powerful institutions and nations in the Global North to administer and control the lives and movements of marginalised or dispossessed individuals in the Global South. On the other hand, we could also look to iris scanning systems designed for the global elite. From 2004 to 2013 the UK Iris Recognition Immigration System [IRIS] initiative was marketed as a fast-track route through border security exclusively available to British citizens. It targeted frequent flyers, some of the most mobile and wealthy citizens of the Global North [fig.6]. The IRIS project has now been superseded by facial recognition technology that matches the body against its passport photographs. Yet facial recognition technology participates in the same system of looking – or ocular regime – as the iris scanner: the looker aligns their face to the camera, focuses their eyes to a camera, and waits to be assessed.

In this way, iris-scanning and its ocular regime, is part of a wider surveillance and border security system. This border security system is mediated by and reproduced through the iris scanner's contact with the eye. The state, the technology, and the eye fuse in a new constellation at that point of contact. The iris scanner participates in a legal and political framework of citizenship, which classifies some people as legal (citizens), and others illegal (migrants), a classification echoed in Daugman's bifurcation 'authentics' and 'imposters'. This point of state-technology-eye contact in turn remediates the looker's entire body, recasting it as illegal/authentic or illegal/imposter. In this context, the iris scanner is a technology for articulating and executing citizenship as a process of inclusion or exclusion based upon a reading of the eye.

3. The Ocular Regime of The Late-Medieval Church, and the Algorithm

3.1 Theories of Vision

Iris-scanning participates in an ocular regime in which the eye is translated into an index of identity, and the condition of bodily movement. It links the governance of the body to its identification through the eye. This linking of the eye to the identity, I want to suggest, mirrors the linking of the eye to the soul in the late-medieval church in Northwest Europe. They participate in the same ocular regime, where the act of looking and the status of the looker are materially fused. By this I am not suggesting that Flom, Safir or Daugman followed a 13th century theory of vision. In fact, the iris scanner is not a technology of vision or optics but one of recognition and pattern processing, based on the corporeality of the eye. However, it is precisely the corporeality of the subject which is significant: late-medieval theories of vision were also doggedly attached to the materiality of sight and the looking body.

Definitively characterising medieval vision as a singular ocular regime is a difficult task given the heterogeneity of approaches and beliefs within the period, even if we confine ourselves to Northwest Europe. However, faced with this challenge, art historian Suzannah Biernoff has emphasised ‘the dynamic, reciprocal nature of medieval vision’: the eye is simultaneously ‘receptive, passive, vulnerable to sensations; and active: roaming, grasping or piercing its objects.’¹³ The mutual quality of vision she describes is explained by the productive intermingling of two contemporary scientific theories of vision: ‘extramission’ in which the sensible soul extended towards an object, carried as rays from the eyes, to see their subject [fig.7]; and ‘intromission’ in which sensible forms shed a ‘species’ or skin of resemblance which then travelled to the eye and brain [fig. 8]. In both theories, neither the looker nor the visible object can be configured as autonomous entities. In this ocular regime, Biernoff contends, looking entailed a physical, not metaphorical or psychological, encounter between bodies, for example a ‘lascivious gaze was said to be equivalent to sin, and a look could literally be venomous.’¹⁴ The active nature of vision, with a physical tie being strung between the eye and object in their meeting, gave the eye (as an organ not symbol) a central, even transformative, role in the world.

13. Suzannah Biernoff, *Sight and Embodiment in The Middle Ages* (Basingstoke, 2002): 3-4.

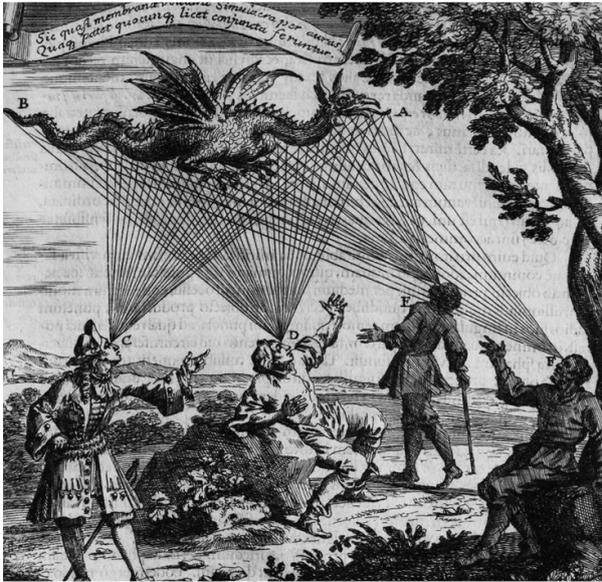


Figure 7. Johann Zahn, 'Oculus Artificialis Teledioptricus Sive Telescopium', 1685

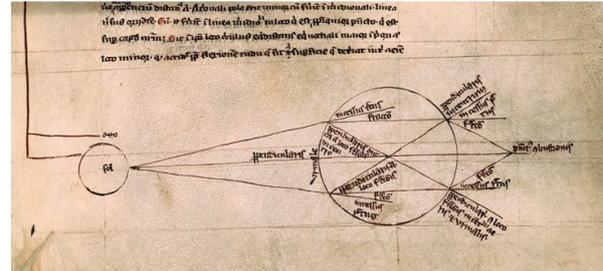


Figure 8. A diagram which shows light being refracted by a spherical glass container full of water, a process key to the formulation of intromission theory. Roger Bacon, 'Opus Majus', folio 25. courtesy of the British Library

