

***Between Movement and Stasis:  
Loops within the Durational***

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**This dissertation is submitted in partial fulfilment for the degree of Doctor of Philosophy (Fine Art), Royal College of Art.**

## **Declaration**

**This thesis represents partial submission for the degree of Doctor of Philosophy at the Royal College of Art. I confirm that the work presented here is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.**

**During the period of registered study in which this thesis was prepared the author has not been registered for any other academic award or qualification. The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.**

**Signed:**

A handwritten signature in black ink that reads "F. Young." The signature is written in a cursive style with a period at the end.

**Frances Young**

**Date: June 2<sup>nd</sup> 2023**

## Abstract

This research examines various iterations and configurations of loop forms in moving image and sound, via artists' use of particular audio-visual technologies; this practice-led investigation acts as a catalyst for academic writing. My field of study moves between the contemporary – including my own practice – and the period from the mid-1960s to early 1970s. I use this historical move to engage with medium-specificities and working processes as they are figured within the reciprocal conditions of technological development and socio-political contexts. I set out to discover what “thinking between” the 1960s and now can tell us about the present; this method also creates a temporal looping back and forth throughout the dissertation.

With the terms *loops* and *looping* I refer firstly to the digital or analogue loop: at its most basic, a short repeating section. I then examine how the loop can embody more complex structures – involving variation, modulation, layering, erasure; taking the form of a spiral, or a multiplicity of loops, or a divergence along different paths which return to the same point. Looping also extends to feedback loops – in terms of analogue audio / video / electronic feedback; as a mode of cybernetics and machine-to-machine imaging; and as a mode of operations within a broader network of social monitoring, surveillance and control. I also explore materiality, meta-materialities, and dematerialisation through the loop.

The thesis situates loop forms as manifestations of cultural and ideological conditions – operating through, and at times against, technological medium-specificities. I place the loop within, or alongside (at times contra), the durational; investigating the dynamics between these temporal modes, and the idea of “presence” within them. I use the term *durational* in the context of time-based media and also with a Bergsonian inflection: duration which involves a flow or flux between different elements of time, where the past flows into the present – at times intersecting it.

Through my research I find points of oscillation or confluence between movement and stasis in the loop; this intersects with dualities between recording and erasure, absence and presence – as well as past and present. Informed by post-Marxist philosophy and cultural theory (Agamben, Virilio, Steyerl, Fisher, *The Invisible Committee*), my research is grounded in the political force of the apparatus and of cultural forms. The thesis also engages with thinking around a posthumanist response to technological mediation (Braidotti, Guattari), and with media archaeology.

My thesis addresses the following research questions:

**How do loops reflect cultural and ideological conditions at the same time as engineering or manipulating them, shaping our perceptual experience? How does this affect our experience of duration?**

**How does the loop in moving image and sound practice operate in relation to particular recording technologies?**

**In what ways does the loop create an oscillation or intersection between movement and stasis, and what kinds of materialities emerge or dissipate through this?**

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Images redacted for copyright reasons: Figs. 9, 10, 17.

## List of Accompanying Material

All supporting material is my own practice. Online links to all works are given in the body of the thesis, in sections on the practice. In addition, the following video and audio files are included:

**1. Frances Young, *Please Review The Setting* (2019)**

Split-screen version of 2 channel HD Video (for 2 monitors).

07:27 looped, colour / b&w, silent.

File name: Frances\_Young Please\_Review\_The\_Setting Splitscreen.mp4

WARNING: Contains flashing images.

**2. Frances Young, *I'm Hacked* (2019)**

Animated GIF.

File in folder: Frances\_Young I\_m Hacked Gif

To view gif file: Ctrl-click (on a mac) or right-click (on a pc) and open with your internet browser.

WARNING: Contains flashing images.

**3. Frances Young, *Now Is Not The Time For Magic* (2018)**

18:51. Single channel HD video, colour with stereo sound.

File name: Frances\_Young Now\_Is\_Not\_The\_Time\_For\_Magic.mp4

**4. Frances Young, *Holding & Not Holding* (2017)**

03:57. Single channel HD video / photographic animation, colour / b&w, stereo sound.

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02:17, stereo audio.

File name: Frances\_Young Virus\_Control.mp3

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## Introduction

This research examines various iterations and configurations of loop forms in artists' moving image and sound, through both practice and written thesis – investigating ways in which looping operates as both a method and as an expression or manifestation of cultural and ideological conditions. I propose ways in which loops reflect these conditions, while at the same time altering perceptual and temporal experience of them. I explore shifting temporal dynamics between loops and the durational – and within this, points of confluence or oscillation between the still and moving / movement and stasis. As I discover, this confluence intersects with – and challenges – dualities of recording and erasure, absence and presence, materiality and dematerialisation.

To outline my use and scope of the terms *loop* and *looping*: firstly, the digital or analogue loop – in its simplest form, a short repeating section; something which returns to its start. With analogue film or audio tape, for example, this could be a simple loop made from a length of filmstrip or tape with the ends joined together. In digital media, a GIF<sup>1</sup> file is also a form of simple loop, which repeats indefinitely – although (as I describe further in Chapter 4), the way in which digital looping operates is quite different – not least because of the seamless nature of the repeat, as well as the limitless replication without variation or 'weathering' of the medium. As I will discuss, the proliferation of this digital seamlessness can paradoxically lead to a more fractured sense of lived temporal experience.

I explore ways in which looping can embody more complex structures – involving variation, modulation, layering, erasure; a multiplicity of loops, or loops-within-loops; or divergences which return to the same point. Looping includes various kinds of feedback loops: as analogue audio or video feedback, and as cybernetic machine-to-machine imaging – operating within the broader feedback loops of social monitoring, surveillance, governance, and military activity. Increasingly, looping can be seen as a mode of work / life and temporal experience, in loops where the demarcations between work and leisure have collapsed.

The thesis is not an encyclopaedic endeavour; there are many examples of looping in sound and moving image which are not covered. One such area is looping within the myriad genres of dance music; this, I feel, is such a large subject that it would warrant a separate thesis. There are many authors on the subject of dance music, hip hop, DJ culture and rave in relation to the socio-political, such as Kodwo Eshun, Mark Fisher, Nav Haq and David Toop, whose work is influential in this field.

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<sup>1</sup> *Graphics Interchange Format*

There are also, no doubt, many other artists whose loop-based work is not discussed in this thesis – it is not my aim to cover all examples, but instead to point to works and methods which have a clear relevance to my research questions as well as to the particular technologies discussed; this includes writing by other artists, filmmakers, and composers, as I will outline.

My research questions are:

***How do loops reflect cultural and ideological conditions at the same time as engineering or manipulating them, shaping our perceptual experience?***

***How does this affect our experience of duration?***

***In what ways does the loop create an oscillation or intersection between movement and stasis, and what kinds of materialities emerge or dissipate through this?***

Engaging in a dialogue between the loop as a formal / technical / material / process-based method, and as a reflection of (and / or opposition to) hegemonic cultural structures, my route through this is led by the technological – in particular, artists' use and repurposing of audio-visual technologies.

***How does the loop in moving image and sound practice operate in relation to particular technologies?***

I explore this question through practice, and through case-studies of other artists' work. The question also structures my approach to the following chapters, via particular technologies or processes.

It is worth noting that while looping is often used as a way of exhibiting artists' work in moving image and sound in a gallery setting (this can be the easiest way to show it), I am making a distinction between this default mode of presentation and work which is more specifically loop-based in form or structure.

## **Methodology**

I employ looping as an overarching methodology, rooted in artistic practice; throughout the thesis, looping is both method and subject – and, in a sense, a tool with

which to address broader questions of cultural conditions. Looping as a process – the thing which returns-back on itself, is a reflexive action. This reflexivity is key to the methodology: using looping as a method to reveal constructs; looping not just as a repeat but as a feedback loop (literally and metaphorically) – the ‘return’ generating new material, altered materialities; looping with potentialities to alter perception and shift temporal experience.

Through my practice, alongside case-studies of other artists’ work in this field, I investigate ways in which artists’ use of loops involve this reflexive doubling, or returning back-onto, the mechanisms and materialities of the recording technology substrate. This form of doubling back onto the medium through looped material is itself a loop-within-a-loop. As an artistic tactic, this can be seen as a way of hacking into the mechanisms of technology, a hack which reveals technology to itself (through itself) – or, to put it another way: loops which, feeding back through the technical, reveal not only the mode of construction but also the wider apparatus surrounding this construction. This method can be linked back to Formal / Structural / Materialist filmmaking practices from the 1960s and 1970s, to *film-as-film* – as I explore in Chapter 3: *Film Loops: Looping Back*; and to Conceptual art of this period – which informs Chapter 6: *On Tape: Information, Erasure, Disintegration, and Loud Silences*.

The research takes a historical looping back and forth between the recent-contemporary and the period from mid-1960s to early 1970s. I use this historical move to engage with specificities of medium and working processes as they are figured within the reciprocal conditions of socio-political contexts and technological developments, then and now, discovering how a looping-back to this period continues to inform perspectives on the present. This method has correlations with the field of media archaeology, which has informed my approach; however, I depart from this in several ways: firstly, in the sense that my aim is not to investigate the histories of early recording technologies or obsolescent media in order to understand ‘new media’.<sup>2</sup>

That said, *media archaeology* is quite a broad term describing the work of a (fairly loose) grouping of philosophers and media theorists who share a commonality in methodologies of technical excavation and re-evaluation as a way of understanding the effects, and futurity, of present (technological) conditions. My reading on this has included

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<sup>2</sup> The term ‘new media’ itself seems outdated – what would this mean today? Although this is not my question as such, it highlights a problem within the field of media archaeology (especially in areas of software).

the work of Friedrich Kittler,<sup>3</sup> Jussi Parikka,<sup>4</sup> Jonathan Crary,<sup>5</sup> Bernard Stiegler,<sup>6</sup> Siegfried Zielinski,<sup>7</sup> and Lev Manovich;<sup>8</sup> there are several other philosophers and media theorists associated with this. A range of different strategies and ideological concerns are expressed by these authors, who have particular focal points within technological, or geo-technological, histories (and futurities) – some of which are more aligned with my research than others. Media archaeology can also be seen as an approach (or method) within wider philosophical projects – such as addressing concerns for ‘computational capitalism’ and climate crisis, within the context of the Anthropocene; a move which Bernard Stiegler, and (more recently) Jussi Parikka and Jonathan Crary, have made.<sup>9</sup>

In some senses, media archaeology can be seen as a theoretical offspring of the work of Michel Foucault and Walter Benjamin, where *The Archaeology of Knowledge* meets Benjamin’s writing on media technologies. Benjamin expresses what could be seen as a media-archaeological viewpoint when he writes, in “The Work of Art in the Age of Its Technological Reproducibility”, that:

*Just as the entire mode of existence of human collectives changes over long historical periods, so too does their mode of perception. The way in which human perception is organized – the medium in which it occurs – is conditioned not only by nature but by history.*<sup>10</sup>

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<sup>3</sup> Friedrich A. Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young & Michael Wutz (Stanford, CA: Stanford University Press, 1999).

<sup>4</sup> Jussi Parikka, *What Is Media Archaeology?* (Cambridge, UK & Malden, MA: Polity Press, 2012). *The Anthroscene* (Minneapolis, MN: University of Minnesota Press, 2015).

<sup>5</sup> Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London / New York: Verso, 2013).

<sup>6</sup> Bernard Stiegler, *Technics and Time, 2: Disorientation*, trans. Stephen Barker (Stanford, CA: Stanford University Press, 2009); *Technics and Time, 3: Cinematic Time and the Question of Malaise*, trans. Stephen Barker (Stanford, CA: Stanford University Press, 2011).

<sup>7</sup> Siegfried Zielinski, *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means*, trans. Gloria Constance (Cambridge, MA; & London: The MIT Press, 2006).

<sup>8</sup> Lev Manovich, *The Language of New Media* (Cambridge, MA & London: The MIT Press, 2001) *Software Takes Command* (New York & London: Bloomsbury Academic, 2013).

<sup>9</sup> See: Jussi Parikka, *The Anthroscene* (Minneapolis, MN: University of Minnesota Press, 2015); Jonathan Crary, *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World* (London & Brooklyn, NY: Verso, 2022).

<sup>10</sup> Walter Benjamin, *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, ed. Michael W. Jennings, Brigid Doherty, Thomas Y. Levin (Cambridge, Mass. & London: The Belknap Press of Harvard University Press, 2008), p.23.

In *What is Media Archaeology?*, Jussi Parikka gives a concise outline of the telos of this method: “Media archaeology has been interested in excavating the past in order to understand the present and the future.”<sup>11</sup> Parikka goes on to say that:

Media archaeology sees media cultures as sedimented and layered, a fold of time and materiality where the past might suddenly be discovered anew, and the new technologies grow obsolete increasingly fast.<sup>12</sup>

This sense of media archaeology is useful to my project – the ‘fold of time and materiality’ within this research is located in the mid-1960s to early 1970s, and is found (materially) within certain analogue loop forms in film and audio. My methodology extends the fold into a series of loops which feed-back on return, led by the artistic subversion (or repurposing) of technologies – taking a different form / structure from media archaeology in this way.

I explore how the 1960s and 1970s feed back into the present in various ways: earlier manifestations of surveillance culture, and artistic critique and resistance to capitalist structures are part of this. A period of accelerated technological development tied in with a burgeoning neoliberalism, the increasing use of recording media for surveillance purposes, as well as access for mass consumers to cheap recording technologies (such as Super 8 film cameras and audio tape recorders), the 1960s and 1970s have an enduring legacy, a persistent presence now mutated through multiple tech-generations. The infancy of late-capitalist networked society can be traced back to this era in many ways; the late 1960s (especially 1968) often seen as a point at which the past-future could have potentially taken another route; Luc Boltanski and Ève Chiapello’s: *The New Spirit of Capitalism*<sup>13</sup>, explores this turn in depth (I refer to this further in Chapter 4).

With this rationale for re-examining the late-1960s in mind, it is important to note Guy Debord’s *Comments on the Society of the Spectacle*,<sup>14</sup> his 1988 revisiting of *The Society of the Spectacle* (originally published 1967) – during which time society had already seen an acceleration in consumerism, neoliberal politics, technological developments, surveillance, disinformation, and a *spectacular society* led by media excess: “In 1967 [...] I showed what

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<sup>11</sup> Jussi Parikka, *What Is Media Archaeology?* (Cambridge, UK & Malden, MA: Polity Press, 2012), p.2.

<sup>12</sup> *Ibid.*, p.3.

<sup>13</sup> Luc Boltanski & Ève Chiapello: *The New Spirit of Capitalism*, trans. Gregory Elliott (London & New York: Verso, 2018). See: Chapter 3: *1968: Crisis and Revival of Capitalism*, pp.167 – 215 (2018).

<sup>14</sup> Guy Debord: *Comments on the Society of the Spectacle*, trans. Malcolm Imrie (London & New York: Verso, 1998).

the modern spectacle was already in essence: the autocratic reign of the market economy which had acceded to an irresponsible sovereignty, and the totality of new techniques of government".<sup>15</sup> Extending this perspective into the present, the correspondence between the autocratic reign of the market economy, techniques of government, and the spectacle / the media (in all its various forms, including social media), is so close as to be fully merged – into an accelerated version of what, in 2005, Jodi Dean termed *communicative capitalism* – built on the proliferation of networked communications and circulation of data: “with the commodification of communication, more and more domains of life seem to have been reformatted in terms of market and spectacle.”<sup>16</sup> What Dean identifies in this text is the effective foreclosure of political mobilisation, produced by so much circulating content: “But the message was not received. It circulated, reduced to the medium.”<sup>17</sup> The implications of this have been addressed more recently by various authors;<sup>18</sup> this area of research informs Chapters 2 and 4.

My research began with interests in the intersections, and differences, between the mechanics of the moving image and human mechanisms of temporal perception, initially informed by readings of Bergson, and Deleuze: thinking the temporal / duration / perception / memory via the cinematic apparatus. Bergson’s use of the (then) newly invented cinematograph as a metaphor for human perception (and language), with which Deleuze begins his first thesis (on *movement and instant*) at the start of *Cinema 1: The Movement-Image*, was a springboard-image for thinking (or re-thinking) the temporal, duration, and the relation between the still and moving image:

We take snapshots, as it were, of the passing reality [...] we have only to string them on a becoming abstract, uniform and invisible, situated at the back of the apparatus

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<sup>15</sup> Debord, p. 2.

<sup>16</sup> Jodi Dean: *Communicative Capitalism: Circulation and the Foreclosure of Politics*, Cultural Politics, Vol.1, Issue 1, March 2005, p.55.

<sup>17</sup> Ibid., p.52. A revised version of this text was published by Dean in: *Democracy and other Neoliberal Fantasies: Communicative Capitalism and Left Politics* (Durham & London: Duke University Press, 2009).

<sup>18</sup> Including:  
Byung-Chul Han, *Psychopolitics: Neoliberalism and New Technologies of Power*, trans. Erik Butler (London / Brooklyn, NY: Verso, 2017).

The Invisible Committee, *Now*, trans. Robert Hurley (South Pasadena, CA: Semiotexte, 2017);  
*To Our Friends*, trans. Robert Hurley (South Pasadena, CA: Semiotexte, 2015).

Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight For a Human Future at the New Frontier of Power* (London: Profile Books, 2018).



of knowledge. [...] Whether we would think becoming, or express it, or even perceive it, we hardly do anything else than set going a kind of cinematograph inside us.<sup>19</sup>

Those snapshots 'of the passing reality' animated on a plane of *becoming* are problematic, however – problems which give Deleuze the core of his *movement-image* thesis. This is not my enquiry here as such, but I am interested in what this image points towards, if re-thought: as the cinematograph evolves into data streams, and the apparatuses of technology and perception become further entangled in the 21<sup>st</sup> Century, what are the implications of this on human temporal experience?

### Chapter Outline

The first short chapter: *Technology, Apparatus, Enframing* acts as a preface to the rest of the thesis, positioning my use of the term *apparatus* (in several senses), as a governing network which includes and extends beyond the technological, and which describes the apparatus in anticipatory roles of pre-action, foreseeing, and pre-emptive tactics. In this, I draw from Giorgio Agamben's essay: "What Is An Apparatus?"<sup>20</sup>, which speaks to Foucault's use of the term *dispositif*. Agamben articulates "the relentless fight between living beings and apparatuses",<sup>21</sup> decrying the proliferation of apparatuses – concluding that, through this proliferation, the subjectification and desubjectification of living beings are becoming increasingly blurred. I then bring to this Heidegger's late essay "The Question Concerning Technology"<sup>22</sup>, and his use of the term *gestell* (enframing), as a way of describing a revealing through restructuring – with strategic aims.

I propose that a conjunction of the *apparatus / dispositif* and *enframing / gestell* can be seen currently enacted through the symbiosis of governing networks, corporate interests, strategic / defence forces, and recording / imaging / surveillance / tracking / cybernetic technologies. I return to Paul Virilio's essay "The Vision Machine"<sup>23</sup> for his prescient

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<sup>19</sup> Henri Bergson: *Creative Evolution*, trans. Arthur Mitchell (Macmillan, 1954), p. 322. Cited in Gilles Deleuze: *Cinema 1: The Movement-Image*, trans. Hugh Tomlinson & Barbara Habbetjam (Minneapolis: University of Minnesota Press, 1997), p. 2.

<sup>20</sup> Giorgio Agamben: *What Is An Apparatus? (and Other Essays)*, trans. David Kishik & Stefan Pedatella, (Stanford, CA: Stanford University Press), 2009.

<sup>21</sup> *Ibid.*, p.14.

<sup>22</sup> Martin Heidegger: *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977).

<sup>23</sup> Paul Virilio: *The Vision Machine* (title chapter), trans. Julie Rose (London: BFI & Bloomington &

observations on computer-controlled video, surveillance, and the possibility (at that time) of *sightless vision*, now a quotidian reality; originally published in 1988, “La machine de vision” has perhaps a greater resonance now than it did then. What Virilio described as the *industrialisation of vision*, and *logistics of perception*, operating in service to “the industrialisation of prevention, or prediction”,<sup>24</sup> in strategic attempts to govern the unruly and limit the unforeseen, rings true in contemporary society in ways which extend far beyond the original context of its writing.

Chapter 2: (*Being*) *Outside of the Loop: Machine > Machine Images* develops this argument further, following Virilio’s lead on the automation and industrialisation of vision, and the development of these technologies by the military – into what Harun Farocki termed *operative images*, and what Trevor Paglen has called the *invisible image*. Focusing on machine-to-machine imaging, post-representational images and machinic autopoiesis – considering these as forms of feedback loops, I start by examining these concepts in the art works and writing of Paglen and Farocki, as well as Omer Fast. The *vision machine* described by Virilio is brought up into the contemporary by Trevor Paglen in his essay “Invisible Images (Your Pictures Are Looking at You)”<sup>25</sup>, in which he observes that “the overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop”.<sup>26</sup> I examine this text alongside photographic works from his 2017 exhibition: *A Study of Invisible Images*.<sup>27</sup>

Paglen’s *invisible images* have a lineage to Harun Farocki’s work with *operative images* – “images that do not represent an object, but rather are part of an operation”<sup>28</sup> – the operative image now several tech-generations down the line. I discuss Farocki’s essay “Phantom Images”<sup>29</sup>, on the operative image and also what he called the *phantom-subjective image*: the “film that takes up the perspective of the bomb”,<sup>30</sup> a perspective generated by the

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Indianapolis: Indiana University Press, 1994). Republished in: *The Virilio Reader*, Malden: Blackwell, 1998, pp.134 – 151.

<sup>24</sup> Paul Virilio: *The Vision Machine. The Virilio Reader* (Malden: Blackwell, 1998), p.140.

<sup>25</sup> Trevor Paglen, ‘Invisible Images (Your Pictures Are Looking at You)’, *The New Inquiry*, December 8, 2016. Accessed at: <https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>

<sup>26</sup> Ibid.

<sup>27</sup> Trevor Paglen: *A Study of Invisible Images*, Metro Pictures, New York, September 8 – October 21, 2017. <https://www.metropictures.com/exhibitions/trevor-paglen4>

<sup>28</sup> Harun Farocki: *Phantom Images*, trans. Brian Poole, *Public* no.29, 2004, p. 17.

<sup>29</sup> Farocki, pp.12-22.

<sup>30</sup> Ibid., p.13.

technologies of ‘remote’ warfare – and in conjunction with this, Farocki’s films: *Eye / Machine* (2001) and *War at a Distance* (2003). “Phantom Images” also outlines the development of automated imaging technologies for cruise missile guidance (during the first Gulf War) – such as image-mapping and 4D animation: technologies which are now used for many other applications, including video-gaming. This text draws correlations between gaming and warfare; his video installation: *Serious Games I – IV* (2009 – 2010), re-enacts the use of Virtual Reality in US military training for combat in Afghanistan and Iraq, and for treatment of Post-Traumatic Stress Disorder (PTSD) on their return. I explore the circularity of simulation to real-life trauma and back again in this work, a loop which is layered by the psychological effects of PTSD, the unwanted thoughts returning. In relation to this, I also examine Omer Fast’s film: *5000 Feet is the Best* (2011), which explores the subject of PTSD via drone warfare and its psychological effects on pilots, using complex looping narrative structures.

The works of Fast, Paglen, and Farocki converge in various ways on the aerial – a perspective with a dominant position in contemporary life through uses in surveillance, mapping, military activity, and entertainment; the view from above also reveals social strata and hierarchies. I draw on Hito Steyerl’s essay: “In Free Fall: A Thought Experiment on Vertical Perspective”<sup>31</sup>, which asks us to consider this reorientation as a governing framework, and The Invisible Committee’s: “Fuck Off, Google”<sup>32</sup>, on cybernetics and a proliferating, networked, aerial view – the algorithmic apparatus in a heightened anticipatory or predictive role.

I then contrast this with post-humanist thinking on cybernetics and the technologically-mediated subject, via Rosi Braidotti and the post-anthropocentric turn. Braidotti’s approach of *vitalist materialism* to the shifting of parameters which had defined a sense of the *anthropos*, presents an opportunity for rethinking subjectivities, anthropocentric hierarchies and dialectical oppositions – human / animal; organic / inorganic; nature / technology; etc. This discussion incorporates ideas of machinic autopoiesis and temporalities (‘generations’ of machines). I follow this with a study of Pierre Huyghe’s exhibition *Umwelt*, Serpentine Gallery (2018 – 2019).<sup>33</sup>

Chapter 3: *Film Loops: Looping Back* explores the loop in Anglo-American Structural filmmaking practices from the mid-1960s to early 1970s, through the films and writing of Peter Gidal, Malcolm Le Grice, Annabel Nicholson, George Landow, and Hollis Frampton. I

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<sup>31</sup> Hito Steyerl, *In Free Fall: A Thought Experiment on Vertical Perspective*, e-flux journal #24, April 2011. Republished in: Hito Steyerl, *The Wretched of the Screen* (London: Sternberg Press, 2012), pp. 12-30.

<sup>32</sup> In: The Invisible Committee: *To Our Friends*, trans. Robert Hurley (South Pasadena, CA: Semiotext(e), 2015), pp. 99-129.

<sup>33</sup> Pierre Huyghe: *Umwelt*, Serpentine Gallery, London, 3 October 2018 – 10 February 2019.

explore how the use of loop-based methods in artists' filmmaking practices during this period is reflective of broader methodologies to disrupt commercially-led / hegemonic narratives (or structures) and the *transparency* of the medium – through a focus pulled back onto the materiality of film, *film-as-film*. As such, these methods can be seen in terms of an ideological move. The film loop provides a means of rupturing the invisibility of filmic construction and apparatus through mechanical and temporal intervention, disrupting the passage of filmic and pro-filmic time while extending duration (what Gidal called the “contradictoriness through duration”<sup>34</sup> of mechanistic repetition); the loop performing this rupture by returning the filmic medium back onto its mechanisms, redoubling the circular motions of recording and projection apparatus.

I consider how different methods of working with film loops – i.e., looped projections, printed loops and repeats, and performative works (such as Nicholson's *Reel Time*, 1973) can embody or reveal particular spatio-temporal structures. I also explore how a liminality between the still and moving image is explored in several works of this period. Significant to this work is the use of the contact printer, and hand-manipulation of film through the printer – through which the slippage of frame-rate, and techniques such as overprinting or layering film strips, dispel the illusion of continuous movement – revealing cellular still frames, sprocket holes, and film edges. Landow's *Film in Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc.* (1966), a film which appears static, other than the blink of an eye and the degradation of the looped celluloid over time, is revisited here via YouTube; the celluloid ‘artefacts’ (dust, scratches, etc.) becoming pixelated noise and digital artefacts, revealing a meta-materiality.

The play between illusion of stillness and illusion of movement found through the loop in Formal / Structural film of this period is then considered in relation to Victorian proto-cinematic animation devices (e.g., the zoetrope), where spinning sequences of still images bring the motionless to life – the earliest forms of moving image as loops. I discuss this in relation to Hollis Frampton's essay: “For a Metahistory of Film: Commonplace Notes and Hypotheses” (1971),<sup>35</sup> in which he explores the relationship between cinema and still photography – proposing a reversal of traditionally held thinking on the succession from still to moving image: “A still photograph is simply an isolated frame taken out of the infinite

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<sup>34</sup> Peter Gidal: *Technology and Ideology Through/And Avant-Garde Film: An Instance* (1980). *Flare Out: Aesthetics 1966 – 2016* (London: The Visible Press, 2016), p.131.

<sup>35</sup> Originally published: Artforum, September 1971. Republished in: Hollis Frampton: *On the Camera Arts and Consecutive Matters: the writings of Hollis Frampton*, ed. Bruce Jenkins (Cambridge, MA & London: MIT Press, 2009).

cinema.”<sup>36</sup> I connect Frampton’s concept of the *infinite cinema* to an experience of the digital age: endless video streams, 24/7 surveillance, and data banks processing vast amounts of images. As Frampton concludes: “Film has finally attracted its own Muse. Her name is Insomnia.”<sup>37</sup>

Chapter 4: *Connectivity and the Disconnect: Economies of time and attention, surveillance capitalism, and the serial crowd*, brings this idea of restlessness and insomnia into an examination of the contemporary condition, beginning with observations on the loop in contemporary culture as a ‘default’ mode of our time. Whether as a short looping video on a social media platform, a GIF, or an advertisement, digital loops and their short-form content pervade many aspects of life – although, perhaps ironically, it’s quite easy not to notice them, the autonomous looping and illusion of seamlessness requiring less attention. These are loops which speak of a shortening attention-span and a poverty of time; the proliferation of looping digital content analogous to a capitalist model of activity for its own sake – in the service of passivity and stasis. The ‘wait’ cursor, a small GIF known as the spinning ‘wheel of doom’ (or *rainbow wheel*, *pinwheel*, etc.) is an example which I highlight here, and in my practice - see: *This Transmission Will Be Interrupted* (2020), p.96. A looping moment of stasis, the wheel of doom is an interruption, and a sign that time is not our own – of time reordered by the machine.

On economies of time and attention in the post-digital era, I refer to Luc Boltanski and Ève Chiapello: *The New Spirit of Capitalism*<sup>38</sup>, Jodi Dean: *Democracy and Other Neoliberal Fantasies: Communicative Capitalism & Left Politics*<sup>39</sup> and Jonathan Crary: *24/7: Late Capitalism and the Ends of Sleep*.<sup>40</sup> Boltanski and Chiapello’s outline of a *connexionist* world, enmeshed in networked communications technologies (*communicative capitalism*, as Jodi Dean put it), in which the model of constant activity enjoys prestige and the separation between work and leisure collapses, is more pervasive now than ever. Paradoxically, this *connexionism* finds its flipside as a model of physical and local inactivity – and an experience of being alone in one’s ‘bubble’. I discuss the dispersal of collectivity and the production of loneliness as an underpinning of capitalism, with reference to Sartre’s terms

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<sup>36</sup> Hollis Frampton, *On the Camera Arts and Consecutive Matters: the writings of Hollis Frampton*, ed. Bruce Jenkins (Cambridge, MA & London: MIT Press, 2009), p.134.

<sup>37</sup> *Ibid.*, p.139.

<sup>38</sup> Luc Boltanski & Ève Chiapello, *The New Spirit of Capitalism*, trans. Gregory Elliott (London & New York: Verso, 2018).

<sup>39</sup> Jodi Dean, *Democracy and Other Neoliberal Fantasies: Communicative Capitalism & Left Politics* (Durham & London: Duke University Press, 2009).

<sup>40</sup> Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London & New York: Verso, 2013).

seriality and the *practico-inert* (in the *Critique of Dialectical Reason*<sup>41</sup>) and to Mark Fisher's terms: *psychic privatisation* and *mandatory individualism*, in his essay "Baroque Sunbursts"<sup>42</sup>. Fisher's observations on the "lonely connectedness of smart-phone addiction"<sup>43</sup>, where "We become our faces, working 24/7 for communicative capitalism"<sup>44</sup> echo Boltanski and Chiapello, along with Dean. I link this, and the current phase of *surveillance capitalism*, to The Invisible Committee's writing in their publication *Now*<sup>45</sup> – on societal fragmentation, segregation, and isolation as prerequisites for a cybernetically managed world.

A networked yet fragmented society (and its immobilised bodies) operates within a fractured experience of time and presence – I look to Hito Steyerl's term *junktime* to describe this: "Junktime is wrecked, discontinuous, distracted and runs on several parallel tracks",<sup>46</sup> also described as the "fracturing of time into micro-loops where duration cannot be sustained".<sup>47</sup> Steyerl's essay: "The Terror of Total Dasein: Economies of Presence in the Art Field" addresses how this creates the conditions for an idealised durational presence (cynically described as "some kitsch ideal of an unalienated uninterrupted radiating endless mindful awful *Anwesenheit*");<sup>48</sup> and – as scarcity equals value, for economies of presence, and 'liveness' as artistic currency.

Through sound, specifically drone works, I then engage with possibilities of the slow and durational as a way out of this fractured, looping temporality, in Chapter 5: *On Drone, as a mode of resistance*. As a form of music / sound, drone operates in an area between movement and stasis: ever-changing and yet constant, durational and repetitious; drone can create an altered sense of time.

I explore the practice of composer Éliane Radigue, and how her use of slow transitions and modulations of sound can be seen as a way of expanding time (or a sense of

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<sup>41</sup> Jean-Paul Sartre, *Critique of Dialectical Reason, Volume 1: Theory of Practical Ensembles* trans. Alan Sheridan-Smith (London & New York: Verso, 2004).

<sup>42</sup> Mark Fisher, *Baroque Sunbursts*, published in: *Rave: Rave and Its Influence on Art and Culture*, ed. Nav Haq (London: Black Dog Publishing, 2016), pp. 39 – 46.

<sup>43</sup> *Ibid.*, p.45.

<sup>44</sup> *Ibid.*

<sup>45</sup> See: '50 Nuances of Breakage', in: *The Invisible Committee: Now*, trans. Robert Hurley (South Pasadena, CA: Semiotext(e), 2017), pp.19-49.

<sup>46</sup> Hito Steyerl, *Duty Free Art: Art in the Age of Planetary Civil War* (London & New York: Verso, 2017), p.24.

<sup>47</sup> Hito Steyerl & Nina Power in conversation, ICA, London, March 5<sup>th</sup> 2014.  
<https://www.youtube.com/watch?v=BoqHQ05J22k> [accessed 06 February 2023].

<sup>48</sup> Steyerl, *Duty Free Art*, p.25.

presence-in-the-moment); in “The Mysterious Power of the Infinitesimal”, Radigue writes of “The freedom of a development beyond temporality in which the instant is limitless”.<sup>49</sup> Working with electronic music, as a way of ‘unlearning’ Western musical structures, allowed Radigue the freedom to explore sound in this way – I examine Radigue’s methods, particularly of working with the modular synthesizer (ARP 2500) combined with tape-mixing processes.

Pointing back to the long history of drone-based practice in devotional and liturgical contexts – particularly in ancient Vedic use, where sound is an embodiment of the divine (*Nada Brahma*), a healing vibrational force, I then look to the efflorescence of drone during the 1960s and 70s, examining the conditions which coalesced to form that particular era of resonating-with. Drone intersects with Minimalism, and with the influence of non-Western music, spiritual practice and philosophy, on composers and artists from Europe and the USA at that time; the effect of drone is often aligned with the mind-altering or consciousness-expanding. I also connect the prominence of drone during this period to the creative use and development of certain audio technologies – particularly tape (loops, mixing, and proto-sampling), synthesizers, oscillators, and experimental uses of amplification and feedback. As I explore, this enables a move away from Western Classical systems of tuning and score – towards microtonality and experimental explorations of harmonic interval, acoustics, sonic spatiality and texture.

I discuss the resurgence of drone over the last decade, with a focus on female contemporary composers, asking the question: *why is this experience important now, in contemporary late-capitalist life?* In answering this, I return to themes of the previous chapter: economies of time, attention, and presence; a fractured temporality; ideologies of acceleration of productivity and change; restlessness, and activity for its own sake. Within this context, the durational and slow-moving becomes a form of resistance – requiring a slowing-down, commitment of attention, and spending-time-with; the antithesis of a multitasking ‘24/7’ culture. Drone presents an opportunity to move away from end-goals, timekeeping, and tempo – allowing drift and stillness, a form of restructuring or de-structuring time: a sonic embodiment of an expanded durational.

La Monte Young and Marian Zazeela’s *Dream House* (1962 / 1975 – present) is examined – as a project in expanded time through drone / sustained intervallic audio frequencies; as the *drone state of mind*<sup>50</sup> – a transformative alterity, embodied

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<sup>49</sup> Éliane Radigue, ‘The Mysterious Power of the Infinitesimal’, *Leonardo Music Journal* (MIT Press), 2009, Vol. 19: Our Crowd—Four Composers Pick Composers (2009), p. 49 *JSTOR*, <<http://www.jstor.org/stable/40926349>> [Accessed 6 Feb. 2023].

<sup>50</sup> See: La Monte Young: talk given at Wesleyan University, CT, USA, November 5<sup>th</sup> 1996, in: Alvin Lucier (ed.), *Eight Lectures on Experimental Music*, Wesleyan University Press, Middletown, CT, 2017, pp. 59 – 79.

'reprogramming' through frequency pulse-patterns experienced in the sound-environment; and as a way of life. I also discuss the *Theatre of Eternal Music*<sup>51</sup> (or the *Dream Syndicate*, as Tony Conrad and John Cale referred to it) and the aims of this collective, as expressed by Conrad: dismantling hegemonic and hierarchical structures of composer and performer, score and ownership, along with Western harmonic conventions; placing an emphasis on shared performing and listening.

