

The Concurrency of Events: Conditions of Alternation and Delay

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Abstract

This thesis examines the cycling patterns of simultaneity, or phasing, between two or more repeating images and identifies this as a visual phenomenon in which reoccurrences over time divide between spatial positions. The research that supports this is based upon my studio practice and my experience of works from contemporary art practice that foreground durational and spatial concerns. I refer to Henri Bergson's theories of spatialised time to examine the means by which we apprehend the spatial presentation of moving images and identify degrees of awareness between the temporal and the spatial.

From my analysis of these I propose that the perception of image phasing results from chance configurations between points in time and positions in space, and argue that the experience of such simultaneities is twofold, that non-resolving patterns of behaviour extend a viewer's awareness from the moment of apprehension towards possible future configurations. It is the means by which such possibility is perceived that I examine in this thesis.

My contribution to knowledge is offered in a body of studio work, as research into formal and perceptual relationships between repetition, extension, slippage and simultaneity. The research question underpinning this thesis addresses the means by which we might perceive the phenomena of image phasing, and how this might in turn extend opportunities for development within the studio practice.

It is in a combination of analysis of selected studio works and the subsequent text that a response to this question is posited that frames a viewer's perception of possibility in terms that owe a debt to Bergsonian thinking about the nature of divided time flow as a series points in space. I argue that the experience of image phasing is one of alternating time apportioned as spatial units, and that this spatialisation process is predicated upon an accumulated past that is recognised as a pattern for possible future configurations. Extrapolating from this I claim that we anticipate the future of multiple temporalities in terms of their relative positions in space and that possibility, the potential future states of the experience, is therefore perceived as separate positions rather than parallel successions.

It is at this point that I am able to claim that the studio work and the subsequent text make a contribution to knowledge in the form of an art practice that frames image phasing as an experience that is concurrent with an awareness of possible future configurations.

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Introduction

Douglas Gordon's *24 Hour Psycho* has continued to generate discussion since it was first exhibited in 1993. Gordon's basic premise of projecting Alfred Hitchcock's 1960 movie *Psycho* at a reduced rate of approximately two frames a second, in a gallery space that the audience can enter and exit at will, remains central to the work, but developments in the form of the work's presentation have occasionally been adopted to extend the way it is encountered. In 2017 - 18 the work was presented in a dual-screen format in which the slow progression of the film from beginning to end was complemented by an adjacent version projected at the same rate but backwards so that once a day they formed an inverted correspondence in a brief Rorschach-like mirrored image.¹ On different occasions Gordon has doubled and inverted the film image with a mirror, but more commonly the film is projected onto a translucent screen that allows the audience to witness its frame-by-frame progression from either side.

Whilst *24 Hour Psycho* is regularly discussed in terms of its appropriation of Hollywood imagery and its reconfiguring of cinematic suspense there are more specific factors within this work that are relevant to this research. These include Gordon's methods of doubling and extending the image, both on a formal level and in terms of the processes by which it might be perceived. The original film's temporality may have been lost in favour of a presentation of scenes that can be scrutinised separately, but this does not simply leave us with duration that lacks a dynamic. Gordon has rendered the original film as a series of separated images that exist as much in space as they do in time. It is with such perceptual shifts, afforded by the delaying of temporal flow that this research began; from a nominal idea that movement and stasis might be perceived to coexist within a work and that attention can be extended between its content and its condition.

The interminable pace of Gordon's projection of a familiar and venerated classic suspends us in front of the screen, unable to engage with it on its original terms. Instead we replace the absent elements of the original version of *Psycho* with memory or assumption, or perhaps make repeated viewings in an attempt to gain something new from events that have been extended beyond the limits of our presence in the exhibition space. His 'delayed' version requires us to utilise experience and imagination in a conscious process of assimilation that separates the content of the original film from the means by which it might now be apprehended. Looking at *24 Hour Psycho* as a sequence of frames we might attempt to orientate ourselves in Hitchcock's script so as to determine what is about to happen on screen. Such a dualised state of awareness resonates with considerations that I will examine in this thesis; the intentional dividing, doubling or layering of our means of engaging with a work between the immediate experience and our imagination. And in relation to the subject of the

¹ Douglas Gordon *back and forth and forth and back* (Gagosian Gallery, New York. 2017 – 2018)

work, alluding to that which might happen in the future, and intentionally giving rise to a viewer's awareness of the ongoing possibility of change in the work.