Even in medieval English philosopher Roger Bacon's (b.1214) work on optics - now considered key to the development of a more 'scientific' optics based on geometry and lenses - retains traces of extramission theory in his refining of intromission theory. Although objects emit 'species', a bit like we might understand reflected light today, Bacon contends these have to be 'aided and excited by the species of the eye.'¹⁵ It is a strikingly intimate theory of mutual vision, requiring a concentration of eye contact to animate sight. The species of both object and looker intertwine through the act of looking; the eye is both penetrated by and penetrates the visible world. As Biernoff argues, Bacon's theory of vision is physical and embodied, 'it works on a principle of contact: the species of an object reproduces itself as a corporeal entity between the object and the eye [...] its species not only touches the sense organ, but materially alters it.'¹⁶ Bacon's writing renders sight as a physical force, an extension of the embodied soul that can 'grasp its [an object's] surface and contain its extremities.'¹⁷

The iris-scanner rehearses this materiality in its own ocular regime. At the point of eye-contact the looker and the scanner are bound together: to function, the iris scanner needs to be looked at; to pass the looker must make the eye-contact. Indeed, the term 'eye-contact' itself must owe something to these earlier tactile theories of vision. Once in contact, however, a strange reversal of the medieval

14. Biernoff, *Sight and Embodiment*, 5.

15. Roger Bacon, *The Opus Majus of Roger Bacon*, trans. Robert Belle Burke, 2 vols (New York, 1962): 471.

theories takes place: only the camera as an 'eye' of the algorithm has the power of sight, it grasps and pierces the eye of the looker. It is the looker's eye that gives off an encoded 'species' to be stored. The iris scanner does not return the looker's gaze. It captures it. The iris scanner tests the subject's authenticity through capturing the subject's gaze. In front of the iris scanner, the eye can only focus and move in its socket – it can look, but it has lost the ability to see – the iris scanner's machine vision appropriates its agency. In this exchange with the iris scanner, the whole body of the looker is transformed and made contingent on the logic of the algorithm. The 'Hamming distance' attributed to the looker's eye encodes the whole person as either authentic or as an imposter. The iris scanner connects the looker to another ideological matrix of inclusion and exclusion; this time based in purity not authenticity – that of the medieval church. We can find the most striking illustration of this connection in the phenomenon of Ocular Communion.

3.2 Ocular Communion

The late-medieval ocular regime shows its clearest form inside the church of Northwest Europe. The church's laws and logic are pronounced during the physical elevation of the Eucharist (the actual body and blood of Christ, in the 'species' or appearance of bread and wine) and its 'ocular communion'. This practice of ocular communion, the idea that one receives the eucharist through looking alone, lasted throughout the late medieval period, from the 13th into the 16th century. At the turn of the 13th century, a typical Western church's laity were barred from physically taking communion, drinking the consecrated wine (blood) and eating the sacramental bread (body), except in most cases on Easter day. Instead, accounts suggest that the communion bread would be raised high by the priest and consumed only by him, with the laity participating in communion through sight: the act of seeing the Eucharist was enough, it offered all the spiritual benefits of ingesting the bread and wine.¹⁸

Medievalist Michelle Sauer suggests that evidence for the significance of ocular communion can be found in the architecture in the anchoritic chamber (most common in the 13th century), where mystic-ascetics like Julian of Norwich (d. 1416) confined themselves.¹⁸ Located within or adjacent to a church, one small window aligned to the altar allowed the anchoress a view of the communion whilst shielding

16. Biernoff, *Sight and Embodiment*, 89.

17. Bacon, *The Opus Majus*, 468.

18. Caroline Walker Bynum, 'The Blood of Christ in the Later Middle Ages', *Church History*, 71.4, (2002): 685–714.

her from all but the gaze of Christ. Ocular communion allowed the anchoress to join a purely visual Eucharist, which suggests that seeing the elevation of the host in its moment of transubstantiation was tantamount to actually consuming the host.²⁰ Therefore looking, the directing of the eye to the host, was a point of immediate and material contact with Christ. Put in terms of late-medieval theories of vision: the body and blood of Christ were touched by the eyes of the congregation, who were in turn touched by divine grace carried by the returning visual rays, manifest in the 'species' (appearance) of the bread and wine.²¹

In both iris-scanning and ocular communion, the physical act of looking, the focusing of the gaze and the alignment of the eye that forges a transformative link to this higher power, be it the body of Christ or the algorithm. In both cases, the corporeal eye is central to the act of translation. In both cases the position and freedom of the looker's body is tightly controlled. The scanner and the ocular communion both demand a technique of looking where the power to direct and code the looker's eye lies resolutely on the side of the institution, with the church and the state.