Chapter 6: *On Tape: Information, Erasure, Disintegration, and Loud Silences*, focuses on the medium of audio tape, and tape loops – on questions of materiality, information, surveillance, erasure, and cyclical repetition. Beginning with an examination of the work of Christine Kozlov, her use of medium as material and subject, a withholding or negating of content, and the play between the seen and the unseen or unheard – I look at: *Information Drift* (1968); *March 1969* (1969); and *Information: No Theory* (1970): a tape loop in a constant cycle of recording and erasing sound from the gallery space. I explore this work in the context of a Nixon-era political culture of surveillance, paranoia, information gathering and erasing – and to the Nixon White House Tapes (in particular: Tape 342, with its erased section). I look to Susan Schuppli's work<sup>52</sup> on Tape 342: on the 'gap' producing an excess of information, absence as presence. Schuppli's forensic work with a copy of the tape reveals a topography of processes with several temporal registers, erasure as an additive rather than reductive process – in which previous states still adhere. Seth Kim-Cohen has also noted<sup>53</sup> the alignment between Tape 342 and Kozlov's piece: *Information: No Theory*, positioning this in the context of the development of neoliberalism and the technological framework of instant reproducibility – the 'Xerographic turn'.

What Kim-Cohen describes as a "cyclical logic of redundancy and repetition"<sup>54</sup> finds a particular expression in tape form, as I discuss. I situate these cycles as oscillations between movement and stasis – or between new and old information: in audio tape, repetition and erasure, while removing information also generates new information – through an altered

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<sup>51</sup> A group of musicians originally active from 1962 – 1966, at the core of which was La Monte Young, Marian Zazeela, Tony Conrad, and John Cale (and at times also included Angus MacLise, Billy Linich, Terry Riley, and Terry Jennings). The name *Theatre of Eternal Music* is now used exclusively by La Monte Young and Marian Zazeela for their performances with disciple Jung Hee Choi and a small ensemble.

<sup>52</sup> See: Susan Schuppli, *Tape 342*, Cabinet, Issue 43: *Forensics*, Fall 2011, pp. 86 – 89; Susan Schuppli, *Some Sinister Force* (presentation text from: *The Right To Silence*, Showroom, London, 25 February 2012).

<sup>53</sup> Seth Kim-Cohen, *Forming, Informing, Recording, Erasing, Documenting, Deleting*, 2018 (unpublished). Content from this paper, retitled: *Dark Optimism / Bright Pessimism: Listening through Neoliberalism* was given at *The Audible Spectrum: Sound Studies, Cultures of Listening and Sound Art*, Cité de la Musique / Philharmonie de Paris, 7 – 9 June 2018.

<sup>54</sup> Kim-Cohen, p.5.



materiality; the ferromagnetic particles harbour sound-ghosts, where the recorded-erased past leaks through into the present. I follow this with a section of writing in response to William Basinski's four-part work: *The Disintegration Loops* (2002 - 2003), which utilises the decay of the tape substrate, the temporal drift of ferrite particles, and the increasing presence of absence through looped repetition.

### **Practice (and the relationship between practice & writing)**

I use my practice in moving image and sound to engage directly and materially with the research questions; I work with loop-based methods (alongside more durational or 'live' content) and a variety of digital and analogue recording and production techniques to investigate how the loop operates in relation to particular technologies. Methods I use in working with loops can involve sequencing, layering, and phasing looped audio / video / film / photographic material; loops within the content / subject-matter, and within the overall structure of the work. The new body of work I have created during the PhD uses these methods to engage with shifting materialities of recorded image and sound, relational shifts between medium and temporal representation (and perception), synchronisation and desynchronisation, and intersections of stasis and movement, in an exploratory and experiential approach to the research.

In moving image, this approach includes exploring a flux or liminality between still and moving images, which I work with in various ways (from still to moving, or from moving to still and back again). Some of these methods are: digitally animating still photographs and film-strips; extracting and re-sequencing video stills; the use of animated GIFs; filming single-frame Super 8 sequences, etc; at times combining these processes with the use of 'real time' recorded footage. The combination of these methods creates shifting speeds, time bases, and tempos in the work – offering alternate temporal experiences and modes of perception.

Working with sound has been a part of my practice in moving image for many years – the interaction between sound and image central to much of my work. I explore this interaction in different ways: it can involve a causality or synchronisation between sound and image – or, conversely, these may be two distinct elements with different structures and content which when brought together create new meanings. In this relation between image and sound there is also the opportunity to work with different or layered temporal structures – for example, in my piece  *Holding & Not Holding* (2017), I use sound created from two looped audio samples, one a NASA sound file (a sonification of light waves emitted by a star), the other from a recording of short-wave radio transmissions (a 'number station'); the

video for this comprised of analogue still photographs and film-strips, which I have digitally animated.

More recently, sound has also become a discrete strand of my practice – which can operate independently from the film and video work, and also in tandem with it. During the PhD, my audio work has encompassed various methods and techniques – such as working with digital looping and phasing of recorded (and found) sound, with tape loops, as well as field recordings and drone compositions – with an interest in these as particular expressions of the spatio-temporal.

Practice and writing are different methods which operate in dialogue in this thesis: the interaction between these creating cross-disciplinary forms of knowledge, drawing together the sensed, embodied, and material with the conceptual, academic, and analytical. My practice involves an often quite intuitive response to concepts, subjects, and methods which arise from the written research; to other content / material which forms a connection to these; and to the form or materiality of the medium, process, or technology at use.

Writing on my practice is included as short sections between each chapter, creating a ‘conversation’ with the written research (and with other artists’ work and writing). There is a back-and-forth, or cross-pollination, between writing and practice; different strands of the written research might be brought together in one moving image piece – or there may be a particular aspect of a chapter (and wider research around it) which sparks a piece of work. Conversely, aspects of the material / content, or medium / process which I am working with in my practice will also spark research and writing in a particular area.

To give an example of how this ‘cross-pollination’ operates, my video piece: *Please Review The Setting* (2019) – which uses video surveillance footage from various locations around the world, recording empty / uninhabited spaces, faulty cameras, video noise and glitches – draws from research on surveillance and automated vision which informs Chapter 2: *(Being) Outside of the Loop: Machine>Machine Images*, and from aspects of Hollis Frampton’s essay: “For a Metahistory of Film: Commonplace Notes and Hypotheses” (1971), in particular his speculative concept of the *infinite cinema* as an endless recording device, examined in Chapter 3: *Film Loops: Looping Back*. Mark Fisher’s writing on the *erie*, a sense which is “constituted by a *failure of absence* or by a *failure of presence*”<sup>55</sup> also feeds into my thinking and approach to this piece. My work on this then had a bearing on my approach to Chapter 6: *On Tape: Information, Erasure, Disintegration, and Loud Silences*, where absence as presence, along with the idea of glitches and malfunction as ‘ghosts in the machine’, comes into play.

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<sup>55</sup> Mark Fisher, *The Weird And The Eerie* (London: Repeater Books, 2016), p.61.

## Chapter 1 (Prologue): *Technology, Apparatus, Enframing*

Writing on photography in 1983, Vilém Flusser observed that: “The camera functions on behalf of the photographic industry, which functions on behalf of the industrial complex, which functions on behalf of the socio-economic apparatus, and so on.”<sup>56</sup> At that time, when digital cameras were in the early stages of prototyping but not yet commercially available, the camera which functioned (ultimately) on behalf of the socio-economic apparatus did so with certain constraints and limitations; now, as digital cameras are in almost every mobile phone and supermarket checkout, distributed throughout towns and cities, public transport, etc., the connection between camera apparatuses and the socio-economic apparatus is direct and embedded. This connection extends further – beyond the socio-economic to include political strategy, governance, and defence; as data, digital images become part of general “economies of knowledge”,<sup>57</sup> performing other operations – the camera an apparatus functioning on behalf of a much wider apparatus.

The word ‘apparatus’ is multi-faceted, with several meanings – which are, for my purposes, interlinked: as equipment or devices, and as wider mechanisms of social government, hegemony, epistemology, and so on. This is extended further by seeing these aspects of the apparatus not as separate parts but as a network of forces. The Latin word *apparatus* is derived from the verb *apparare* meaning ‘to prepare’; in this sense, the apparatus is positioned in an anticipatory role – as Flusser described it: “a thing that lies in wait or readiness for something”,<sup>58</sup> giving it a particular temporal state of pre-action or foreseeing. This alignment of the apparatus with pre-emptive or predictive visualities (and societal control) becomes more apparent, and more urgent, when considering the conditions of surveillance capitalism.

In the essay “What is an Apparatus?”, Giorgio Agamben begins by examining Foucault’s use of the term *dispositif* – a formation which “appears at the intersection of

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<sup>56</sup> Vilém Flusser, *Towards a Philosophy of Photography* (London: Reaktion Books, 2000), pp.29-30.

<sup>57</sup> See Hito Steyerl: *In Defense of the Poor Image*: “This flattening-out of visual content – the concept-in-becoming of the images – positions them within a general informational turn, within economies of knowledge that tear images and their captions out of context into the swirl of permanent capitalist deterritorialization.” In: Hito Steyerl, *The Wretched of the Screen* (Berlin: Sternberg Press, 2012), p.41.

<sup>58</sup> Flusser, p.21.

power relations and relations of knowledge”,<sup>59</sup> generally translated in English as *apparatus*. Foucault uses this to demarcate a ‘system of relations’ (or network) operating across many heterogenous elements, this formation having a strategic purpose:

What I’m trying to pick out with this term is, firstly, a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements. Secondly, what I am trying to identify in this apparatus is precisely the nature of the connection that can exist between these heterogenous elements. [...] Thirdly, I understand by the term ‘apparatus’ a sort of – shall we say – formation which has as its major function at a given moment that of responding to an urgent need. The apparatus thus has a dominant strategic function.<sup>60</sup>

Agamben traces a lineage of Foucault’s use of the term *dispositif* to his earlier use of the word *positivité* (‘positivity’) – which is etymologically close but semantically different – to denote a similar meaning. To explain this, Agamben looks to Jean Hyppolite (a teacher of Foucault) and his analysis<sup>61</sup> of Hegel’s early writings on theology, in particular Hegel’s discourse on the opposition between ‘positive religion’ and ‘natural’ (or ‘subjective’) religion<sup>62</sup> – whereby, in Hegel’s use of these terms, “natural religion is concerned with the immediate and general relation of human reason with the divine, [while] positive or historical religion encompasses the sets of beliefs, rules, and rites that in a certain society and at a certain historical moment are externally imposed on individuals.”<sup>63</sup>

To this, Agamben also brings the Greek term *oikonomia*, which refers to household management (and economics), and in its use within early Christian theology a dividing of

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<sup>59</sup> Giorgio Agamben, *What Is An Apparatus? (and Other Essays)*, trans. David Kishik & Stefan Pedatella (Stanford, CA: Stanford University Press, 2009), p.3.

<sup>60</sup> Michel Foucault, *The Confessions of the Flesh*. In: *Power / Knowledge: Selected Interviews and other Writings 1972 – 1977*. (Brighton: The Harvester Press, 1980), p.194.

<sup>61</sup> See: Jean Hyppolite, *Introduction à la philosophie de l’histoire de Hegel* (Paris: Seuil, 1983).

<sup>62</sup> See: Georg Wilhelm Friedrich Hegel, *The Positivity of the Christian Religion* (1795), published in: Hegel, *Early Theological Writings*, trans. T. M. Knox (Chicago: University of Chicago Press, 1948).

<sup>63</sup> Agamben, p.4.

governance / administration through the separating-out of the Holy Trinity.<sup>64</sup> This proposes a network and at the same time a division: “a caesura that separated in Him being and action, ontology and praxis.”<sup>65</sup> The link made here is in the Latin translation of *oikonomia*: *dispositio*.

In light of this theological genealogy the Foucauldian apparatuses acquire an even more pregnant and decisive significance, since they intersect not only with the context of what the young Hegel called “positivity”, but also with what the later Heidegger called *Gestell* (which is similar from an etymological point of view to *dispositio*, *dis-ponere*, just as the German *stellen* corresponds to the Latin *ponere*). [...] What is common to all these terms is that they refer back to this *oikonomia*, that is, to a set of practices, bodies of knowledge, measures, and institutions that aim to manage, govern, control, and orient [...] the behaviours, gestures, and thoughts of human beings.<sup>66</sup>

This reference to Heidegger’s essay of 1954, “The Question Concerning Technology”, in which he employs the word *Gestell* (enframing) is important. In ordinary usage, the German word *gestell* translates as a frame, or framework – or an apparatus, in the most functional sense,<sup>67</sup> Heidegger ascribes to this word a particular active meaning of calling-forth, gathering and revealing (or un-concealing), through ordering or restructuring.<sup>68</sup> This use of *gestell* approaches what Heidegger calls the ‘essence’ of technology – although

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<sup>64</sup> “*Oikonomia* became thereafter an apparatus through which the Trinitarian dogma and the idea of a divine providential governance of the world were introduced into the Christian faith.” – Giorgio Agamben, *What Is an Apparatus?*, p.10.

<sup>65</sup> Agamben, p.10.

<sup>66</sup> *Ibid.*, p.12.

<sup>67</sup> Heidegger notes that “According to ordinary usage, the word *Gestell* [frame] means some kind of apparatus, e.g., a bookrack. *Gestell* is also the name for a skeleton. And the employment of the word *Ge-stell* [Enframing] that is now required of us seems equally eerie [...] Yet this strangeness is an old usage of thinking. [...] Compared with the demands that Plato makes on language and thought [...] the use of the word *Gestell* as the name for the essence of modern technology, which we now venture here, is almost harmless. Even so, the usage now required remains something exacting and is open to misinterpretation.” – Martin Heidegger, *The Question Concerning Technology (and Other Essays)* (New York & London: Garland Publishing, Inc., 1977), p.20.

<sup>68</sup> William Lovitt, translator of “The Question Concerning Technology”, describes Heidegger’s use of *Ge-stell* thus: “Enframing is fundamentally a calling-forth. It is a “challenging claim”, a demanding summons, that “gathers” so as to reveal. This claim *enframes* in that it assembles and orders. It puts into a framework or configuration everything that it summons forth, through an ordering for use that it is forever restructuring anew”. In: Martin Heidegger, *The Question Concerning Technology (and Other Essays)* (New York & London: Garland Publishing, Inc., 1977) p.19.

“the essence of technology is by no means anything technological.”<sup>69</sup> Heidegger does not set out to question technology in the technological or mechanical sense, but rather to seek out its *essence*, in the *enframing* – which is fundamentally a positioning: “Enframing means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological.”<sup>70</sup>

The enframing (*gestell*), in these terms, can be interpreted in some sense as a world-view: a positionality towards – and ordering / reordering of – all that is outside of the self (the environment, other humans, etc.) in terms of a future resource (‘natural resources’, ‘human resources’, etc.), as elements and forces to be enframed within a (scientific, technological, and – I would add, commercial) potentiality. This resource-potentiality, which reveals the real in a particular light, is what Heidegger calls the *standing-reserve*:

We are questioning concerning technology in order to bring to light our relationship to its essence. The essence of modern technology shows itself in what we call Enframing [...] Where do we find ourselves brought to, if now we think one step further regarding what Enframing itself actually is? It is nothing technological, nothing on the order of a machine. It is the way in which the real reveals itself as standing-reserve.<sup>71</sup>

Heidegger goes on to locate the *standing-reserve* as concerning natural resources above all, a position which now has a particular resonance at a time of climate crisis: “In Enframing, that unconcealment comes to pass in conformity with which the work of modern technology reveals the real as standing-reserve. [...] That revealing concerns nature, above all, as the chief storehouse of the standing energy reserve.”<sup>72</sup>

This poses questions about how a sense of *enframing* has changed – or accelerated, between the mid-twentieth century and the present; and how the revealing (which could also be seen in terms of subjectification) has also changed.

A conjunction of the *apparatus / dispositif* and *enframing / gestell* can be seen

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<sup>69</sup> Martin Heidegger, *The Question Concerning Technology (and Other Essays)* (New York & London: Garland Publishing, Inc., 1977), p.4.

<sup>70</sup> Ibid., p.20.

<sup>71</sup> Ibid., p.23.

<sup>72</sup> Ibid., p.21.

currently enacted through the symbiosis of governing networks, corporate interests, strategic / defence forces, and recording / imaging / surveillance / tracking / cybernetic technologies. This conjunction of apparatus and enframing positions a particular relation between human subjectification, desubjectification, and splitting of viewpoint.

Paul Virilio's essay "The Vision Machine" (1988) discussed an impending "new technology of 'visionics': the possibility of achieving *sightless vision* whereby the video camera would be controlled by a computer",<sup>73</sup> and "the advent of 'vision machines' designed to see and foresee in our place".<sup>74</sup> These predictions have been made manifest, operating across many platforms – from surveillance cameras, drones, and Google Maps, to behavioural-predictive algorithms and facial recognition software. Virilio also linked computer-controlled video devices with foreseeing, or forecasting, which speaks to the present apparatuses of social control through surveillance and pre-emptive tactics:

This is the industrialisation of prevention, or prediction: a sort of panic anticipation that commits the future and prolongs 'the industrialisation of simulation' [...] this doubling up of monitoring and surveillance clearly indicates the trend in relation to public representation. It is a mutation that not only affects civilian life and crime, but also the military and strategic areas of Defence.<sup>75</sup>

Virilio discusses the *industrialisation of prevention* as part of a wider *industrialisation of vision* – which, he says,

should be considered not only in relation to control of surveillance, and the attendant persecution mania, but also primarily in relation to the philosophical question of the *splitting of viewpoint*, the sharing of perception of the environment between the animate (the living subject) and the inanimate (the object, the seeing machine).<sup>76</sup>

The *splitting of viewpoint* is central to an understanding of 'technical' images and our

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<sup>73</sup> Paul Virilio, *The Vision Machine*. In: *The Virilio Reader* (Malden: Blackwell, 1998), p.134.

<sup>74</sup> *Ibid.*, p.136.

<sup>75</sup> *Ibid.*, p.140.

<sup>76</sup> *Ibid.*, p.134.

human relation to them. In thinking about this, it is useful to return to Agamben's question of the apparatus, and a "partitioning of beings into two large groups or classes: on the one hand, living beings (or substances), and on the other, apparatuses in which living beings are incessantly captured."<sup>77</sup> Between these two groups he adds "a third class, subjects. I call a subject that which results from the relation and, so to speak, from the relentless fight between living beings and apparatuses [...] The boundless growth of apparatuses in our time corresponds to the equally extreme proliferation in processes of subjectification."<sup>78</sup>

When viewed through the apparatuses of the present, these processes of subjectification and desubjectification become increasingly blurred, giving rise to what Agamben described as a "larval" or "spectral" form of subject:

What defines the apparatuses that we have to deal with in the current phase of capitalism is that they no longer act as much through the production of a subject, as through the processes of what can be called desubjectification. A desubjectifying moment is certainly implicit in every process of signification...But what we are now witnessing is that processes of subjectification and processes of desubjectification seem to become reciprocally indifferent, and so they do not give rise to the recomposition of a new subject, except in larval or, as it were, spectral form.<sup>79</sup> [...] The problem of the profanation of apparatuses – that is to say, the restitution to common use of what has been captured and separated in them – is, for this reason, all the more urgent. But this problem cannot be properly raised as long as those who are concerned with it are unable to intervene in their own processes of subjectification, any more than in their own apparatuses, in order to then bring to light the Ungovernable, which is the beginning and, at the same time, the vanishing point of every politics.<sup>80</sup>

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<sup>77</sup> Agamben, *What Is An Apparatus? (and Other Essays)*, p.13.

<sup>78</sup> *Ibid.*, pp.14-15.

<sup>79</sup> *Ibid.*, pp.20-21.

<sup>80</sup> *Ibid.*, p.24.



## Chapter 2:

### ***(Being) Outside of the Loop: Machine>Machine Images***

In 2016 the artist Trevor Paglen observed that the “overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop.”<sup>81</sup> This looping – or feeding-back, of ‘images’ from machine to machine, bypassing human intervention, leads to what Paglen calls the *invisible image*, undermining and mutating the very basis on which images have previously operated. Machine-to-machine imaging, in this way, is the *industrialisation of vision* (Virilio) taken to its conclusion. Paglen writes,

The landscape of invisible images and machine vision is becoming evermore active. [...] Images have begun to intervene in everyday life, their functions changing from representation and mediation, to activations, operations, and enforcement. Invisible images are actively watching us, poking and prodding, guiding our movements, inflicting pain and inducing pleasure. But all of this is hard to see.<sup>82</sup>

Paglen argues that while much cultural theory has fretted over the lost indexicality of the digital image, its reproducibility and ‘loss’ (or dematerialisation), many theorists have been missing the most important point. As Paglen sees it,

What’s truly revolutionary about the advent of digital images is the fact that they are fundamentally machine-readable: they can only be seen by humans in special circumstances and for short periods of time. A photograph shot on a phone creates a machine-readable file that does not reflect light in such a way as to be perceptible to a human eye. A secondary application, like a software-based photo viewer paired with a liquid crystal display and backlight may create something that a human can look at, but the image only appears to human eyes temporarily before reverting back to its immaterial machine form when the phone is put away or the display is turned off. However, the image doesn’t need to be turned into human-readable form in order

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<sup>81</sup> Trevor Paglen, ‘Invisible Images (Your Pictures Are Looking at You)’, *The New Enquiry* (December 8, 2016) <<https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>> [accessed 11<sup>th</sup> February 2023].

<sup>82</sup> Ibid.

for a machine to do something with it. This is fundamentally different than a roll of undeveloped film [...] The fact that digital images are fundamentally machine-readable regardless of a human subject has enormous implications. It allows for the automation of vision on an enormous scale and, along with it, the exercise of power on dramatically larger and smaller scales than have ever been possible.<sup>83</sup>

This exercise of power through machine-readable images encroaches on almost all aspects of twenty-first century life – it's difficult to think of many 'exclusion zones' where digital images do not play a part in surveillance, social profiling, marketing, or 'risk management' (the *industrialisation of prevention*). Writing on the use of images by Facebook, Paglen points out that while users of this platform often regard the sharing of photographic images as a benign activity, akin to sharing a printed photo album of old (which is how Facebook 'frames' it within their interface), many people disregard the fact that "When you put an image on Facebook or other social media, you're feeding an array of immensely powerful artificial intelligence systems information about how to identify people and how to recognize places and objects, habits and preferences, race, class, and gender identifications, economic statuses, and much more."<sup>84</sup> These images inform generative AI 'neural networks', which constantly mutate their operations and systems of classification according to what is fed into them, and which do not escape bias, politics, or economically-vested interests – all the more dangerous when presented as a neutral or objective system. "As such, the machine-machine landscape forms a kind of hyper-ideology that is especially pernicious precisely because it makes claims to objectivity and equality."<sup>85</sup>

Over the last few years, the corruptive potential of social media has made itself apparent in a number of ways (one example is the Cambridge Analytica scandal which appeared in 2018),<sup>86</sup> and (in terms of those platforms) any illusion of objectivity and equality has fallen away. However, while many social media users now understand this, few seem to translate this knowledge into a modification of use. Perhaps there is an element of denial in this behaviour, along with being lulled into a false sense of security: many of us have been using social media for well over a decade, our friends and family are 'there', we have our 'photo albums' – yet we cannot escape the fact that this data is being not only monitored and

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<sup>83</sup> Trevor Paglen, 'Invisible Images (Your Pictures Are Looking at You)', *The New Enquiry* (December 8, 2016). <<https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>>

<sup>84</sup> Ibid.

<sup>85</sup> Ibid.

<sup>86</sup> See: <https://www.theguardian.com/news/series/cambridge-analytica-files>

stored but actively harvested and used. What makes us blind to this, perhaps more than anything, is the invisibility of much of this activity.

We no longer look at images – images look at us. They no longer simply represent things, but actively intervene in everyday life. We must begin to understand these changes if we are to challenge the exceptional forms of power flowing through the invisible visual culture that we find ourselves enmeshed within.<sup>87</sup>

The images which look at us – these *invisible* images, intervene in (and modify) our lives while at the same time leaving us (or our agency), outside of the loop. It is a kind of feedback loop which, by its everyday invisibility, can be difficult to penetrate or even observe. Hal Foster, reviewing recent publications on Paglen, comments on this difficulty, and the turn from the mimetic image – or even images directed *at* us – to the operational:

This technological turn complicates basic ideas about mimesis: that images represent the world, that they are meant to be beheld by us, that they mean at all (think of facial-recognition programs alone). The standard critique that contemporary society is swamped by spectacle, by images directed at us, may also have to be revised. If power today depends largely on data – on invisible information harvested, searched, surveilled and acted on by corporations, governments, insurance companies, credit agencies and police departments – how are we to track it, let alone challenge it?<sup>88</sup>

Hal Foster's question is answered by Paglen's strategy of intervening in this closed circuit, whereby he advocates an immersion in – and revealing of – the 'parallel universe' of invisible images and their metadata, 'un-learning' how to see like humans:

The point here is that if we want to understand the invisible world of machine-machine visual culture, we need to unlearn how to see like humans. We need to

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<sup>87</sup> Trevor Paglen, 'Invisible Images (Your Pictures Are Looking at You)', *The New Enquiry* (8 December 2016).

<sup>88</sup> Hal Foster, 'You have a new memory. Trevor Paglen: Sites Unseen' by John P. Jacob and Luke Skrebowski; Trevor Paglen by Lauren Cornell, Julian Bryan-Wilson and Omar Kholeif.' *London Review of Books*, Vol.40, No.19 (11 October 2018), p.43.

learn how to see a parallel universe composed of activations, keypoints, eigenfaces, feature transforms, classifiers, training sets, and the like.<sup>89</sup>



**Fig.1. Trevor Paglen, “Fanon” (Even the Dead Are Not Safe), Eigenface, 2017**

**(Dye sublimation print, 48 x 48 inches)**

**© Trevor Paglen, all rights reserved.**

**Courtesy of the artist, Altman Siegel Gallery, San Francisco and Pace Gallery.**

Paglen’s 2017 exhibition *A Study of Invisible Images*<sup>90</sup> brought together a body of work he made in collaboration with software developers and computer scientists, attempting

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<sup>89</sup> Trevor Paglen, ‘Invisible Images (Your Pictures Are Looking at You)’, *The New Enquiry* (8 December 2016).

<sup>90</sup> Trevor Paglen: *A Study of Invisible Images*, Metro Pictures, New York, September 8 – October 21, 2017. see: <https://www.metropictures.com/exhibitions/trevor-paglen4>

to learn how to see this largely-invisible parallel universe. Making visible the invisible is a common thread throughout Paglen's oeuvre, one which he has previously applied to 'hidden' geo-political sites. In *A Study of Invisible Images*, Paglen works with three kinds of 'invisible images': training libraries (or datasets), machine-readable landscapes, and AI-generated images. One of his methods is to utilise (and modify) facial-recognition software: in *Machine Readable Hito* (2017), and the *Eigenface* portraits "Winona" (2016) and "Fanon" (2017), elements of 'invisible' machine-to-machine imaging processes are revealed:

For *Machine-Readable Hito*, for example, Paglen took hundreds of images of artist Hito Steyerl and subjected them to various facial recognition algorithms. This portrait of Steyerl presents the images alongside metadata indicating the age, gender, emotional state and other signifiers that the algorithms have interpreted from the images. In another portrait in the show, Paglen trained facial recognition software to read the face of philosopher Frantz Fanon. A ghostly image of Fanon shows the facial signature—the unique qualities of a face as determined by biometric recognition software—used by computer vision to identify an individual.<sup>91</sup>

While using the same technological means which he is trying to critique, or hack-into, could be a problematic strategy (running the risk of reinforcing it), Paglen's re-purposing of the technology reveals some of the processes operating within (AI) 'computer vision'; further, it reveals what Agamben described as a 'spectral' form of the subject,<sup>92</sup> produced by the convergence of so many apparatuses.

Paglen's use of the term *invisible images* has a correlation with (and lineage to) Harun Farocki's term *operative images*, "images that do not represent an object, but rather are part of an operation."<sup>93</sup> Both terms describe post-representational images, which enter into a kind of abstraction not *of* the image but *away from* the image. There is an obvious link between Farocki and Paglen (who exhibited work together,<sup>94</sup> shortly before Farocki's death in 2014) – both artists' work has, in various ways, explored links between a global military industry and developments in machine-imaging and surveillance technologies which, in turn,

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<sup>91</sup> Press Release: *Trevor Paglen: A Study of Invisible Images*, Metro Pictures, New York, September 8 – October 21, 2017.

<sup>92</sup> See previous chapter, p.32.

<sup>93</sup> Harun Farocki, 'Phantom Images', trans. Brian Poole, *Public*, no.29 (2004), p.17.

<sup>94</sup> *Visibility Machines: Harun Farocki and Trevor Paglen*, Center for Art, Design and Visual Culture, UMBC, Baltimore, October 24, 2013 - February 22, 2014.

have impacted on the daily lives of civilians in multitudinous ways.

Farocki's work from the early 2000s, in particular the cycle of video installations *Eye / Machine I, II, & III* (2000 - 2003), the film *War at a Distance* (2003), and his essay "Phantom Images" (2004),<sup>95</sup> develops the concept of *operative images* – largely in response to the first Gulf War, during which the developments in image simulation used for cruise missile guidance as well as for portrayal of the war (such as image-mapping and 3D animation) created new kinds of visualities, distanced from their source – and new kinds of (remote) warfare: "It has been said that what was brought into play in the Gulf War was not new weaponry but rather a new policy of images. In this way the basis for electronic warfare was created."<sup>96</sup> This is where the image becomes *operational*, functioning not so much as a record, but as a tool in military operations, a link within operational strategies.

In "Phantom Images", Farocki explores several key developments in the shifts in visualities created by the military: firstly, the development of the 'camera bomb' during World War Two, a bomb equipped with a small television camera. Although not used during WW2 for bombing, this development contributed to technological advancements in the television industry.<sup>97</sup> The title, "Phantom Images", is taken from a re-purposing of historical film production terminology, rethought for the perspective of a camera-bomb:

During the 1920s in the US, film recordings taken from a position that a human cannot normally occupy were called phantom shots; for example, shots from a camera that had been hung under a train. In narrative film images taken from a position of a person are referred to as subjective. We can interpret the film that takes up the perspective of the bomb as a phantom-subjective image. The film footage from a camera that is plunging towards its target, a suicidal camera, stays in our mind. This perspective was new and it offered us an image of something about which

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<sup>96</sup> Harun Farocki, Production statement: *Eye / Machine* (2000), *Harun Farocki*, <<https://www.harunfarocki.de/installations/2000s/2000/eye-machine.html>> [accessed: 13<sup>th</sup> Feb 2023].

<sup>97</sup> "There is a film about a minute long, made in 1942, of the training flight of the missile HS 293 D over a shipwreck near Peenemünde. It was recorded by a television camera in the warhead of the projectile. The television pictures were sent by a transmitter to an accompanying plane that fired the missile and then deviated from the missile's path without losing sight of it. From the plane the missile was guided to its target using a control stick closely resembling the modern day joystick. Since, as is well known, it was impossible to record electronic images right up until the 1950s, this sequence is probably the only remaining film documentation of this experiment – one of the technicians filmed it from the monitor with his camera. The miniaturization of the television camera was a developmental advance, but the HS 293 D itself was never used during World War II. By contrast with the rocket-builders, the rocket-television-camera-installers continued their work not in the US, but in the West German television industry." - Harun Farocki, 'Phantom Images', trans. Brian Poole, *Public*, no.29 (2004), p.16.

we had only limited knowledge until the cruise missiles of the 1980s appeared.<sup>98</sup>

What Farocki terms the *phantom-subjective* can also be applied to drones – particularly as military weapons, but also perhaps merely as cameras. The current proliferation of drone-based aerial views in civilian life, whether for surveillance, mapping, or entertainment, is a significant shift in perspective which carries with it a background of warfare, governance, and hierarchy. Farocki writes about a machine called HIL, or *hardware in the loop* – an early iteration of machine-readable imaging, a ‘vision machine’ for guiding missiles:

The apparatus HIL, short for “hardware in the loop”, is a machine that tests the flight path of rockets as they travel towards their target and corrects their course, independently navigating their flight to their strategic objective. The apparatus, about as large as an automobile, offers a large number of viable parameters and can perform quick swerving movements with great precision. [...] images are transmitted to the warhead – simulated pictures of the landscape it has to fly over. [...]

The tactical warhead stores and processes the aerial photos, and the processing of the photos can be seen in green and red lines. The green lines appear to suggest something like an initial suspicion. The search-target program discovers a constellation in a picture, perhaps a part of a recognizable pattern, and stores it. The program then draws a line in the picture and searches again for an aggregate of pixels that would allow it to continue drawing that line. When the line is verified, when the outlines of a street-crossing, bridges, or power lines appear, which are registered as landmarks, the colour red is used to show that they have been verified, rather like a slow-moving mind that underlines in red a thought that seems to be correct. The automated eye has recorded only a few search patterns through which it looks at the images of the real world. These picture-processing apparatuses work with the same sort of clumsiness with which robotic arms perform a new task [...] But just as the robots in factories first used manual labourers as their model until they outperformed them and rendered them obsolete, these sensory automatons are supposed to replace the work of the human eye.<sup>99</sup>

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<sup>98</sup> Harun Farocki, ‘Phantom Images’, trans. Brian Poole, *Public*, no.29 (2004), p.13.

<sup>99</sup> *Ibid.*, p.17.

This machinery sounds incredibly clunky by today's standards, as technologies have advanced and the applications of this have expanded (to include the development of drones, GPS, and machine-readable images). However, the naming of this apparatus, "*hardware in the loop*", is still apt – describing at once the loop of machine-to-machine feedback and the absence of soft, messy, human bodies. Earlier in this text, Farocki observes that

At a press conference during the first Gulf War, a representative of the US military showed a film in which a car could be seen driving away from a bridge that had just been hit – and he made a joke about it. Today you cannot get footage from the military archives in which cars can be seen, footage that would force you to conclude that humans were indeed present at or near the target. It is obvious, then, how war tactics and war reportage coincide. The images are produced by the military and are controlled by the military and politicians.<sup>100</sup>

In this sentiment, Farocki looks beyond the looping back and forth of images between machines of war, extending this into the wider apparatus of the media, politicians, and the construction of images for public consumption. On the way in which images of the Gulf War were presented in the media – via the medium of (3D) animation, he writes:

A corollary to the common view in 1991 that the pictures from these cameras – whether filming the missiles approaching their target or the detonation – made the war look like a computer game is that war resembles child's play. Cartoons are something for children, and computer animation is a form of symbolic assimilation. Almost all technical representations which maintain that *they only* represent the operative principle of a process have a large share of mystification in them.<sup>101</sup>

This representation can be seen as what Paglen described as a "hyper-ideology that is especially pernicious precisely because it makes claims to objectivity",<sup>102</sup> combined with a gaming aesthetic which adds a cartoonish assimilation. *Serious Games*, a later series of

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<sup>100</sup> Farocki., p.15.

<sup>101</sup> Ibid., p.15.

<sup>102</sup> Trevor Paglen, 'Invisible Images (Your Pictures Are Looking at You)', *The New Enquiry* (December 8, 2016).



video works made by Farocki between 2009 and 2010, explores the use of VR / video-gaming technologies in both the training of, and rehabilitation from, combat in Afghanistan and Iraq for US military servicemen. On *Serious Games III: Immersion*, the writer and curator Pieter van Bogaert outlines the military processes behind Farocki's film:

Eighteen years after the first Gulf War (1990/91), computer-generated game technology is not only employed on the battlefield, but also used for recruiting, training, and therapy for battle-scarred soldiers. It is the beginning, the middle, and the end of the violence of war. Never has war been so transparent, so tangible, so efficient or so virtual. Filming for *Immersion* took place at Fort Lewis, near Seattle, during a demonstration for therapists treating Post Traumatic Stress Disorder (PTSD) sufferers. The event was organized by the designers of the technology now being used in Virtual Reality Exposure Therapy (VRET). The therapy consists of subjecting traumatized soldiers to the conditions of war once again, in a virtual reality. It is a kind of going back to the beginning – not only literally to the beginning of the military experience, starting with the recruiting game, but also back to the beginnings of a technology that was initially developed by the military, was subsequently taken over by game designers, and is now being sold back to the same military apparatus from which it originated.<sup>103</sup>

The circularity of this process is striking: there is a technical and commercial loop, in terms of the development of VR technologies from the military to gaming and back again, and also a lived experience which moves in a circular pattern from the virtual image to the real-life trauma and back again. It is a layered looping, which shifts from the technological (and its applications) to the psychological, and back again.