The research question

In this thesis I examine the perception of simultaneity between images encountered in space. The research project is comprised of a series of studio-based works and a written component that both reflects the thinking generated in the process of making and exhibiting these works, and also operates as a means of generating further questions and proposing new perspectives that are fed back into the development of this body of work. From this I analyse particular studio works that I propose encapsulate an experience of image phasing, which I define as the perceived slipping of simultaneities between two or more repeating images in two or more positions in space.

My focus upon what is primarily a perceptual phenomenon is contextualised by my experience of a wider array of works by visual artists, musicians, composers, writers and choreographers that utilise differing degrees of repetition in adjacent situations. Ultimately the selection of visual art works examined in this thesis reflect a studio practice that is largely image-based, and offer an overview of selected works that I argue describe a nexus within which the phenomena of image phasing might be located.²

I support my analysis of these selected studio works with relevant examples from contemporary art practice and I extend my analysis of these with reference to writings by Henri Bergson and Gilles Deleuze that address time perception and simultaneity.³ These references are used to scrutinise the subjective circumstances in which phasing patterns are perceived, and to ultimately consider the nature of what might result from the perception of such phenomena. Thus the research can be described as an examination of the perception of visual phasing defined as patterns of simultaneity between image alternations in adjacent space.

The question that this research sets out to address is:

What might the visual phasing perceived to be operating in the studio practice between moving and repeating images reveal about the nature of perception?

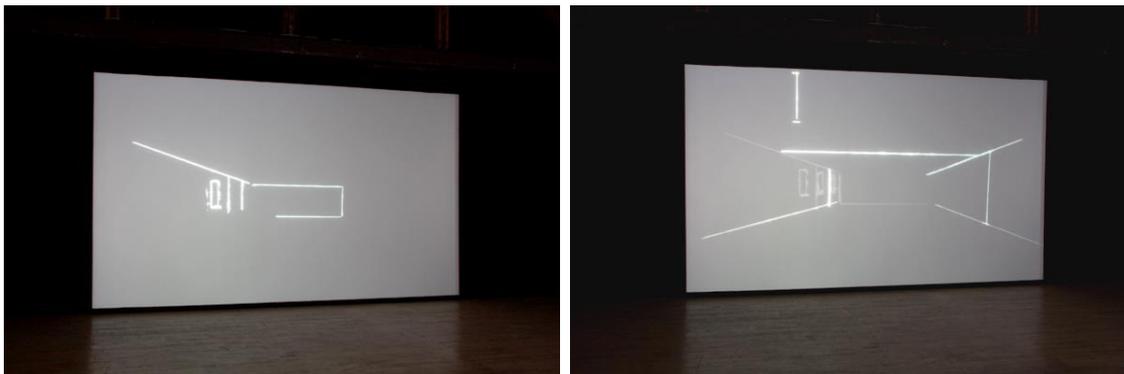
² The only examples used that I have not experienced first hand are Takahiko Iimura's *Loop Seen as a Line* (1972) and Peter Kubelka's *Arnuf Rainer* (1960), both of which I have instead witnessed in documented form and, in the case of Iimura, spent time in conversation with the artist about the work.

³ Henri Bergson, *Time and Free Will* (London: Muirhead Library of Philosophy, 1956), *Duration and Simultaneity* (New York: Bobbs-Merrill, 1965), Gilles Deleuze, *Cinema 1: The Movement Image* (London: Continuum, 2004), *Cinema 2: The Time Image* (London: Continuum, 2005), *Bergsonism*, (New York: Zone Books, 1994)

Thesis overview: content

This thesis is comprised of an accumulation of thoughts and questions that have resulted from making, exhibiting and discussing a focussed series of studio works, and the links and contextual resonances that I have drawn from these works. Reciprocal processes of making, discussing and writing have sustained the development of this research, and in the writing of this text I have continued this process of identifying and aligning what I perceive to be the operations of these works as I examine them alongside cited examples of works that I have witnessed, and in some cases discussed with the artists in question.