In the late 13th century, 'rood-screens' separating the chancel (and thus altar) from the congregation became taller and more widespread. They enshrined the elevated status of the priest and choir by blocking them from the eyes of the laity. Significantly, Sauer writes that churches with wealthier congregations were more likely to have peepholes or viewing aids in the screen, allowing worshippers to still participate in ocular communion.²² By restricting eye-contact with the Host, the church established a hierarchy between its congregations, only some (whether particularly wealthy or particularly holy) had the privilege of having their gaze returned by God's medium. This is, therefore, an ocular regime of the socially embodied eye in two senses: the looker's access to sight is socially contingent and, as we shall explore next, the social judgements are made about the whole person on the basis of the act of looking.

19. Michelle M. Sauer, 'Architecture of Desire: Mediating the Female Gaze in the Medieval English Anchorhold', *Gender & History* 25.3 (2013): 561.

20. Sauer, 'Architecture', 547-9.

21. Margaret R. Miles, *Image as Insight: Visual Understanding in Western Christianity and Secular Culture* (Boston, 1985): 96.

22. Sauer, 'Architecture of Desire', 552.

3.3 Eye, Flesh, Body, and Soul

Early work on optics, such as the *De Proprietatibus Rerum* by Franciscan scholar Bartholomaeus Anglicus (c.1230), suggested that the eyes were crucial in moral development because they occupy the space in the body closest to the soul.²³

Between 1275 and 1289 the Parisian theologian Peter of Limoges composed *De Oculo Morali* (or *On the Moral Eye*), a priest's manual that applied Bacon's theory of optics to the religious and moral control of the eye. It was one of the most widely popularised texts on moralised optical theory in the late-medieval period.²⁴ The eye in the text is a kind of 'permeable membrane', not just the body's border. Bacon tellingly conflates corporeal sight and the bodily eye with spiritual sight and the mind's eye. For example, in a chapter *On Three Visible Things That Delight the Corporeal Eye* he advises readers that looking at representations of Christ's wounds will spiritually elevate the looker.²⁵ Looking involves a spiritual transformation of the viewer; it produces a new subject in sympathy with Christ's suffering.

The link between looking and spiritual transformation runs deep throughout the bible. It was also the eye at fault in the Fall of Man from the garden of Eden; here Eve's eye is seduced by the pleasantness of the apple and upon consuming it, she and Adam are cast out of paradise. In medieval readings of the story, the ocular site of her sin is emphasised – she had a bad eye.²⁶ Therefore, the movement of the body, whether into heaven or out of paradise, is tied to the actions and agency of the eye. We can see this dogma running through into the New Testament; take Jesus's Sermon on the Mount, 'The eye is the lamp of the body; so then if your eye is clear, your whole body will be full of light. But if your eye is bad, your whole body will be full of darkness.'²⁷ Here the eye is described as an index of the whole body's virtue (light) or sinfulness (darkness). Through the iris scanner, the eye becomes an index of the whole person's legality (as citizen) or illegality (as a fraud or imposter).

In Western late-medieval society – along with many other cultures before and after it around the world – the biblical description of the eye as a visible expression of the moral self, translated in a popular superstition surrounding the 'evil eye'. The 'evil eye' refers to a body of folklore and beliefs that state that an eye can spread disease

23. Sauer, 'Architecture of Desire', 548.

24. Estelle Doudet, 'Medieval Theater as Medium: A Survey in Media Archaeology', *Studia litterarum*, 2.1, (2017): 51.

25. Sauer, 'Architecture of Desire', 548-9, quoting Peter of Limoges, *The Moral Treatise on the Eye*, trans. Richard Newhauser (Toronto, 2012)

26. Biernoff, *Sight and Embodiment*, 42-3.

27. Sermon on the Mount, Gospel of Matthew 6:22, King James English Bible.

or misfortune with a look [fig.9]. For example, Bacon records, ‘I saw a physician made blind while he was endeavouring to cure a patient with a disease of the eyes, because of the multiplication of species coming from the eyes of the patient.’²⁸ Here, eyes hold the power to ‘fascinate’ or curse an individual, they can reach out and have agency in the world through their (multiplying) rays. According to Bacon, those who are envious, deformed, old, poor, eunuchs, and illegitimate are particularly susceptible to developing the evil eye. Tradition also tends to identify those who deviate from standard appearances, particularly foreigners as suspect – those with dark eyes in northern Europe and those with blue or green eyes in Mediterranean countries are most feared.²⁹

Whilst the iris-scanner is not meant to detect a trace of evil or sin in the eye, like the medieval ocular regime it focusses on the eye as a place where the risk of evil, or rather illegality, might be indexed [fig.10]. The eye can, therefore, be a legitimate ground to exclude a person from a country, cast them out of community, or restrict their access to resources. The iris-scanner realises a solution to a late-medieval problem, then only achievable by God: how to identify and exclude those with ‘bad eyes’ who threaten the health of the social body. In both ocular regimes, the external evaluation of the eye defines the value of the whole person. The eye and its look are the anchor points for welding the corporal body to the social body, and the state.