This circular pattern of simulation and trauma is also explored in a film made in 2011 by the artist Omer Fast, *5000 Feet is the Best*, which addresses drone warfare and its psychological effects on drone pilots. The title refers to the optimum flight altitude of a U.S. Air Force Predator drone for visual identification of the ground below. Based on interviews between the artist and a former U.S. Air Force drone operator (now working as a Las Vegas casino security guard), the film shifts between retelling and re-enactment, using a combination of narrative filmmaking, documentary, virtual re-creations, surveillance imagery, and drone footage (much of which is recorded above Las Vegas). In one section of the film,

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<sup>103</sup> Pieter van Bogaert, 'How to Live in a Game. Harun Farocki's War Games', *Metropolis M*, no.5 (2009). Cited in: Ralf Bell and Antje Ehmman, eds.: *Serious Games: War/Media/Art*. Exh.cat. Mathildenhöhe Darmstadt, pp.82-85. Ostfildern: Hatje Cantz, 2011. Republished online at: <https://www.fus.edu/intervalla-files/vol2/9-HF.pdf>

the drone operator talks about going home to play flight-simulation video games after work shifts – a “downtime” that repeats the day job, with similar virtual conditions. In other sections which weave in and out of the film, the drone pilot as a re-enacted ‘character’ appears in a hotel room being interviewed about his experiences, and a circularity of narrative and conversational prompts – repeating questions and audio hallucinations before digressing into different stories – creates a seamless loop within the structure of the film: there seems to be no beginning or end as such. Although repetitive, the repeat veers off in various directions before returning, presenting a kind of endless maze. This method reflects (and heightens) the sense of PTSD being revisited by the drone pilot, and throws into question relationships between memory, recollection, and truth; reality and representation.



Fig.2. Omer Fast, *5000 Feet is the Best* (film still), 2011

(Digital video, colour, sound, English spoken. 30 min)

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The aerial view, with its militaristic background, is a dominant form in contemporary life. In the essay “In Free Fall: A Thought Experiment on Vertical Perspective”, Hito Steyerl outlines the apparatuses involved in the development of linear perspective, the subsequent dismantling of this perspective between the mid-twentieth century and the present, and maps the vertical as a dominant perspective of our age – with implicit political and social strata.

Through this outline, Steyerl prompts us to recognise these perspectives as governing apparatuses:

With the twentieth century, the further dismantling of linear perspective in a variety of areas began to take hold. Cinema supplants photography with the articulation of different temporal perspectives. Montage becomes a perfect device for destabilizing the observer's perspective and breaking down linear time. [...] Time and space are reimagined through quantum physics and the theory of relativity, while perception is reorganized by warfare, advertisement, and the conveyor belt. With the invention of aviation, opportunities for falling, nose-diving, and crashing increase. With it – and especially with the conquest of outer space – comes the development of new perspectives and techniques of orientation, found especially in an increasing number of aerial views of all kinds. While all these developments can be described as typical characteristics of modernity, the past few years has seen visual culture saturated by military and entertainment images' views from above.<sup>104</sup>

Steyerl places the aerial view in domains of the military, entertainment, surveillance, and “vertical worlds”. These domains are intertwined, part of the larger apparatus – seen both as a web spreading outwards and a verticular layering. The ‘God’s-eye’ aerial view – which is not singular, returns us to the ‘oikonomia’ of the apparatus – a governing division of viewpoints, a hierarchical housekeeping. In their essay “Fuck Off, Google”, The Invisible Committee recall the words of an (anonymous)<sup>105</sup> professor: “Thanks to the widespread networks of sensors, we will have a God’s eye view of ourselves. For the first time, we can precisely map the behaviour of masses of people at the level of their daily lives.”<sup>106</sup> The proliferating, networked, God’s-eye view is not just about verticality and strata, but also about mapping, territories, and social monitoring. The words of the professor echo Virilio’s on the “logistics of perception”,<sup>107</sup> twenty-five years or so earlier:

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<sup>104</sup> Hito Steyerl, *The Wretched of the Screen* (Berlin: Sternberg Press, 2012), p.22.

<sup>105</sup> The source is not given by the Invisible Committee in their text; preceding paragraphs infer that this was a professor from M.I.T.

<sup>106</sup> The Invisible Committee, *To Our Friends*, trans. Robert Hurley (South Pasadena, CA: Semiotext(e), 2015), p.113.

<sup>107</sup> Paul Virilio: *The Vision Machine*. In: *The Virilio Reader*, ed. James Der Derian (Malden: Blackwell, 1998), p.145.

The will to see all, to know all, at every moment, everywhere, the will to universalised illumination: a scientific permutation on the eye of God which would forever rule out the surprise, the accident, the irruption of the unforeseen.<sup>108</sup>

Extending this to Google Maps, The Invisible Committee are unequivocal about the scale and motivation of this as a project, saying that

With Google, what is concealed beneath the exterior of an innocent interface and a very effective search engine, is an explicitly political project. An enterprise that maps the planet Earth, sending its teams into every street of every one of its towns, cannot have purely commercial aims. One never maps a territory that one doesn't contemplate appropriating.<sup>109</sup>

The Invisible Committee outline a brief history of cybernetics, tracing it back to a particular project and network of influential individuals in 1940s USA – linking new means of communication and data processing that emerged post-WW2 with a “science of government” – feeding into (and from) social, political, economic, military, and educational strategies and experiments – as well as IT and AI. This reveals the strategic network of elements at work; the sense of the apparatus positioned in an anticipatory role, aligned with predictive visualities, becomes ever more apparent:

The great refrigerated storehouses of data are the pantry of current government. In its rummaging through the databases produced and continually updated by the everyday life of connected humans, it looks for the correlations it can use to establish not universal laws nor even “whys”, but rather “whens” and “whats”, one-time, situated predictions, not to say oracles. The stated ambition of cybernetics is to manage the unforeseeable, and to govern the ungovernable.<sup>110</sup>

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<sup>108</sup> Virilio, p.145.

<sup>109</sup> The Invisible Committee, *To Our Friends*, p.105.

<sup>110</sup> Ibid., p.113.

This returns to attempts to manage the ungovernable – back to Agamben’s positioning of the apparatus, and to Virilio’s thinking on the *industrialisation of prevention* alongside the industrialisation of vision. Agamben’s theory of the reciprocal indifference between processes of subjectification and desubjectification, which can only give rise to a new subject in ‘larval’ or ‘spectral’ form<sup>111</sup> are echoed by The Invisible Committee, in the shape of a “transparent humanity”:

For the most advanced cybernetics, there’s already no longer man and his environment, but a system-being which is itself part of an ensemble of complex information systems, hubs of automatic processes [...] Just as political economy produced a *homo economicus* manageable in the framework of industrial States, cybernetics is producing its own humanity. A transparent humanity, emptied out by the very flows that traverse it, electrified by information, attached to the world by an ever-growing quantity of apparatuses.<sup>112</sup>

There are, of course, other ways of thinking the human-cybernetic relationship. A contrasting position comes from Rosi Braidotti, in *The Posthuman*, on technological apparatuses and the human subject: that of post-anthropocentric *vitalist materialism*, which Braidotti frames within a monistic view:

The post-anthropocentric turn, linked to the compounded impacts of globalization and of technology-driven forms of mediation, strikes the human at his / her heart and shifts the parameters that used to define *anthropos*.[...] The key question for me is: what understandings of contemporary subjectivity and subject-formation are enabled by a post-anthropocentric approach? What comes after the anthropocentric subject? How one reacts to this change of perspective depends to a large extent on one’s relationship to technology<sup>113</sup>

In contrast to Agamben, who saw only a ‘larval’ or ‘spectral’ form of a subject emerging from the proliferation of apparatuses, and the Invisible Committee, who see “a

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<sup>111</sup> See: Agamben, *What Is An Apparatus?*, p.21.

<sup>112</sup> The Invisible Committee, *To Our Friends*, pp.110-111.

<sup>113</sup> Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013), pp.57-58.

transparent humanity”<sup>114</sup>, Braidotti takes a view in which all living matter is ‘smart’, and technological mediation is a central, embedded force. She asks:

Why is matter so intelligent, though? Because it is driven by informational codes, which both deploy their own bars of information, and interact in multiple ways with the social, psychic and ecological environments. What happens to subjectivity in this complex field of forces and data flows? My argument is that it becomes an expanded relational self, engendered by the cumulative effect of all these factors.<sup>115</sup>

For Braidotti, rather than seeing a loss of self (or desubjectification) in the posthuman, technologically-mediated condition, there is an “expanded relational self”. She describes how there can be a “negative tendency to represent the transformations of the relations between humans and technological *apparatus* or machines in the mode of neo-gothic horror”,<sup>116</sup> and says that “as a posthuman thinker with distinct anti-humanist feelings, I am less prone to panic at the prospect of a displacement of the centrality of the human and can also see the advantages of such an evolution.”<sup>117</sup> Braidotti’s post-humanist thinking comes from a “vitalist approach to living matter”<sup>118</sup> which, she says,

displaces the boundary between the portion of life – both organic and discursive – that has traditionally been reserved for *anthropos*...and the wider scope of animal and non-human life, also known as *zoe*. *Zoe* as the dynamic, self-organizing structure of life itself stands for generative vitality. It is the transversal force that cuts across and reconnects previously segregated species, categories, and domains. *Zoe*-centered egalitarianism is, for me, the core of the post-anthropocentric turn: it is a materialist, secular, grounded and unsentimental response to the opportunistic trans-species commodification of Life that is the logic of advanced capitalism.”<sup>119</sup>

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<sup>114</sup> See: fn110.

<sup>115</sup> Braidotti, *The Posthuman*, p.60.

<sup>116</sup> *Ibid.*, p.64

<sup>117</sup> *Ibid.*

<sup>118</sup> *Ibid.*, p.60

<sup>119</sup> *Ibid.*

Braidotti gives an overview, or lineage, of ‘vitalist materialism’ and a ‘monistic universe’ via Spinoza, and the revival of his theories by French philosophers – including Gilles Deleuze (who published a study of Spinoza)<sup>120</sup> and Félix Guattari:

The main idea is to overcome dialectical oppositions, engendering non-dialectical understandings of materialism itself, as an alternative to the Hegelian scheme. The ‘Spinozist legacy’ therefore consists in a very active concept of monism, which allowed these modern French philosophers to define matter as vital and self-organizing, thereby producing the staggering combination of ‘vitalist materialism’. Because this approach rejects all forms of transcendentalism, it is also known as ‘radical immanence’. Monism results in relocating difference outside the dialectical scheme, as a complex process of differing which is framed by both internal and external forces and is based on the centrality of the relation to multiple others.<sup>121</sup>

One can immediately recognise Deleuzian concepts within this outline (not least the idea of *radical immanence*). Braidotti’s ‘transversality of relations’ also seems to echo a position proposed by Leibniz and expressed by Deleuze in *The Fold: Leibniz and the Baroque*: “Our mechanisms are in fact organized into parts that are not in themselves machines, while the organism is infinitely machined, a machine whose every part or piece is a machine [...] We might say that between organic and inorganic things there exists a difference of vector”.<sup>122</sup>

Further referencing both Deleuze and Guattari, Braidotti’s enquiry into the transformative potentialities of post-anthropocentrism incorporates three sections on the posthuman as “becoming-animal”, “becoming-earth”, and “becoming-machine”.<sup>123</sup> Braidotti also refers to “practices of becoming-machine as: *radical neo-materialism* (Braidotti, 1991), or as *matter-realism* (Fraser et al, 2006).”<sup>124</sup> In “The Posthuman as Becoming-machine”,

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<sup>120</sup> Gilles Deleuze, *Spinoza: philosophie pratique* (Paris: Les Éditions de Minuit, 1981).

<sup>121</sup> Ibid., p.56.

<sup>122</sup> Gilles Deleuze, *The Fold: Leibniz and the Baroque*, trans. Tom Conley (London: The Athlone Press, 1993), p.8.

<sup>123</sup> Braidotti, *The Posthuman*, p.66: “I have labelled these processes as ‘becoming-animal, becoming-earth, and becoming-machine’, with reference to Deleuze and Guattari’s philosophy, though I am very independent in relation to them.”

<sup>124</sup> Braidotti, *The Posthuman*, p.95.

Braidotti sets out a posthuman symbiosis between technology and the human which displaces ontological boundaries, resulting in what she calls a “new transversal compound”:

The relationship between the human and the technological other has shifted in the contemporary context, to reach unprecedented degrees of intimacy and intrusion. The posthuman predicament is such as to force a displacement of the lines of demarcation between structural differences, or ontological categories, for instance between the organic and the inorganic, the born and the manufactured, flesh and metal, electronic circuits and organic nervous systems.<sup>125</sup>

[...] The ‘becoming-machine’ indicates and actualizes the relational powers of a subject that is no longer cast in a dualistic frame, but bears a privileged bond with multiple others and merges with one’s technologically mediated planetary environment. The merger of the human with the technological results in a new transversal compound, not unlike the symbiotic relationship between the animal and its planetary habitat.”<sup>126</sup>

This view of the relationship (or merging) between the human and the technological is post-ontological in the sense that while discreet categories may still exist, they are part of an overall ecology. While the “lines of demarcation” may have been displaced, there is nevertheless a form of re-structuring within Braidotti’s neo-materialist thinking. This re-structuring seems to take place as a transversal cutting or splicing across boundaries – or as a rhizomatic plane.<sup>127</sup>

Just as Braidotti writes of ‘radical immanence’, so the ‘becoming-machine’ process is situated on the cusp of the present / presence and futurity / virtuality, in a state of transition: “I want to argue for a vitalist view of the technologically bio-mediated other. This machinic vitality is not so much about determinism, inbuilt purpose or finality, but rather about becoming and transformation.”<sup>128</sup> In this *vitalist* idea of the becoming-machine, Braidotti looks to Guattari’s exploration of machinic autopoiesis, referencing his text: *Chaosmosis: an ethico-aesthetic paradigm*.<sup>129</sup>

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<sup>125</sup> Ibid., p.89.

<sup>126</sup> Ibid., p.92.

<sup>127</sup> “the most striking feature of the current scientific redefinition of ‘matter’ is the dislocation of difference from binaries to rhizomatics” – Braidotti, p.96.

<sup>128</sup> Braidotti, p.91.

<sup>129</sup> Félix Guattari, *Chaosmosis: an ethico-aesthetic paradigm*, trans. Paul Bains and Julian Pefanis



The subject is ontologically polyvocal. It rests on a plane of consistency including both the real that is already actualized, 'territorialized existential territories', and the real that is still virtual, 'deterritorialized incorporeal universes'. Guattari calls for a collective reappropriation of the production of subjectivity, through 'chaosmic' de-segregation of the different categories. [...] 'Chaosmos' is the universe of reference for becoming in the sense of the unfolding of virtualities, or transformative values. [...] In his analysis of the 'collective existential mutations' (1995: 2) currently taking place, Felix Guattari refers to [Francisco] Varela's distinction between autopoietic (self-organizing) and allopoietic systems. Guattari moves beyond the distinction proposed by Varela by extending the principle of autopoiesis [...] to cover also the machines or technological others.[...]

Guattari's machinic autopoiesis establishes a qualitative link between organic matter and technological or machinic artefacts. This results in a radical redefinition of machines as both intelligent and generative. They have their own temporality and develop through 'generations': they contain their own virtuality and futurity."<sup>130</sup>

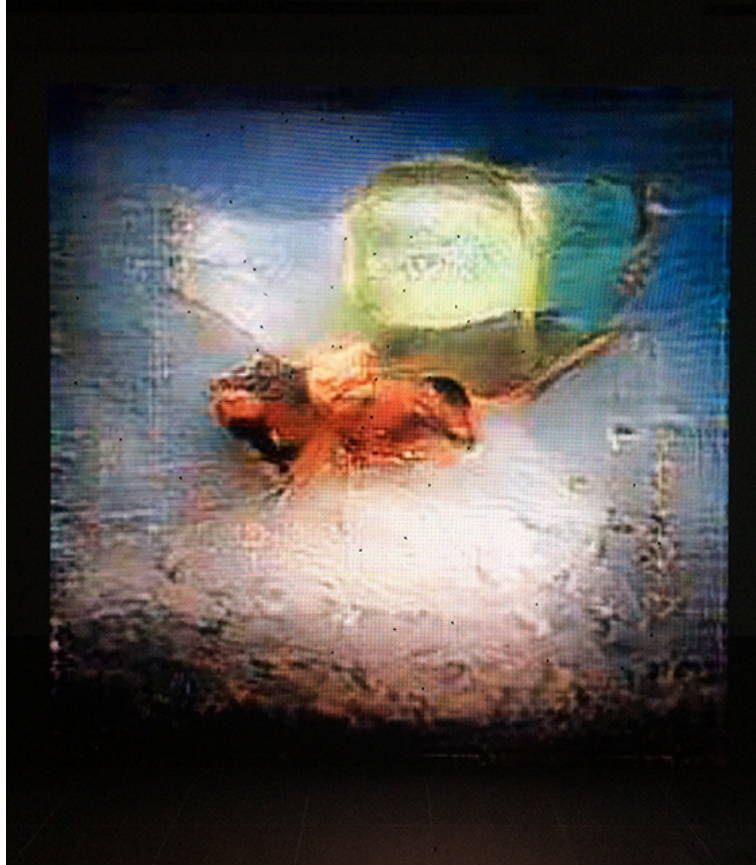
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(Bloomington & Indianapolis: Indiana University Press, 1995).

<sup>130</sup> Braidotti, pp.93-94. (Braidotti cites Guattari: *Chaosmosis: an ethico-aesthetic paradigm*, 1995.)

## Pierre Huyghe: *UUmwelt*

Serpentine Gallery, London, 3 October 2018 – 10 February 2019



**Fig.3. Frances Young, Installation view of *Pierre Huyghe, UUmwelt*,  
Serpentine Gallery, London, 2018 - 2019**

Huyghe's *UUmwelt* project incorporates a form of machine-to-machine imaging which functions differently from Farocki's *operative images* or Paglen's *invisible images* (although there are some parallels with a series of prints titled *Adversarially Evolved Hallucinations* (2017) by Paglen).<sup>131</sup> The imaging processes in *UUmwelt* do not bypass the human as such – rather, there is an expansion from the human to the machine and back again. In

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<sup>131</sup> “To make the prints in *Adversarially Evolved Hallucinations*, Paglen trained an AI to recognize images associated with taxonomies such as omens and portents, monsters, and dreams. A second AI worked in tandem with the first to generate the eerie, beautiful images that speak to the exuberant promises and dark undercurrents characterizing our increasingly automated world.” – Press Release, Trevor Paglen: *A Study of Invisible Images*, Metro Pictures, NY (2017).

collaboration with Kamanti Lab / Kyoto University and ATR (Japan), Huyghe attempts to recreate human thought or visualisation via complex processes of brain scanning (fMRI), pattern recognition, and image-matching. These images, evolving from human brain activity and processed through AI neural networks, are then made visible again via an output which is contingent on human interaction and several other environmental factors. The resultant morphing images sit somewhere between the still and moving, operating as elaborate feedback loops within part of a larger ecosystem.

Huyghe began by selecting a set of images and descriptions and gave them to an individual. As this person recreated these images in their mind, their brain activity was captured by an fMRI scanner, and the data produced was given to a deep neural network, which attempted to reconstruct them, collaging together elements from its own bank of images. The thousands of attempts of the deep neural network to construct visual representations of a human thought are presented here on large LED screens distributed throughout the gallery. The rhythms and pauses within the succession of images are endlessly modified by conditions in the gallery; sensors detecting light, temperature and humidity levels, the presence of insects, and the gaze of the visitors produce a feedback loop.<sup>132</sup>

The insects referred to are a colony of flies which have been introduced to the gallery space and are kept fed on sugar and water for the duration of the exhibition. They are a part of the “porous environment” created by Huyghe, and although visibly crawling across the screens it is unclear exactly how they, along with changing light and atmospheric conditions, affect the motion of the images. For the viewer, there are unanswered questions about this: the movement of images does not obviously stop or start every time a visitor approaches, or when there is a movement of flies, but these factors apparently affect the output; one is aware of a rhythm that isn’t obviously mechanical and isn’t just digital glitch either – it seems to have a life of its own.

To understand more about the production of the images, the processes through which they were developed, I will refer to Huyghe’s conversation with Hans Ulrich Obrist at the Serpentine Gallery in October 2018:

They are doing an [f]MRI scan on someone who is thinking about an image...shall we say, a cat...the person going into [f]MRI: *think about the cat, think about the cat...*they take a “brainwave” of the moment that that person is thinking about the cat – this

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<sup>132</sup> Exhibition guide: Pierre Huyghe: *Umwelt*, Serpentine Gallery, 3 October 2018 – 10 February 2019.

brainwave (I simplify again, because it is way more complex than that) becomes a pattern, and this pattern is decoded; this pattern goes through multi-neural networks, which have a databank of millions of images...generic images, which are matched... There's a kind of co-production, in a certain way, or collective production of imagination between two kinds of intelligence...to me that's something which is very interesting – not only that you can bypass 'expression'...so the making is bypassed, the sense is bypassed; but of course you open the possibility to say that you can share images, you can share imagination..and potentially (more like a speculative aspect) that will be shared by whatever – animal, machine, or humans.<sup>133</sup>

This concept of a collective production and imagination which is shared by animal, machine, and humans is resonant with the post-anthropocentrism of Braidotti (as well as Donna Haraway, etc.). In this work by Huyghe there is a post-ontological restructuring of the human – technological relationship, a transversality of relations within a monistic structure, machinic autopoiesis, and an in-effect *becoming-machine*.

Huyghe talks of wanting to reverse the exhibition 'condition': "rather than exhibiting something to someone, I wanted to do the opposite: to exhibit someone to some thing. [...] The work is "not made for us; it does not 'address' us":<sup>134</sup> it has an autonomy. Artistic expression is bypassed in the sense that the artist relinquishes control, the work becomes semi-autonomous but reactive to various elements, the machines intelligent and generative – and in some kind of symbiotic relationship with human and animal life.

The title *Umwelt* is an extension of the German word 'umwelt', meaning *environment-world* or, "the world as it is experienced by a particular organism".<sup>135</sup> This could be a reference by Huyghe to the use of the term in the biosemiotic theories of Jakob von Uexküll and Thomas A. Seboek: supposing "an infinite variety of perceptual worlds"<sup>136</sup> which correspond to the infinite variety of animal and insect species; a view which represents a turn away from anthropocentrism and the hierarchical classification of species. Agamben writes about Uexküll and his concept of *Umwelt* in *The Open: Man and Animal*, explaining that:

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<sup>133</sup> Pierre Huyghe in Conversation with Hans Ulrich Obrist, Serpentine Galleries, 3 October 2018. <<https://www.youtube.com/watch?v=emYOOVRzG8E>> [Accessed: 13 February 2023]

<sup>134</sup> Ibid.

<sup>135</sup> Definition: Lexico / Oxford ([www.lexico.com](http://www.lexico.com))

<sup>136</sup> Giorgio Agamben, *The Open: Man and Animal* (Stanford, CA: Stanford University Press, 2004), p.40.

Uexküll begins by carefully distinguishing the *Umgebung*, the objective space in which we see a living being moving, from the *Umwelt*, the environment-world that is constituted by a more or less broad series of elements that he calls “carriers of significance” (*Bedeutungsträger*) or of “marks” (*Merkmalträger*), which are the only things that interest the animal. In reality, the *Umgebung* is our own *Umwelt*, to which Uexküll does not attribute any particular privilege and which, as such, can also vary according to the point of view from which we observe it.<sup>137</sup>

In this concept of *umwelt*, the endless variety of environment-worlds as perceived by different species each function as a “closed unity in itself”<sup>138</sup> which “are not, however, objectively and factually isolated, but rather constitute a close functional – or, as Uexküll prefers to say, musical – unity with the animal’s receptive organs that are assigned to perceive the mark (*Merkorgan*) and to react to it (*Wirkorgan*).”<sup>139</sup> This is a very different idea to that of an inter-species collective imagination (and is perhaps the opposite of post-ontological), but it describes quite well some of the processes at work in Huyghe’s project if one expands the idea of bubble-like environment-worlds, which interact with or bounce off each other, to include the technological – in particular AI. If one sees the neural network image processing in this work as a *closed unity in itself*, and its constituent functions as forms of *Merkorgan* and *Wirkorgan* – i.e., coded receptors and reactors, then this closed-circuit mode is continually modulated by the functions of other concurrent and contingent environment-worlds.

Huyghe talks of creating “the conditions under which something happens, modifies”;<sup>140</sup> and of the imaging in *UUmwelt* as “an imagination that becomes public”.<sup>141</sup> In making visible the internal processes of combined human imagination and AI neural network processing, Huyghe is intercepting those closed loops; in conversation he uses the term: “Une lettre volée” (a stolen, or intercepted, letter) as a way to describe the interception and making-visible of machine-to-machine images: “for the lab...the whole point is to do a brain

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<sup>137</sup> Agamben, *The Open.*, pp.40-41.

<sup>138</sup> Ibid., p.41.

<sup>139</sup> Ibid.

<sup>140</sup> Pierre Huyghe in Conversation with Hans Ulrich Obrist, Serpentine Galleries, 3 October 2018.  
<<https://www.youtube.com/watch?v=emYOOVRzG8E>>

<sup>141</sup> Ibid.

to computer interface, which is something you don't have to make public. By making it public, I trigger again the visual."<sup>142</sup>

In the visual processing of human thought for *Umwelt*, what at first appeared to be constructed from a set of still images appears to have begun with sets of moving images:

There's these different images that I gave (to be imagined) to this person in Japan...and he thought one by one all these images – to me, in a certain way, composing a situation. Each image I gave him to imagine is a film, because of course it's the process of optimization. So you have like, whatever different duration of that moving image (I prefer not to call it a film, but whatever)...blocks of moving image – many screens, and sometimes they change<sup>143</sup>

What I think Huyghe means by the “process of optimization” is the duration needed for this mental and technological operation to occur – it has to happen over time. This makes the process more durationally complex from the outset: it is no longer “*think about a cat*”, but perhaps *watch this film of a cat, and then imagine (or mentally recreate) it*. There is the suggestion of a simultaneity of different images (maybe several different cats). Of course, the whole process of mental visualisation is never fixed – we imagine something, and within a short space of time it morphs and changes in our mind. In simplistic terms, in the work created by Huyghe and his collaborators the image goes from a film on a screen to an imagined image, to images of brainwaves, to datasets of images, and back again to a moving image on a screen. This is an elaborate loop, via which the very idea of ‘image’ becomes a question.

In the processed – or processing – images presented in *Umwelt*, this ‘chimera’ of moving images, restless and flickering as the neural networks try to match, are halted temporarily by various conditions; the ‘end result’ is never shown because Huyghe is more interested in the processing – “in the process of recognition”.<sup>144</sup> Other variables within the space add to the changing conditions – and the more these change, “the more the image becomes hysteric...and it stops. And then you are faced with a fixed image of a chimera...so as it stops, you are doing the same process as the neural networks.”<sup>145</sup> This is another

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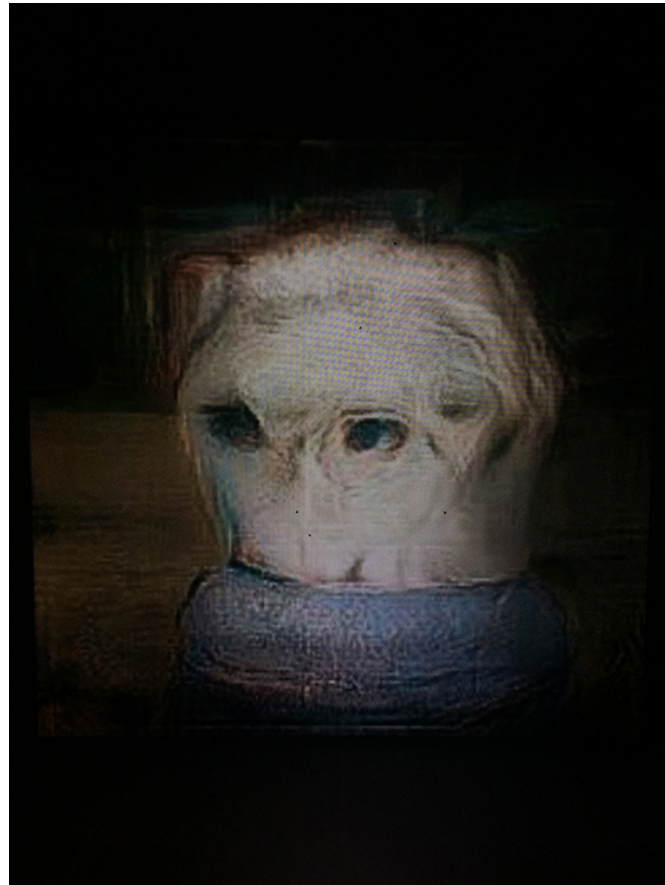
<sup>142</sup> Pierre Huyghe in Conversation with Hans Ulrich Obrist, Serpentine Galleries, 3 October 2018.  
<<https://www.youtube.com/watch?v=emYOOVRzG8E>>

<sup>143</sup> Ibid.

<sup>144</sup> Ibid.

<sup>145</sup> Ibid.

feedback loop within the work – as you trigger a response or pause in the image, so you are given pause for some kind of recognition or reading of the image, to which you bring an individual interpretation: “...memory-triggers – like so many little Madeleines...”<sup>146</sup> But these are mutant, hybrid forms which emerge, *like* something recognisable but not identifiable, as noisily digital dreams – or nightmares.



**Fig.4. Frances Young, Installation view of *Pierre Huyghe, UUmwelt*,  
*Serpentine Gallery, London, 2018 - 2019.***

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<sup>146</sup> Ibid.

## Frances Young, *Please Review The Setting* (2019)

2 channel HD Video (for 2 monitors), 07:27 looped, colour / b&w, silent.

<https://vimeo.com/francesyoung/pleasereviewsplitscreen> (split-screen version)

<https://vimeo.com/francesyoung/pleasereviewinstall> (documentation of two-channel version)

Exhibited at:

*I Scared My Computer*, White City Place, London, March 2019

2084 (RCA Research Show) Dyson Gallery, Royal College of Art, London, January 2020

## Frances Young, *I'm Hacked* (2019)

Animated GIF (for online exhibition)

File in folder: Frances\_Young I\_m Hacked Gif.

To view gif file: Ctrl-click (on a mac) or right-click (on a pc) and open with your internet browser.

Exhibited at: *ex text for something next*, boxegallery.com, March – April 2019

WARNING: Both pieces contain flashing images.



Fig.5. Frances Young, *Please Review The Setting*, HD video still, 2019





**Fig.6. Frances Young, *Please Review The Setting*, HD video still, 2019**

*Please Review The Setting* is a silent video installation for two synchronised flat-screen monitors, arranged vertically. I made a split-screen version of this for preview purposes, included with the supporting material. A link to documentation of the work as a two-channel installation, at the exhibition 'I Scared My Computer' (White City Place, London, 2019), is above.

The piece plays as a loop, within which several other loops operate between the screens. Both utilise the same footage which is differently treated and sequenced for each channel, creating an interaction of material back-and-forth, and at times across, the two screens. The footage shifts between sections playing at 'real time' speed, parts which are sped-up, and short looping sections comprised of sequenced stills, operating like bursts of GIFs which interrupt the flow of recorded time. A companion piece to this, *I'm Hacked* (2019) is a GIF work taken from one of these animated sections, which was made for an online gallery, *BOXE* (curated by Cradeaux Alexander).

The work uses surveillance footage of uninhabited spaces, some with faulty cameras, recorded from live online streams. Most of these cameras relay a constant video stream, though some operate as timed uploads of still / semi-moving images, adding to the play between still and moving in this piece. I believe that the footage originates from China, India, and the USA (although I can't verify this). While this is a work about surveillance, it is about the surveillance of no-one, and of nothing. It relates to my research on the apparatuses of surveillance, and machine-to-machine images: the camera which keeps

recording without human interaction, when there is nothing to record, or even when it is broken. This also adds another way of thinking the *durational* – one which doesn't require human presence; and which is akin, in some ways, to Hollis Frampton's idea of the *infinite cinema*: "A polymorphous camera has always turned, and will turn forever, its lens focused upon all the appearances of the world."<sup>147</sup>

The appearances of the world in *Please Review The Setting* range from the mundane to the puzzling or strange, the abstract and the glitch, towards the blank and voided. There is a human absence in almost all of it. During my collation of the footage I found myself returning to locations which were the most uninhabited and eerie. This sense of place is aligned with Mark Fisher's description of the eerie: "A sense of the eerie seldom clings to enclosed and inhabited domestic spaces; we find the eerie more readily in landscapes partially emptied of the human."<sup>148</sup> It is not simply about empty spaces, but "is constituted by a *failure of absence* or by a *failure of presence*. The sensation of the eerie occurs either when there is something present when there should be nothing, or there is nothing present when there should be something."<sup>149</sup>

In my returns to some of these empty surveilled locations there would be small changes each time, signalling that there *had* been a human presence – maybe a chair had moved; however, I became so used to the absence of people that when a figure entered the frame it was a shock. There was a presence when it felt like there should have been an absence. For this reason, I kept the interloper in the edit, though as a semi-translucent ghostly presence. They wear a full-body hazmat suit with face visor, masking their identity and adding to a sense of the strange.

The work points to a sense of 'ghosts in the machine': the glitchiness, the faulty cameras, the image telling us that "I'm Hacked"; the feeling that the machine, while continuing without us, is perhaps being driven by other forces.

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<sup>147</sup> Hollis Frampton, *For a Metahistory of Film: Commonplace Notes and Hypotheses*, Artforum, September 1971. Republished in: Hollis Frampton, *On the Camera Arts and Consecutive Matters*, ed. Bruce Jenkins (Cambridge, MA & London: MIT Press, 2009) p.134. For my discussion of this, see: Chapter 3: *Film Loops: Looping Back*, pp.79 – 80.

<sup>148</sup> Mark Fisher, *The Weird And The Eerie* (London: Repeater Books, 2016) p.11.

<sup>149</sup> *Ibid.*, p.64.

## Frances Young, *Now Is Not The Time For Magic* (2018)

18:51. Single channel HD video, colour with stereo sound.

<https://vimeo.com/francesyoung/nowisnotthetime>

Exhibited at: *Flight Mode* (RCA Research Exhibition), Assembly Point, Peckham, London, June – July 2018.



**Fig.7. Frances Young, *Now Is Not The Time For Magic*, HD video still, 2018**

Direction, Camera, Sound, Edit: Frances Young.

Voice Actor: Nick Landrum.

This piece uses the recording of video-game voice parts to explore the loop as repetition with variation, as divergences along different paths with returns to the same point, embodying the maze-like form of recurrence and feedback loops which operate in gaming narrative structures. I worked with a voice actor who records these vocal parts professionally – in this video I record him working from home, in a cupboard in his spare room. I filmed him reading from a gaming script, acting the parts of nonplayable characters (known as NPC) –

these are characters which are controlled by the computer, coded to give pre-determined responses, dialogue, and ‘emotes’. Unlike the narrative path that a gamer would follow, his reading runs through all the possible variations in succession. In this way, the reading performs a kind of *anti-narrative*. The edit plays with this narrative halting and repetition, cutting to enhance the repeats of language in the script.

It is interesting to note that the term NPC has been adopted as urban slang, meaning a person who is unable to think independently or objectively – according to the online *Urban Dictionary*, NPC is “a play on video-games “non-player character” mixed with a play on The Simulation Hypothesis [...] We exist in a simulated reality and some humans take on the role of NPCs, spouting “opinions” they are programmed to spout and repeating in a cult-like manner”.<sup>150</sup> One could speculate on how Baudrillard might have responded to this; one way, perhaps, as his essay “Screened Out” expresses, is that: “Machines produce only machines. [...] At a certain level of machination, of immersion in virtual machinery, there is no longer any man-machine distinction: the machine is on both sides of the interface. Perhaps you are indeed merely the machine’s space now – the human being having become the virtual reality of the machine, its mirror operator.”<sup>151</sup>

In this sense, the piece is also about making a separation – from the virtual back to the real through a revealing of unseen processes, the analogue of human labour behind the simulation. I present this as an ‘unblinding’, a kind of *Wizard of Oz* moment where the curtain is pulled back to reveal the person behind the scenes. There is a Brechtian aspect to this defamiliarization of the video-game format, a distancing effect (*Verfremdungseffekt*)<sup>152</sup> which draws attention to the artifice. This makes the violence expressed in parts of the script (ironically) more visible, at once both shocking and ridiculous in its casual repetitiveness; the domestic setting, with children’s paintings on the wall, adds to the incongruity of this.

The convergence of gaming, repetitive looping, and violence relates to themes discussed in Chapter 2: *(Being) Outside of the Loop: Machine > Machine Images*, on the circularities between simulation, video-game technologies, and the military.

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<sup>150</sup> Posted by Shimokuma, ‘NPC’, *Urban Dictionary* (July 3<sup>rd</sup> 2018), <<https://www.urbandictionary.com/define.php?term=NPC>>, [accessed May 18<sup>th</sup> 2023].

<sup>151</sup> Jean Baudrillard, *Screened Out*, trans. Chris Turner (London & New York: Verso, 2002), pp.177-178.