This research began with an approach to making work that hypothesised a condition of ‘seeing oneself seeing’, and developed out of attempts to engender experiences of actuality and reflexivity in my studio practice. This initial focus foregrounded a phenomenological approach to visibility in the work in which the viewer’s presence, the body and the process of seeing were intended to coexist as subject. A key example of such a work, entitled *Duration Reveals Extension* (2009) was a site-specific video installation in which a line drawing of an interior space hidden behind a large projection screen was reduced to its separate components and back-projected at 1:1 scale. My intention was that this deconstructed drawing of the space hidden behind the installed screen was revealed in sections, over time, so that the viewer might determine a representation of that space out of the conscious accumulation and reconfiguration of its separated and sequenced lines and angles. Additionally, as the viewing space was semi-dark there was the potential for the projected lines of the drawing to form on the retina as layered afterimages and reveal something of the physicality of seeing. In developing this piece I was attempting to delay the process of perceiving an image and reveal some of the means by which we apprehend visual representations of the world.



Steven Scott, *Duration Reveals Extension*, August Art Gallery, London, 2009

An initial focus on reflexivity and visuality has become more implicit in my studio practice to accord with what Kate Mondloch describes as a state of *spectatorial doubleness*.⁴ Mondloch uses this term to describe the condition a viewer of screen-based installations adopts whereby they retain awareness of a work's subject and, at the same time, its material form and/or means of presentation. This, she suggests, is a method of concurrent assimilation of what is a spatially privileged experience in a manner that owes less to the traditional single-point perspective-based viewpoint of painting and more to that of the sculptural experience of moving around an artwork.

Between 2013 and 2015 I visited multi-screen installations by artists João Maria Gusmão and Pedro Paiva, and Chantal Akerman and experienced such an extending of concurrent awareness between the filmic content of each installation and the means by which it was presented in the exhibition space. In considering this proposed state of dual consciousness in relation to the perception of simultaneity of multiple images required by both of the works in question, I turned to Henri Bergson's writings in *Duration and Simultaneity* on the dividing of subjective durational flow and the perception of time as a spatialised dimension.⁵ An examination of Bergson's writing on spatialised time is used to contextualise the strategies developed as part of my studio practice in which patterns of phasing between repeating images result from the doubling, mirroring, or layering of a temporal work. The paradigm of dual or concurrent awareness is considered in relation to a viewer's experience of extreme durational works such as Douglas Gordon's *24 Hour Psycho*, and I argue that in such cases a viewer must calculate the work's pace against the limitations of their presence. I propose that such durational works are perceived as perpetual and irresolvable and encourage in the viewer an awareness of a perceptual shift from their current circumstances towards an array of possible future states.

As might be expected from practice-based research the works examined in this text reflect the conceptual development of my studio practice over a number of years, from an initial interest in rhythmic repetitions of film and video imagery towards a reduction of pictorial subject and emphasis on minimal, durational and spatial concerns. What is also reflected in my selection of artists' works is the subsequent development of the research process itself, taking shape out of the accumulation of ideas and the refinement of a hypothesis around the perception of multiple simultaneities. In keeping with the nature of this practice I have used examples of a number of works predicated upon the moving image that in different ways emphasis form and material as being of equal importance to pictorial content. Thus I refer to works by artists associated with structural issues in which the film's

⁴ Mondloch describes *spectatorial doubleness* in relation to 'certain media installations (that) generate a forceful, critical effect that hinges...between illusionist/virtual and materialist/actual spaces.' Kate Mondloch, *Screens: Viewing Media Installation Art* (Minneapolis: University of Minnesota Press, 2010), 62

⁵ Bergson, *Duration and Simultaneity*

spatio-temporal qualities are of primary concern. This is examined in the positive-negative dual film, *Loop Seen as a Line* (1972) by Takahiko Imura, the dual image repetitions of Ken Jacob's *Nervous System* works (1980s onwards), and the live film projections of *X Fours Loops* (1974), *Rings* (2012) and *Quadrants* (2016) by Nicky Hamlyn. These have been selected as exemplars of the exploration of real-time relationships of separate projections, and offer context to my focus upon image simultaneities between multiple screens.