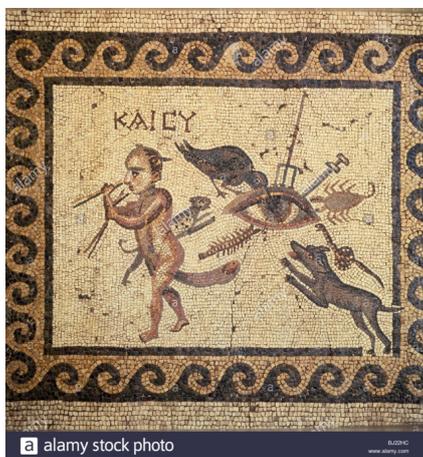


Figure 9. Evil eye under attack, 2nd century Roman threshold mosaic, Hatay Museum Antioch Turkey. Source: Alamy stock photo.

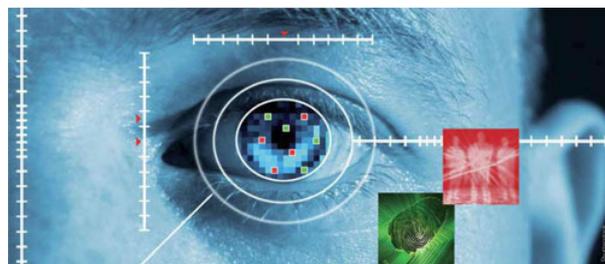


Figure 10. Stock image of iris scanning. Source: Shutterstock.

28. Roger Bacon, *Opus Majus: volumes 1 and 2* (1267), trans. Robert Belle Burke (Philadelphia, 2018): 164.

29. Silvan S. Tomkins, *Affect Imagery Consciousness: The Complete Edition: v.1 - v.4* (New York, 2008): 377.

4. Conclusion: Eye-Contact and the Border

This article set out with two tasks, to describe what biometrics *do* to the body; and to challenge simplistic narratives that tout digital technology's progressive rationalisation of sight and the body. By comparing the ocular regimes of the iris scanner and late medieval church, we have explored how looking constitutes the body, and how, through interaction with wider systems of power and authority like the state or the church, the eye becomes a site for legal, social, or spiritual inclusion and exclusion to be practiced. When used at the border specifically, the iris scanner becomes a technology for executing citizenship. The eye is translated into an index of identity, and the condition of bodily movement. It links the governance of the body to its identification through the eye. However, through comparison with late-medieval theories of vision, we have seen that this is not a process of rationalisation.

Sight, in late-medieval theories of vision, is a strikingly tactile and active force. The eye and its object are physically tied through rays and skins, which mirrors the close physical bond between the eye and the algorithm in the iris scanner. Late-medieval theories of vision and religious dogma also invest the eye and the act of looking with a great moral significance. Ocular communion and popular beliefs in the 'evil eye' are two examples of how this dogma was enacted. In the former, looking was invested with positive material and spiritual power, yet looking was also tightly controlled, with access to sight being socially-contingent and stratified. In the latter, the eye and its look was invested with the power to harm others, and rendered in religious and popular belief as an index to the soul's goodness and health. In each instance, as with the iris scanner, the act of looking recasts the social constitution of looker's whole body and self.

How do we square this strange connection across time with our popular narratives of technological rationalisation and the contemporary science of vision that the iris scanner works through? Since the 16th century, theories of vision have progressively rationalised sight away from the material, relational, and moral theories of the late-medieval period. One of the first texts devoted solely to the subject of eyes is the 16th century French physician André du Laurens' *A Discourse on the Preservation of Sight*, in it he writes that 'sight is the subject of forms without body.'³⁰ Here the body, the eye, and the material object of its gaze have disappeared from sight. In their place is pure, abstract cognition. The late 20th century computer and medical science that created the iris scanner work through this model of the disembodied

30. André du Laurens, *A Discourse on the Preservation of Sight* (1599), quoted in Jonathan Sugg, *Smoke of the Soul* (Basingstoke, 2013): 100.

eye, developed subsequently by enlightenment positivist thought. This is the eye that crowns US government's Information Awareness Office's [IAO] seal as a floating Eye of Providence [fig.9], and the same eye that looks down over the title page of the early 17th century explorer Walter Raleigh's *History of the World* [fig.10]. This is also the imagined eye of the border force algorithm: an all-seeing and ever-accurate abstraction of the organ.

The iris scanner works through and between these two different ocular regimes: the imagined, mythical regime of the disembodied IAO-esque eye, unmediated sight, and abstract knowledge; and that of late medieval relational eye with its entangled, socially contingent, and embodied look. The former is what the iris scanner *claims* to work through: an eye as a neutral representation of a neutral body; the scanner as a neutral seeing tool of a neutral algorithm. The latter is what it enacts, a reconfigured relational system of embodied looking, inherited from that of the Late-Medieval period in Northwest Europe.

Much current academic writing about biometrics suggests that biometric technologies like the iris scanner rationalise the body, reducing it to a disembodied code or password through the encounter.³¹ However, by understanding the iris scanner within the latter ocular regime, we are called to ask how biometrics re-embodiment subjects or embody them differently. Writing on Eurodac's use of fingerprint biometrics, theorist Irma Van der Ploeg argues that bodies exposed to biometric analysis are '*stigmatised*' by their contact with the scanners, punctured, and turned into a 'witness against itself'.³² The act of looking at the scanner is therefore one that, through its imbrication in relationships and institutions of power, transforms the body. This transformation fixes a single, immutable identity onto the subject, materially recasting the looker's entire body according to its inclusion or exclusion from a database. Whether at the border or when we unlock our phones, biometric technology is increasingly threaded through our lives. Comparison with a late-medieval ocular regime illuminates how this encounter is not part of a teleology of the body's technological rationalisation, but instead systems of technologically and ideologically mediated re-embodiment.