<sup>152</sup> For a brief explanation of Bertolt Brecht’s use of *Verfremdungseffekt* (usually translated in English as ‘alienation’ or ‘defamiliarization’ effect), see: Andrew Dickson, ‘Bertolt Brecht and epic theatre: V is for Verfremdungseffekt’, *British Library*, (07 September 2017), <<https://www.bl.uk/20th-century-literature/articles/bertolt-brecht-and-epic-theatre-v-is-for-verfremdungseffekt#footnote8>> [accessed 30 November 2022].

## Chapter 3:

### ***Film Loops: Looping Back***

Mechanistic repetition – for example, loops – produced contradictoriness through duration, the mechanism producing itself as separate from the pro-filmic; not a metacinema but a force of separation and difference referring to just that.<sup>153</sup> – Peter Gidal.

In this chapter I propose a reading of methodologies in the film work and writing of Anglo-American experimental filmmakers from the mid-1960s to early 1970s (specifically: Malcolm Le Grice, Peter Gidal, Annabel Nicholson, George Landow, and Hollis Frampton), in order to investigate ways in which looping operates within this work, some of the functions and subversions which looping performs, and what loops can reveal about the filmic medium and its temporal and representational mechanisms. What Gidal called the “contradictoriness through duration”<sup>154</sup> of the film loop, and the loop as a “force of separation and difference”<sup>155</sup> comes into play, as well as slippages between the moving and static image, and between illusion and the *real / reel* of the material. A back and forth between the filmic and the early or proto-cinematic plays a part in this move, and through this perhaps a form of metacinema – one which recoils back to early film history and extends into the present.

My focus is on *Structural* or *Materialist* film (in some instances known as *Formalism*, or a ‘formal tendency’) – which is to say (broadly speaking) work that is concerned with exploring or revealing the physicality, materiality, and processes of the filmic medium and its apparatuses, and in so doing challenges various conventions of representation and illusion in filmmaking. While the different terms for these practices are not exactly interchangeable, the correct term or definition is a point which many of the filmmakers and writers engaged with this work at the time had different views on. In recent years, the term *structural film* has been used more broadly; first applied in 1969 by film theorist P. Adams Sitney,<sup>156</sup> it was

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<sup>153</sup> Peter Gidal, *Technology and Ideology Through/And Avant-Garde Film: An Instance* (1980) In: Peter Gidal, *Flare Out: Aesthetics 1966 – 2016* (London: The Visible Press, 2016), p.131.

<sup>154</sup> Ibid.

<sup>155</sup> Ibid.

<sup>156</sup> In: P. Adams Sitney, ‘Structural Film’, *Film Culture*, 47 (Summer 1969). Sitney subsequently revised and expanded this term in *Visionary Film: the American avant-garde* (New York: Oxford University Press, 1974).

contentious among many filmmakers at the time who felt that this implied that content was subsidiary to structure, and was a term imposed upon their work.<sup>157</sup> Sitney's outline of structural film was to differentiate it from his conception of 'formal' avant-garde film (of the 1950s and 1960s) which employed "a cinematic language of *conjunction*"<sup>158</sup> or a "language of *metaphor*"<sup>159</sup> (he included Brakhage, Markopoulos, Kubelka, and Anger in this category), and aligned the Structural with the work of Tony Conrad, George Landow (aka Owen Land), Michael Snow, Hollis Frampton, Joyce Wieland, Ernie Gehr, and Paul Sharits – all of whom, he said, "have produced a number of remarkable films *apparently* in the opposite direction of the formal tendency. Theirs is a cinema of structure, wherein the *shape* of the whole film is pre-determined and simplified, and it is that shape that is the primal impression of the film."<sup>160</sup> This was further expounded by Sitney in terms of characteristic techniques:

Four characteristics of the structural film are a fixed camera position (fixed *frame* from the viewer's perspective), the flicker effect, loop printing (the immediate repetition of shots, exactly and without variation), and rephotography off of a screen. Very seldom will one find all four characteristics in a single film, and there are structural films that avoid these usual elements.<sup>161</sup>

The aspect of loop printing as method – although not necessarily as repetition *exactly and without variation*, is something which I will address within a broader context of artists' subversion or redeployment of the medium, used to several different ends. Sitney's reductive reading of the work of a diverse collection of filmmakers which appears to miss the intentions behind their methods was critiqued by Malcolm Le Grice in 1972: "Sitney's use of the term 'structural', to cover what he makes it cover, is totally misleading and does not help the perception or understanding of any of the films which he puts into the category [...] Is there

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<sup>157</sup> "Few film-makers approved of the term 'structural film', introduced in 1969 by Sitney to describe post-Warholian film-making in which 'the film insists on its shape, and what content it has is minimal and subsidiary to its outline.'" - A.L. Rees, *A History of Experimental Film and Video: From the Canonical Avant-Garde to Contemporary British Practice* (2<sup>nd</sup> Edition) (London: British Film Institute / Palgrave Macmillan, 2011), p. 80. Rees cites P. Adams Sitney, 'Structural Film', *Film Culture*, 47 (Summer 1969).

<sup>158</sup> P. Adams Sitney, 'Structural Film' (1969), in: P. Adams Sitney (ed.), *Film Culture Reader* (New York: Cooper Square Press, 2000), p.326.

<sup>159</sup> Ibid.

<sup>160</sup> Ibid., p.327.

<sup>161</sup> Ibid.

anything which these film-makers do have in common with each other?"<sup>162</sup>

Moving away from Sitney's categorisations of 'structural', Le Grice went on to approach this issue by identifying a series of concerns explored by filmmakers "who have a base in the 'underground'"<sup>163</sup> – such as those which derive from: the camera, its limitations and extensions; the editing process "*and its abstraction into conceptual, concrete relationships of elements*";<sup>164</sup> methods of printing, processing, and re-filming as "*exploration of transformations possible in selective copying and modification of the material*";<sup>165</sup> perceptual mechanisms (particularly relating to flicker); the materiality and plasticity of film, "*awareness of the reality of the material itself and its possible transformation into experience and language; celluloid, scratches, sprockets, frame lines, dirt, grain*";<sup>166</sup> the projection apparatus and its components (lamp, lens, gate, shutter, claw, screen); the "*semantics of image and the construction of meaning through 'language' systems*";<sup>167</sup> and "*concern with duration as a concrete dimension*".<sup>168</sup>

Le Grice's outline of this<sup>169</sup> which, through a specificity to methodological concerns (and reference to particular filmmakers' works) crossed a divide made by Sitney, tracing a configuration of practices that explored materiality, process, plasticity, form and structure of the medium and its component parts, in conjunction with the conceptual and semantic. This included the possibilities of the medium to engage with questions of temporality and perception, in ways which are particular to the medium of film. This approach is more aligned with my research, expressing connections between the technological, material, temporal, perceptual, and ideological.

The significance of differences in terminologies, as much in terms of a reading of practices as categorisations, is the ideological intentions behind them. Peter Gidal combined the terms structural and materialist in a "Theory and Definition of Structural / Materialist

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<sup>162</sup> Malcolm Le Grice, 'Thoughts on Recent Underground Film (1972)', in: Malcolm Le Grice: *Experimental Cinema in the Digital Age* (London: BFI Publishing, 2001), p.13.

<sup>163</sup> Ibid., p.14.

<sup>164</sup> Ibid., p.15.

<sup>165</sup> Ibid.

<sup>166</sup> Ibid., p.16.

<sup>167</sup> Ibid., p.17.

<sup>168</sup> Ibid.

<sup>169</sup> In: Le Grice, 'Thoughts on Recent Underground Film (1972)', *Experimental Cinema in the Digital Age*, pp.13 – 26.

Film”,<sup>170</sup> with the caveat that “Using the term Structural / Materialist is dangerous as well, as it refers to structural film. Equal emphasis must be put on the Materialist ‘half’ of the term”.<sup>171</sup>

For Gidal, a key ideology is anti-illusionism,<sup>172</sup> and at times, anti-representation<sup>173</sup> – against what he called the *transparency* of the apparatus governing the construction of dominant forms of expression:

A move away from dominant forms of expression is necessary because dominant forms of expression means *current* dominant forms of expression, which are ones of transparency, invisibility, in which the mechanism, the apparatus, the construction is not such, does not exist. A move away from dominant forms is thus not a matter of anti-manipulation, or deconstruction of certain codes in the sense of explication-after-the-fact, but of *film-as-projected*, as anti-illusionist, remembering that a mechanistic finality to this is not achievable; but attempted anti-illusionist practice through consequent/consistent materialist practice wherein the process is the film, the procedure: construction of production of the film, its effects, of an image of the real, of production of the real (this is real).<sup>174</sup>

In these terms, the disruption of illusion, representation, and narrative forms by bringing the mechanisms of the medium to the fore are methods for the de-familiarisation of cultural and filmic modes of expression, rupturing the transparency or invisibility of this construction with the ‘real’ of matter. These interventions to the dominant modes of expression were ideologically-driven, a subversion of the filmic medium as a vehicle,

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<sup>170</sup> Peter Gidal, ‘Theory and Definition of Structural / Materialist Film’, *Studio International*, 190, no.978 (November / December 1975), pp.189 – 196. Republished in: Peter Gidal, *Flare Out: Aesthetics 1966 – 2016* (London: The Visible Press, 2016), pp.37-68.

<sup>171</sup> Gidal, *Flare Out*, p.67.

<sup>172</sup> “Structural / Materialist film attempts to be non-illusionist” – Gidal, *Flare Out*, p.37.

<sup>173</sup> For example, in Peter Gidal’s film work the decision to avoid figural representation (particularly of women) was a political one: “I have what may be called an ultra-left position because, in terms of the feminist struggle specifically, I have had a vehement refusal over the last decade, with one or two minor aberrations, to allow images of women into my films at all, since I do not see how those images can be separated from the dominant meanings [...] It went further [...] my position has led me to the point where there are no women or men in my films.” – Peter Gidal, in: ‘Discussion between Laura Mulvey, Christian Metz, Sandy Flitterman, Jean-Louis Comolli, Maureen Turim and Peter Gidal’, *The Cinematic Apparatus*, de Lauretis, T. / Heath, S. (eds.) (London: Macmillan Press, 1980), p. 169.

<sup>174</sup> Peter Gidal, ‘The Anti-Narrative’ (1979), in: Gidal, *Flare Out*, pp.96-97.



revealing its mechanisms and constructs: “For us, the project was one of the inseparability of the technology from the ideological and the inseparability of both from representations / constructings.”<sup>175</sup>



Working with film loops in the 1960s and 1970s meant either a looped projection (presented ‘live’, or re-filmed) or a loop made in a contact (or ‘step’) printer – involving the sequencing and repetition of printed frames and / or the hand-manipulation of film strips (and sometimes other materials) through the printer. In many instances, it was a combination of these methods. Within those processes are embodied different temporal modes: the looped projection (or multiple projections) as a live event, which happens in real-time (but not necessarily representing real-time); the recorded projected loop, one step removed – and *fixed* in time; and the printing of loops, whereby segments of recorded film-time can be manipulated, rearranged, and repeated – often involving several ‘generations’ of film prints. Beyond this, the loop is a durational event made up of a fragment of recorded time, holding the past-as-continuous-present within a mechanistic force.

Methods of hand-printing shaped many Formal / Materialist film works during this period, particularly those created at the London Film-Makers’ Co-operative workshop. To some extent, this can be aligned with the technical facilities available there, including the installation of a contact printer at the workshop. As Gidal put it: “work with one possible operation through one aspect of one machine at the London Film-Makers’ Co-operative in, say, 1969 could yield a specific kind of work on representation that another system of technology could not.”<sup>176</sup>

The *modus operandi* which defined the LFMC at its peak was as a multi-functioning workshop / lab, cinema / performance space, critical / discursive site, archive, and distributor of films and texts. One could shoot a film, hand process it, edit, manipulate and re-print, and show the film – all within the same building, if one wanted to. Not only that, but the films would often be previewed and reviewed by writers from within the Co-op group. Within this whole process at the LFMC there is a striking circularity: a closed-circuit of production, output, and critical engagement.

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<sup>175</sup> Peter Gidal, ‘Technology And Ideology In / Through / And Avant-Garde Film: An Instance’ (1980), in: Gidal, *Flare Out*, p.128.

<sup>176</sup> *Ibid.*, p.119.

The development of the workshop at LFMC grew from the initiatives of Malcolm Le Grice and David Curtis to create access to facilities for filmmakers to hand-process and print their work. This began with some (quite eccentric) home-made equipment for developing and printing, built by Le Grice and friends, followed later by the purchase of a professional film processor and a Debie step printer for the workshop. Le Grice's early work relied heavily on hand-manipulated contact printing – initially using the hand-built printer he made from an old projector, a mid-1960s technology hack: "I built a home-made printer using an old projector and I did all my earliest work with printing on it – *Little Dog For Roger, Blind White Duration*."<sup>177</sup> Writing in 1972, Le Grice aligns this technology with early film history, in a move away from the separation of camera and projector (in essence, printers are a combination of the two) – and through this, finds a concept of filmic time-space 'equivalence':

In the earliest stages of film's history, the same piece of equipment was often used as camera, printer, and projector. The similarities of functioning provide something of a 'mechanistic' basis for the 'equivalence' idea. Until recently, printing has been the area of retrospective TIME/SPACE (or content) which has involved me the most. I have been interested by the way in which it allows physical aspects of the medium, the reality of the celluloid, emulsion, sprockets, the nature and capabilities of the machinery to become the basis of experience and content.<sup>178</sup>

This is not just an endeavour to challenge illusionistic or narrative film-time, but to draw out the sculptural and sensual possibilities of thinking and visioning a new kind of 'concrete' filmic space-time – one which was 'real' and in the present, yet shifting, looping, and modulating. Central to this (as a viewer) is being witness to the production process laid bare; at the same time, the projection as event – or as spatio-temporal structure – becomes primary. This could seem like a contradiction, but where the production-time and projection-time converge – via the printer (and particularly the hand-manipulation of film through it) – the 'events' of production and projection become closer (or parallel): this is Le Grice's "mechanistic' basis for the 'equivalence' idea", grounded in the sense of "Time or duration as a 'concrete' dimension."<sup>179</sup>

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<sup>177</sup> Malcolm Le Grice, 'Establishing the Co-op Workshop' (interview by Mark Webber, 2001). In: Mark Webber (ed.), *Shoot Shoot Shoot: The First Decade of the London Film-Makers' Co-operative 1966 – 76* (London: LUX, 2016), p.104.

<sup>178</sup> Le Grice, 'Real TIME/SPACE [1972]', in: Le Grice, *Experimental Cinema in the Digital Age*, p.158.

<sup>179</sup> Ibid., p.160.

In the essay “Technology And Ideology In / Through / And Avant-Garde Film: An Instance”, Peter Gidal writes about the slippage between materiality and representation – between the film strip with its sequence of still images and the illusion of movement, which working with the printer can produce. This tension between illusion and the material could expose (quite literally) the mechanisms at work:

When you loop a strip of master film material (threading) onto a printer and attempt to pull it through in order to ‘see’ how the reproduction will appear if the original is *not* led through automatically on the sprocket-wheel, you are attempting to set up a difference between image and its reproduction. If, then, because of the mechanism (the machine *per se*), occasionally, the sprocket-wheel catches the sprockets of the material which you are trying to pull through freely and the result – within 24 hours – is screened moments wherein the illusion of real-time represented (movement at 24 frames per second) is worked against ‘the rest’ of the material which was slipped through and which (therefore) blurred betraying hardly a three-dimensionally-acceptable movement at all, *then* you have set up a contradictory representation: holding and not holding a series of reproductions into (the) terms of (a) representation.<sup>180</sup>

‘Holding and not holding’ the sequence of images to the terms of filmic representation is a *holding and not holding* of recorded time: the mechanistic illusion of ‘real time’ as projected at twenty-four frames per second, against the ‘real’ of the film strip as it is pulled through the printer by hand and re-printed (in real time). The physical holding and handling of the film, and its slippage in and out of this temporal registration, betrays the illusion of filmic construction – revealing still frames and film edges. The printer, and the parameters which this allowed to be tested within the filmmaking process, defines particular approaches to *film-as-film*, questioning the terms of reproduction and representation.

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<sup>180</sup> Gidal, *Flare Out*, p.118.



**Fig.8. Malcolm Le Grice, *Little Dog for Roger* (film still), 1967  
(16mm film, 12 minutes, B&W, sound)  
© Malcolm Le Grice, all rights reserved**

In Malcolm Le Grice's film *Little Dog for Roger* (1967), the *contradictory representation*, ("holding and not holding a series of reproductions into (the) terms of (a) representation")<sup>181</sup> is clear. In this piece, we see the slippage in registration of strips of 9.5mm film as they are pulled by hand through a 16mm contact printer, shifting between representation (and the illusion of natural movement), freeze-frames, and blurred semi-frozen frames. The edges of the reprinted film, and the sprocket holes which run down the middle of it, are as much the content as the recorded images.

Before any recorded images become clear, the film begins with the blurred motion of scratched, degraded film (and the chemical residue of hand-processing) – an abstract image of movement, with gaps where the reprinted film strips end or begin. This is accompanied by an intermittent soundtrack which is made from clips of popular World War Two era songs, tape-recorded from old 78rpm records (apparently from his parent's collection).<sup>182</sup> The recorded sound, distorted and overdriven, stops and starts as if erased and re-recorded in short bursts – although the hum of the audio tape is constant. The image sequences, when they appear, show Le Grice as a young boy, with his mother and brother, playing with a

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<sup>181</sup> Gidal, *Flare Out*, p.118.

<sup>182</sup> See accompanying booklet to the DVD: *Shoot Shoot Shoot*, LUX / Re:Vair, 2006.

small dog. It is a nostalgic image which, combined with the soundtrack and obsolete 9.5mm film gauge, could become an overload of wistful nostalgia. However, in *Little Dog For Roger*, this material is worked-against through methods of reprinting, re-recording, repetition and looping – and the ‘failures’, or repurposing, of the technologies involved. That said, the slippage of time and the recorded past, obsolescence, and a layering of temporalities, all haunt this work.

For years, Le Grice famously dismissed the nostalgia of the images and sound as “vaguely nostalgic material [which] has provided an opportunity for me to play with medium of celluloid and various kinds of printing and processing devices.”,<sup>183</sup> although he adds that “The qualities of film, the sprockets, the individual frames, the deterioration of records like memories, all play an important part in the meaning of this film.”<sup>184</sup> This last sentiment, *the deterioration of records like memories*, speaks of nostalgia, of loss, and of the return; and what else is nostalgia but the desire to return? The etymology of the word ‘nostalgia’, from the Greek *algos* - meaning pain or grief, and *nostos*: homecoming, expresses this sensibility. The desire to return is imbued not only with longing but also with a sense of grief at what may have been lost in the interim. In the last few years Le Grice revised his view of this film:

– I thought it was about film as a medium and material – scratches, sprocket holes, dirt, slippage in the projector, blank screen, gaps in the sound-track – I forgot that one of the boys was me, the other was my brother, the young woman was my mother – now dead – and behind the camera in 1952 was my father – the dog was mine – nothing to do with Roger – that’s another story.<sup>185</sup>

The passing of time throws a different light – for Le Grice personally, and for different generations of audiences returning to this work. There have been several different versions and formats of *Little Dog For Roger* – as single and double screen 16mm projections, with and without sound, and more recently digitised as single channel and two-channel formats (with sound). At one of its first screenings (at the New Arts Lab in London), the film was shown as a two-channel looped projection event: one screen projected at sound speed (24

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<sup>183</sup> Malcolm Le Grice, ‘Little Dog For Roger’, *LUX*, <<https://lux.org.uk/work/little-dog-for-roger>> [accessed 20<sup>th</sup> February 2023].

<sup>184</sup> Ibid.

<sup>185</sup> Malcolm Le Grice, ‘1960s’, *Malcolm Le Grice*, <<https://www.malcolmlegrice.com/1960s>> [accessed: 20<sup>th</sup> February 2023].

fps) and the other at silent speed (16 fps).<sup>186</sup> This double looping at different projection speeds would further add to a sense of multiple temporalities within the work.<sup>187</sup>

Le Grice's methods of printing in this and in other works, such as *Berlin Horse* (1970), involve the layering of different generations of prints – some positive, some negative, which are treated and reprinted in different ways. *Little Dog For Roger* begins with one layer of reprinting (9.5mm to 16mm), then a second (a reprint of the reprint) in negative – one film strip moving towards and across another, followed by further reprinting of the same sections, with changes in exposure, frame-size and alignment, inversion of the image, focus / un-focus, and in movement / speed – shifting the image between the filmic and the still photographic. This layered reprinting creates a series of repeats with variations – which, in much of the film, are not continuous loops but instead draw our attention to the ends of the film-strip. At about two-thirds of the way through *Little Dog For Roger* we see a section printed as a continuous loop: the dog runs a circular path, which is looped several times before becoming a series of blurred, shifting, hand-held freeze-frames. The loop returns once more again, the circular motion of the dog doubling the looping. There is a tension between the film-strip as object (with edges, ends, and still frames), as moving image, and as a loop – through which there is a 'contradictoriness': a duality of stillness and movement, of the continuous and the discontinuous.

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Annabel Nicolson's film *Slides* (1971) also utilises slippages between still and moving, and between the material and illusory, which hand-manipulated film printing enabled – extending this to encompass a wider variety of materials, media, and processes. While *Slides* is concerned with the physicality of film, such as the edges of the reprinted material, it is also about the edgeless, and the flow and flux of materiality. Nicolson has commented that "The appearance of sprocket holes, frame lines, etc., is less to do with the structural concept and more of a creative, plastic response to whatever is around".<sup>188</sup>

Nicolson's approach in this work is to move away from the camera, working with the printer and a variety of material, some from her previous work: 8mm and 16mm film strips

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<sup>186</sup> See: Elcott, N. M., 'Darkened Rooms: A Genealogy of Avant-Garde Filmstrips from Man Ray to the London Film-Makers' Co-op and Back Again', *Grey Room 30* (MIT Press), Winter 2008, p. 15.

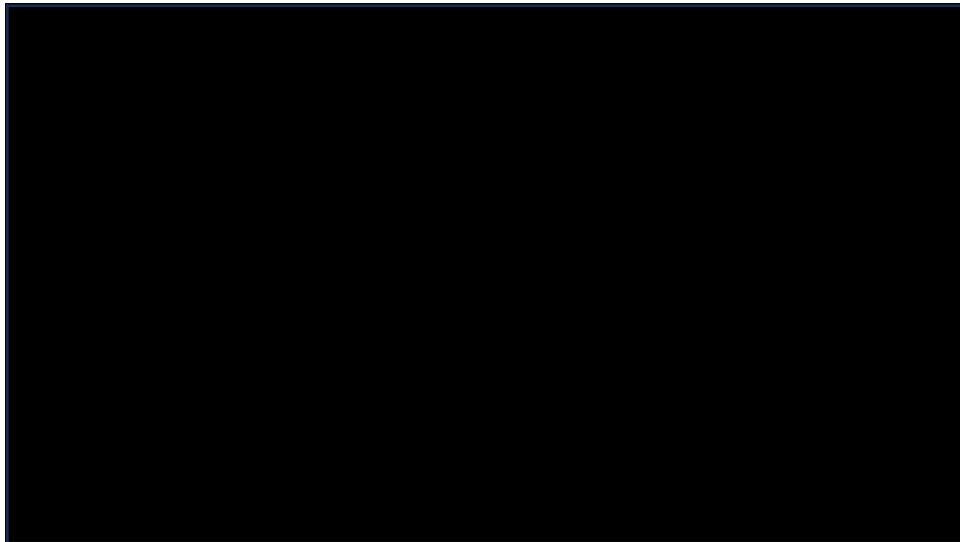
<sup>187</sup> The version of Le Grice's *Little Dog For Roger* which I have referred to for my reading of this work is a digitised single-screen version, released on DVD by LUX / Re:Voir in 2006.

<sup>188</sup> Annabel Nicolson, 'Slides', *LUX*, < <https://lux.org.uk/work/slides/> > [accessed 23<sup>rd</sup> February 2023].

which had been sewn, painted, scratched, or perforated, light-leaked footage, and cut-up 35mm slides (including images of her paintings on canvas). Beginning and ending with the photographic, the piece becomes an evolving, at times abstract, moving-(image)-painting-projection, leaking over the edges of the film-frame. The film (as material) in the printer is treated almost as a canvas (and could be thought of more in terms of a 'support'), onto which various kinds of matter can be projected and handled. She has described this work as one of her "tactile films".<sup>189</sup> There is a fluidity to this method, which only hand contact printing could allow:

A chance to see/create by movement, a kind of dance between the printer and myself.

'Slides' came about through some fascination with the phenomena of matter, its frailty and transience, the oddness of tiny filmed images from my earlier work lying around. Working with these parts, 35 mm slides cut into strips, thread, sewn film, light leaked footage, 8mm and 16mm fragments, I hand held this material in the contact printer. Images were created by movement and handling, literally keeping in touch with the elements.<sup>190</sup>



**Fig.9. Annabel Nicolson, *Slides* (film still), 1971  
(16mm film, colour, silent, 11 minutes)**

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<sup>189</sup> Nicolson, 'Slides'.

<sup>190</sup> Annabel Nicolson, 1978. *Perspectives on British Avant-Garde Film*, Hayward Gallery (exh. Cat.), 1977.  
Citation: LuxOnline: [http://www.luxonline.org.uk/artists/annabel\\_nicolson/slides.html](http://www.luxonline.org.uk/artists/annabel_nicolson/slides.html)

(Overleaf) IMAGE REMOVED: film still from *Slides*, Annabel Nicolson, 1971.

Image source: <<https://lux.org.uk/work/slides/>>

*Slides* is not loop-based in its construction, the form is more of a journey or flow – but in some ways it makes a return: to its start, in the photographic image, as well as to Nicolson’s earlier work. In the last ninety seconds or so, the work introduces a figure: a woman’s head appears, upside-down – the face of a woman from an earlier film by Nicolson: *Anju*, 1970.<sup>191</sup> This is followed by a section of hole-punched film, layered with another film strip below, the punched holes becoming peepholes (a Victorian device) through which the woman’s head is seen again – passed through various colour filters. The piece ends with this, a section of film which feels almost forensic, with strips of light-leaked film fragments pulled back and forth through the printer, a searching for something, a hiding and revealing.

Annabel Nicolson’s live expanded-cinema piece, *Reel Time* (1973), arguably one of the most radically *materialist* film-loop pieces of this period, is at once performance, sculpture, interactive installation, and film projection. It is also a form of intervention into, and subversion of, film projection mechanisms – something which Nicholson performed in other works, such as in the material used for *Frames* (1973), the result of a performance using a modified slide projector as film projector with a hand-held lens.<sup>192</sup> In *Reel Time*, a very long film loop is passed through both a film projector and a sewing machine, with Nicolson sewing (or, more accurately, *perforating*) the film live as it is projected. The film loop being ‘sewn’ was a recording of Nicolson sewing – a doubled looping. Another projector was used as a light source, casting the shadow of the artist and sewing machine onto a second screen. In an interview discussing the piece, Nicolson described her performance and the set-up:

There were two projectors. One of them was just a light beam, so that was always in the present, just illuminating my shadow; in the other projector was the murky image of me sewing. The loop was very, very long, up to 100ft depending on where I was, so I was sitting quite a long distance from the projector and the film. It was very difficult to perform because I had to keep up with the speed of the projector and often the film would snap and whoever was projecting had to mend it as it ran. It was very dramatic, because when it snapped it was very loud; quite a shock for

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<sup>191</sup> See: ‘Anju, Annabel Nicolson’, *LUX*, <<https://lux.org.uk/work/anju/>>, [accessed 23<sup>rd</sup> February 2023].

<sup>192</sup> See: ‘Frames’, *LUX*, <<https://lux.org.uk/work/000324-frames/>> [accessed 23<sup>rd</sup> February 2023].



everyone and for me! Of course, the more holes that got in the film, the more perilous it was.

It had to be a brand new piece of film every time, so it was always very shiny...like it was straight out of the can. You got these little flickers of light bouncing off the walls. The film was sort of trailing around and the light was bouncing off it, and it was also trickling down along the floor and through the audience to the projectionist. Sometimes it got tangled up because it was going through the audience – people had to help it along, pick it up and pass it along. It involved everyone.<sup>193</sup>

In this piece the projection as a spatial live event, as phenomena and mechanism, is central. In relation to this, Nicolson has expressed how she was drawn to projection as an interest in light: “Even before I made films, what I liked was projection, the light beam”,<sup>194</sup> and to working with the architectural space of the projection event – “I’ve always been very affected by different spaces so that was also a way of working with that idea too. When you project a film or do something with projectors you’re not just working with the technology, you’re working with the space and the surfaces and the height.”<sup>195</sup>

In the looping within *Reel Time* there is an inevitable destruction of the film material – and the longer the loop ran the more destroyed it became, until eventually it could be spliced no further. It tests the limits of the medium, in the most physical, material way. Felicity Sparrow, recalling the performance of *Reel Time* at the London Film-Makers’ Co-operative in 1973, describes the unfolding of this destruction and obliteration of the film-image:

Once repaired the film starts again, but the pauses become more frequent as the brittle filmstrip deteriorates, needing further splices. The screen image becomes all-but-obliterated by light, unlike the real-time moving shadowgraph which remains constant. The performance ends with the film’s destruction, when the projectionist announces that it can no longer pass through the projector. The house-lights come on.<sup>196</sup>

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<sup>193</sup> Annabel Nicolson, ‘Reel Time, 1973’ (interview with Mark Webber, January 2002), in: Mark Webber (ed.), *Shoot Shoot Shoot: The First Decade of the London Film-Makers’ Co-operative 1966 – 76* (London: LUX, 2016), p.169.

<sup>194</sup> Ibid., p.168.

<sup>195</sup> Ibid.

<sup>196</sup> Felicity Sparrow, ‘Annabel Nicholson, 1. Prologue: The Art of Light and Shadow’, *LUXONLINE*, <[https://www.luxonline.org.uk/artists/annabel\\_nicolson/essay\(1\).html](https://www.luxonline.org.uk/artists/annabel_nicolson/essay(1).html)> [accessed: 23<sup>rd</sup> February 2023].

There was an additional element to Nicolson's piece: the reading of two manuals by people within the audience, one on threading a sewing machine, the other on threading a projector, reinforcing the link between these machines as it was being performed. As Nicolson observes here, this part has sometimes been overlooked:

The thing that is very important, that people forget, is that there were also two people reading. One of them had a little booklet 'How to thread the sewing machine' and the other had 'How to thread the projector'. I just asked them to read now and again, just intermittently, a bit here and there, it was quite leisurely. So although people remember it as just me sewing, the whole thing was really quite spatial, with different things happening in different parts of the room.<sup>197</sup>

In this alignment of technologies, threading together projector and sewing machine, there is potential for a feminist reading of the work, something which Nicolson has tended to distance herself from as a motivation at the time of making the work. Whether intended as a feminist move or not, the piece is a subversive act, which implicitly questions the notion of 'women's work' – as domestic labour (and / or 'craft'), repositioning the image of a woman at a sewing machine. Writing on female filmmakers associated with the London Film-Makers' Co-operative and their work in relation to feminism, Lucy Reynolds mentions Nicolson's *Reel Time* along with Gill Eatherley's *Aperture Sweep* (1973), as what could be seen as early manifestations of a feminist filmmaking practice concerned with formal or material experimentation which developed further in the late-1970s and 1980s; however, she cautions against imposing this reading retrospectively on the work:

These questions can be implicitly traced in earlier works of the Co-op, such as Annabel Nicolson's film performance *Reel Time* (1973) or Gill Eatherley's *Aperture Sweep* (1973), where the tools of domestic labour such as the sewing machine and the broom make allusion to the workings of cinematic illusion. But these are feminist readings in retrospective, projected onto works that, however compelling, were primarily seeking to understand the forms and spectatorships of film, as yet seen as unconnected to a politics of female liberation. Indeed, at the time Eatherley, Nicholson or Sally Potter felt that the women's liberation movement had little bearing on their intense and singular engagements with film and its languages.<sup>198</sup>

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<sup>197</sup> Nicolson, 'Reel Time, 1973', in: Webber (ed.), *Shoot Shoot Shoot*, p.169.

<sup>198</sup> Lucy Reynolds, essay for film screening programme: 'From Reel to Real: Women, Feminism and the London Film-Makers' Co-operative', *Tate Modern*, 23 – 25 September 2016.



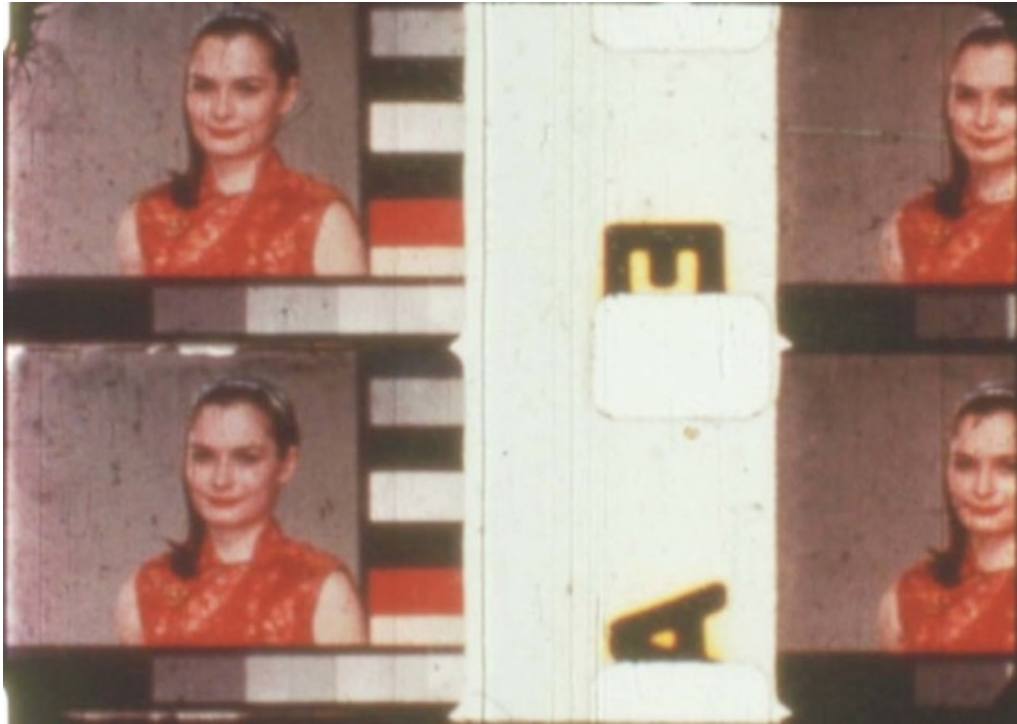
**Fig.10. Annabel Nicolson, Section of film loop from the film performance  
*Reel Time*, 1973**

IMAGE REMOVED: a section of film loop from Annabel Nicolson's *Reel Time* performance (1973), showing perforations to the film.

Image source: <<https://camdenartcentre.org/file-notes/file-note-75>>

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Celluloid film, each time it is projected, handled, and looped, picks up surface scratches, dirt, and other marks & blemishes – these marks are referred to as artefacts. When a loop is run for a duration of time, and / or on a number of occasions, these artefacts increase and the film becomes engraved with the historicity of its projection over time. Displaying this degradation of the film over time and accumulation of artefacts on its surface, George Landow's *Film in Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc.* (1965 / 1966), is an almost motionless film, created by methods of looping and reprinting. The film uses found 16mm footage from a Kodak colour-test film, the head and shoulders of a young woman, an image which is static apart from her occasional blink. Landow had the film re-printed so that the image is split in half across the frame, with the edge of the film running almost central in reprint.



**Fig.11. George Landow / Owen Land, *Film in Which There Appear Sprocket Holes, Edge Lettering, Dirt Particles, Etc.* (film still), 1965  
(16mm film, 5 mins, colour, silent)  
Courtesy Office Baroque and Estate Owen Land**

The film disrupts the image, cutting it in half, and troubles the 'moving image' by almost freezing it – the movement occurring mostly in the edges of the medium, in the sprocket holes and edge lettering, which have been centralised. As Landow (aka Owen Land) has said: "This film takes the view that certain defining characteristics of the medium, such as those mentioned in the title, are visually "worthy"."<sup>199</sup> The work can also be seen as a critique of commercial formats; in its preliminary iteration, *This Film Will Be Interrupted After 11 Minutes by a Commercial* (1965) there is a more direct critique of commercial broadcast formats, as well as perhaps a comment on the reproduction of images. This used the same test-film footage on a loop, which (as the title described) was interrupted after eleven minutes by the image of Rembrandt's *Syndics of the Drapers' Guild* as reproduced in

<sup>199</sup> Owen Land, 'Film In Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc.', *LUX*, <<https://lux.org.uk/work/film-in-which-there-appear-sprocket-holes-edge-lettering-dirt-particles-etc/>> [accessed 27<sup>th</sup> February 2023].

advertisements by Dutch Masters cigars. P. Adams Sitney describes this first presentation of the film and its development into *Film in Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc.* (which was later reconfigured again by Landow as a two-screen piece)<sup>200</sup> –

Landow premiered this film as loop at the Film-Makers Cinematheque, calling it *This film will be interrupted after ten minutes by a commercial*. True to its title, the film was interrupted with an 8mm interjection of Rembrandt's "Town Council" [sic] as reproduced by Dutch Master Cigars. A luscious green scratch stood across the splice in the loop, which gave it a particular tonality during that single performance, since only that identified the cycling of the loop, and contrasted with the red overtone of the image.