In outlining the focus of this research I begin with multi-screen installations by João Maria Gusmão and Pedro Paiva, and Chantal Ackerman, and as I develop my argument I draw upon examples by contemporary artists that in different ways combine two components in structural, experiential or conceptual dialogue. I use these to underpin my examination of the phasing synchronicities of images in my studio practice. It is important to state here that the selection of these works is based not just on their relevance to the research as examples that might reveal something about the perception of patterns of phasing, but that I have in a majority of cases experienced each first hand, and that they have therefore contributed directly to my thinking. These works can be aligned with broad definitions of image phasing in that they are each structured in different ways around concurrent temporalities and/or adjacent positions in space. As such they are part of a process of personal experience and reflection from which a series of studio works has emerged that are intended to challenge and explore the perception of the plurality and duration of images.

In attempting to survey the ground within which such characteristics might be situated I refer to Douglas Gordon's *24 Hour Psycho* and focus on examples of the dual projection works, *H.M.* (2009) by Kerry Tribe, *'Take My Eyes and Through Them See You...'* (2010) by Cerith Wyn Evans, *By Faith and Industry* (2006) by Lisa Oppenheim, and *Win, Place or Show* (1998) by Stan Douglas. The format in each case of two films presented in a dialogical relationship is the basis of each of these, and examples of such methods of generating meaning out of the form of a work is proposed in relation to that of the studio practice. Doubled or mirrored photographic imagery by artists Peter Liversidge, and Ryan Gander are also referenced in relation to wider notions of alternating dialogues between dual components in the studio practice. I use an examination of Brion Gysin's *Dreamachine* (1960) to explore the phenomenological experience of phasing patterns of light and I use an analysis of the photograph of Duchamp's *Door, 11 rue Larrey* (1927) to propose a relationship between the perception of possibility in a work and his idea of *Infrathin*.

The various examples of work presented for consideration are drawn from a wider array of works, exhibitions, curatorial projects and screenings that I have largely witnessed directly, or in the case of Imura's *Loop Seen as a Line*, discussed with the artist. From having witnessed and interrogated such exhibitions and screenings I have attempted to form a body of contextual thought that underpins the works and ideas generated in my studio practice.

To conduct this aspect of the research I have focussed primarily on two key studio works that encapsulate issues of simultaneity and alternation between two elements in complementary operations. One is predicated upon rhythmic patterns of phasing simultaneities of images repeating over time, the other upon visual illusions of movement and extended duration between two components that operate below the threshold of immediate perception.⁶ In both instances moving image technologies and processes of spatial presentation are designed to frame the shifting synchronisations of visuals displayed either on two screens or as two images.

Relationships between text, context and practice

From the development of a studio practice and the analysis of artists' works that foreground interrelationships between multiple temporal flows I hypothesise the alternation between two points in time and/or positions in space as a method of perceptual enquiry and begin by addressing the difference between these as alternating dimensions of movement/stasis. This subsequent method of interrogating dual as opposed to multiple states of concurrency developed from my observations of alternating movement on adjacent video screens between two looped images and positions of the two screens. The phasing of two images resulted from my intention to simplify the work so as to isolate and focus upon slipping synchronisations of repeating images on just two screens. My framing of this phenomenon in terms of the alternations of repetitions that span the temporal and the spatial has in turn enabled me to appraise the perception of visual phasing in terms of Bergsonian ideas of simultaneity as divided duration and spatialised time.

The texts that form the basis for my initial work on this thesis, and those that I've used to support the claims and arguments that constitute this thesis, are referenced and examined throughout. But at this point I want to acknowledge the key writings that enabled me to formulate my thoughts and responses to the ideas developing in the studio practice, as well as to reflect upon my experiences of repetition, simultaneity and spatialised time in the art works referenced here that have, in turn, supported the processes of making and exhibiting the studio works.

The books that extended my thinking around phenomenology and helped me to examine initial ideas of self-reflexivity and embodied visibility were, *On the Phenomenology of the Consciousness of Internal Time* by Edmund Husserl,⁷ and the *Phenomenology of Perception* and *The Visible and the*

⁶ The works in question are titled *Edge of Motion* (2013) and *Occlusion* (2016) and are examined in Chapters 3 and 4 respectively.