31. For example, Aas argues biometrics 'builds on radically new conceptions of identity and embodiment'; Katja Franco Aas, 'The body does not lie: Identity, risk and trust in technoculture', *Crime Media Culture* 2.2 (2006): 145.

32. Irma van der Ploeg, 'The illegal body: "Eurodac" and the politics of biometric identification', *Ethics and Information Technology* 1.

Memoirs as Counter-History: Rethinking Film Culture during the Chinese Cultural Revolution

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Anyi Xu

The cultural revolution in China is now recognised as a nationwide political and cultural catastrophe which affected all aspects of society and people's everyday life. It was simultaneously a top-down and bottom-up political revolution, launched by the Chinese Communist Party (CCP) chairman Mao Zedong, led by other leaders in the CCP and responded to by numerous voluntary groups and folk organisations all over the country. All kinds of cultural forms experienced devastating setbacks during that time. Since film is a crucial ideological apparatus, and cinema also functions as a public space for community, both were inevitably taken as political tools in that period. The whole film industry experienced dramatic changes in terms of the production and distribution of domestic features as well as the importation of foreign films. Meanwhile, cinema-related practices formed some patterns unique to that temporal sociocultural context which were never seen before and hopefully would not be repeated again.

In today's most commonly accepted version of the events surrounding the cultural revolution, the great criticising campaign started after Mao published 'Two instructions on literature and art' in *Renminribao* (People's Daily) in 1963, in which he announced that 'there are too many problems existing in all kinds of art forms. Socialist transformation has had little effect on them. Many communists are enthusiastic about promoting feudalist and capitalist art, but not socialist art.'¹ Under the banner of 'preventing the tendency of the cultural restoration of capitalism,' several bizarre practices around films and cinema occurred. Old films were mostly banned from being shown, and new domestic productions were strictly censored for their ideologies and representations. Old features and foreign films, it was claimed, were embedded with capitalist, feudalist or revisionist ideologies. They were categorised as 'poisonous grass films' and were criticised before or after screening. 'Poisonous grass film', or 'poisonous weed film', was the term used to describe films that would poison people's mind and promote harmful ideologies. Works of art and

1. Republished in Mao Zedong, *Five Documents on Literature and Art*, (Peking: People's Publishing House, 1967).

literature such as books, films and songs that did not conform to the mainstream political values of that time, that could be interpreted as vilifying the working people and the revolutionary warriors, promoting feudalism and the bourgeois lifestyle could be classified as ‘big poisonous grass’ and banned. Thus, cinemas were turned from leisure spaces into political battlegrounds where class struggle sessions were carried out.

This article will explore the filmic practices in that period through an archaeological lens, that avoids the simplified narration that has become familiar to us. My aim is to excavate past materials to discover and retrieve the hidden stories, forgotten memories and neglected experiences. I looked through ordinary people’s dairies during that time, materials that have been collected by the ‘Folk History’ archive of the Chinese University of Hong Kong. These memoirs contain many rich details of ordinary people’s lives and show diverse and vivid perspectives rarely seen or heard in official narratives today. I also looked in some scholars’ memoirs and articles that have been edited into magazines, which provide a more intellectual perspective on that time. Finally, I also looked at news reports, posters, announcements and film magazines from that time as primary resources. All translations from Chinese language sources are my own.

I will first make a comparison between official narrative and traces of popular memory to reveal contradictions buried under the seemingly conclusive historic view. Following that, I will develop the idea of reciprocal epistemology to suggest the meanings of acknowledging such contradictions for the present.

Failure of memory

Since the cultural revolution caused severe destruction of cultural legacies, political disorder and countless loss of life, it is acknowledged to have been a traumatic and false period, one which Chinese people would rather not remember or mention. In this sense, it is understandable how the current view of that period came into being. The historical narrative is always ‘contingent on the ideological context that produced it,’ and is a ‘verbal structure in the form of a narrative prose discourse that purports to be a model, or icon’, explaining the past by representing and demonstrating the most obvious and momentous evidence.² However, this kind

2. Maria Del Pilar Blanco and Esther Peeren, ‘Haunted Historiographies / Introduction,’ in *The Spectralities Reader: Ghosts and Haunting in Contemporary Cultural Theory*, (London: Bloomsbury Academic, 2013): 482.

of explanation often hinges on the narrators of history, their concerns and their relationships to the present. As del Pilar Blanco and Peeren wrote, 'each generation represents a set of priorities in how it establishes a relationship with the past, what it preserves or archives, what it recounts, and how it tells it.'³ Today's attitude toward the cultural revolution, which categorically repudiates all activities, operations and ideas from that era, implicitly contrasts that period with the radical and benighted party leadership now. This one-dimensional view is constructed on the basis of loss, regression and national trauma caused by cultural revolution, smoothly forming an evasive discursive context for its people. Detailed personal stories and the texture of complex feelings and experiences are washed away and left outside the history and cultural memory of the time. In order to see through the prevailing historiography, it is helpful to deploy a mode of active questioning that Colin Davis identifies with scepticism. This involves 'speaking for non-coincidence and fractured temporalities rather than a stable, unified plane of intelligibility to which everything can be reduced.'⁴ Through a process of questioning whilst gathering the scattered memories, I found neglected or denied contradictions emerging in almost every aspect of the historical narrative of the cultural revolution and its relationship to cinema. I will examine three aspects of 'the great criticism' campaign and point out some of the contradictions overlooked in the mainstream historiography.