When the loop, minus the commercial, was printed to become *Film in which, etc.*, Landow instructed the laboratory not to clean the dirt from the film but to make a clean splice that would hide the repetitions. The resultant film, a found object extended to a simple structure, is the essence of a minimal cinema. The girl's face is static, perhaps a blink is glimpsed; the sprocket holes do not move but waver slightly as the system of edge lettering flashes around them. Deep into the film, the dirt begins to form time patterns, and the film ends.<sup>201</sup>

I am watching a YouTube version<sup>202</sup> of Landow's *Film in Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc.*, and the image is also digitally degraded, several times over. I see pixellated dirt. I can remember what real dirt and film scratches look like, so I am creating a synthesis of artefacts in my mind, a kind of meta-materiality. But despite this, what strikes me is not so much the dirt, or the digital artefacts, but the illusion of stillness – belied by the continuous movement of Kodak edge-lettering and the occasional jolt of the loop-splice going through the gate. In this area between stasis and movement, illusion and materiality, which the loop creates – there is, perhaps, another type of meta-materiality, somewhere between film-as-film and the pre-cinematic.

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<sup>200</sup> "later he would reconfigure the work as a two-screen piece with the image on the left flipped so that the half face at the frame edge became a third figure when the two projections overlapped." - P. Adams Sitney, 'Passages: Owen Land' (obit.), *Artforum* (November 2011) <<https://www.artforum.com/print/201109/owen-land-29195>> [accessed 26<sup>th</sup> February 2023].

<sup>201</sup> P. Adams Sitney, 'Structural Film', *Film Culture* No.47, Summer 1969. In: P. Adams Sitney, (ed.), *Film Culture: An Anthology* (London: Secker & Warburg Ltd, 1971), p.339.

<sup>202</sup> See: <[https://www.youtube.com/watch?v=1\\_7dNnB8fMc](https://www.youtube.com/watch?v=1_7dNnB8fMc)> [accessed 27<sup>th</sup> February 2023].

Proto-cinematic Victorian animation devices – the phénakisticope, zoetrope, praxinoscope, and zoopraxiscope among them, relied on a spinning circular disc or cylinder format to produce the illusion of movement from still images; in effect, these early forms of moving images are loops. Writing on proto-cinematic inventions in his essay “For a Metahistory of Film: Commonplace Notes and Hypotheses”, structural filmmaker Hollis Frampton described how the “Belgian physicist Plateau invented the phenakisticope, the first true cinema”<sup>203</sup> and how the “generically similar” inventions which followed it (zoetrope, praxinoscope, zoopraxiscope) took the loop form: “All of them, unconsciously miming the intellectual process they instigated, took the form of spliceless loops: an eternity of hurdling horses and bouncing balls.”<sup>204</sup>

The mechanics of early animation devices reveal the illusion of the moving image as such – its component parts, the still frames, a visible and persistent reminder; it is easy to see why a structural (or materialist) filmmaker would take an interest in this. The play between stillness and motion, which is a matter of speed and after-image (or ‘persistence of vision’), excited Victorian audiences for its illusion, its trickery, and was pursued by scientists and inventors for what it revealed about visual perception. This fascination continued into the early years of film projection (and, to some extent, still abides):

Early film projectionists used to play a kind of trick by beginning a film show with the image projected still and then slowly cranking the film into motion. By so animating the still, they appeared to release the movement that had been dormant in that single frame; they brought it, as the saying goes, to life.<sup>205</sup>

There is a sense of magic or alchemy in bringing the still and motionless ‘to life’ – and, in so doing, of cheating death.<sup>206</sup> Frampton, who began his career as a photographer, has explored the relation between still and moving image in various ways – notably in his film (*nostalgia*) (1971), in which the duration of each of thirteen reels of film bears witness to the cremation of a still photograph. Frampton’s (*nostalgia*) does not involve film loops or loop printing as method, but using a repetitive structure, it is about returning. Juan Carlos Kase,

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<sup>203</sup> Hollis Frampton, *For a Metahistory of Film: Commonplace Notes and Hypotheses*. In: Hollis Frampton, *On the Camera Arts and Consecutive Matters: the writings of Hollis Frampton*, ed. Bruce Jenkins (Cambridge, MA & London: MIT Press, 2009), p. 133.

<sup>204</sup> Ibid.

<sup>205</sup> Rachel Moore, *Hollis Frampton: (nostalgia)* (London: Afterall Books, 2006), p.3.

<sup>206</sup> Laura Mulvey has written extensively on this. See: Laura Mulvey, *Death 24x a Second* (London: Reaktion Books, 2006).

arguing for the reading of a more personal register in Structural and Formal films, has observed that (*nostalgia*) contains of “a sense of loss, of time past, of youth spent, of the insufficiency of images to stop time”.<sup>207</sup> Using a static camera, the only movement in the film is through the ‘death’ of the image.

In the essay “For a Metahistory of Film”,<sup>208</sup> Frampton traces the relationship between photography and cinema through the animation of the still image, from early proto-cinema – which, he reminds us, began with the hand-drawn – to a future “infinite film”, discussing how the early “union of cinema and the photographic effect followed a clumsy mutual seduction spanning six decades”.<sup>209</sup> Frampton attempts to redirect a traditionally-held view of the lineage from photography to moving-image, writing that:

The relationship between cinema and still photography is supposed to present a vexed question. Received wisdom on the subject is of the chicken / egg variety: cinema somehow “accelerates” still photographs into motion.

Implicit is the assumption that cinema is a special case of the catholic still photograph. Since there is no discoverable necessity within the visual logic of still photographs that demands such “acceleration”, it is hard to see how it must ever happen at all.<sup>210</sup>

What Frampton proposes, in answer to this “vexed question”, is a startling reversal of the received wisdom on the succession of film from photography; rather than the cranked-up animation of a still into life, it is an endless, seamless, recording device from which any still can be selected. What he envisages – or predicts (without knowing these forms at the time) is, in effect, digital video streams, 24/7 surveillance cameras, and data banks processing an endless amount of infinite cinemas:

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<sup>207</sup> Juan Carlos Kase, ‘Reassessing the Personal Registers and Anti-Illusionist Imperatives of the New Formal Film of the 1960s and ‘70s’, *October* (MIT Press), Issue 163 (Winter 2018), p. 63.

<sup>208</sup> Frampton, ‘For a Metahistory of Film: Commonplace Notes and Hypotheses’, *Artforum* 10, no.1 (September 1971). Republished in: Hollis Frampton, *On the Camera Arts and Consecutive Matters*, pp.131 – 139.

<sup>209</sup> *Ibid.*, p.133.

<sup>210</sup> *Ibid.*, p.134.

So I propose to extricate cinema from this circular maze by superimposing on it a second labyrinth (containing an exit) – by positing something that has by now begun to come to concrete actuality: we might agree to call it an *infinite cinema*.

A polymorphous camera has always turned, and will turn forever, its lens focused upon all the appearances of the world. Before the invention of photography, the frames of the infinite cinema were blank, black leader; then a few images began to appear upon the endless ribbon of film. Since the birth of the photographic cinema, all the frames are filled with images.

There is nothing in the structural logic of the cinema filmstrip that precludes sequestering any single image. A still photograph is simply an isolated frame taken out of the infinite cinema.<sup>211</sup>

The prescience of this writing is striking – as is its optimism. Living within a kind of “infinite cinema” nearly 50 years later, the labyrinth seems to have no exit. It keeps looping back and if there’s a way out it’s hard to find. Frampton: “Film has finally attracted its own Muse. Her name is Insomnia.”<sup>212</sup>

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<sup>211</sup> Frampton, p.134.

<sup>212</sup> Ibid., p.139.



## Frances Young, *Holding & Not Holding* (2017)

03:57. HD video / Photographic animation. Colour / b&w, stereo sound.

Single channel and multi-channel versions available.

<https://vimeo.com/francesyoung/holdingandnotholding>

4D Simulation of two-channel projection: <https://vimeo.com/francesyoung/holding4d>

Exhibited at:

*Stone Bodies, Red Sea: Judith Noble, Charlotte Prodger & Frances Young,*

MK Gallery, Milton Keynes, June 2017

*Fort Process, Newhaven Fort, September 2018*

*Fieldnotes: Slow Compression, Café Oto, London, July 2022*

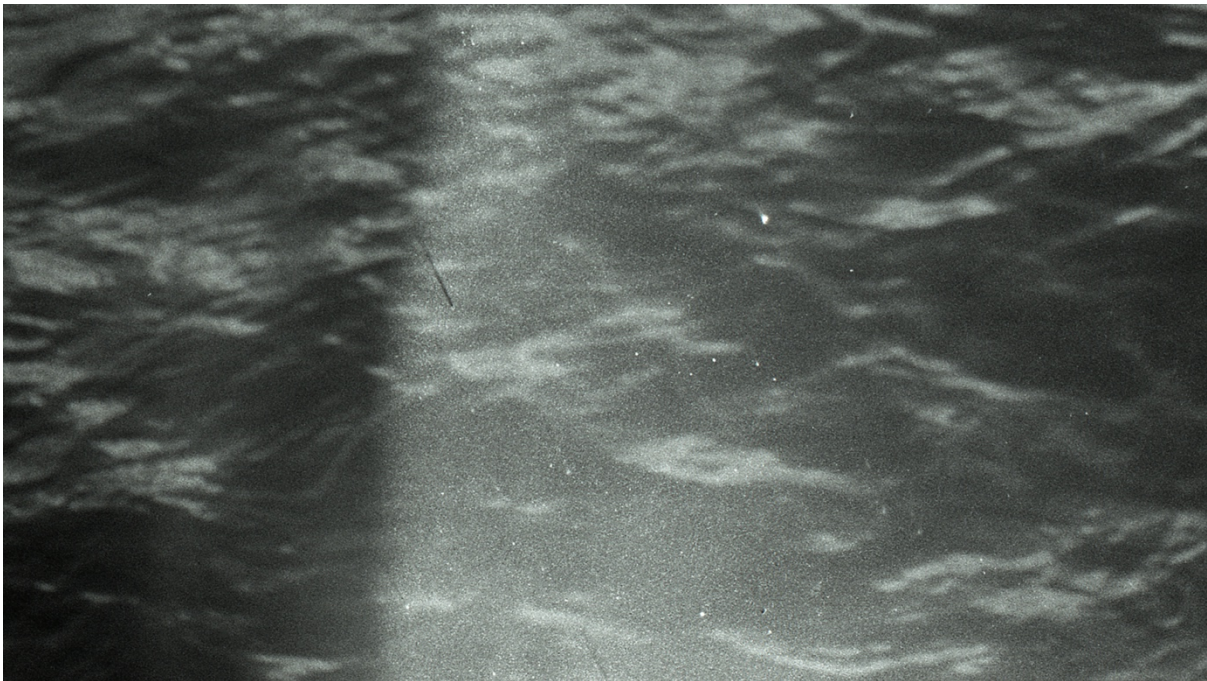
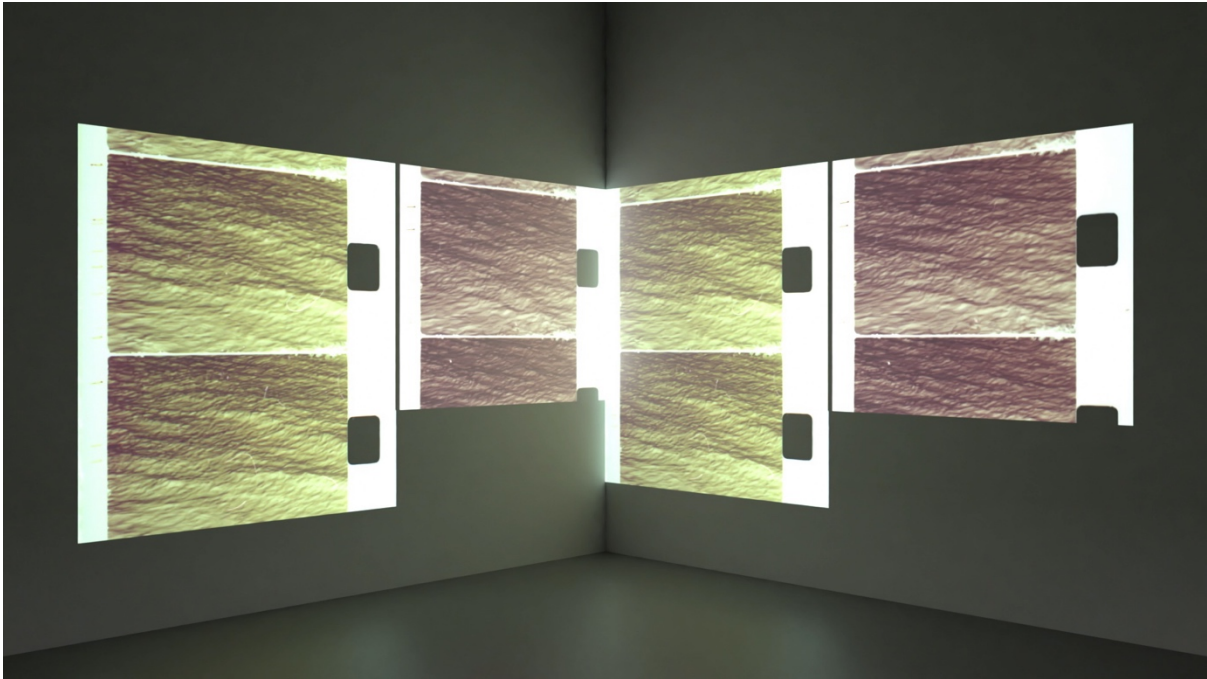


Fig.12. Frances Young,  *Holding & Not Holding* , HD video still, 2017

*Holding & Not Holding*  is a video projection with sound, which has both single channel and multi-channel versions. A 4D simulation of the work as a two-channel corner projection is available via the link above. This presents a more spatial, sculptural use of projection. In this version there is a slight variation in the video edit between the two channels.



**Fig.13. Frances Young, *Holding & Not Holding*, 4D simulation of two channel projection (video still), 2017 / 2022**

Exploring translations of media and the threshold between still and moving images, the video content is made from scanned photographic fragments: a few frames of black-and-white medium format negatives which had been exposed to light and dust during hand-processing, and some strips of found 8mm film. Both record sections of the sea, shot from above.

After processing and scanning, the physical negatives were lost; working with the digital remains, I became interested in the dust particles and light bleeds as much as the recorded images, which had been marked by a temporal layering of processes (in effect, an accidental double-exposure). Using close-detail video pans, I explore the surface of the film as another landscape, at times with an almost forensic treatment. In some sections, the motion of film through the scanner is echoed in horizontal movement through the video frame.

The 8mm film-strips were scanned as long, thin, single image files which I ‘animated’ vertically across the frame, altering the velocity of movement – this created a slippage in the material between blurred still frames and the momentary illusion of filmic movement. This method resonated with my reading of a passage in Peter Gidal’s essay: “Technology And

Ideology in / through / and Avant-Garde Film: An Instance”,<sup>213</sup> from which the title *Holding & Not Holding* is drawn; in this passage, discussed in Chapter 3, Gidal writes about the contradictory terms of representation in film mechanisms – contradictions between illusion and materiality, still frames and moving images. He gives the example of pulling film through the optical printer by hand, where a slippage of frame rates reveals this “contradictory representation: holding and not holding a series of reproductions into (the) terms of (a) representation.”<sup>214</sup>

My piece transposes this to a different method: *holding and not holding* the cellular frames to their ‘terms of representation’ within digital mechanisms. In parallel to what Gidal describes, my process of digitally moving the filmstrip through the frame was based on a fairly random, changing set of speeds – which momentarily hit the required frames-per-second equivalent for the terms of filmic representation to be held.

The work draws on a simultaneity of different temporal registers, layers of time and distance, through a plurality of wave-forms. The piece begins with the sound of radio static and a short-wave ‘number station’ which continues its repetitive utterances throughout, as the signal moves in and out of tune. Another layer of sound joins this, forming a bass tone – this is from a NASA audio file,<sup>215</sup> a sonification of *light curve waves* from a star, which I have sampled and looped. The material is from the Kepler Space Observatory, detecting exoplanets by looking for the dip in a star’s light as a planet passes in front of it – the *light curve wave*, here transcoded into sound waves. This can be seen as a form of photography, a drawing with light – and, as with all photographic processes, it follows the equation of light intensity over time. I was interested in this ‘equivalence’ with the photographic; and pairing the two sounds together as different embodiments of the spatio-temporal, and as signals which undergo a translation or recoding: the mysterious coded broadcast from an unnamed location on the planet, alongside the ‘sound’ of starlight as it is occluded by another planet, many thousands of light years away.

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<sup>213</sup> In: Gidal, *Flare Out: Aesthetics 1966 – 2016*, pp.116-134.

<sup>214</sup> Gidal, p.118.

<sup>215</sup> NASA: Kepler: Star KIC7671081B Light Curve Waves to Sound. (Public domain). Accessed at: [https://www.nasa.gov/mp3/578359main\\_kepler\\_star\\_KIC7671081B.mp3](https://www.nasa.gov/mp3/578359main_kepler_star_KIC7671081B.mp3)

## Chapter 4:

### ***Connectivity and the Disconnect: Economies of time and attention, surveillance capitalism, and the serial crowd***

As a form within contemporary culture, the loop is a ubiquitous feature – as looping content in music and video, in gaming, animated GIFs (programmed to run as an endless loop), advertisements and video billboards, and social media platforms – where the action of scrolling through this content can also be a looping, repetitive behaviour. Here, the encounter is with digital loops – which are (or can be) seamless. Digital loops don't have the physical constraints of film or tape loops – they can be much shorter or much longer, they don't degrade or gain artefacts over time, you can't see the joins, and they can run endlessly for eternity. The digital loop tends towards an illusion that the film loop pulls away from: often not so much a 'force of separation and difference', more an illusion of smooth seamlessness. In this mode the loop requires less attention – we know that it will come back around, to continue looping whether we are engaged with it or not.

The loop is also a frequent visual presence as the spinning 'wheel of doom', computer-graphics shorthand for: wait while this is processing / uploading / crashing, etc., a sign that time is not our own, of time reordered by the machine. It's a pause, a glitch, a looping moment of stasis within a sense of accelerated time – and it's slowing you down. Is the loop a default mode of our time – within ever-decreasing circles of *our* time: the time-outside-of-timekeeping, the not-accounted-for time? Is it also the default action for the acceleration in production, reproduction, and repetition of images? Does it speak of a shortening attention span?

As both time and human attention are increasingly commodified – a result of increased 'connectivity', perhaps the loop is a manifestation of a loss, or poverty, of time, and of 'being present'. Economies of time and attention (the subject of increasing debate and theorising over the last two decades) are intertwined with the technological – in particular, with the effects of networked technologies. A surplus of information and connectivity becomes a scarcity of time, privacy, and focus.

Luc Boltanski and Ève Chiapello were early to outline this paradigm in the *The New*

*Spirit of Capitalism*,<sup>216</sup> at a time when the new economies of (what they termed) ‘a *connexionist* world’ were accelerating during the ‘dot-com’ boom of the late-1990s: “In a network world, the significance of saving has not disappeared, but it applies to a different kind of goods [...] the main scarcity in our societies – at least among categories like *cadres*, who do not face immediate necessity – concerns time, not material goods.”<sup>217</sup>

The scarcity and commodification of time, and the disintegration of separations between work and leisure time, private and professional life, which Boltanski and Chiapello addressed,<sup>218</sup> has since then increased under a greater proliferation of networked media and ‘smart’ devices, the effects of which are now more deeply embedded in a confluence of *communicative*, *surveillance*, and *platform capitalism*. This paradigm reinforces the notion that constant activity provides a form of status – particularly *being seen* to be active, extending a work ethic that had always “permeated the spirit of capitalism in various forms”,<sup>219</sup> which

tends to make way for a premium on *activity*, without any clear distinction between personal or even leisure activity and professional activity. To be doing something, to move, to change – this is what enjoys prestige, as against stability, which is often regarded as synonymous with inaction.”<sup>220</sup>

Jonathan Crary follows this thread in *24 / 7: Late Capitalism and the Ends of Sleep*, adding that “There are now very few significant interludes of human existence (with the colossal exception of sleep) that have not been penetrated and taken over as work time, consumption time, or marketing time [...] This model of activity is not some transformation of an earlier work-ethic paradigm, but is an altogether new model of normativity, and one that requires 24/7 temporalities for its realization.”<sup>221</sup> Under the conditions of a contemporary

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<sup>216</sup> First published as *Le nouvel esprit du capitalisme* ([Paris]: Éditions Gallimard, 1999).

<sup>217</sup> Luc Boltanski and Ève Chiapello, *The New Spirit of Capitalism* (London: Verso, 2018), p.152.

<sup>218</sup> “In a connexionist world, the distinction between private life and professional life tends to diminish [...] It then becomes difficult to make a distinction between the time of private life and the time of professional life” - Boltanski and Chiapello, p.155.

<sup>219</sup> Boltanski and Chiapello, p.155.

<sup>220</sup> Ibid.

<sup>221</sup> Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London & New York: Verso, 2013), p.15.

'24/7' networked culture, this restless activity as a signifier of industriousness or progress dissolves boundaries of not only the personal and private, but also hijacks leisure or 'down time' through a commodification of behaviour: a surveillance capitalism trading on behavioural predictions and marketing strategies (described by Shoshana Zuboff as 'behavioural futures markets')<sup>222</sup> – which, in turn, influences and mediates daily behaviours, political outcomes, and social bonds – or, social fractures. This model of constant activity enmeshed in various communications technologies, is simultaneously a model of physical and local inactivity, where people have become immobilised behind computer screens or hunched over smartphones, active yet passive, alone in their zone of connectivity. The immobilisation within this scenario can also extend to a sense of political immobilisation, or lack of agency; as Crary has put it: "the paradox of public and private life humming with an unimaginable quantity of activity, while all this restless animation and industry is in the service of an effective stasis".<sup>223</sup>

In this experience there is reversal of an earlier optimism in the potential of networked connectivity, an ideology which was gaining ground in the (pre-internet) late 1960s and early 1970s, famously expressed by Marshall McLuhan in 1967: "Ours is a brand-new world of allatocness. 'Time' has ceased, 'space' has vanished. We now live in a global village...a simultaneous happening."<sup>224</sup> The 'global village' as seen from the late 1960s is a far more utopian vision than the reality we now know; time may have 'ceased', in the sense that it seems to have shrunk and its former delineations have been erased – taken over by the almost continuous demands of communicative capitalism. 'Allatocness' has become a restless treadmill.

This turn from an earlier sense of freedom in connectivity to a form of enslavement by it has been expressed recently by Byung Chul-Han in *Psychopolitics: Neoliberalism and New Technologies of Power*:

Initially, the internet was celebrated as a medium of boundless liberty. Microsoft's early advertising slogan – 'Where do you want to go today?' – suggested unlimited freedom and mobility on the web. As it turned out, such euphoria was an illusion.

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<sup>222</sup> In: Shoshana Zuboff, *The Age of Surveillance Capitalism: The fight for a human future at the new frontier of power* (London: Profile Books, 2019). See also: Shoshana Zuboff, 'Surveillance Capitalism', Project Syndicate, 3<sup>rd</sup> January 2020, < <https://www.project-syndicate.org/magazine/surveillance-capitalism-exploiting-behavioral-data-by-shoshana-zuboff-2020-01> > [accessed 9<sup>th</sup> March 2023].

<sup>223</sup> Crary, *24/7: Late Capitalism and the Ends of Sleep*, p.116.

<sup>224</sup> Marshall McLuhan & Quentin Fiore, *The Medium is the Massage: An Inventory of Effects* (Corte Madera, CA: Gingko Press, 2001), p.63.

Today, unbounded freedom and communication are switching over into total control and surveillance. More and more, social media resemble digital panoptica keeping watch over the social realm and exploiting it mercilessly. [...] Jeremy Bentham's panopticon isolated inmates from each other for disciplinary purposes and prevented them from interacting. In contrast, the occupants of today's digital panopticon actively communicate with each other and willingly expose themselves. That is, they collaborate in the digital panopticon's operations. Digital control society makes intensive use of freedom. This can only occur thanks to voluntary self-illumination and self-exposure (Selbstaussleuchtung und Selbstentblößung). Digital Big Brother outsources operations to inmates, as it were.<sup>225</sup>

In the current conditions of *surveillance capitalism*, the 'digital panoptica' to which much of the world population subscribes (often unwittingly) in some form or other, the data which our daily activity generates can be extracted for both social control and economic value. This is a more accelerated, integrated, and technologically-advanced version of the networked 'communicative capitalism' which Jodi Dean identified in the mid-2000s as a political-economic formation: "The concept of communicative capitalism designates the strange merging of democracy and capitalism in which contemporary subjects are produced and trapped."<sup>226</sup>

Dean's work on this has correlations with observations made a few years earlier by Deleuze, in the significant and prescient essay "Postscript on the Societies of Control", which points towards the beginnings of a "socio-technological study of the mechanisms of control, grasped at their inception".<sup>227</sup> This is not a stance of technological determinism, as Deleuze points out: "Types of machines are easily matched with each type of society – not that machines are determining, but because they express those social forms capable of generating and using them".<sup>228</sup>

Deleuze identifies several aspects of the incipient "*societies of control*, which are in the process of replacing the disciplinary societies"<sup>229</sup> (as described by Foucault), and which

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<sup>225</sup> Byung-Chul Han, *Psychopolitics: Neoliberalism and New Technologies of Power*, trans. Erik Butler (London & Brooklyn, NY: Verso, 2017), e-Book (UK), pp.23-24.

<sup>226</sup> Jodi Dean, *Democracy and Other Neoliberal Fantasies: Communicative Capitalism & Left Politics*, p.22.

<sup>227</sup> Gilles Deleuze, 'Postscript on the Societies of Control', *October*, Vol. 59 (Winter 1992), p.7.

<sup>228</sup> *Ibid.*, p.6.

<sup>229</sup> *Ibid.*, p.4.

hinge upon new technologies in formation with new forms of capitalism, where social control and commodification are in conjunction:

the societies of control operate with machines of a third type, computers [...] This technological evolution must be, even more profoundly, a mutation of capitalism [...] The operation of markets is now the instrument of social control<sup>230</sup>

With this form of control society now in full operation, possibly more so than Deleuze could have envisaged in 1992 when the essay was published, the text holds a mirror to current conditions which seemed, not so long ago, the realm of science fiction – and which have been assimilated with apparent ease. The proposition that “The conception of a control mechanism, giving the position of any element within an open environment at any given instant (whether animal in a reserve or human in a corporation, as with an electronic collar), is not necessarily one of science fiction”,<sup>231</sup> is now evident in a mechanism which the majority of the global population willingly buys into: the smartphone, monitoring our every move.

In the commodification of our daily activities mediated by this connectivity, our thoughts and emotions, ‘likes’ and searches become ‘behavioural surplus’,<sup>232</sup> data to be traded. This move, beginning around the year 2000, can be seen as a pivotal moment in the evolving feedback loops of machine learning and surveillance capitalism. Describing this socio-technological formation in its incipience, Jodi Dean’s early analysis succinctly expressed the boundlessness of the neoliberal drive behind it: “The commodification of communication reformats ever more domains of life in terms of the market: *What can be bought and sold? How can a practice, experience, or feeling be monetized?*”<sup>233</sup>

Reflecting on early critiques of this conglomeration of neoliberal late-era capitalism, a digital control society, and networked technologies – through the (1990s) work of Deleuze, Dean, Boltanski & Chiapello, and Fisher, some obvious questions arise when cast in this historical relief, such as: *Did we sign up for this? How did it seem so inevitable? How has this all accelerated and mutated so fast?* Lured in by rhetorics of participation, egalitarianism,

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<sup>230</sup> Deleuze, p.4.

<sup>231</sup> Ibid., p.7.

<sup>232</sup> See: Shoshana Zuboff, *The Age of Surveillance Capitalism: The fight for a human future at the new frontier of power* (London: Profile Books, 2019), Chapter 3: ‘The Discovery of Behavioural Surplus’. Shoshana Zuboff, ‘Rendering Reality and Cash Cows’, *Science Node* (17 October 2017) <<https://sciencenode.org/feature/shoshana-zuboff,-part-two-rendering-reality.php>> [accessed May 5<sup>th</sup> 2023].

<sup>233</sup> Dean, p.24.



and engagement (political or otherwise) through a promise of connectivity, the post-internet era instead sees increased passivity, atomisation, loneliness, addiction, ADHD, depression, indifference, and misinformation. It also sees greater socio-economic imbalances, the accumulation of vast amounts of wealth and power by the very few, and further ecological ruin; on this, I shall return to Dean:

Instead of leading to more equitable distributions of wealth and influence, instead of enabling the emergence of a richer variety in modes of living and practices of freedom, the deluge of screens and spectacles coincides with extreme corporatization, financialization, and privatization across the globe. Rhetorics of access, participation, and democracy work ideologically to secure the technological infrastructure of neoliberalism, an invidious and predatory politico-economic project that concentrates assets and power in the hands of the very, very rich, devastating the planet and destroying the lives of billions of people.<sup>234</sup>

This has been reiterated by many other theorists since, as the devastating effects on the environment as well as on human wellbeing have become more pronounced; recently, Jonathan Crary has decried the effects of this socio-technological infrastructure, in *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World*:

For the majority of the earth's population on whom it has been imposed, the internet complex is the implacable engine of addiction, loneliness, false hopes, cruelty, psychosis, indebtedness, squandered life, the corrosion of memory, and social disintegration. All of its touted benefits are rendered irrelevant or secondary by its injurious and sociocidal impacts.

The internet complex has become inseparable from the immense, incalculable scope of 24/7 capitalism<sup>235</sup>

The apparent inevitability of this situation and the sense of powerlessness against it – much as Mark Fisher proposed (or provoked) that “*It’s easier to imagine the end of the world than the end of capitalism*”,<sup>236</sup> can be read as a form of disorder in-itself, and a product of the

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<sup>234</sup> Dean, p.23.

<sup>235</sup> Jonathan Crary, *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World* (London & New York: Verso, 2022), p.2.

<sup>236</sup> Mark Fisher, *Capitalist Realism: Is there no alternative?* (Ropley: Zero Books, 2009), Chapter 1 (title), p.1.

material and meta-material contingencies of the post-internet society. In *24/7: Late Capitalism and the Ends of Sleep*, Crary looks to Jean-Paul Sartre's terms *seriality* and the *practico-inert* to provide an understanding of this: "The practico-inert [...] operates as a collective delusion that transforms the experience of individual solitude and powerlessness into something seemingly natural or inevitable [...] Seriality is the dispersal of collectivity into an aggregate of discrete individuals who relate to each other only on the basis of hollow or narcissistic identities."<sup>237</sup>

This is Crary's reading of Sartre (*Critique of Dialectical Reason*), which goes some way to framing the argument that capitalism (in its various forms) is underpinned by isolation and the fragmentation of collectivity. Sartre uses the example of passengers in a bus queue to illustrate his use of the term seriality, as a "plurality of isolations: these people do not care about or speak to each other and, in general, they do not look at one another; they exist side by side alongside a bus stop."<sup>238</sup> Sartre's concept of seriality, and its antithesis – the *group-in-fusion*, a collective group which activates *praxis*, can be extended further into the post-internet present as a way of reading the conditions of social atomisation within global connectivity – and the promise of 'connectedness' which leads to further pluralities of isolation. Fredric Jameson's analysis of Sartre's *Critique* puts seriality in terms which could be easily transcribed from the bus queue to, for example, any social media platform: "The subjectivity which accompanies this purely ideal or imaginary community with other people, other users and consumers, but other workers as well, will now be called seriality."<sup>239</sup>

The dialectical opposition between *seriality* and the *group-in-fusion* provides a method of reading historical patterns of social dynamics as a series of reactions: the serial and atomised producing the need for collectivity – *with a purpose*, which then runs the risk of dissolving back into seriality. As Jameson outlines in his introduction to Sartre's *Critique (Volume 1)*, this move is key:

its central conceptual [is the] antithesis between two fundamental forms of collective existence, between the side-by-side indifference and anonymity of the "serial" agglomeration and the tightly knit interrelationship of the 'group-in-fusion'. This is an antithesis that is not merely a classificatory one, for as a principle of social dynamics and an empirical fact of social history, the group-in-fusion emerges from seriality as a

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<sup>237</sup> Crary, *24/7: Late Capitalism and the Ends of Sleep*, p.116.

<sup>238</sup> Jean-Paul Sartre, *Critique of Dialectical Reason, Volume 1: Theory of Practical Ensembles* trans. Alan Sheridan-Smith (London & New York: Verso, 2004), p.256.

<sup>239</sup> Fredric Jameson, 'Foreword'. In: Jean-Paul Sartre, *Critique of Dialectical Reason, Volume 1*, p. xxvi.

reaction against it, its subsequent development and fate governed by the danger of its dissolution back into seriality again. [...] The more fundamental question about the antithesis is an ethical one, for it is clear from the language of these descriptions that a judgement is implicit in them, and that the serial state, however comfortable or content its members might consider themselves to be, is one of mediocrity if not of alienation, while the group-in-fusion incarnates active human *praxis* in a uniquely heightened fashion – a kind of *praxis* all the more distinctive in that it constitutes the production, not of things, but of other people and the self, of a new kind of sociality.<sup>240</sup>

Applying this approach to questions of how a networked society can (paradoxically) produce a plurality of isolations, one needs to look at the conditions which allowed the manifestation of new models of 24/7 capitalism to take hold. The neoliberal economic climate in which communicative and surveillance capitalism has developed required the necessary conditions for a dispersal of social collectivity.

As has been outlined by a number of theorists including Boltanski & Chiapello, Dean, Fisher, Zuboff, etc., the beginnings of neoliberalism as more than a fringe ideology can be traced back to a period in the mid-1970s, following the political, social, and economic volatility of the late 1960s and early 1970s in Europe and the USA<sup>241</sup> – an era within which critiques of capitalism and political corruption burst through as moments of ungovernability, promising a potential to galvanise left-wing activism and its various factions. Instead, in many respects, this momentum for social and political change became subsumed and incorporated into a dispersion and capitalisation of its energies. With the elections of Thatcher in the UK (1979), and Reagan in the USA (1980), neoliberalism became established policy. In *Capitalist Realism: Is there no alternative?*, Mark Fisher recalls the Thatcherite slogan underpinning this instalment of neoliberal capitalism, and which can be seen as reinforcing the *practico-inert*: “The 80s were the period when capitalist realism was fought for and established, when Margaret Thatcher’s doctrine that ‘there is no alternative’ – as succinct a slogan of capitalist realism as you could hope for – became a brutally self-fulfilling prophecy.”<sup>242</sup>

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<sup>240</sup> Jameson, pp. xxvi – xxvii.

<sup>241</sup> Such as the May 1968 Paris riots, the war in Vietnam (and protests against it), civil rights movements, the Watergate scandal, 1970s economic crashes, strikes, and so on.

<sup>242</sup> Mark Fisher, *Capitalist Realism: Is there no alternative?* (Ropley: Zero Books, 2009), p.8.

The neoliberal drive extends into what Fisher identified as “psychic privatisation”<sup>243</sup> (in the essay “Baroque Sunbursts”), feeding into the Tory government’s legislation against the rave scene in Britain in the 1990s (part of the Criminal Justice and Public Order Act, 1994). Fisher positions this legislation as an act against collectivity – a systemic process within the capitalist project:

The campaign against rave might have been draconian, but it was not absurd or arbitrary. Very much to the contrary, the attack on rave was part of a systemic process – a process that had begun with the birth of capitalism itself. The aims of this process were essentially threefold: cultural exorcism, commercial purification and mandatory individualism.<sup>244</sup>

As a symptom of *mandatory individualism*, Fisher observes that the “lonely connectedness of smart-phone addiction is a depressive hedonistic reversal of MDMA festivity. Sociality is supervised by multiple embedded corporate platforms. We become our faces, working 24/7 for communicative capitalism.”<sup>245</sup> The Invisible Committee, in “50 Nuances of Breakage” (from their publication: *Now*), point to this social fragmentation and isolation as the “necessary condition for the reign of the GAFA (Google, Apple, Facebook, Amazon)”,<sup>246</sup> saying that:

A totally fragmented world remains completely manageable cybernetically. A shattered world is even the precondition for the omnipotence of those who manage its channels of communication. The program of these powers is to deploy behind the cracked façades of the old hegemonies a new, purely operational, form of unity, which doesn’t get bogged down in the ponderous production of an always shaky feeling of belonging, but operates directly on “the real”, reconfiguring it.<sup>247</sup>

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<sup>243</sup> See: Mark Fisher, ‘Baroque Sunbursts’, in: Nav Haq (ed.), *Rave: Rave and Its Influence on Art and Culture* (London: Black Dog Publishing, 2016).