⁷ Edmund Husserl, *On the Phenomenology of the Consciousness of Internal Time (1893-1917)* (Dordrecht: Kluwer Academic Publishers, 1991)

Invisible by Maurice Merleau-Ponty.⁸ These two books were particularly useful in extending my thinking around visibility, duration and representation. In subsequently expanding my responses to the identification of image phasing as a focus of my studio practice I referred to a wider range of texts that included *The Inordinance of Time* by Shaun Gallagher, which offered wider phenomenological examinations of temporality and presence, but ultimately did not give me the means by which I could form an understanding of how spatial concerns might be fundamental to the perception of phasing. *The Future of the Image* by Jacques Rancière, and *Techniques of the Observer* by Jonathan Crary⁹ allowed me to consider the means by which I might articulate the context in which I was working with moving images. It was not until I began to examine some of the ideas in Deleuze's *Cinema 1. The Movement Image*, and in particular in *Cinema 2. The Time Image*, that I could begin to identify a context for processes of repetition and simultaneity that were being revealed in my studio work. Additionally I began to explore Henri Bergson's writings on the perception of time as a spatial concern and I found Deleuze's book *Bergsonism* helpful in his interpretation of Bergson's theories of spatialised time.¹⁰

In conjunction with the presentation, examination and refinement of the studio works I began to develop the means by which I was to approach the phenomena of image phasing as a perceptive process rooted in the subjective experience of a spectator. I found Bergson's examination of spatialised time and time consciousness, pure memory and the memory image afforded me a framework within which I was able to conceive of phasing as an experience of visual alternations of space and time. Although not generally considered in relation to phenomenological thought, Bergson's writings on perception and time incorporate subjectivity and presence. It is from a focus on the subjectivity of visibility and the audience that my context shifted from Husserl and Merleau-Ponty towards that of Bergson and Deleuze as a means of focusing upon my refined interest in the perception of simultaneity as a spatio-temporal phenomenon. This aspect of my research is therefore drawn largely from Bergson's key works: *Simultaneity and Duration*, *Time and Free Will* and *Matter and Memory*, and Deleuze's responses to these texts in *Bergsonism* in which he adapts Bergson's theories of movement, image, simultaneity and time.¹¹

Alongside these key texts I addressed themes and practices in contemporary art in publications that included *Screens: Viewing Media Installation Art*, by Kate Mondloch, and have subsequently adopted her notion of *spectatorial doubleness* as a model of a viewer's multiple states of

⁸ Maurice Merleau-Ponty, *Phenomenology of Perception* (London: Routledge Classics, 2002), *The Visible and the Invisible* (Evanston: Northwestern University Press, 1968)

⁹ Jacques Rancière, *The Future of the Image* (New York: Verso, 2007), Shaun Gallagher, *The Inordinance of Time* (Evanston: Northwestern University Press, 1998), Jonathan Crary *Techniques of the Observer* (Cambridge: MIT Press, 1992)

¹⁰ Deleuze, *Cinema 1: The Movement Image*, *Cinema 2: The Time Image*, *Difference and Repetition*, *Bergsonism*,

¹¹ Bergson, *Time and Free Will*, *Duration and Simultaneity*, *Matter and Memory*

awareness when engaged with multi-image installations. In her book *The Past is the Present; It's the Future Too* Christine Ross examines ideas of simultaneity in multi-screen installations that are the result of direct experience of selected artworks. John Geiger's book *Chapel of Extreme Experience* examines the hallucinatory effects of strobe light and flicker films as a context to Brion Gysin's *Dreamachine*.¹²

In responding to the research question stated previously I determine that image phasing is most effective when it is seen to be taking place between two or more autonomous temporalities and that image synchronisations are perceived to be forming at the point of apprehension. From this I am able to extrapolate that such 'real time' phasing offers the viewer a tacit awareness of possible future conditions of the visual phenomena, and that phasing between two autonomous flows is perceived as a perpetual cycle of chance configurations. Having determined the importance of the viewer's perception of what might be called the 'live' cycling of simultaneity and difference between moving images I examine the experience of phasing between separate presentation systems and propose an awareness in the viewer of the perpetual nature of simultaneity in the work. Furthermore, this notional concurrent layer of awareness of possible configurations of the works' visual interrelationships alludes, by implication, to a perceptive threshold beyond which such possibilities take the form of virtual degrees of difference that, I argue, accords with Bergsonian ideas of spatialised time. I refer to this proposed condition as 'possibility'.