Writing groups

'The great criticism' was both a top-down and bottom-up campaign, it brought forth numerous criticising writing groups in urban and rural areas. These were dedicated to publishing critiques on 'poisonous grass films', writing speeches to criticize reactionaries on struggle sessions and making propaganda blackboard newspapers for public viewing. Film critiques in that time are nothing like film reviews as we might understand them now, they seized hold of every tenuous trivial element which could be perceived as a deviation from Maoist ideology and extravagantly criticized its representation. Typical rhetoric that claimed films to be problematic included claims that they were 'anti-party and anti-socialist poison grasses, propagate wrong directions, rehabilitate counter-revolutionaries, vilify veteran army cadres, write about male/female relationships and love, and write about mediocre characters with no clear political leaning.'⁵ As ridiculous as the critical discourse was, the Red Guards

3. del Pilar Blanco and Peeren, 'Haunted Historiographies', 482.

4. Davis quoted in del Pilar Blanco and Peeren, 'Haunted Historiographies', 483.

and the rebel faction, as Qi shows, ‘compiled and printed numerous newspapers, publications and propaganda materials, estimated to number several hundred, which lead to an exceptional period of ‘prosperity’ for the film press in Chinese history.’⁶ Writing groups applied similar methods when they drafted criticising speeches on people, they scolded ‘reactionaries’ for past behaviours which appeared to be ‘not socialist’. However, according to Luo’s example, before the criticising screening of *Raging Waves* (1933) and *Three Modern Ladies* (1933), writers made a special trip to Beijing to borrow and view 1930s materials from the China Film Archive about filmmakers Xia Yan and Tian Han, in the aim of digging deeper into the old roots of the filmmakers when writing the critique speech.⁷ In this case, it is clear that the criticism was excessive, but the writing was not a complete fabrication. Rather, ironically, the critics were also reassessing the filmmakers lives, editing facts and retelling a montaged past of the filmmakers to compose a ‘history’ ideologically in their favour which may be an explicit representation of how history is usually narrated.

From the official record, it seems that writing groups were enthusiastic and serious about correcting the ‘poisonous grass’, however, Zhang’s memoir ‘My life in a Great Criticism group’ brings to light a quite different perspective. Zhang confesses that the only reason he was willing to join the Great Criticism writing group was because he wished to prevent himself from being bullied for his ‘capitalist’ family background. He wrote:

Before, the class would often somehow turn into a criticism session against me, demanding me to account for my parents’ crimes. Classmates put up a barrier to exclude me, leaving me speechless and helpless... After I became the penman in our school, the biggest change was that at least some of my classmates and teachers were much more polite to me. ... At that time, the tasks of this kind of grass-roots Great Criticism Group were quite simple, just parrot the words from “Liang Bao Yi Kan (两报一刊)’ (Two newspapers and one magazine), and then relate them to the local reality of our school, you can even fudge up

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5. Hu, Zhuangzi. ‘Xin Bei Ying on the ruins of the old films.’ Remembrance, vol. 116 (July 2014): 12-13. <http://prchistory.org/wp-content/uploads/2014/05/116%E8%AE%B0%E5%BF%86%E7%AC%AC116%E6%9C%9F-.pdf>. [Author’s translation]
 6. Qi, Zhi. ‘The Great Criticisms of Films: Launching and Operations.’ Journal of East China Normal University: Philosophy and Social Sciences, no. 1 (2012): 50. Accessed <http://xbzs.ecnu.edu.cn/CN/html/2012008.htm>.
 7. Qi, ‘The Great Criticism’, 48

words, no one would really look into it. There were countless criticism groups like this around the country, but if there were ten thousand, there would be ten thousand of the same kind of parrot.⁸

Zhang's story has traceable records, yet still failed to enter the historical narrative. Despite having recorded his personal story, this story relates experiences that have been judged unimportant or incoherent with the prevailing narrative, in which members from the criticizing writer groups can simply be dismissed as foolish and ignorant.

Struggle sessions

Struggle sessions are one of the most traumatic experiences and shameful memories for Chinese people who lived during the Cultural Revolution. They destroyed numerous families and innocent people's lives, and embodied the overall madness and ignorance of the party leadership, as well as the masses. However, no matter how painful it may be to bear with those experiences, this should never be a reason to consign them to a 'dark period' from which we recoil and shrink away. Though the past is difficult or even impossible to recover, the least we should do is to acknowledge that the shameful and traumatic situation in the past is a complex conundrum with manifold roots that cannot be settled with a simple explanation and final judgement.