<sup>244</sup> Fisher, ‘Baroque Sunbursts’, Nav Haq (ed.), *Rave*, p.42.

<sup>245</sup> *Ibid.*, p.45.

<sup>246</sup> The Invisible Committee, *Now*, trans. Robert Hurley (South Pasadena, CA: Semiotext(e), 2017), p.48.

<sup>247</sup> *Ibid.*, p.47.

The Invisible Committee invoke Sartre's concept of seriality as a way of describing these conditions of a 'purely operational form of unity' – a plurality of isolations where each individual is now further separated by a bubble-like immersion in smartphone activity:

Where the GAFAs claim to be “linking up the entire world”, what they're actually doing is working toward the real isolation of everybody. By immobilising bodies. By keeping everyone cloistered in their signifying bubble. The power play of cybernetic power is to give everyone the impression that they have access to the whole world when they are actually more and more separated [...] The serial crowd of public transportation was always a lonely crowd, but people didn't transport their personal bubble along with them, as they have done since smartphones appeared. A bubble that immunizes against any contact, in addition to constituting a perfect snitch. This separation *engineered* by cybernetics pushes in a non-accidental way in the direction of making each fragment into a little paranoid entity<sup>248</sup>

This 'serial crowd', isolated within personal bubbles, which arises from the fragmentation of society as a collective entity, operates in tandem with a fragmented experience of time. In a talk given at the ICA, London, in 2014, Hito Steyerl spoke of the fracturing of time, and “the accelerating of time into fractured micro-loops.”<sup>249</sup> She introduced the term *junk-time*: “which is time after time has been trashed...time as spam, if you like; time as fragments that are so shattered that they cannot ever be pieced together..”<sup>250</sup> Steyerl says that 'junk-time' is the

fracturing of time into micro-loops where duration cannot be sustained – because people are exhausted, they cannot afford it any longer, they don't have time – or the time that they have, it has to be artificially boosted or extended...you have to pretend that you are basically present, on one online channel, while you are trying to catch some sleep but all the tab browsers are open at the same time.. What happens if there is no more time in time-based media?<sup>251</sup>

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<sup>248</sup> The Invisible Committee, *Now*, pp. 48-49.

<sup>249</sup> ICA, *Hito Steyerl in Conversation with Nina Power, Institute of Contemporary Arts, London, 5 March 2014*, online video recording, YouTube, < <https://www.youtube.com/watch?v=BoqHQ05J22k>> [accessed 5<sup>th</sup> March 2023].

<sup>250</sup> Ibid.

<sup>251</sup> Ibid.

The question of what happens to time-based media when time has become so accelerated, fractured, and disrupted – in some ways returns us to the looped, short-form, and fragmented. However, the rarefication of time and attention also leads, conversely, to an elevation of the durational – for example, ‘slow cinema’, or lengthy performance works. In the essay “The Terror of Total Dasein: Economies of Presence in the Art Field”, Steyerl develops this argument further, explaining that “the demand for total presence and immediacy arises from mediation; or more precisely from the growing range of tools of communication, including the internet.”<sup>252</sup>

The aura of unalienated, unmediated, and precious presence depends on a temporal infrastructure that consists of fractured schedules and dysfunctional, collapsing just-in-time economies in which people frantically try to figure out reverberating asynchronicities and the continuous breakdown of riff-raff timetables. It’s junk-time, broken down, kaput on any level. Junktime is wrecked, discontinuous, distracted and runs on several parallel tracks. (...) With junktime any causal link is scattered. The end is before the beginning and the beginning was taken down for copyright violations. Anything in between has been slashed because of budget cuts. Junktime is the material base of the idea of pure unmediated endless presence.<sup>253</sup>

This fractured temporality which Steyerl calls ‘junktime’ sets up the ideal, and *worth*, of unmediated presence. Steyerl poses the question: “Is the fragmented junktime (...) creating the conditions for some kitsch ideal of an unalienated uninterrupted radiating endless mindful awful *Anwesenheit*?”<sup>254</sup> This equation, although cynical, rings true – presenting a dichotomous yet interdependent framework of temporalities: ‘junktime’, discontinuous and asynchronous, containing micro-loops and running on various tracks – which gives rise to an ideal of uninterrupted, durational presence. In the era of broken-down *junktime* and 24/7 networked capitalism, the economies of time and presence are leading to a desire for disconnection from constant ‘connectivity’ and virtual interactions, in order to reconnect with ourselves, with our environment, and perhaps more meaningfully with others. The Invisible Committee have expressed this desire – or need, as:

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<sup>252</sup> Steyerl, *Duty Free Art*, p.23.

<sup>253</sup> *Ibid.*, p.24.

<sup>254</sup> *Ibid.*, p.25.

Eventually, however, with Western man's abstract relation to the world becoming objectified in a whole complex of apparatuses, a whole universe of virtual reproductions, the path towards presence paradoxically reopens. By detaching from everything, we'll end up detaching ourselves even from our detachment. The technological beat-down will ultimately restore our capacity to be moved by the bare, pixelless existence of a honeysuckle vine.<sup>255</sup>

Could it be that the contemporary *serial crowd* and its fractured experience of time, attention, and social relations, is beginning to look away from the proliferation of screens and towards other modes of being together? Could this be the beginnings of a shift towards greater collectivity and more listening, towards shared praxis? Towards slowing down and making time?

In the next chapter I will explore how the durational and slow-moving sonic practices of drone can be seen as one form of resistance to the restless, distracted, and atomised activity in the current conditions of a 24/7 networked capitalist culture.

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<sup>255</sup> The Invisible Committee, *To Our Friends*, p.117.

## Frances Young, *This Transmission Will Be Interrupted* (2020)

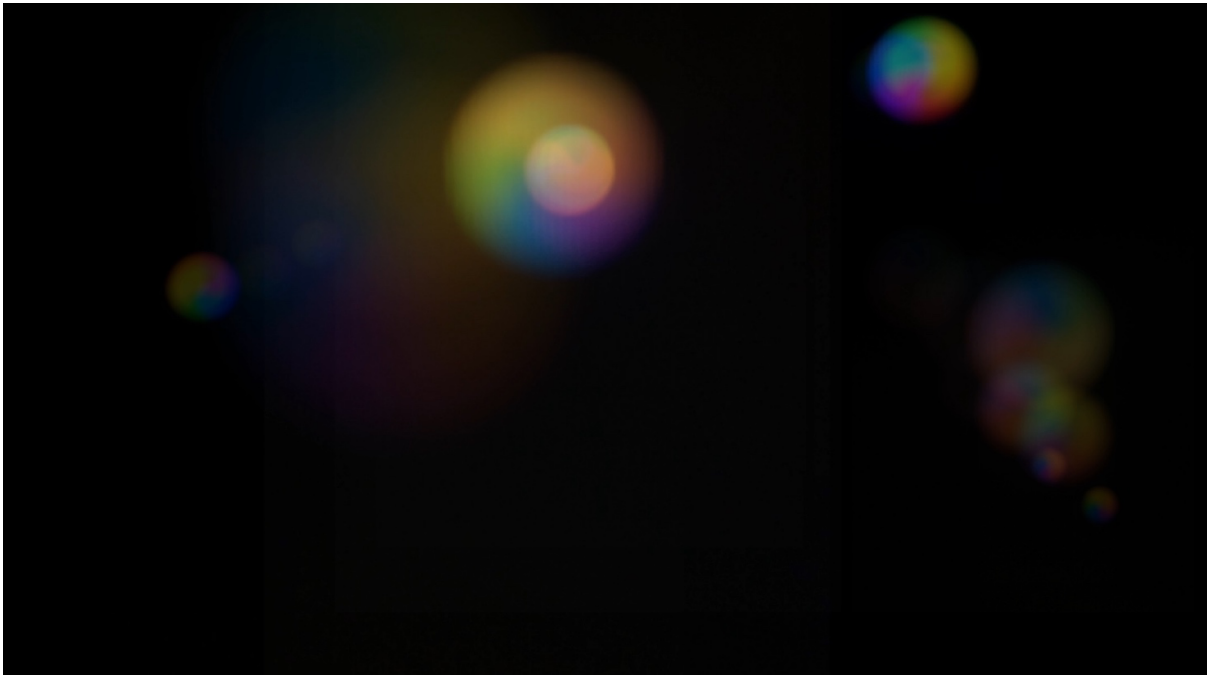
03:25. Single channel HD video, colour with stereo sound.

<https://vimeo.com/francesyoung/thistransmission>

Shown at: *Unruly Encounters*, Southwark Park Galleries, London, March 2022

*Entanglement: Just Gaming* (RCA zoom event), June 25<sup>th</sup> 2020

*Plague Time TV* (online broadcast), July 26<sup>th</sup> 2020



**Fig.14.** Frances Young, *This Transmission Will Be Interrupted* (video still), 2020

The video was made from multiple, layered recordings of the 'wait' cursor, or spinning 'wheel of doom', as it is known, extending and enlarging these moments of looping stasis. I collected the recordings from my computer screen, while my laptop embarked on a slow decline; around that time I began writing about the spinning wheel GIF for the (previous) chapter: *Connectivity and the Disconnect: Economies of time and attention, surveillance capitalism, and the serial crowd*. Broader concerns arising from research on that chapter – on social fragmentation and atomisation into isolated bubbles, a 'plurality of isolations' (Sartre), in tandem with a fractured and interrupted temporal experience (containing micro-



loops and running along several different tracks, to paraphrase Steyerl), time reordered by the machine – also fed into my thinking on this piece and its visual development.

The wheel of doom halts us while the computer performs its own actions – or when an application gets stuck in an infinite loop, ignoring our commands. This looping interruption by the machine infringes on the time-poor user; appropriately, the first ‘wait’ cursor used in early versions of the Mac OS was a wristwatch. Perhaps this was too literal: the wristwatch, a sign that time is ticking by, was then replaced by a variety of spinning wheels, disks and orbs – also known as *beach balls*, *rainbow wheels*, *pinwheels*, *pizzas*, *lollipops*...etc., as if time ticking-away could be rebranded as “leisure”. The added conjunction “- of doom / death”, tells a different story.

I began the editing work on this video during the first Covid-19 pandemic lockdown in the UK, at which time it seemed as if life had come to a standstill. I was also recovering from the virus, and my computer had slowed to a limping crawl, adding further “wheels of doom” on top of the ones I was compositing. This layered, multiplied sense of interruption, halting, and stasis fed into the work – with wheels spawning further wheels, spinning about as though in orbit. The piece then became more playful, with an element of camp absurdity, wheels of doom as rainbow-coloured planetary orbs, at times conjoining, generating more wheels, and eventually disappearing as if sucked into a black hole.

The work also evokes Intermission play-reels, from the then-closed cinemas. This is reinforced by the audio which I created with a short loop sampled from an LP of 1970s mall muzak, phased through shifted layering. The track I sampled is called *Impulse Purchase*.



**Fig.15. (overleaf) *Mall Music Muzak: Mall of 1974*, LP cover.**

Added to this looping muzak, and beginning the video, is a computer-generated voice-over (and text frame): *This transmission will (now) be interrupted by...* In a viral context, the word *transmission* had taken on a double-meaning, and the platforms through which I was able to show the work at that time were online livestream video broadcasts. In the context of this livestream broadcast format, I wanted the video to be an interruption, a pause almost.

The *interruption* is also a nod to David Hall's *TV Interruptions* (1971), a series of short films made for broadcast on Scottish TV during the 1971 Edinburgh Festival. Interrupting the usual TV programming, they appeared without titles, credits, or announcements, reconfiguring the format and confounding viewers' expectations. As with many of Hall's works, the medium is disrupted via its own means, specifically the apparatuses of analogue television transmission and receiver with which he was so engaged. The content of Hall's *TV Interruptions* subverts the broadcast medium by variously drawing attention to the constructs of production and viewing and to the TV set as an object (and container). Hall has said that:

These transmissions were a surprise, a mystery. No explanations, no excuses. [...] They were gestures and foils *within* the context of the predictable form and endless inconsequentiality of TV. They needed TV, they depended on it.<sup>256</sup>

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<sup>256</sup> David Hall, *7 TV Pieces*, text written for *19:4:90 Television Interventions* catalogue, Channel 4, 1990 / Third Eye Centre, Glasgow, June 9 – 24 1990. PDF document accessed at: 'TV Interruptions (7 TV Pieces) 1971', *Rewind*, <https://rewind.ac.uk/assets/19490-7-tv-pieces-text-1991/> [accessed 6<sup>th</sup> January 2023].

## Chapter 5:

### *On Drone, as a mode of resistance*

*Drone: music / noise characterised by sustained tones, repetition, and continuity over a duration, with shifts in pitch / tuning / frequencies, microtones, overtone patterns, harmonic phasing, modulation, resonance, layers.*

Between movement and stasis – there the drone is situated. Continuous, held, ever-changing, always the same; repetitious and durational. Listening to drone and its subtle changes, one begins to examine the shape of a waveform – its shifting edges and oscillations; it can be a similar experience to staring at the sea – wave after wave, enfolding, unfolding, enveloping. Translucent tones becoming opaque; rippling, shifting patterns, recurrent in their changing. At times shimmering, hypnotic. Deep. Transcendent while embodied.

French composer Éliane Radigue, whose work utilises the sustained tones of drone, describes the experience of listening to the kind of sound she makes in similar terms:

It's like looking at the surface of a river. There's an iridescence around the reefs, but it's never completely the same, according to the way in which you look, you see the golden flashes of the sun or the depths of the water [...] you can see the reflection of the ripples on the bottom or have a vision of the whole and let yourself be carried away by what I call 'dream-gazing', or fix on a detail and make your own landscape. There you can make your own soundscape. Among the responses that I have had which I find particularly true regarding these kind of sounds, it is that they act as a mental mirror [...] If you are ready to open up to them, to listen truly and devote yourself to listening, they really have a fascinating magnetic power.<sup>257</sup>

That this listening experience can be described in such visual terms expresses something of the spatial nature of drone, shaped by acoustic resonance; about how the ear 'moves' through minimal shifts in tone and depth, through the colours and textures of the sound, as the eye would move over a landscape, sound becoming soundscape. This

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<sup>257</sup> Éliane Radigue, IMA Portraits, *portrait #04: Éliane Radigue* (2009), online video recording, UbuWeb Film, <[https://ubu.com/film/radigue\\_portrait.html?dm\\_i=56G9,AMU4,1BODCC,17F4J,1](https://ubu.com/film/radigue_portrait.html?dm_i=56G9,AMU4,1BODCC,17F4J,1)> [accessed May 20<sup>th</sup> 2023].

listening experience is not passive, it requires engagement, and can have profound effects on both mind and body if – as Radigue says, you are ready to devote yourself to listening. To *make* these works requires intense and ‘open’ listening, of course; it’s a two-way street, an avenue through which the auditory senses are somehow stretched, altered – and with this, our sense of time.

Radigue’s compositions are characterised by elongated tones which pulse and oscillate, gradually building, slowly evolving, shifting and layering; her works are durational – many pieces an hour or more in length, and a sense of expanded time is central to her work. As music critic Sasha Frere-Jones put it,

How long did an hour feel in 1971? Was it like three 2018 hours? Ten minutes? The music of [...] Éliane Radigue forces these questions because as much as it’s about synthesizers and magnetic tape and silence and held notes and resonance, it is also about time.<sup>258</sup>

Éliane Radigue’s early works (c.1969 – 1970) were created using microphone feedback and tape recorders:<sup>259</sup> *Vice-Versa, Etc...*, is one example of this, presented in 1970 as an audio installation at Galerie Lara Vincy, Paris. Soon after, Radigue began working with modular synthesizers, initially the Buchla 100 synth at NYU,<sup>260</sup> with which she made her piece *Chry-ptus* (1971), “a piece made up of two tapes with an analogue duration, 22 or 23 minutes, which could be played either simultaneously or with a slight time difference, so as to establish slight variations every time the piece was played.”<sup>261</sup> This process – involving the shifting mix between recorded parts on tape – became central to her practice: the transitional, explored with a zen-like attention to the unfolding sound event.

Moving away from the Buchla synth, Radigue found her instrument for many years in the ARP 2500 modular synth, which she describes as having a very close relationship with; discarding the keyboard attached to it she worked solely with the potentiometers, directly shaping the sound, and recording sections onto tape for further mixing.

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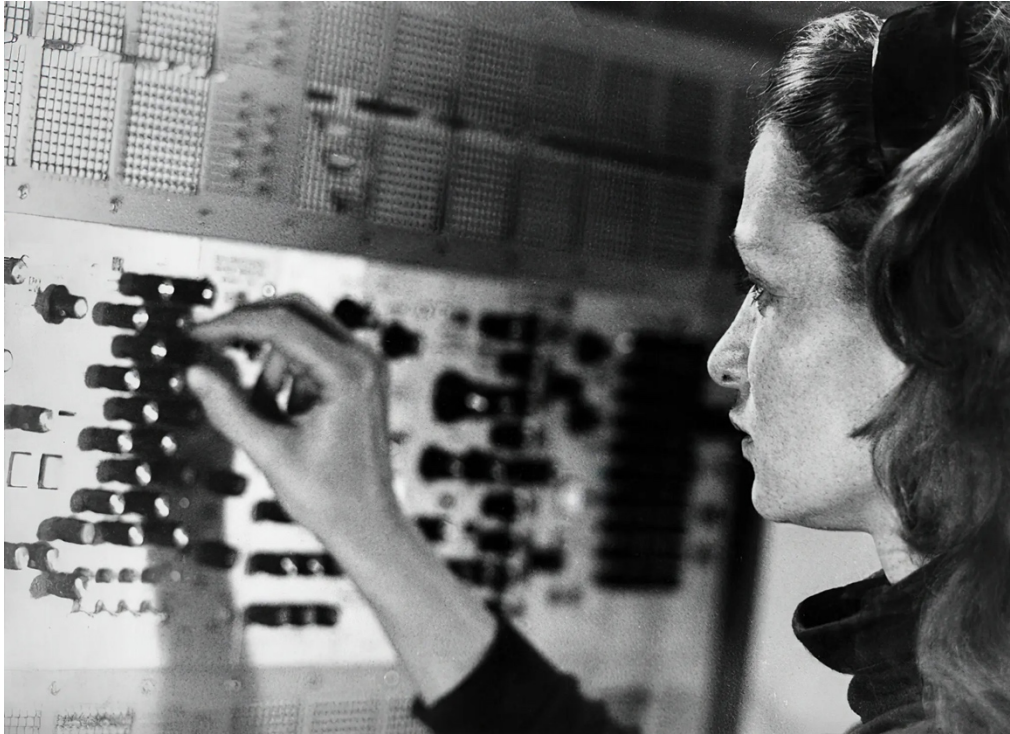
<sup>258</sup> Sasha Frere-Jones, ‘Synthesize Me: Sasha Frere-Jones on Éliane Radigue’, *Artforum International*, Vol. 57: Issue 5 (January 2019) < <https://www.artforum.com/print/201901/sasha-frere-jones-on-eliane-radigue-77996> > [accessed 20<sup>th</sup> May 2023].

<sup>259</sup> See: Éliane Radigue, *Feedback Works 1969 – 1970*, < <https://elianeradigue.bandcamp.com/album/feedback-works-1969-1970> > [accessed 20<sup>th</sup> May 2023].

<sup>260</sup> The Buchla 100 had been installed at NYU by Morton Subotnick; at this time, Radigue was sharing the studio with Laurie Spiegel.

<sup>261</sup> Éliane Radigue: Re-release sleeve notes for Éliane Radigue: *Chry-ptus*, Important Records (2019) < <https://importantrecords.com/products/eliane-radigue-chry-ptus-2lp> > [accessed May 20th 2023].

I could make sounds that change almost imperceptibly, and I learned to modify the sounds *tout doucement*, very lightly, almost like a caress...I use tape because my pieces are made up of sounds that crossfade into other sounds, and at the moment of overlap there's an interaction between the two sounds, and it's crucial to get the timing right..."<sup>262</sup>



**Fig.16. Yves Arman, *Éliane Radigue in her studio, Paris, c. 1970s***

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Explaining further her compositional process with tape mixing, Radigue has talked about the amount of time this took – often around two years to complete a piece – “The first year is for collecting sounds: this goes here, that goes there [...] the second year is putting it all together”.<sup>263</sup> It is important to note here, that Radigue’s tape mixing is a live event:

<sup>262</sup> Éliane Radigue, ‘The Mysterious Power of the Infinitesimal’, *Leonardo Music Journal* (The MIT Press), Vol. 19: *Our Crowd—Four Composers Pick Composers* (2009), p.47.

<sup>263</sup> Éliane Radigue, IMA Portraits, *portrait #04: Éliane Radigue* (2009), online video recording, UbuWeb Film, <[https://ubu.com/film/radigue\\_portrait.html?dm\\_i=56G9,AMU4,1BODCC,17F4J,1](https://ubu.com/film/radigue_portrait.html?dm_i=56G9,AMU4,1BODCC,17F4J,1)> [accessed May 20<sup>th</sup> 2023].

When a piece is almost finished, I end up with many dozen segments [...] of different characters [recorded from the ARP synthesiser]. I organise them all in mixing onto wide tapes with blanks between each recording. With an 80 minutes duration, when I start the mix I must go all the way to the end without a mistake. If I make a mistake in the 75<sup>th</sup> minute I have to start all over again [...] Sometimes I also used to make pre-mixes, for instance, a section pre-mixed with 2 or 3 tapes. It was all really an enormous amount of work, rarely done with fewer than 15 or 20 segments like these.<sup>264</sup>

When presenting her work in 1973 at the California Institute of the Arts, Radigue called her pieces *combinatory music* – “music on loops of various lengths of tape creating indefinite durations, by a slow process of de-synchronisation”.<sup>265</sup> Synchronisation and de-synchronisation – moving *in and out of time*, seems key to Éliane Radigue’s ethos within her practice: the slight shifting of temporal elements; slow transitions of sound synthesis. She has written about the freedom which electronic music gave – to be, within constant modulation, in a limitless present:

The freedom of a development beyond temporality in which the instant is limitless. Passing through a present lacking dimension, or past, or future, or eternity. Immersion into a space restrained or limited by nothing. Simply there, where the absolute beginning is found. Lending a new ear to a primitive and naïve way of listening.

Breath, pulsation, beating, murmur...continuum.

I dreamt of an unreal, impalpable music appearing and fading away like clouds in a blue summer sky.<sup>266</sup>

This text by Radigue, “The Mysterious Power of the Infinitesimal” (2009), begins with an evocation of primal sounds, earth sounds, the *beginning* (its tone almost biblical, *Genesis*-like): “In the beginning there was the air’s powerful breath, violent intimidating

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<sup>264</sup> Éliane Radigue, IMA Portraits.

<sup>265</sup> Charles Amirkhanian, *Morning Concert: Interview with Éliane Radigue* (originally broadcast: KPFA-FM, Morning Concert Series, 11<sup>th</sup> December 1980), republished: *Other Minds Archive*, <[https://archive.org/details/MC\\_1980\\_12\\_11/MC\\_1980\\_12\\_11\\_A\\_ed.wav](https://archive.org/details/MC_1980_12_11/MC_1980_12_11_A_ed.wav)> [accessed May 20<sup>th</sup> 2023].

<sup>266</sup> Radigue, ‘The Mysterious Power of the Infinitesimal’, pp. 48-49.

tornados, deep dark waves emerging in long pulsations from cracks in the earth [...]”<sup>267</sup> she asks the question:

Was it already sound when no ear was tuned to this particular register of the wave spectrum (Fig. 1)<sup>268</sup> – in this immense vibrating symphony of the universe? Was there any sound if no ear was there to hear it?<sup>269</sup>

There is a sense in Radigue’s work of the vibrations which extend before and after the piece, as if we are tuning in to something which was already there; an extended durational stretching out to infinity.

*L’isle ré-sonante* (composed 2000, released 2005), with a duration of just over 55 minutes, builds from near-silence into a nebulous, shimmering sound; moving from synthesised drone into ethereal vocal sounds which seem to hover in the air, untethered, fleshless, ghostly. Other passages sound cavernous, dark, mysterious, evoking a sense of the void, or abyss; until eventually the piece resolves in a pure, transcendent, gently oscillating tone.

Recently, Radigue has moved away from the electronic, making only compositions for acoustic instrumentation. Significantly, her approach to this has been shaped by an ‘unlearning’ of musical structures, a freedom she had found through working with electronic sound. Radigue’s embrace of electronic technology had enabled a move away from another technology – that of the Western harmonic scale, to an area of sonic work between-notes and research into wave-spectrums; via the infinitesimal to the expansive, creating organic sound-worlds:

Then came the electronic Fairy; through the power of magnetic, analog and digital capture, breath, pulsations, beating, and murmurs can now be defined directly in their own spectrum, and thus reveal another dimension of sound – within sound.

[...]

The frequencies and everything that ensues. Varying modulations giving rise to new spectra. In short, all so called “electronic” music. [...]

Another story was beginning. A story where breath, pulsations, beating, murmurs and above all the natural production of these marvellous, delicate and

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<sup>267</sup> Éliane Radigue, ‘The Mysterious Power of the Infinitesimal’ p. 47.

<sup>268</sup> A reference to a diagram by Radigue, *Spectrum of Waves*, in: Éliane Radigue, ‘The Mysterious Power of the Infinitesimal’ p. 47.

<sup>269</sup> Radigue, p. 47.

subtle harmonics could be deployed in a differently organized manner.

No acceptable intervals to tolerate or obey. No harmonic progression. No recursion or inverted series, no respect for rules of atonality tending toward “discordant”. Forget everything to learn again.<sup>270</sup>

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Drone-based music can be traced back through millennia, across different continents, and in many different forms, with a history connected to devotional and liturgical practice, ritual, and collective listening. One of the earliest examples is found in ancient Vedic use, in the form of repetitive chanting with drone-based instrumental accompaniment, often played on a stringed instrument such as a tanpura, or with a harmonium or shruti box. In this tradition, the ‘meaning’ of the chants – and their power to heal – are physically embodied in the sound.

In Buddhism and Hinduism alike, the drone manifests as the sacred Om [...] – the vibration of universal matter. In Hindu philosophy, sound carries uniquely sacred significance. The concept of Nadha Brahma translates as ‘Sound is God’ – a fundamental tenet of Vedic scripture. The divine is codified not as matter, but as *sound* vibration that runs through everything – coexisting in everything and everyone simultaneously.<sup>271</sup>

Whether experienced as a sonic embodiment of the divine or simply as sonic vibration, drone can enhance feelings of presence and connectedness. It can be mind-altering, consciousness-expanding – subtle shifts in tone, harmonics, and long sustained notes opening up space for heightened perception and sensory exploration; one goes *into* the sound, allowing it to permeate. It’s a transcendent experience which physically resonates in the body – and allows the mind to listen more fully, more keenly.

It is fair to say that although drone has never really gone away, it has had particular moments of significance and of *resonating-with*. The 1960s – mid-70s is one such era: the efflorescence of drone-based sound works during this time (particularly in the USA and Europe) intersects with Minimalism (with drone works often classified under this term, correctly or not), in tandem with the influence of ‘non-Western’ philosophy, art and music on

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<sup>270</sup> Radigue, pp. 48-49.

<sup>271</sup> Harry Sword, *Monolithic Undertow: In Search of Sonic Oblivion* (London: White Rabbit, 2021), p.11.



artists and composers (it has been widely noted that the work of La Monte Young, Terry Riley, Steve Reich and Philip Glass has been variously ‘informed’ by musical traditions from Africa and Asia, for example).

This can also be aligned with a point where an interest in the thresholds of perception and in altered states met with the creative development of various technologies, in particular: audio tape – delay / loops / mixing / proto-sampling; developments in synthesizers; and the expanded / experimental use of amplification, feedback, and oscillation. These technologies enabled a move away from standard Western classical tuning systems towards the microtonal, and experimental explorations of sound and acoustics.

Over the last decade or so, drone seems to have had another resurgence,<sup>272</sup> with a younger generation of artists working in this field – often using church organs (in a sense, the earliest form of synthesizer) to explore acoustic resonance, the microtonal, and different tuning systems – in particular, female composers such as Kali Malone, Sarah Davachi, Claire M. Singer, and Ellen Arkbro. In 2017, Arkbro presented a piece at the Stockholm Concert Hall with a duration of 26 days; although of a younger generation, Arkbro’s practice has a direct lineage to La Monte Young and the *Dream House* in New York – she studied *just intonation* with Young, Zazeela, and their ‘disciple’ Jung Hee Choi there. Arkbro works with both acoustic instruments and algorithmic sound synthesis, exploring sonic spatiality and texture, psycho-acoustics, and harmonic intervals, with an interest in particular tuning systems; this is evident on her 2017 release *for organ and brass*: the twenty-minute title track is written for a tuning system known as *meantone temperament*, used widely from the 16<sup>th</sup> to 19<sup>th</sup> centuries and particularly associated with Renaissance and Baroque tunings.

So why is this experience important now? As discussed in my previous chapter, in late-capitalist contemporary life there are new economies: of time, attention, and presence – these becoming rarefied and commodified within an era of shortened attention-spans and what can feel like the shrinking of time and space to contemplate (or simply just *be*). This sits within the fractured temporality referred to as *junktime* by Hito Steyerl,<sup>273</sup> the “fracturing of time into micro-loops where duration cannot be sustained”.<sup>274</sup> Durational, slow-moving art forms, in this context, become a kind of resistance to this restlessness born from an ideology of the acceleration of productivity, of activity and change for its own sake.

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<sup>272</sup> For example, see: Sam Davies, ‘5 artists leading drones quiet revolution’, *Crack Magazine* (08.10.18): “In 2018, drone is everywhere, from *Twin Peaks* to Whitney Houston.” - <https://crackmagazine.net/article/lists/5-artists-leading-drones-quiet-revolution/>

<sup>273</sup> See: Hito Steyerl, *The Terror of Total Dasein. Duty Free Art*, Verso (London / NY), 2017.

<sup>274</sup> Hito Steyerl & Nina Power in conversation, ICA, March 5<sup>th</sup> 2014, online video recording, <<https://www.youtube.com/watch?v=BoqHQ05J22k>> [accessed May 20<sup>th</sup> 2023].

Drone involves a slowing down, requiring a commitment of attention and spending-time-with. As a listener, it can take time for the mind to settle and perception to shift, to tune in to changing patterns and frequencies. It is the antithesis of a multitasking, 24/7 culture, allowing an opening-up of time through sonic immersion. The *sense* of duration – how time is *felt* – is, of course, never constant or fixed, affected by many factors both internal and external; one can only speculate how durational works could have been experienced differently in different historical eras, set against the acceleration of contemporary life and time-poverty.

As a shared listening experience, drone also runs counter to the *mandatory individualism*, dispersal of collectivity, and the “lonely connectedness of smart-phone addiction”;<sup>275</sup> the fracturing of the self into scattered online identities and isolated bubbles of communicative capitalism – a removal from the body and the ‘here and now’; all of which provokes a need to reconnect differently with ourselves and with others, the drone perhaps making us more permeable again, retuned.

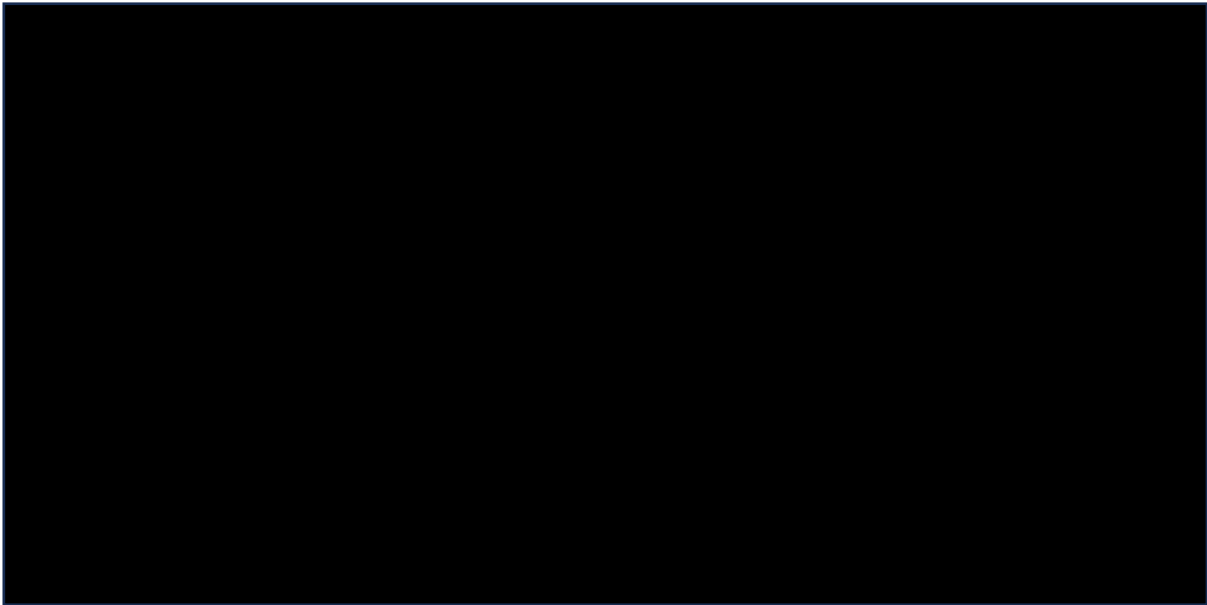
The refusal of drone works to be sliced into bite-sized excerpts or molded into more commercial formats (such as the 3-minute pop song) presents a form of resistance to capitalist modes of production and consumption. Not only is the format less sellable, less quickly digestible, but also, for the artist in this field, the activity of creating works of extended duration seems fairly incompatible with also trying to hold down a ‘regular’ job (or two). As music writer Harry Sword has observed, “The drone is fundamentally subversive when taken in relation to capitalist doctrine. It subverts every tenet of music as consumer commodity.”<sup>276</sup>

Drone offers an opportunity to move away from the boundaries of timekeeping, to drift, to be still; it’s not driven by rhythm, tempo, or narrative end-goals. Drone pieces take as long as they need to: in tonal shifts and in overall duration. Through this sonic embodiment of an expanded-durational it can be a form of restructuring, or de-structuring, time.

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<sup>275</sup> Fisher, ‘Baroque Sunbursts’, Nav Haq (ed.) *Rave*, p.45.

<sup>276</sup> Sword, *Monolithic Undertow*, p.421.



**Fig.17. Marian Zazeela, *Dream House*. 275 Church Street, Lower Manhattan, New York, 1993.**

IMAGE REMOVED: A photograph of the *Dream House* interior at 275 Church Street, New York.

Image source: <<https://www.melafoundation.org/dream02.htm>>

La Monte Young and Marian Zazeela's *Dream House* in New York could be described as a project in expanded time *through* drone, as much as it is a project in sustained intervallic audio frequencies and the psychoacoustic effects of sine-wave patterns. It is also, one could say, a way of life. The *Dream House*, in its various locations, has housed a number of musicians, including their teacher Pandit Pran Nath, who lived with them for many years. It is said that in the *Dream House* drones played for 27 hours a day – an extended clock by which they lived, redefining cycles and expanding time beyond the 24-hour clock in one long drone; Young and Zazeela's 'expanded clock' has shifted over the years: an article written in 2015 said that "Young lived on a weekly cycle of five 33.6-hour days. Lately, he stays awake for 24 hours, and then rests for 24";<sup>277</sup> in a talk given in 1996, Young says: "Marian and I live on a very special rotating sleeping-waking cycle. Currently, we're usually awake for about twenty hours and then we sleep for about ten hours".<sup>278</sup> Why are La Monte Young and Marian Zazeela's sleep patterns of interest? They may be fairly unimportant in effect, other than perhaps provoking altered states for them both – but they

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<sup>277</sup> Rob Tannenbaum, 'Minimalist Composer La Monte Young on His Life and Immeasurable Influence', *Vulture, New York* (July 2<sup>nd</sup> 2015) < <https://www.vulture.com/2015/06/la-monte-young-dream-house.html> > [accessed May 20<sup>th</sup> 2023].

<sup>278</sup> La Monte Young, talk given at Wesleyan University, CT, USA, November 5<sup>th</sup> 1996, in: Alvin Lucier (ed.), *Eight Lectures on Experimental Music* (Middletown, CT: Wesleyan University Press, 2017), p. 78.

signify a form of resistance to capitalist time structures: the eight-hour working day, embodied in clock-time – which is itself an industrialisation of the temporal.