Thesis overview: structure

In presenting here an overview of the chapters of this text I will outline the structure of my argument. This begins with examples of artist's works proposed as spatialised time, perceptions of dual imagery, and the phenomenon of image phasing, and develops to examine phasing in Bergsonian terms of simultaneity and repetition, and claim that the perception of phasing of live synchronisations of images offers an awareness of possible future states.

Chapter 1: Encounters with spatialised time

Theme: Multi-screen installations are considered in terms of spatialised time and the difference between points in time and positions in space. This chapter begins with phenomenological examinations of recent encounters with screen-based installations by artists João Maria Gusmão and Pedro Paiva, and Chantal Akerman. Kate Mondloch's notion of *spectatorial doubleness* is referenced in

¹² Kate Mondloch, *Screens*, Christine Ross, *The Past is the Present; It's the Future Too* (London: Bloomsbury, 2012), David Curtis (Ed) *Expanded Cinema* (London: Tate, 2011), Tanya Leighton (Ed) *Art and the Moving Image* (London: Tate, 2008), John Geiger, *Chapel of Extreme Experience. A Short History of Stroboscopic Light and the Dream Machine* (New York: Soft Skull Press, 2003)

relation to these and the proposed doubled awareness of a viewer is considered in relation to Bergsonian ideas of spatialised time and simultaneity.

Chapter 2: The doubled image

Theme: The difference between two components as a creative method. Examinations of dual and doubled images in contemporary art and studio practice. The difference between two points in time and two positions in space is described as a matrix to frame the studio practice. This is considered in relation to repetition and dual image works from contemporary art and in the studio practice. Works by Kerry Tribe, Cerith Wyn Evans, Lisa Oppenheim, Stan Douglas, Takahiko Iimura and Nicky Hamlyn are used to reflect upon methods of repetition and dual form presentation. Notions of live-ness and chance are highlighted in the presentation of studio work, as the perception of visual phasing and possibility.

Chapter 3: Phasing as shifting simultaneities

Theme: Visual phasing as the perception of simultaneities between points in time and positions in space. An initial examination of forms of phasing and the perception of patterns of synchronisation and slippage is followed by a close analysis of the perception of visual phasing in studio work, *Edge of Motion* in reference to Bergson and Deleuze's ideas of temporal plurality and simultaneity. I propose that the perception of image phasing reveals a doubling of awareness, between the actuality of the work and of its possible future configurations.

Chapter 4: Phasing as alternation and delay

Theme: Visual phasing as perception of duration and repetition. A close analysis of the studio work entitled *Occlusion* is conducted in relation to spatialisation and duration and the writing of Bergson and Deleuze. Examples of contemporary artists' works are employed to consider ideas of delay in terms of patterns of repetition.

Chapter 5: The Dreamachine: a phenomenology of interference patterns

Theme: Visual phasing as a phenomenological experience of the repetition of patterns. Consisting of an examination of Brion Gysin's *Dreamachine* in relation to its form and subjective effects. This is conducted with reference to flicker film.

Chapter 6: Phasing and possibility

Theme: The viewer's awareness of a work's possible configurations considered in relation to Duchamp's *Infrathin*. An analysis of the subjective readings inherent in the photograph of Duchamp's *Door, 11 rue Larrey*. Such configurations are considered as possibility and compared to Duchamp's *Infrathin* as concurrent transition between one and another in the perception of the viewer.

Conclusion: Phasing as a phenomenological experience of spatialised time and an awareness of possibility.

The perception of visual phasing results in a state of concurrent awareness of the real time simultaneities between two moving image and their futures as a set of probable states that are conceived in consciousness in terms of their possible relative positions in space. This perception of future configurations is conceived in spatial terms as an array of relative positions.

Contribution to knowledge

The thesis comprises both a studio practice and a written component that together make a contribution to knowledge that frames the presentation and examination of phasing as a visual phenomenon. This phasing of repeating imagery is developed out of the studio practice as the perception of ongoing difference between two points in time, as repetition, and two points in space, as dual images, and is described as the perception of an ongoing slipping of synchronisation of one visual component against another.