During the great criticism campaign, lots of filmmakers and writers were sent to May Seventh Cadre School to be reformed through labour. As Qi depicted, at first people were terrified during struggle sessions, but once they had gone through too many similar processes, they even 'grasped' the trick to pass the session, which is, quoting actress Tian Hua's words, 'you have to say the most unpleasant things about yourself first, then others will have nothing to say.'⁹ Afterwards, people who had seen through the struggle session were no longer afraid of it. They even 'deliberately came up with something to criticise, in order to escape from exhausting physical labour,' because once the struggle meetings were held, they could stop working in the fields.¹⁰ Under this circumstance, the struggle sessions were merely a hollow performance and

8. Zhang, Ming. 'My Life in the Great Criticism Group', Folk History, Chinese University of Hong Kong, accessed January 5, 2021, <http://mjlsh.usc.cuhk.edu.hk/book.aspx?cid=4&tid=1237> [Author's translation].

9. Qi, Zhi. 'Labour Reform for Filmmaker.' Remembrance, vol. 65 (December 2010): 31-32. Accessed: <http://prchistory.org/wp-content/uploads/2014/05/REMEMBRANCE-No-65-2010%E5%B9%B412%E6%9C%8830%E6%97%A5.pdf> [Author's translation]

10. Qi, 'Labour Reform'.

even an escape from labour, which accidentally saved those people from mental and physical disintegration. Besides, the struggle session meant even less for those outsiders. To illustrate, Chen Sihe was just an ordinary teenager who was fond of going to criticising sessions at that time, he recalled in his memoir ‘for us teenagers on the fringes of Shanghai, we did not really care who was on trial, it was just a reason to “go to Shanghai”, watch films and have fun.’¹¹ Of course, there were also people in a position of criticising others, who then presented themselves as ‘active socialist members’ or ‘red guards’. However, Zhang Ming, whom I mentioned earlier, provided a different insight on these sessions via his personal story. In the end of his memoir, he wrote ‘to be honest, I cannot say I regret that I had done such things, because for those of us who were trampled in the mud (a reference to the bullying he received for his background), it was already nice enough just to be stepped on a little less.’¹² It is when the complexity of rationales and the thickness of details behind those experiences are seen and heard that people like him can be recognized and sympathized with as a person rather being bombarded as a foolish red guard. What we should seek for from the past is never a completely sense-making story, rather, it should be the very oddness and vividness of the past event through which we can understand a bit more about the history.

Public and inside screening

Films categorised as ‘poisonous films’ were not completely banned, some of them were shown along with struggle sessions. The official regulation on the showing of these films was as follows:

The screening of poisonous grass films for criticism should not be excessive, and they must be organized with well-prepared criticism before being screened. The audiences should be charged for watching films in accordance with state regulations. After screening, seminars should be organised to criticise the films with great fanfare, through seminars and the publication of critiques in the press, the films can be criticised thoroughly.¹³

11. Chen, Sihe ‘Memories of Walking,’ Folk History, Chinese University of Hong Kong, accessed January 7, 2021, <http://mjlsh.usc.cuhk.edu.hk/book.aspx?cid=7&tid=4&pid=3737&aid=3738> [Author’s translation].

12. Zhang, Ming. ‘My Life’.

13. Documents from Cultural Revolution Group, ‘Notice from the Central Cultural Revolution Group on the screening and recycling of poisonous grass films.’, translated my own.

14. Wang, Xiaoming. ‘My Cultural Life in That Decade’, Folk History, Chinese University of Hong Kong, accessed January 5, 2021, <http://137.189.161.106/book.aspx?cid=4&tid=1141> [My translation].

There is no doubt that the Cultural Revolution was a disastrous period for culture, but various pieces of archival materials showed that even in the time of darkness the desire of ordinary people to enrich their lives culturally never faded. Wang Xiaoming's memoir recorded an interesting experience, when *Lenin in 1918* (1939) was shown to 'educate people with socialist ideology', all audiences cared about was the ballet dance 'Swan Lake' in that film. He wrote 'audiences waited eagerly from the beginning of the film. When the actresses in the white feathered dress began to dance, they gaped, as if they wanted to devour the whole scene in one gulp.' Some of his friends would buy ticket to see this film again and again just for this one minute dance scene.¹⁴ Similar things also happened to other films, when *Aa, kaigun* (1970) and *Rengô kantai shirei chôkan: Yamamoto Isoroku* (1968) were shown for the purpose of criticising Japanese militarism and evoking people's patriotism, Lu Gusun said it was a rare chance to enjoy such an 'eye feast' during the Cultural Revolution: extra-wide screens, colourful images, the sea and battleships, white naval uniforms adorned with medals, and the 'grand narrative' about World War II. It easily outweighed the eight worn out model stage works. It was so impressive that he still remembered that when the movie was over, he heard someone whisper: 'now that's what I call a movie!'¹⁵ More amusingly, those films which are supposed to serve as propaganda for class struggle even triggered a form of resistance among the young people. As Ruan Zhe recalled, he liked the fierce struggle and the conflicts of the characters in *Jue Lie* (1975) and *Chun Miao* (1975). Yet he was not interested in the so-called heroes, but in the antagonists, the class enemies. He even liked to use the promoted protagonists' characteristics to make sarcastic comments to the activists around him, such as 'I know you want to be Chunmiao', or 'the way you talk really looks like Principal Long.'¹⁶ These materials vividly demonstrate how ordinary people strived for enjoyment and entertainment under coercion and a tedious and restrictive cultural environment. They also show how they disrupted the constant and intense ideological input by actively decoding the films on their own. Yet when we rummage through these personal diaries and memoirs, we should always be aware that, as with any archive, a process of selection, assembling and rearrangement, has already happened. Therefore, instead of regarding these surviving traces as the 'truth' of the past, it is more appropriate to see them as clues to discrepant spectatorial experiences, while also being aware of our position and relation with the archival materials we are viewing.