Originally conceived in 1962, the *Dream House* has had several incarnations – becoming a more permanent fixture from 1975 onwards;<sup>279</sup> it continues to this day at 275 Church Street, Lower Manhattan, which houses their continuous sound and light installation on one floor and Young and Zazeela’s residence on another, although this has recently been under threat from closure due to increased financial pressure and a back-log of rent.<sup>280</sup> Describing the initial conception and early stages of the *Dream House*, Young says:

I had conceived of pieces that would have no beginning and end and that would go on in time [...] where could you really set up a piece and let it run? So, I conceived of this idea of the Dream House, where originally it was going to be just musicians, and it would be a building where the musicians could live as well. And they would have little monitor speakers in their own apartments so they could be listening to how the piece was developing in the main space. It would take about eighty musicians, I figured, to have a team of maybe eight playing all the time. The piece would run continuously. And this was the beginning concept of a Dream House. And I found after doing a few short-term Dream Houses with live musicians, and going to Europe with two tons of electronic equipment and six to eight people, that it would become very expensive to be able to pay musicians to keep it going continuously.<sup>281</sup>

This expensive and labour-intensive set-up was gradually reduced, in terms of its musician work-force, by Young’s increased use of electronic technologies – beginning with sine wave oscillators which could be phase-locked, and moving on to programmable synthesizers and the digital.<sup>282</sup>

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<sup>279</sup> See: Andy Battaglia, ‘Celebrating 40 Years of La Monte Young and Marian Zazeela’s Dream House’, *Frieze*, Issue 175 (23 October 2015) <<https://www.frieze.com/article/music-42>> [accessed May 20<sup>th</sup> 2023].

<sup>280</sup> See: Andy Battaglia, ‘Decades-Old ‘Dream House’ Sound Installation in Danger of Closing: ‘Artists Live Like This Their Entire Lives’’, *ARTnews* (July 10 2020) <<https://www.artnews.com/art-news/news/la-monte-young-dream-house-crowdfunding-1202694005/>> [accessed May 20<sup>th</sup> 2023].

<sup>281</sup> La Monte Young, in: Lucier (ed.), *Eight Lectures on Experimental Music*, p.67.

<sup>282</sup> “And gradually in the ‘60s, we began to move sufficiently into the age of electronics that more and more stable sine wave oscillators became available. By the ‘70s, we were easily getting them phase locked, and we went into digital by the late ‘70s. And, eventually, you had young people like David Rayna making the Rayna synthesizer, which you could program with a computer and enter ratios of intervals with rather large numerators and denominators and have them precisely in tune.” - La Monte Young, in: Lucier (ed.), *Eight Lectures on Experimental Music*, p.67.

La Monte Young describes the concept of the Dream House in terms of the *drone state of mind*, a transformative alterity and a form of physical ‘reprogramming’ through frequency pulse-patterns which are felt throughout the body and mind, shifting with one’s movement within the sound-environment:

One of the things I’m interested in in relation to my Dream Houses is this concept of the drone state of mind [...] When you go into a Dream House, the sine waves are there, and they’re fixed in frequency; they don’t change. You get different impressions of pitch and impressions of loudness and this sensation of being able to create your own melodies and harmonies as you walk in and out of the standing wave patterns. [...] The concept of the drone state of mind is that each periodic pulse of the air molecule patterns hits the eardrum. For low and mid-range frequencies it’s especially true that these pulses make it all the way through the synapses up to the cerebral cortex with pretty much a pulse pattern, so that the brain is receiving this pattern of pulses. [...] In the same way that you already have patterns taking place in your body that you use as reference patterns, a set of frequencies in the sound environment can become a new set of reference patterns. In the same way that in Indian classical music they were able to develop this complex system of srutis because the pitches were always performed over a drone, in a Dream House as you spend time in it, you can establish a new foundational system based on this set of referential frequencies, which are actually, in the case of the current Dream House, using relationships that are based on very high prime number ratios.<sup>283</sup>

The work which La Monte Young has been doing with these systems of relational frequencies over the last six decades reaches back to the initial 1960s incarnation of the *Theatre of Eternal Music*<sup>284</sup> and their exploration of intervallic harmonics and use of *just intonation* tuning systems. The input of Tony Conrad on this was key: “it was Conrad, a Harvard-trained Mathematician, who introduced Young to the mathematics of the harmonic series that the group so steadfastly explored”.<sup>285</sup> Writing about this work with frequency

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<sup>283</sup> Young, pp. 70-71.

<sup>284</sup> A collective of musicians (originally active from 1962 – 1966) at the core of which were La Monte Young, Marian Zazeela, Tony Conrad, and John Cale; and which also included Angus MacLise, Billy Linich (later known as Billy Name), Terry Riley, and Terry Jennings. In the late 1960s Young and Zazeela revived the group, by then working with other musicians. The name *Theatre of Eternal Music* is now used exclusively by La Monte Young and Marian Zazeela for their performances with disciple Jung Hee Choi and a small ensemble; *The Dream Syndicate* is a name which has been given by Conrad and Cale for their collective work with Young.

<sup>285</sup> Christoph Cox & Daniel Warner (eds.), *Audio Culture: Readings in Modern Music* (New York: Continuum,

ratios during his involvement with the *Theatre of Eternal Music*, Tony Conrad explains this method as one of the fundamental tools for realizing “a solid opposition to the North Atlantic cultural tradition of composition”<sup>286</sup> through collaborative drone-based practice, in which Western harmonic conventions and hierarchical models of composer and performer, score and ownership, ‘high art’ and ‘popular culture’ could be dismantled.<sup>287</sup> He writes about this as one of “three pathways that made sense to the performers of “Dream Music”, or the “Theatre of Eternal Music”, or “The Dream Syndicate”, as I sometimes called it”,<sup>288</sup> explaining what he had considered to be shared aims and methods of the group:

The third route out of the modernist crisis was to move away from composing to listening, again working “on” the sound from “inside” the sound. Here I was to contribute powerful tools, including a nomenclature for rational frequency ratios, which ignited our subsequent development [...]

[T]here was a baseline which stabilized the group – our (then) shared conviction that the collaborative composer/performer identity was the way to proceed (historically), and that the mechanism which could make this congruence fruitful would be attention to, and preoccupation with, the sustained *sound itself*. [...]

I launched an explication of the scale degrees and their relation to simple numerical frequency ratios. From this point of understanding, it readily followed that we might construct a system of intervals based on the prime numbers 3 and 7, rather than 3 and 5 (which are the foundation for the ordinary diatonic and chromatic scales).<sup>289</sup>

Conrad discusses how the “quality of listening inside the sound”<sup>290</sup> while playing within these rational frequency ratios “became different from other listening experiences. Our unfamiliar intervals, built on tones and timbres which are alien to the vocabulary of 20<sup>th</sup>

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2005), p.313.

<sup>286</sup> Tony Conrad, ‘*LYssophobia: On Four Violins*’, in: Christoph Cox & Daniel Warner (eds.), *Audio Culture: Readings in Modern Music*, p.316.

<sup>287</sup> “The first was the dismantling of the whole edifice of ‘high’ culture [...] At the time, I was also a part of the ‘Underground Movie’ scene [...] Other counter-cultural components of the Dream Music picture were our anti-bourgeois lifestyles, our use of drugs, and the joy which John Cale and I took in common pop music. Down this pathway there were other fellow travellers, like Andy Warhol and Lou Reed; it led straight to the Velvet Underground, and the melting of art music into rock and roll.” - Tony Conrad, in: Cox & Warner (eds.), *Audio Culture: Readings in Modern Music*, p.316.

<sup>288</sup> Conrad, p.316.

<sup>289</sup> *Ibid.*, pp. 316-317.

<sup>290</sup> *Ibid.*, p. 317.

century common practice, were surprisingly sonorous – dissonant but not discordant.”<sup>291</sup> In placing this emphasis on listening, Conrad shifts the impetus for *just intonation* harmonics from compositional tool to a shared performance and listening experience.

Tony Conrad’s role in the group’s use of *just intonation*, as well as in co-composition, has been disputed by La Monte Young, who has tended to claim sole authorship of their collective work. In the year 2000, Young published a twenty-seven page (retrospective) defense of his role in the group as composer, producer, as well as originator of the frequency-based intervallic systems.<sup>292</sup> In this text, Young rails against Tony Conrad and John Cale, saying that:

Just as John [Cale] and Tony [Conrad] lived the fantasy of a group called “The Dream Syndicate” that never existed outside of their imagination, they lived and continue the fantasy that they were co-composers of the Dream Music they wanted to syndicate. It is significant to note: that all of the musicians who have performed in my groups [...] only Tony Conrad and John Cale believe that they were co-composers of my music. Every other member of the group alive, then and now, believed that it was my music and that I was the sole composer of the of the underlying music composition.<sup>293</sup>

La Monte Young’s attitude towards the compositions and recordings made by the *Theatre of Eternal Music* as his sole property would seem to be a negation of the collaborative aims of the project; a method towards these aims, the removal of the use of a score – and with it the hierarchy of composer and performers (the “authoritarian trappings of composition”,<sup>294</sup> as Conrad puts it), led to the group’s use of tape recordings as documentation:

The second solution was to dispense with the score, and thereby with the authoritarian trappings of composition, but to retain cultural production in music as an activity. [...] At the time, when we played together it was always stressed that we existed as a collaboration. Our work together was exercised “inside” the acoustic environment of the music, and was always supported by our extended discourse

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<sup>291</sup> Ibid.

<sup>292</sup> La Monte Young, ‘Notes on the Theatre of Eternal Music and *The Tortoise, His Dreams and Journeys*’ (2000), *Mela Foundation*, < <https://www.melafoundation.org/theatre.pdf> > [accessed 21<sup>st</sup> May 2023].

<sup>293</sup> Ibid.

<sup>294</sup> Conrad, p.316.

pertinent to each and every small element of the totality [...] Much of the time, we sat inside the sound and helped it to coalesce and grow around us.

In keeping with the technology of the early 1960s, the score was replaced by the tape recorder. This, then, was a total displacement of the composer's role, from progenitor of the sound to groundskeeper at its gravesite. The recordings were our collective property, resident in their unique physical form at Young and Zazeela's loft, where we rehearsed, until such time as they might be copied for each of us.<sup>295</sup>

The tape recordings were not copied for Conrad or the rest of the group, with La Monte Young claiming sole authorship and refusing to distribute or release them. In his text "Notes on the Theatre of Eternal Music and *The Tortoise, His Dreams and Journeys*" (2000), Young counters this, saying that the reason the tapes were unreleased was that, in 1987, Conrad and Cale had threatened to sue him if he did anything with them;<sup>296</sup> Young, however, had attempted to get Conrad and Cale to sign away their composer rights in exchange for release, to which they had objected. This dispute was never resolved.

In the following chapter I focus on audio tape (and tape loops) as a medium of both recording and erasure, what can be discovered in the altered materiality of degraded and erased tape, and on content recorded but withheld.

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<sup>295</sup> Conrad, p.316.

<sup>296</sup> See: La Monte Young, 'Notes on the Theatre of Eternal Music and *The Tortoise, His Dreams and Journeys*' (2000), *Mela Foundation*, < <https://www.melafoundation.org/theatre.pdf> > [accessed 21<sup>st</sup> May 2023].



**Frances Young,**  
***All The Waves Of All Bygone Events Are Still Oscillating In Space***  
**(2019)**

10.37, stereo audio.

<https://soundcloud.com/maniacal-reproduction/all-the-waves-of-all-bygone-events-are-still-oscillating-in-space>

Exhibited at: *Sp0re: Psychedelic Laughter*, Platform Arts, Belfast, September 2019

As discussed in the previous chapter, the process of making (and listening to) drone is an embodied experience, something which is felt, and which requires close listening and attention to small changes as the sound gradually modulates. It's a slow form, which takes a slowing-down and removal from end-goals and restless activity to engage with it. This, like an act of meditation, can be therapeutic; it can alter one's perception of time, and of sound as a spatial phenomenon. The physical effect of oscillating sound frequencies on the body, or the 'drone state of mind' (as La Monte Young has put it), can create a transformative alterity. This, I would say, is a form of resistance to, and potential healing from, poverties of time and attention; as well as a form of re-embodiment within the disembodiment which networked capitalism engenders.

This drone piece was made with an electric chord organ; unlike a synthesizer, the chord organ is an electro-acoustic instrument in which air is forced over reeds by an electric fan, a bit like a harmonium. The fan-powered sound moves in varying cycles, and because of this it is possible to play with the oscillation it creates; here I use a technique of slowly changing held keys to alter modulations and overtones in the sound. The piece was played and recorded live, after which a small section of it was looped and added as a layer beneath the live recording. This looped layer is almost continuous, creating shifting harmonics with the main part.

The piece was part of a collective exhibition: *Psychedelic Laughter* by Sp0re, at Platform Arts, Belfast – a group installation, based around ritual, magic, altered states, and collective praxis.

The title is a line ‘borrowed’ from the author Salomo Friedlaender, and cited by Friedrich Kittler in *Gramophone, Film, Typewriter*.<sup>297</sup> My intention is not to reflect or comment on the content of those texts, rather I have repurposed this line for my own ends; however, it does reflect my reading on media archaeology at the time. Sometimes a line can jump out of one setting and perform a different function in another. For my purposes, “all the waves of all bygone events are still oscillating in space” expresses something of the extended durational, of the physicality of wave forms, and of drone as a form which embodies this sense of spatial, endless oscillation.

## Frances Young, *A Soundtrack* (2018)

16:26, Stereo audio.

<https://soundcloud.com/maniacal-reproduction/a-soundtrack>

Broadcast on Resonance FM (104.4): Fieldnotes / Sessions, 29<sup>th</sup> September 2022

An audio work which incorporates looping and the durational; field recordings, live recorded drone, and looped short-wave radio recordings.

I think of this piece as a soundtrack for a non-existent or imaginary film; a series of sound recordings which I had initially planned to use as part of a video-audio installation, I then decided to develop these as a stand-alone audio piece, onto which the mind may project its own images – a kind of audio journey. It is comprised of several sections: beginning with a field recording from a Tokyo street – the repetitive chant of a couple of happy-hour beer hawkers competing for trade, a recording originally made on a phone and sent to me in the UK. This is followed by a drone section, which is a live recording of myself playing a 1970s or ‘80s Bontempi chord organ. After this, a field recording I made in the Sussex countryside in Autumn – birdsong, acorns falling from trees, a woodpecker pecking, and the rumble of a distant train. This is followed by the sound of a Super 8 projector, which then merges with looping sections of short-wave radio recordings, a syncopated movement in-and-out of tune with distant stations.

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<sup>297</sup> “After all, the air is full of sound waves caused by decades of Goethean speechifying. Citing Pschorr, another of Friedlander’s heroes claims that ‘all the waves of all bygone events are still oscillating in space’.” – Friedrich Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young & Michael Wutz, (Stanford, CA: Stanford University Press, 1999), p.76. Kittler cites Salomo Friedlaender, *Graue Magie* (Dresden: Rudolf Kaemmerer, 1922), p.326.



Fig.18. Frances Young, *Tandberg Model 11*, 2019

### Frances Young, *Virus-Control (after Burroughs)* (2019)

02:17, stereo audio.

<https://soundcloud.com/maniacal-reproduction/virus-control>

This audio was made with a portable reel-to-reel 1/4" tape recorder, recording a computer-generated voice which reads, at varying speeds: "Virus", and then: "Virus Control". These recordings on tape were played back, re-recorded digitally, and layered. The battery-powered tape recorder, an old Tandberg (manufactured c.1968 – 1971), starts to lose its power – the tape slips in and out of its correct speed, distorting the recorded words. Eventually, the machine almost grinds to a halt, producing a failing noise which sounds like a fly or mosquito. This noise, rather like a disease-carrier, starts to engulf the degenerated sound of 'virus control' until it is drowned out.

The piece was made partly in response to William S. Burroughs' work with tape playback as a force of annihilation and psychic warfare, and in particular to his text *The Electronic Revolution* (1970).<sup>298</sup> Burroughs saw the potential of the tape-machine as a weapon, making links to the Watergate scandal.

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<sup>298</sup> William S. Burroughs, *The Electronic Revolution* ([West Germany]: Expanded Media Editions, 1970), online publication: *ubu classics* (2005) < <https://www.ubu.com/historical/burroughs/> > [accessed May 29<sup>th</sup> 2023].

*The Electronic Revolution* also posits several apposite descriptions, almost predictions, of phenomena within our present-day media-fed and surveilled condition – in particular: fake news, viral text / image, and data storage as memory. On this last point, he positions tape-as-memory (or memory-as-tape):

NEW SCIENTIST 2 July, 1970 ...Current memory theory posits a seven second temporary “buffer store” preceding the main one: a blow on the head wipes out memory of this much prior time because it erases the contents of the buffer. Daedalus observes that the sense of the present also covers just this range and so suggests that our sensory input is recorded on an endless time loop, providing some seven seconds of delay for scanning before erasure.<sup>299</sup>

The loop which records only to be erased some seconds later is reiterated in the work of Christine Kozlov, which I shall explore in the next chapter – along with the Nixon White House Tapes.

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<sup>299</sup> Ibid., p.21.

## Chapter 6:

### ***On Tape: Information, Erasure, Disintegration, and Loud Silences***

For a brief period between the mid-1960s and early 70s, the American artist Christine Kozlov (1945 – 2005) was a central figure in the Conceptual art scene – before dropping off the map almost entirely. Kozlov was associated with many of the key Conceptual artists and avant-garde musicians of this period: in 1967, Kozlov and Joseph Kosuth opened the Lannis Gallery in New York (later that year renamed the Museum of Normal Art), after which she became involved with the Art and Language group. However, sometime in the mid – late 1970s she decided to stop making art, and this withdrawal from the art scene and her subsequent “silence” echoes the content, or rather negation of content, within her work. For decades, there was very little writing on Kozlov, and not much information in circulation. There is an irony to this, but perhaps (I would like to think) even an intended one – a real-life actioning of the conceptual, material, and ironic strands which run throughout her work. In the last decade, however, Kozlov has attracted more interest and reappraisal, her first solo show being held (posthumously) at the Henry Moore Institute in Leeds in 2015 – 2016.

Just as Kozlov seemed to disappear into some kind of artistic void in the 1970s, so her practice was concerned with the blank and voided, with erasure, and with the withheld. As Jo Melvin has put it, “Kozlov set out to represent ‘nothing’, to reject concepts, and to consider the parameters of silence.”<sup>300</sup> I disagree that Kozlov set out to reject concepts, but her work did set out to question the concept of ‘information’. This work often involved a play between presenting the medium as material and as subject, a withholding or negating of content, and textual descriptions (or titling) which offer an unseen or unverifiable element to be engaged with (and conceptualised) in the mind. Within this play between the seen and the unseen or unheard, between what is presented and what is suggested, there seems to be a game of trust between Kozlov and her audience, as if to say: I am telling you what is on this tape that cannot be listened-to, this film that cannot be watched – *trust me*. This includes pieces such as *Information Drift* (1968) which consists of a framed reel of tape and printed paper which states:

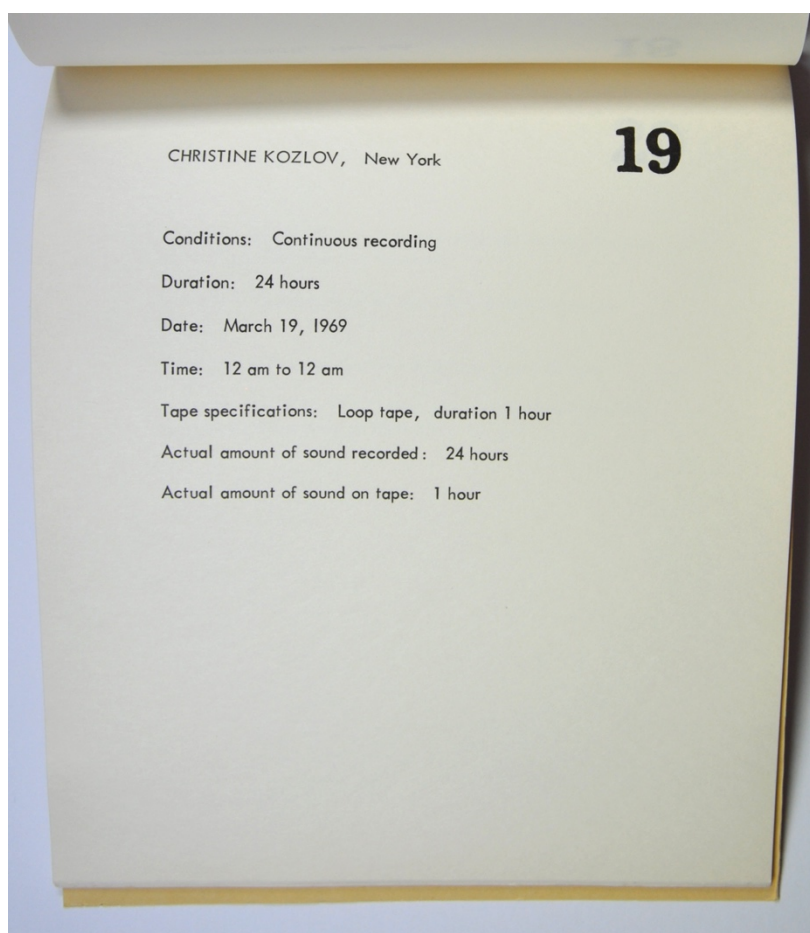
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<sup>300</sup> Jo Melvin, ‘Christine Kozlov: Conundrums of an Art Practice’, in: Lisa Le Feuvre (ed.), *Essays on Sculpture*, 74: *Christine Kozlov: Information* (Leeds: The Henry Moore Institute, 2015), p.5.

## INFORMATION DRIFT

COMBINED RECORDINGS OF NEWS BULLETINS  
OF THE SHOOTINGS OF ANDY WARHOL AND  
ROBERT KENNEDY

There is an ironic humour to this piece: we have no way of knowing whether this is what is actually on the tape or not – there is a drift between what we are told and what we are given. It also presents the *idea* of an encapsulation of time (the shootings happened within two days of each other). The positioning of the work in relation to a specific time-frame is a prominent tactic of Conceptual artists of Kozlov's generation (notably in the work of On Kawara, among others), as well as of curators: the publication-based exhibition *One Month* (also known as *March 1969*), curated by Seth Siegelaub, gave thirty-one artists a single page on which to create a text-based work for each day of the month. Kozlov's work for this (19 March 1969) proposed a continuous recording from 12 am to 12 am, duration 24 hours: "Tape specifications: Loop tape, duration 1 hour. Actual amount of sound recorded: 24 hours. Actual amount of sound on tape: 1 hour."



**Fig.19 (overleaf) Christine Kozlov, *Contribution to 'One Month' (March 1969),*  
Seth Siegelau, New York, 1969  
Courtesy of Stichting Egress Foundation / Estate of Seth Siegelau.**

While an hour-long tape loop could be difficult to achieve technically (perhaps why this remained a proposition rather than an executed reality), this text work acts as a conceptual forerunner to Kozlov's piece *Information: No Theory* (1970), which is my main focus here. As proposed in her *One Month* piece, the tape loop functions for both recording and erasing – thus the time recorded and the time 'on tape' differ; in *Information: No Theory*, the concept is realised with a reel-to-reel tape recorder, a microphone, and a two-minute tape loop which records the sound within the gallery, continually recording over (and erasing) what has just been recorded two minutes earlier. There is no audio output, and the audience is again asked to trust that this is what is occurring. In this piece the tape recorder is accompanied by a framed statement which reads:

1. The recorder is equipped with a continuous loop tape.
2. The tape recorder will be set at *record*. All the sounds audible in the room will be recorded.
3. The nature of the loop tape necessitates that new information erases old information. The 'life' of the information, that is, the time it takes for the information to go from 'new' to 'old' is the time it takes for the tape to make one complete cycle.
4. Proof of the existence of the information does in fact not exist in actuality, but is based on probability.



**Fig.20. Installation view of Christine Kozlov: *Information*, Henry Moore Institute, Leeds (10 December 2015 – 21 February 2016), showing: Christine Kozlov, *Information: No Theory*, 1970 © Estate of Christine Kozlov, all rights reserved.**

If we take points three and four from this statement and run them together (such as a tape loop might be edited), they bring to mind ideas of news-cycles (referring back to Kozlov's piece, *Information Drift*), and also of "fake news" – of trust taken too far. This sits within a wider picture of a politics of surveillance, of information gathering and erasing, and a sense of paranoia, which was reaching a height in the Nixon era when the piece was made. Seth Kim-Cohen, in his paper "Forming, Informing, Recording, Erasing, Documenting, Deleting",<sup>301</sup> has described this piece as a *pansonicon*, a reference to Jeremy Bentham's 18<sup>th</sup> century *panopticon* – where the psychological power of this architectural construction is held in the *possibility* of constant surveillance of prisoners by guards, without the inmates ever being able to verify when they are being surveilled or not:<sup>302</sup>

<sup>301</sup> Seth Kim-Cohen, 'Forming, Informing, Recording, Erasing, Documenting, Deleting' (2018, unpublished). Content from this paper, retitled: 'Dark Optimism / Bright Pessimism: Listening through Neoliberalism' was given at *The Audible Spectrum: Sound Studies, Cultures of Listening and Sound Art*, Cité de la Musique / Philharmonie de Paris, 7 – 9 June 2018.

<sup>302</sup> In fact, as an addition to his panopticon prison, Bentham also proposed (though never realised) a listening-device or *Panacousticon*, which Foucault commented on as a footnote in *Discipline and Punish*, and which Peter Szendy has outlined within a history of audio surveillance and eavesdropping, in his book *All Ears: The Aesthetics of Espionage* (2017). Szendy also looks back to Athanasius Kircher's *Musurgia universalis* of 1650, in which Kircher "mentions Dionysus the Tyrant's mythical grotto as the first example of what he calls "echotechnics" (an architecture of echoes) used for the purposes of



Kozlov's *Information: No Theory* is a kind of surveillance mechanism, recording the sound of the room for two minutes before erasing those two minutes to record the next two minutes. The tape is never played back, but the room is constantly surveilled by this technological eavesdropper. The tape recorder functions as a parallel to Bentham's panopticon, here reimagined as pansonicon. One is constantly aware of the possibility of being listened to. But no one is listening. Instead, magnetic particles are being rearranged on the surface of the plastic substrate of the tape.<sup>303</sup>

Kozlov's piece is a very material expression of the emergent culture of surveillance (and paranoia) which characterized Nixon's Presidency, and ultimately his downfall. While *Information: No Theory* pre-dates the eruption of the Watergate scandal by a couple of years, it is difficult not to see it in this context: the audio surveillance by President Nixon and his associates, the attempted cover-ups, and the Nixon White House Tapes (approximately 3,700 hours of them, recorded surreptitiously on a voice-activated system installed at the White House in 1971) – in particular Tape 342, in which there is an eighteen and a half minute erased gap, or 'buzz section'.

This tape recorded a conversation on June 20<sup>th</sup> 1972 between Nixon and his Chief of Staff, H.R. (Bob) Haldeman, three days after the break-in and attempted installation of bugging devices at the headquarters of the Democratic National Committee at the Watergate complex. During the subsequent Watergate Hearings, Tape 342 came under special scrutiny by the Advisory Panel on the White House Tapes, comprised of six experts in audio forensics. The erased section, with its residual noises of buzzing and clicks, appeared to be the result of a deliberate act. The question of intentionality and whether the section of tape was erased by Nixon or accidentally by his secretary Rose Mary Woods (who transcribed the White House Tapes) was central; Woods made two contradictory statements in court about her part in the erasure – initially denying any errors or incompetence, and later saying that she may have made a "terrible mistake",<sup>304</sup> suggesting coercion to maintain a cover-up.

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auditory surveillance." See: Peter Szendy, *All Ears: The Aesthetics of Espionage*, trans.: Végső, R., (New York: Fordham University Press, 2017), pp.17 – 23. (Op. Cit.: Athanasius Kircher, *Musurgia universalis* (Rome, 1650), 2:291).

<sup>303</sup> Seth Kim-Cohen, 'Forming, Informing, Recording, Erasing, Documenting, Deleting', 2018, p.12.

<sup>304</sup> "In her court testimony of November 8 1973 she asserted her secretarial competency, flatly denying ever making any stupid transcription errors when handling the tape recorder. "The buttons said on and off, forward and backward. I caught on to them fairly fast. I don't think I'm so stupid as to erase what's on a tape." However a month later, under cross-examination in a federal courtroom, she told a rather confused story of how she might after all have made a "terrible mistake" and been partially responsible for the glitch. Woods claimed that while she had been transcribing the tape on her UHER 5000, the telephone suddenly rang causing her foot to press the wrong pedal thus producing the erasure." – Susan

The later statement by Woods described her pressing the wrong foot pedal while reaching to answer the telephone – a manoeuvre which became known as the ‘Rose Mary Woods Stretch’, stretching both body and credibility. This testimony, if believable, still did not account for the whole erasure: “She said that her telephone had rung while she was in the midst of listening to the tape [...] and that when she reached for it, she “must have” pressed down the “record” button rather than the “stop” button and kept her foot on the pedal while she talked. As her testimony progressed, however, she insisted more and more vehemently that she had only been on the phone for four or five minutes and that thus she could have caused only a four or five minute portion of the erasure.”<sup>305</sup> Woods also described how Nixon came into her cabin at Camp David the morning she started working on transcriptions of the tape and “listened to different parts of the tape, pushing buttons back and forth.”<sup>306</sup>

What information could be pulled from the noisy silence of erased tape? The audio forensics experts “covered the tape with a magnetic fluid that allowed them to see various markings [...] The key marking was what they called the “quartet signature” – four tiny lines, each half a millimeter high, in a group three millimeters wide – which the “erase head” of the recorder marks onto the tape each time the erase function is halted.”<sup>307</sup> As a tape is erased, new marks are produced on its surface. The report delivered to Judge Sirica by the Advisory Panel found that: “3. The erasures and buzz sections were done in at least five, and perhaps as many as nine, separate and contiguous segments. 4. Erasure and recording in at least five places on the tape required hand operation of keyboard controls on the UHER 5000 machine.”<sup>308</sup>

This gap between the testimonies of Rose Mary Woods and the forensic evidence held in the tape-gap produces a doubling, or amplification of the gap. The following points of the Advisory Panel’s report could equally apply to Christine Kozlov’s work – one could imagine her using them as a textual element in a piece of work:

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Schuppli, ‘Some Sinister Force’ (presentation text from: *The Right to Silence*, The Showroom, London, 25 February 2012).

<sup>305</sup> Lesley Oelsner, ‘Tape Experts Tell Sirica That Gap In 18-Minute Watergate Recording Was Due To At Least 5 Erasures’, *New York Times* (Wednesday January 16 1974); published online: *CIA*, <https://www.cia.gov/readingroom/docs/CIA-RDP77-00432R000100320004-8.pdf> [accessed May 22nd 2023].

<sup>306</sup> Ibid.

<sup>307</sup> Ibid.

<sup>308</sup> The EOB Tape of June 20, 1972: Report on a Technical Investigation Conducted for the U.S. District Court for the District of Columbia by the Advisory Panel on White House Tapes, May 31, 1974.

5. Erased portions of the tape probably contained speech originally.
6. Recovery of the speech is not possible by any method known to us.<sup>309</sup>

*Information* is here as a question mark, and it exists in the lack, proliferating in the gaps. Through erasure, the potentiality of content has been increased in the potency of a widening gap – the gap of the erased recording as well as the gap between information and truth. This gap becomes fuller over time, and the silence louder. Writing on Tape 342, artist and researcher Susan Schuppli describes the trajectory of a “residual silence that is haunted by the spectre of a man who refused to speak on the grounds that such testimony might be self-incriminatory”<sup>310</sup>, tracing the materiality and embodiment of this silence:

silence consequently shifted from the aphasiatic body of the President to the absence of the subpoenaed tapes and upon their recovery to the 18 ½ minute gap in Tape 342 itself. Through this sequence of juridical displacements, silence was reconfigured as the very means by which material artefacts could begin to speak for themselves.<sup>311</sup>

Schuppli’s in-depth investigation of Tape 342 is led by an interest in the tape’s erasure as an additive process which produces a surplus of information, rather than simply an absence: though there is a withholding of information the erasure is generative, an erasure which produces new meanings. Absence appears in the form of a strong, abiding presence here, the absence of speech during the 18 ½ minute gap providing a space for an overflow of other (speculative) presences. Alongside the contentious circumstances surrounding this tape-gap, which flood in to fill it, the additive nature of this erasure pertains to tape recording technology specifically – one records *over* a tape (or demagnetises it), thus leaving new traces. Tape is characterised by this duality of recording and erasure in a very particular way that other recording technologies are not. Schuppli points out that “the tape-gap was always-already-there [...] The very fact of a tape-recorder is an affirmation that an erasure of some kind – delivered or accidental – will occur at some point, which will, in turn, attach it to a localised event.”<sup>312</sup>

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<sup>309</sup> Ibid.

<sup>310</sup> Susan Schuppli, ‘Some Sinister Force’ (presentation text from: *The Right to Silence*, The Showroom, London, 25 February 2012), p.2.

<sup>311</sup> Ibid., p.4.

<sup>312</sup> Susan Schuppli, ‘Stretching the Truth’, *Eavesdropping* conference, Melbourne (28 July 2018), online video recording, <<https://eavesdropping.exposed/documentation/videos/2>> [accessed 22nd May 2023].

In fact, an analogue tape recorder can only ever re-record over an existing track and thus Nixon's, or his secretary Rose Mary Woods's, purported act of tampering was a supplementary act of recording – an additive rather than a subtractive process. Every recorded sound-event is an archive that registers a dense topography of processes [...] Tape 342 must be similarly understood as comprising a heterogenous acoustic materiality in which all the previous states of the system still adhere.<sup>313</sup>

The past states and processes held in the materiality of the tape – the 'truth' of the material – are paired with a future potentiality of the erased tape to 'speak'. The tape-gap is "a transition that designates the interval between the actual and the virtual – between what was said and what might be said",<sup>314</sup> tied to a sense of technological futurity (i.e., what might be discovered with the advancement of forensic technologies). This sense of the tape-gap as an interval 'in limbo' between silence and the remains of recorded sound does not silence it further, but rather opens it up to a "surplus of information":

Because the discourse around the tape has turned on the rhetorical deficiency of the gap, whether named as silence or as an erasure [...] my interest has always been to assert that a surplus of information now populates this gap, literally and conceptually. Although the National Archives commitment to investigating the magnetic encodings of the tape and unlocking its secrets is tied to its conviction in technology's progressive futurity, the tape's status as mute has already been extensively undone by the sheer volume of speculation around what kind of lurid data lurks within; musings that far exceed what any one man can actually say in 18 ½ minutes. It is this conception of the gap as producing an excess – what Derrida has called (following Rousseau) a dangerous supplement<sup>315</sup>

Tape 342 remains in the National Archives, the initial forensic testing having revealed some details about the erasure but not evidence of what was erased, except for "three small fragments of "speech-like sound" [...] each next to a small silence."<sup>316</sup> Using a copy-of-a-copy of Tape 342 Schuppli has done her own forensic work, replicating some of the original

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<sup>313</sup> Susan Schuppli, 'Tape 342: That dangerous supplement', *Cabinet*, Issue 43: Forensics (Fall 2011), p.86.

<sup>314</sup> Schuppli, 'Stretching the Truth', *Eavesdropping* conference, Melbourne (28 July 2018).

<sup>315</sup> Schuppli, 'Some Sinister Force', pp. 9 – 10.

<sup>316</sup> Lesley Oelsner, 'Tape Experts Tell Sirica That Gap In 18-Minute Watergate Recording Was Due To At Least 5 Erasures', *New York Times* (Wednesday January 16 1974).

tests done in 1973 – 1974, in addition to using an Atomic Force Microscope (AFM) and Scanning Tunnelling Microscope (STM) to examine the surface of the tape. She explains some of the original processes carried out, and her own tests:

they carried out over 200 hours of testing using spectrum and waveform analyses, digital signal processing equipment, which was an emerging technology at that time, in addition to optical inspection of magnetic patterns made visible by “washing” the tapes in a fluid containing ferrite particles [...] A process that I replicated last year on a copy of Tape 342 (along with AFM, STM scans) for a short photo-essay in Cabinet. Unfortunately for the audio experts, the tape maintained its stubborn silence, although I would argue that the tape is in fact not silent but resonant with acoustic information.<sup>317</sup>

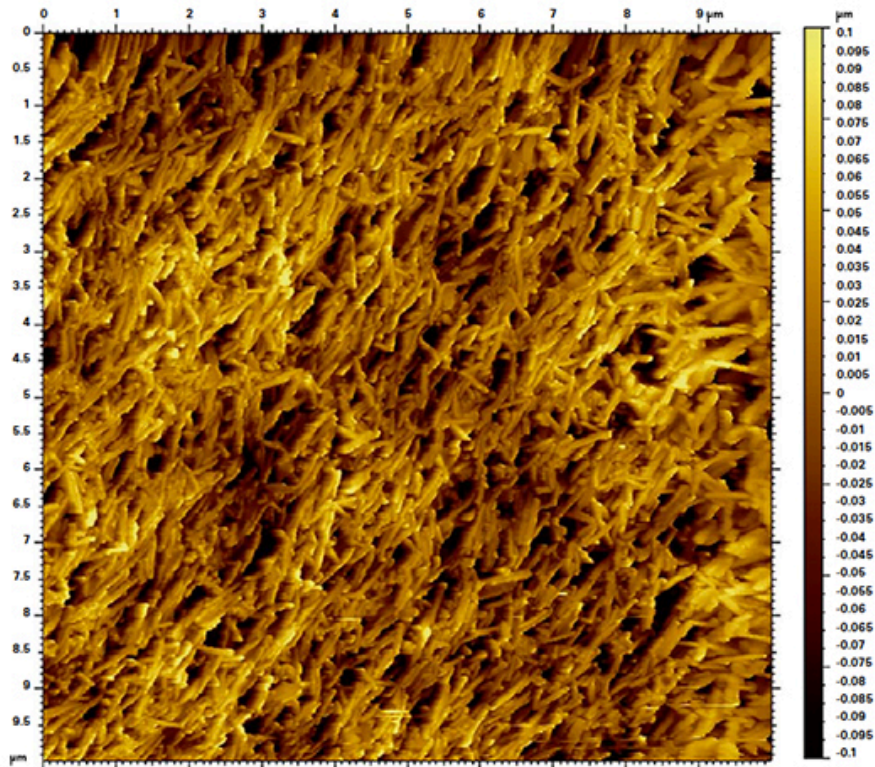


**Fig.21. Susan Schuppli, assisted by Christopher Glazowski, PhD, optical engineer, Memorial Sloan-Kettering Cancer Center, New York, June 2011, ‘A magnetic developer containing iron oxide particles was applied to the surface of a copy of the 18 ½ minute gap of Tape 342. This technique, in which sensitized particles cling to residual magnetic traces, replicates one of the original tests performed in 1973, and can reveal the original recording patterns, enabling them to be photographed and analyzed.’, Susan Schuppli, ‘Tape 342: That dangerous supplement’, *Cabinet*, Issue 43: *Forensics* (Fall 2011) p.88.**

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<sup>317</sup> Schuppli, ‘Some Sinister Force’, p.6.



**Fig.22. Susan Schuppli, assisted by Agnieszka Rutkowska, PhD, research associate, Department of Chemistry, Imperial College, London, June 2011, ‘Portion of 18 1/2-minute gap in Tape 342 (copy) scanned using an Atomic Force Microscope (AFM) Agilent 5500 SPM in oscillating AFM mode. Tip Nanosensors, Resonance Frequency 45–115 kHz, Force Constant 0.5–9.5 N/m.’, Susan Schuppli, ‘Tape 342: That dangerous supplement’, *Cabinet*, Issue 43: *Forensics* (Fall 2011), p.89.**

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The forensic images created by Schuppli and her technical collaborators present the tape as a topography, a terrain with many temporal registers. It is an archaeology of media in the most direct sense of the term. “If topographic images of the surface of Tape 342 were to be produced, they would reveal a palimpsest of multiple magnetic inscriptions that could, in theory, be disentangled and decoded.”<sup>318</sup> However, given that she was working with a “copy of Tape 342 (obtained from NARA’s contracted duplication services, who were themselves provided with a copy of the of the original recording) [...] a recombinant image of sound in which all previous versions of the 18½-minute “silence” – the original, the copy made in 1973 by NARA for purposes of reproduction, and the copy of this copy in my possession”,<sup>319</sup> this endeavour to pull traces of audio from duplicated and scanned tape

<sup>318</sup> Susan Schuppli, ‘Tape 342: That dangerous supplement’, *Cabinet*, Issue 43: *Forensics*, Fall 2011, p.86.

<sup>319</sup> Schuppli, ‘Tape 342’, p.342.

particles proved to destabilise its meaning or sense further “so that they can only be read as an image without an index to a fixed event.”<sup>320</sup>

To return again to Christine Kozlov’s piece *Information: No Theory* in this context, the tape loop which erases as it records could be seen as an index without an image. As there is no output, we have only a concept of an image (or sound), the *idea* of what is, or has been, recorded on the tape. There is no fixed event – other than the duration of the gallery installation. This is a key example of a loop within the durational, and it’s one which is hermetically sealed. However, it’s not difficult to imagine that if one were to do forensics on the tape loops from installations of *Information: No Theory*, traces of sound-ghosts might remain in the particles; with forensics or not, the previous states still adhere conceptually, becoming part of a continuous flow of old and new (unseen) information. Seth Kim-Cohen describes the fluidity and destabilisation of the recording process in Kozlov’s piece:

*Information: No Theory* is a recording process directed not at the “frozen” product of the process but at the “fluid” time and activity at the point and time of recording. The conventional oppositions between presentation and re-presentation, between original and copy, between live and recorded, are destabilized.<sup>321</sup>

The alignment between Kozlov’s piece: *Information: No Theory* and White House Tape 342 has been foregrounded by Kim-Cohen, pointing out that “Kozlov’s tapes and Nixon’s tapes and the Pentagon papers all take place during the late 1960s and early 70s, a crucial moment in the development of what we now refer to [...] as neoliberalism.”<sup>322</sup> This is situated within a media-technological framework of instant reproducibility, tied in with inbuilt redundancy; one could say that the equation between surplus and redundancy is embedded in a neoliberal economic model – which finds expression in the dominant technologies of the time.

The late 1960s – early 70s represents a period of shift towards the ‘information age’, in which we are now immersed. In this sense, that era stays with us as nascent form of our current conditions – shaped by data, recording and surveillance technologies, and by neoliberal ideologies. The current post-industrial mode of information capitalism and a ‘knowledge economy’ can be traced back to that time. As value shifted from manufacture to information, and as information became coupled with technologies of instant reproduction –

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<sup>320</sup> Ibid.

<sup>321</sup> Kim-Cohen, ‘Forming, Informing, Recording, Erasing, Documenting, Deleting’, pp.12-13.

<sup>322</sup> Ibid., p.13.

through which there is both surplus and redundancy, the *matter* of information – and its erasure – comes to the fore. These paradigms, operating across economic, technological, and political realms, created a kind of feedback loop which was rewired or subverted through artistic reflexivity:

If we continue rewinding, from Tape 342 in 1972, through the Pentagon Papers in 1971, we encounter other significant employments of new, cheap, fast and readily available technologies of mechanical reproduction. In 1970, the exhibition *Information*, organized by Kynaston McShine at the Museum of Modern Art in New York featured more than 150 artists working in documents and data. Also in 1970, Christine Kozlov made *Information: No Theory* [...] In 1966, Ian Burn and Mel Ramsden, soon to be members of the Art and Language collective, made *Soft Tape*, a reel-to-reel tape recorder playing back a short, theoretical text at a volume specified as “the ‘zero point’ between understanding the spoken words and indecipherable noise.” And in 1963, William Anastasi made *Microphone*, a reel-to-reel tape recorder playing back a recording of the machine’s own mechanical operation. None other than John Cage described it as “a recording of the recorder recording the recorder.”<sup>323</sup> [...] A cyclical logic of redundancy and repetition emerges. Not only did Kozlov record the gallery and then, just two minutes later, record over that recording with another recording of the same space; not only did Anastasi record the sound of the tape machine to be played back by the same machine, doubling the mechanical sound of the recorder; but among the logs of Nixon’s tape archives, we find hours and hours of recordings of Nixon in the Oval Office, listening to previously recorded tapes; recordings which record prior recordings.<sup>324</sup>

Kim-Cohen positions these works and historical events with the ‘Xerographic turn’, placing Seth Siegelaub’s *Xerox Book* (1968) alongside them, and citing Baudrillard’s expression the “Degree Xerox of Culture”,<sup>325</sup> as well as art critic Hilton Kramer’s disparaging terms *Xeroxophilia* and *Xeroxomaniacs*.<sup>326</sup> Referencing author Lisa Gitelman (and her use of

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<sup>323</sup> Aaron Levy & Jean-Michel Rabaté (eds.), *William Anastasi’s Pataphysical Society: Jarry, Joyce, Duchamp, and Cage* (Philadelphia: Slought Books, 2005), p.55. Cited by Kim-Cohen, S., in: ‘Forming, Informing, Recording, Erasing, Documenting, Deleting’ (2018), p.5.

<sup>324</sup> Kim-Cohen, ‘Forming, Informing, Recording, Erasing, Documenting, Deleting’, pp.5-6.

<sup>325</sup> Jean Baudrillard, *The Conspiracy of Art* (New York: Semiotext(e), 2005), p.105.

<sup>326</sup> Hilton Kramer, ‘Art: Xeroxophilia Rages Out of Control’, *New York Times* (April 11 1970), p.26 <<https://www.nytimes.com/1970/04/11/archives/art-xeroxophilia-rages-out-of-control-show-featuring-copied.html>> [accessed 23<sup>rd</sup> May 2023].



the term ‘Xerox Revolution’)<sup>327</sup> Kim-Cohen says that “as photocopying (and tape recording too) “embrace plenitude and redundancy” both input – what can or should be reproduced – and output – where these reproductions go, in what form, and to whom – change dramatically.”<sup>328</sup> While it is true that both tape and Xerox copies share characteristics of plenitude and redundancy, and are both technologies of cheap, instant recording and reproduction, they are fundamentally different media.

This “cyclical logic of redundancy and repetition” finds a particular expression in tape form, where there is an inbuilt cycle of alteration and redundancy through playback; a tape loop (whatever its content) performs this cycle in a material, physical way – through multiple repetitions the tape’s substrate becomes worn over time and its particles, subject to drift and change, are realigned and redistributed, altering the recorded content. In Kozlov’s *Information: No Theory*, the tape loop which records only to erase and re-record takes the cycle of repetition and redundancy to its logical conclusion. Perhaps conversely, Nixon’s White House Tapes which record him listening to previous recordings conjure a Sisyphean image of repetitive redundancy – particularly in the context of his subsequent resignation.

I would argue that these cycles embodied in the tape form (and particularly in the tape loop), are manifestations of oscillating points between movement and stasis – or between new and old information, from which something other is generated. Repetition and erasure, while removing information also generates new information: “repetition thus engenders transformation and difference, actively re-shaping the surface contours of the tape with each rewind and playback.”<sup>329</sup> In its ferromagnetic particles, tape harbours sound-ghosts – the remnants of previous recordings / erasures which linger on in the edges. This audio residue, known also as hysteresis or remanence – where the recorded-erased past leaks through into the present, suggests latent forces, ghosts in the machine; it’s a haunted technology, which can’t help but repeat itself. In the case of Tape 342, it suggested *sinister forces* and “devil theories”.<sup>330</sup>

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<sup>327</sup> See: Lisa Gitelman, *Paper Knowledge: Toward a Media History of Documents* (Durham, NC & London: Duke University Press, 2014).

<sup>328</sup> Kim-Cohen, p.5.

<sup>329</sup> Schuppli, ‘Stretching the Truth’, *Eavesdropping* conference, Melbourne (28 July 2018).

<sup>330</sup> “White House chief of staff Alexander M. Haig Jr. said yesterday he and White House lawyers had discussed fears that “some sinister force” erased one of President Nixon’s subpoenaed Watergate tapes. [...] Testifying in federal court here, Haig told of what he called the “devil theories” about the controversial 18 ¼-minute gap in the recording, which has yet to be explained. [...] The 18 ¼ minute segment was drowned out by a long humming noise that drops noticeably in volume after the five-minute mark. Haig said this was “a source of great distress” to White House lawyers. As a result, he said, they discussed the possibility that “perhaps there had been one tone applied by Miss Woods...and then perhaps some sinister force had come in and applied the other energy source and taken care of the information on that tape.”” – George Lardner Jr., ‘Haig Tells of Theories on Erasure’, *Washington Post*,

When a tape is erased, the erase head scatters its magnetic particles, scrambling its contents. This phenomenon doesn't remove particles but radically reorients them through demagnetisation. The original recorded voice still clings to the tape but is ventriloquised by its machinic deterritorialisation as the presentness of absence. The more the tape is rewound and replayed, the more mobile or animated its particles become. In their temporal drifting across the surface of the tape they produce a kind of latent noise or acoustic interference. But this should not be viewed negatively as an act of magnetic subterfuge, but rather, as one of the means that the machine has at its disposal to create new sounds and 'meanings'.<sup>331</sup>

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(December 7 1973), p.A01.

<sup>331</sup> Schuppli, 'Some Sinister Force', p.7.

## William Basinski: *The Disintegration Loops* (I – IV)

William Basinski's set of four albums, *The Disintegration Loops* (originally released in 2002 and 2003) utilises the decay of the tape substrate, the temporal drift of ferrite particles, and the presence of absence. The defining process behind these works could be described as initially accidental: when attempting to digitise some tape loops he had made in the early 1980s, which contained fragments of found audio, radio muzak and shortwave radio noise, Basinski discovered that the tape had deteriorated to the extent that the ferrite eroded from the plastic backing on playback. "The tapes themselves were old when I got them, from a junk store in 1978, when I was 20 years old.",<sup>332</sup> Basinski has said. He worked with six different loops, allowing them to play for extended periods of time and recording the process of disintegration. The loops "disintegrated in their own time, in their own way, over a two-day recording session."<sup>333</sup> On the first, *Disintegration Loop 1.1 (dlp 1.1)*, Basinski also used a Voyetra 8 synthesiser<sup>334</sup> with a kind of arpeggiated French horn sound which provides a counterpoint to the recorded found-sound loop. It was as he recorded this synth part onto the old tape that he began to notice the little droppings of ferrite dust accumulate below the tape-head.

*The Disintegration Loops* are lengthy, durational. The first track runs at over an hour; in total the four-disc set is about five hours (extended further in the 2012 reissue which spanned nine LPs, with accompanying DVD and book). Partly, this is just the way that Basinski works: "I do these long, eternal, kinds of things...a single would be 45 minutes – because that's the side of a cassette"<sup>335</sup> – but it's also the time required for the disintegration to unfold.

Basinski was finishing the *Disintegration Loops* project when the attacks of 9/11 on the World Trade Center in Manhattan occurred. From the rooftop of his apartment in Brooklyn he filmed the aftermath of the attack, the billowing clouds of smoke and dust across the dusk skyline. This became the video for *dlp 1.1*,<sup>336</sup> and stills from this were used for the

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<sup>332</sup> William Basinski, interviewed by Francesco Tenaglia, Auditorium San Fedele, Milan (01/10/2018), online audio recording, *Archivio Storico Ricordi*, < <https://www.archivioricordi.com/en/projects/the-music-folder> > [accessed May 23<sup>rd</sup> 2023].

<sup>333</sup> Ibid.

<sup>334</sup> Ibid.

<sup>335</sup> Ibid.

<sup>336</sup> Video can be viewed online at: < <https://www.youtube.com/watch?v=qYOr8TlnqsY> > [accessed May 23<sup>rd</sup> 2023].

artwork on the records. The shock of the 9/11 attacks and their aftermath was, and is, durational in itself.

Watching the *d/p 1.1* video, there is a tension between being lulled by the melancholic nostalgia of the audio loop and the aesthetics of the image – and then remembering what it is you are looking at; I find that my attention moves back and forth between these two states of conscious and unconscious thought. It's an uncomfortable piece, in its aestheticization of horrific destruction and the loss of so many lives. But it also fits: *The Disintegration Loops* are a material embodiment of loss in audio form.

Basinski's rooftop video of the aftermath of 9/11 has always contextualised *The Disintegration Loops* – once you have seen it, and especially if you can remember the attacks, it is impossible to unlink the audio from this video. Perhaps this is what gives the work its power. I have tried listening to it without the video, but the association is still there. When I listen to *d/p 1.1* (01:03:35), what I hear is the falling-away – the actuality of the falling-away of ferrite particles from the tape, which has a metaphorical resonance to the 9/11 attacks: the falling of bodies, the falling of the towers and their erasure from the Manhattan skyline, the sense of the falling-away of normality, of daily-life halted, never to be quite the same again; a Fall from grace of Biblical proportions. And it is the sound of fragility, of both falling and holding.

What I also hear is Basinski's use of a long and variable delay. This adds to the mournful nature of the work and enhances the sense of sounds struggling to push through: muted horn and string sounds, which appear almost as if they are playing in some cavern underground, the noise leaking through a crack in the earth. His use of a shifting delay within the loop also fundamentally changes the loop form: it never returns in exactly the same way; the loop comes back in a slightly different tempo, modified each time by both the shift in delay / reverb and the decay of the tape.

Following this, *d/p 2.1* (10:55) is a much shorter section, and a more enveloping, denser track – around one note with oscillating (background) harmonics. In some ways it actually feels more apocalyptic than *d/p 1.1* – perhaps post-apocalyptic, the aftermath of the aftermath; its ascendant tone suggesting some kind of afterlife or 'other space'. In *d/p 2.2* (32:37), the sound of disintegration becomes very apparent about a third of the way in. In this, I feel that there is something about the remnant frequencies finding their way in which is akin to tuning a dial on a shortwave radio – it's about feeling the rough edges of a sound as it disintegrates, and playing with that edge.

In *d/p 3* (41:50) we hear the muted French horn again – two notes ascending, backed by a synthesised 'swell', and the tinny remnants of a drum beat and roll, forming a slightly off-kilter loop. The loop starts to noticeably disintegrate at around 14 minutes with certain frequencies dropping out, which has the effect of a stuttering syncopation through which the

horn sound persists. At around 30 minutes the loop becomes eaten away further, the horn sound now only coming through in fragmented bursts, the disintegration of the tape changing the shape of the sounds. In the last few minutes we are left with a residue of repeated stuttering noise, like a distant and distorted Morse-code.

*d/p 4* (20:07) is a more harmonic loop, at first reminiscent of a Boards of Canada track, with what sounds like a slightly longer loop of orchestral sound. From around 8 minutes in, the sound becomes noticeably warped and filled with the intrusive noise of tape failure – and by about 12 minutes into the 20-minute track this noise is occupying more space than the recorded sound. By 14 minutes, we can only hear three chords of the original, infiltrated by the sound of ghostly drifting particles. This ratio increases, until it is only intermittent short bursts of recorded noise (a note or two) swimming within a crackling noise-pool of tape-disintegration-interference. Following this, *d/p 5* (52:21), follows in a similar vein as a section of three or four string / synth chords with background percussive sounds – at this point I am hearing a long continuation. But I am not moved by it, as I was in the previous loops. Maybe it's the effect of the Major chords which predominate, or maybe it's the length of time it takes for the tape to disintegrate, I don't know. What I hear mostly is the effects of delay and overdrive combined with a general lossiness. I am now getting impatient for real disintegration, which makes me question myself a little as I realise that I have a desire for a greater sense of falling-away.

In Joanna Demers' book *Drone and Apocalypse: An Exhibit Catalog for the End of the World*, a work of 'fictive theory' narrated in the voice of a character called Cynthia Wey, the narrator describes her unease about a love of *The Disintegration Loops*, tied to a sense of the apocalyptic:

The composite artwork, its photos and backstory, make it well nigh impossible either to ignore memories of the September 11<sup>th</sup> attacks, or to avoid viewing those events with melancholic pleasure. Its four album covers capture the Manhattan skyline at successive moments that show how smoke and debris overtake the city. But we see nothing from the street, of course; no planes, no people jumping from the towers, and the shots are taken from such a remove that it's easy to be metaphorical and read the events of that day, as well as the image of those collapsed buildings, as symbols of the decay of the American empire. [...] At the end of *Disintegration Loops 1.1*, when the synthesizer loops have entirely disappeared, the only remaining sound is the lingering tape groan. It is recurring, the only vestige of sound on a tape that has been scraped clean of dust and music. Is this groan all that will remain after the civilization that built the towers has also ground itself down into dust? *Disintegration*

*Loops 2.1* is even bleaker. [...] This music also slowly recedes, is overtaken by noise, and is eaten away like a corpse. And yet Basinski has made this so beautiful, so invincibly and serenely beautiful, that I can half-believe that the collapse of my culture is also beautiful, or at least will be regarded as tragically beautiful after an appropriate period of mourning has passed.<sup>337</sup>

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<sup>337</sup> Joanna Demers, *Drone and Apocalypse: An Exhibit Catalog for the End of the World* (Alresford: Zero Books, 2015), pp. 82-83.

## Conclusion

In an original contribution to knowledge, the thesis has proposed a structural reading of the loop from a contemporary perspective, as a method in artistic practice and as a figure through which to read temporal, material, and ideological conditions. The research has shown ways in which looping can lead to a degradation of both material and experience. It has also offered speculative alterities to this, towards other structures and modes of lived temporal experience, in a move away from a 24/7 capitalist culture of restless activity and time poverty.

My approach to the research has been both practical and theoretical, with looping as a method which has bridged artistic practice, academic writing, and research strategies. I have used the loop in a material or process-based sense, and in a figural sense – as a form for ‘thinking through’, an interstitial figure operating between movement and stasis.

The loop became a tool, a device for uncovering, a way of looking / revealing / perceiving: a reflexive process which can subvert the medium while bringing into view the conditions and constructs surrounding it. This original methodological approach extends the field of knowledge, specifically in areas of contemporary art practice, artists’ writing, critical theory / philosophy, cultural / media studies, and the study and re-evaluation of practices in moving image, sound, and conceptual art from the mid-1960s – early 1970s.

Through this methodology, the research has engaged with implications of mutating dynamics between technology, temporal experience and perception, economies of time and attention, social conditions and governance, subjectification, imaging and the post-representational, materialities and meta-materialities of moving image and sound, cybernetics and the posthuman, recording and erasure.

The thesis includes an original body of new artworks. This work in moving image and sound has tested out various loop-based processes, the relation between (and thresholds of) movement and stasis, and explored looping in relation to the durational and the live recording. The practice as research has operated in an experimental and exploratory way, performing a function which writing alone cannot – this is centred around process, structure, and working with the material; it is often also contingent on the experiential, the intuitive, and sometimes the ‘happy accident’.

The relationship between practice and writing has been a form of dialogue: the practice has responded to areas of academic research, to particular texts, and ideas generated through the writing; the writing (and its direction) has also been informed by content and methods explored in the practice.

The question: ***How does the loop in moving image and sound practice operate in relation to particular technologies?*** has been explored experimentally in the practice through loop-based work with various recording technologies, formats, and methods (this has not been an exhaustive attempt, or one of categorisation, which has not been my aim). I have addressed this question in the previous chapters, which have been more or less arranged into particular areas of technology (and the effects of these). I have considered this question in terms of other artists' use of looping in relation to the medium and its construction, extending this to looping as a method which reveals mechanisms of technological as well as economic and socio-political apparatuses. A key element of this has been discovering how looping within artistic subversion and 'redeployment' of the technology / medium (film, video, AI-generated and machine images, audio tape, etc.) returns the medium, its technologies and constructs, back onto itself. In this way, the loop can become a 'revealer', exposing the elements at work.

The thesis has considered ways in which the loop as method in artistic practice can provide an opportunity for critique of, and resistance to, conditions of late-era capitalism and a technologically mediated society – drawing attention to the apparatuses which drive these, and to the technologies which direct our time and attention, the repeat making us look again. It has pointed to earlier manifestations of these conditions (and responses to them), emergent during the late 1960s and early 1970s.

The ways in which looping operates in relation to particular technologies also concerns the materiality of the medium. This leads back to the question: ***In what ways does the loop create an oscillation or intersection between movement and stasis, and what kinds of materialities emerge or dissipate through this?***

The thesis has explored ways in which looping can destruct, degrade, or erase, altering the material substrate and recorded content of the medium – particularly in film and audio-tape loops (discussed in relation to the work of William Basinski, Christine Kozlov, Annabel Nicolson, George Landow / Owen Land, Hollis Frampton); and how through this mutation alternate materialities, information, and content are formed. This is one of the ways in which looping can be simultaneously materially reductive (or subtractive) and generative, challenging dualities of recording and erasure, materiality and dematerialisation. I have also looked to the feedback loops of AI and machine imaging (through works of Trevor Paglen, Harun Farocki, and Pierre Huyghe) as operative, post-representational images; and as generative processes, in terms of machinic autopoiesis.

The loop can be seen as embodying a form of both movement and stasis, and through the loop (and looping repetition) alternate materialities can be formed. The relational dynamic between an intersection of movement and stasis and altered materialities through looping is not necessarily causal – these aspects may run in parallel; in the loops of 1960s



and 1970s Structural and Materialist filmmaking practices I have discussed, where explorations of the materiality of the medium (in moves away from cinematic illusion) include a focus on the still frame within the filmstrip, the connection between movement, stasis, and materiality is apparent. Within this, via the writing of Hollis Frampton, there is a reconsideration of the lineage from still photographic to moving image.

A key component of my practice has been working with the relation and interplay between still and moving images - this can be seen in video pieces such as *Please Review The Setting* (2019) and *Holding & Not Holding* (2017). In some instances, this work plays with perceptual thresholds, either as a rapid movement of stills which alters perceptions of the image, or as frames which shift in velocity between the still and moving image. These methods reveal a flux between illusion and the material. The practice has also involved translations between film, video and photographic media (analogue and digital), as methods of exploring hybrid materialities.

My practice has also used other strategies to engage with the relation between movement and stasis: in *This Transmission Will Be Interrupted* (2020) this occurs as a multiplied and extended looping moment of stasis, via the 'wheel of doom', or 'wait' cursor. This looping stasis speaks to a fragmented experience of time re-ordered by the machine.

The thesis has also explored the question of movement and stasis as a socio-political question, in terms of political mobilisation (or lack of it), and the circulation of data (to paraphrase Jodi Dean, the message which circulated but wasn't received); the 'practico-inert' (Sartre), and the isolated bubbles of a 'serial crowd'.

This returns to the questions: ***How do loops reflect cultural and ideological conditions at the same time as engineering or manipulating them, shaping our perceptual experience? How does this affect our experience of duration?***

These questions have evolved during the course of the research, becoming more an exploration of how temporal experience is shaped by the socio-technological conditions of neoliberal capitalist ideologies, and how looping in artistic practice can perform a reflexivity towards, and disruption of, these conditions.

The thesis has investigated correlations between social and temporal conditions, technology, and a broader apparatus which includes the strategic and anticipatory forces of defence, economics, and social surveillance. My approach to this has differed from that of *technological determinism* (or *media determinism* – for example, in the work of Marshall McLuhan) which tends towards a reductionist view where technology determines the development of social, political, economic, and cultural forms. This view presupposes in some way that technological development – to which we are subject, drives itself. Instead, my perspective on this configuration, while considering the effects of technological mediation, has been more broadly aligned with the viewpoint expressed by Deleuze in

“Postscript on the Societies of Control” (discussed in Chapter 4): “Types of machines are easily matched with each type of society – not that machines are determining, but because they express those social forms capable of generating them and using them.”<sup>338</sup>

In this research I have positioned forms of technology as indicative of socio-political, economic, and ideological apparatuses – thus the technology as such is not what leads; however, it is true that technology affects perception, social conditions, culture, methods of governance, etc. – which, in turn, shapes the mode of operations of the (wider) apparatus, and so it continues. From this viewpoint, the interaction between technology and society can be seen as a complex form of feedback loop - or a multiplicity of interconnected feedback loops. In the current technological climate, this feedback looping is more literal than metaphorical, playing out algorithmically in almost all areas of ‘connected’ daily life. This is not an unbiased or un-hierarchical system; the technology is not neutral. The direction of these ever-increasing loops towards ‘new systems of government’ through corporate ‘big tech’ industries of surveillance capitalism, is an aspect of this interaction which I have addressed.

The thesis has expressed some of the more fractured and repetitive forms of contemporary temporal experience arising from this; looping is thus seen as a mode of lived temporal conditions, not simply reflecting cultural and ideological conditions but embedded within them. I have explored this sense of a looping, distracted and discontinuous temporality as a condition which leads to a scarcity – and therefore value, of ‘presence’ and the extended durational.

Thinking the loop in relation to the durational has involved methods of returning to and re-evaluating the work of a previous generation, as a form of long durational loop which feeds back into the present. This is not exactly a cyclical repetition, but rather a past which endures into / intersects with the present. This method – a loop leading back to the 1960s and early 1970s which returns to the contemporary – has provided a contribution to knowledge which repositions a reading of artistic practices and methods of ideological resistance to dominant cultural forms, capitalist structures, and socio-politico-technological concerns from both eras – a return which has revealed the significance of earlier forms and manifestations of what could be called the ‘contemporary condition’.

This method, and its aims, has convergences with the work of theorists such as Mark Fisher, which has informed this thesis. Fisher, who also returned to the culture and ideologies of the 1960s and 1970s in his writing (particularly through music and film), brings Jacques Derrida’s concept of *hauntology*<sup>339</sup> into a historical loop which reveals lost futures

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<sup>338</sup> Gilles Deleuze, ‘Postscript on the Societies of Control’, *October*, Vol. 59 (Winter, 1992), p.6.

<sup>339</sup> Initially proposed by Jacques Derrida in *Spectres of Marx: The State of the Debt, the Work of Mourning and*

and a regurgitation of the past – a time out of synch. Fisher points to the perpetual looping of cultural production as a critique of global capitalism, and to the (given) attitude of inevitability and “reflexive impotence”<sup>340</sup> towards this. This move, which also draws from Nietzsche’s philosophy of *eternal recurrence* – and, I would argue, is met with the *practico-inert* (Sartre) in this paradigm – brings to a looping inevitability the dystopian sense that nothing is new, “the thought that [...] the future harbours only reiteration and re-permutation”.<sup>341</sup> As Fisher acknowledges, this perspective is, in many ways, aligned with Jameson’s view of postmodernism, the ‘cultural logic of late capitalism’.

My research has points of confluence with Fisher’s work (as noted in previous chapters), but there are also key points of difference in my approach to looping (and recurrence), not least that my thesis is led by practice. Significantly, I have proposed a potentiality of looping – where the loop is not simply endless recurrence and regurgitation, but where it can perform a function of change and alteration. While the thesis examines looping as a manifestation or expression of cultural conditions, it also explores how the loop can be a resistance to, or subversion of, dominant cultural forms. This theory on looping as a potentiality extends the field of knowledge.

The thesis has shown how looping and fragmentation can lead to a desire for the extended durational. Following on from this research, I would like to explore this idea further in my practice, extending the work into longer durational forms – not in the sense of an endurance, but rather as a form of slowing down and taking time. This approach has been seen in recent years in overnight ‘sleep-in’ events, such as Apichatpong Weerasethakul’s *SLEEP CINEMA HOTEL* (2018, International Film Festival Rotterdam), and Max Richter’s eight-hour concert, *Sleep*<sup>342</sup>. These are works designed to drift in and out of, events which aim towards some kind of healing and collective experience. While I am not considering a ‘sleep-in’ as such, my work may move towards long-form video / film and sound practice with a similar aim. One way in which I would like to approach this is to explore spatial sound and frequency modulation as immersive environments / installations, towards a shared listening praxis and creating spaces in which to drift / meditate / retune / slow down, where one can step outside of 24/7 restless activity.

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*the New International* (New York and London: Routledge, 1994). Original publication: *Spectres de Marx: L’état de la dette, le travail du deuil et la nouvelle Internationale* (Paris: Éditions Galilée, 1993).

<sup>340</sup> Mark Fisher, *Capitalist Realism: Is There No Alternative?* (Ropley: Zero Books, 2009), p.27.

<sup>341</sup> *Ibid.*, p.3.

<sup>342</sup> Premiered September 2015, at the Wellcome Collection, London, with live broadcast on BBC Radio 3.

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## Exhibitions, Film Screenings, and Events

- 'A World View: John Latham' (exhibition) Serpentine Gallery, London, 2 March – 21 May 2017.
- 'Aerial: the view from above in artists' film' (screening), Artangel, Peckham Multiplex, London, 29 September 2016.
- 'At Altitude' (exhibition) Towner Art Gallery, Eastbourne, 2 June – 30 September 2018.
- 'Borrowed Time: Alice May Williams / Karen Kramer', Jerwood / FVU Awards (exhibition) Jerwood Space, London, 9 March – 24 April 2016.
- 'Chantal Akerman: Now' (exhibition) Ambika P3, University of Westminster, London, 30 October – 6 December 2015.
- 'Conceptual Art in Britain 1964 – 1979' (exhibition) Tate Britain, London, 12 April – 29 August 2016.
- 'Co-op Dialogues 1966 – 2016: Lis Rhodes & Miranda Pennell' (event) Tate Britain, London, 18 April 2016.
- 'Co-op Dialogues 1966 – 2016: Malcolm Le Grice & Matthew Noel-Tod' (event) Tate Britain, London, 16 May 2016.
- 'CROSSROADS by Bruce Conner' (exhibition) Thomas Dane Gallery, London, 12 June – 1 August 2015.

- ‘David Hall: TV Interruptions (7 TV Pieces)’ (exhibition) Tate Britain, 13 October 2014 – 29 March 2015.
- ‘David Hall: Video Art Pioneer’ (event) Tate Britain, 5 March 2015.
- ‘David Curtis: 1966 Better Books’ (event) BFI Southbank, London, 14 January 2016.
- ‘Electronic Superhighway 2016 – 1966’ (exhibition) Whitechapel Gallery, London, 29 January – 15 May 2016.
- ‘From Reel to Real: Women, Feminism and the London Film-Makers’ Co-operative’ (events and screenings) Tate Modern, London, 23 – 25 September 2016.
- ‘Harun Farocki: Parallel I – IV’ (exhibition) Whitechapel Gallery, London, 15 December 2015 – 12 June 2016.
- ‘Hito Steyerl: Power Plants’ (exhibition) Serpentine Galleries, London, 11 April – 06 May 2019.
- ‘Human Flicker: The Cinema of Jun’ichi Okuyama’ (event) Tate Modern, London, 23 January 2016.
- ‘John Latham: Erth’ (exhibition) Breese / Little, London, 22 – 24 September 2016.
- ‘London Film-Makers Co-op 50<sup>th</sup> Anniversary & Book Launch’ (event), Sallis Benney Theatre, University of Brighton, 24 November 2016.
- ‘Lou Reed: Drones’ (UK Premiere) (event) The Spire, St Mark’s Chapel, Brighton, 13 – 17 May 2016.
- ‘Lucy Raven: Edge of Tomorrow’ (exhibition) Serpentine Gallery, London, 8 December 2016 – 12 February 2017.
- ‘Metahaven: Version History’ (exhibition) ICA, London, 3 October 2018 – 13 January 2019.
- ‘Malcolm Le Grice: No Idea’ (exhibition) Richard Saltoun, London, 29 May – 10 July 2015.
- ‘Nam June Paik’ (exhibition) Tate Modern, 17 October 2019 – 9 February 2020.
- ‘Obsolescence, or the post-nostalgic use of journalistic imagery: Martha Rosler, Harun Farocki, John Smith’ (exhibition) RCA Dyson Gallery, London, 9 October – 22 October 2015.
- ‘Omer Fast: 5000 Feet is the Best’ (exhibition), Towner Art Gallery, Eastbourne, 2 June – 30 September 2018.
- ‘Pierre Huyghe: UUmwelt’ (exhibition) Serpentine Galleries, London, 3 October 2018 – 10 February 2019.
- ‘Ryoji Ikeda’ (exhibition) 180 The Strand, London, 20 May 2021 – 18 September 2021.
- ‘Shoot, Shoot, Shoot: The London Film-makers’ Co-operative 1966 – 76’ (exhibition) Tate Britain, London, 17 April – 17 July 2016.
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## Recordings: Films and Online Videos

*At The Academy*, dir. Guy Sherwin (1974) (LUX / Re:Voir, 2006) [on DVD]

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## Recordings: Audio

Charles Amirkhanian, 'Morning Concert: Interview with Éliane Radigue', original broadcast: KPFA-FM, *Morning Concert Series*, 11<sup>th</sup> December 1980, republished online: *Other Minds Archive*, <[https://archive.org/details/MC\\_1980\\_12\\_11/MC\\_1980\\_12\\_11\\_A\\_ed.wav](https://archive.org/details/MC_1980_12_11/MC_1980_12_11_A_ed.wav)> [accessed May 20<sup>th</sup> 2023]

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Kali Malone, *The Sacrificial Code* (2019), online audio, Bandcamp, <<https://kalimalone.bandcamp.com/album/the-sacrificial-code>> [accessed 2<sup>nd</sup> June 2023]

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## Live Performances

'Occam XXV', Éliane Radigue, performed by Frédéric Blondy, Union Chapel, London N1,  
8<sup>th</sup> March 2022

Sarah Davachi, Grand Junction, London W2, 27<sup>th</sup> October 2022

William Basinski, Attenborough Centre for the Creative Arts, Brighton, 10<sup>th</sup> March 2023