15. Lu, Gusun. 'Film Watching in Cultural Revolution', Folk History, Chinese University of Hong Kong, accessed January 5, 2021, <http://mjlsh.usc.cuhk.edu.hk/book.aspx?cid=6&tid=169&pid=2758>. [My translation]

16. Ruan, Zhe. 'My Entertainment Life in Cultural Revolution', Folk History, Chinese University of Hong Kong, accessed January 5, 2021, <http://mjlsh.usc.cuhk.edu.hk/book.aspx?cid=4&tid=2901> [My translation]

Reciprocal epistemology

The contradictions rejected by mainstream history may appear to be incoherent and unreasonable. It is not hard to imagine, due to the disgraced and traumatic collective memory, that people might find it hard to accept that ordinary audiences did find joy watching propaganda films or regarded dehumanized struggle sessions as an escape from heavy labour. However, this multiplicity of past and variety of details are the very 'sharp startling weirdness' hit the historians at the first sight, then were quickly avoided and disavowed when making history. Nevertheless, the past is always permeated with the present, intermingling like pieces of a jigsaw. Walter Benjamin wrote, 'irretrievable images of the past threaten to disappear in any present that does not recognize itself as intended in that image.'¹⁷ It is through the recognition and acceptance of past images that the contradiction emerges. Perceiving and acknowledging the contradictoriness of historical events does not necessarily mean we have fully grasped the past, it simply adds 'a little note of truth' to our common view of history and allows us to feel more richly textured sense of the past. More importantly, it contributes to a better understanding of our relationship with the present, forming a reciprocal epistemology of both past and present.

The historical representation of the period of the Cultural Revolution is now common in domestic feature films in China. These representations typically fall into two kinds of stereotypes. The first is the emotional portrayal of the period as historical tragedy and national trauma. Whilst one could hardly argue that such a portrayal of the cultural revolution period was inappropriate, nevertheless, without a willingness to see complexity of this traumatic history, the depiction is always trapped in the unenlightening repetition of itself and the reinforcement of its generalised narrative. The other tendency in historical representations of the period shift the focus away from national pain to the civil everyday life. These films tend to foreground historical elements unique to that era. visualising them in a way the emphasises the bizarre and exotic, creating a folklore spectacle to attract audiences. For example, in *To Live* (1994), when two protagonists get married, they are wearing military uniforms, and red flowers, holding a copy of *Quotations from Chairman Mao* on their chests, and standing in front of his portrait with a classic slogan. It is the same with *Farewell My Concubine* (1993), protagonists are kneeling on the ground in a struggle session, hanging a board on their neck, and their names on the board were marked with red crosses. Both films deployed the iconography of the cultural revolution in ways that maximize the visual attraction. These depictions cannot be

17. Walter Benjamin, 'On the Concept of History.' In Walter Benjamin: Selected Writings, 4: 1938–1940, edited by Howard Eiland and M

described as 'wrong', but when representing such a complex historical period, would it not be better to avoid plot and representational clichés in order to bring out a more profound reflection about that period.

With a closer look into the past and the awareness of the contradictions it holds, we can have a deeper reflection and historical consciousness. Firstly, people's desire for freedom is not that simple to control and press, resistance will always come with repression even in a time of madness. Second, to solely blame the adversity on a political system is insufficient, it is more of a tragedy where individual lives were disregarded and individual dignity was trampled because of some people's callousness, selfishness, and ignorant conformity. The disaster of the Cultural Revolution is passed, but the disaster caused by the ugliness of human character could be repeated at any time. No matter how determined leaders were to politicise films and cinema, people continued to find cultural nourishment and escape in the very films they were told to reject. The scar of the Cultural Revolution can constantly haunt us in our perception of the past and decision in the present and future. When it is made into films or literatures, works should not simply expose the wounds, nor alienate us from the past as remote historical period from which we have long departed, but should confront it and represent it with sincerity.

Conclusion

The trauma and national shame of the Cultural Revolution period is a rather complex historical phenomenon, affected by myriad causes and reasons. In that sense, we should refuse the generalizations that gloss the period or the didactic lessons that are found in the prevailing historical narrative. Through an archaeological approach to the past practices of 'the great criticism' of film and cinema, we are more able to understand how and why some alternative histories, narrative and experiences are silenced and neglected. By excavating past materials, we are able to converse with the ghosts, yet a conclusive account of the past is impossible, we are always in the process of understanding and new meanings of the past and present can keep opening up. However, we should also be aware that the practice relating to archaeology itself is never neutral while using the past materials to make new narrative.