Therefore the contribution to knowledge that this thesis claims is in terms of its exploration of the significance of the perception of phasing as a first-hand operation; that this perceived phasing can occur between adjacent visual elements repeating in space and over time; and how these concerns can be materialised, as explored in the accompanying artworks. In the process of answering the research question I propose a context in which such phasing is constituted in relation to the perception of recorded time distributed in space. It is this context, considered in relation to Bergson's ideas on spatialised time, that enables me to examine the means by which art works I have witnessed also offer a sense of incompleteness, of a perpetual state of changing that extends awareness between the moment of encounter toward states that the work might yet encompass. Further to this I make the claim that the means by which this awareness is perpetuated is imagined as an array of relative positions in space as opposed to concurrent flows of time.

This research has been developed out of a studio practice that is rooted in artist's moving image and the form and space of its encounter. This is an indicator of the field of knowledge in which this research resides and therefore the primary beneficiaries of such work are likely to be artists with research-driven practices, academics, research students, art world professionals and audiences whose interest or areas of research and activity involve expanded moving image installation, expanded fields of sculptural or photographic practice, temporal and spatial relationships and philosophically-driven approaches to processes of perception and abstraction.

Chapter 1:

This chapter begins with phenomenological examinations of my encounters with two screen-based installations. From this the viewer's engagement in a condition of layered awareness is proposed and examined in relation to Bergsonian ideas of spatialised time and simultaneity.

Encounters with spatialised time

Papagaio: João Maria Gusmão and Pedro Paiva, Venice Biennale 2013, Camden Arts Centre, 2015

A film depicting a car wheel is projected onto a screen suspended above head height in a semi-darkened hall. This is one of a number of films being projected in the space. The image of the wheel fills most of the frame as its background rotates around its central axis in a blur of colour and light. There is movement but the wheel itself seems to remain almost static, and because it cannot be seen to be traversing a surface the film does not seem to progress. The wheel is turning at the same rate as our viewpoint, leaving a cyclical, repetitive motion that is a combination of abstraction and stasis. The image of the car wheel is replaced by that of a bicycle wheel and the same relative movement of the background rotating around the wheel is witnessed again.¹³

From gallery press releases to critical reviews, descriptions of the film projections in the exhibition *Papagaio* by João Maria Gusmão and Pedro Paiva focus primarily on the emotive qualities of their imagery, describing them as 'magical, mesmerising', '...an imaginative journey into science, philosophy and religion' that reveals '... the different qualities within the visible.'¹⁴ Such descriptions may be representative of the initial impressions one has of the content of Gusmão and Paiva's silent films, but what can be overlooked in describing such visually distracting images as a man balancing eggs end to end, cassowaries wandering in front of a painted backdrop or water trickling in an arc from an earthenware jug, is the means by which one needs to negotiate the overall form of the work. Having visited two versions of this exhibition, in Venice in 2013 and London in 2015, I was able to reflect both upon the evocative quality of the films' content and the means by which these films are designed to be apprehended as collections of scenes repeating in space.

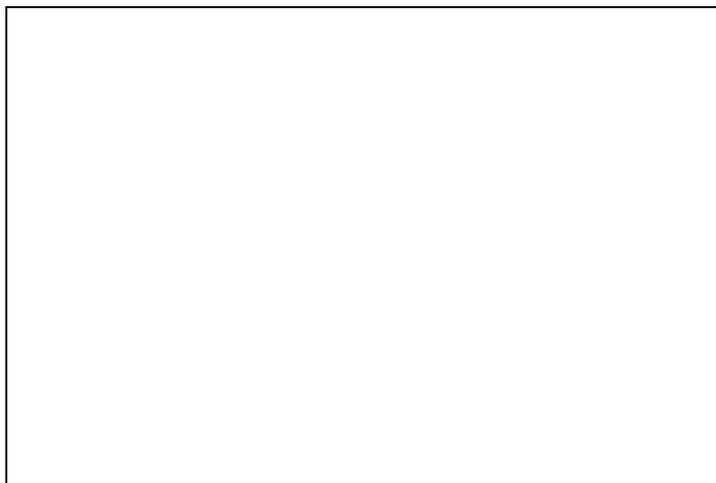
Three bright spots appear in the sky under an arch formed by the roof of a cave. Our viewpoint is from inside the cave towards the sea. The three spots are iterations of the sun arranged in a diagonal line of ascending scale between the silhouetted rock and the horizon line of the sea. The camera moves very slightly revealing these suns to be a trick of the light that involves either filming through a layer of glass, or perhaps capturing reflections of the sun in the camera's lens. The shot lasts about a minute and is repeated.

¹³ This film is comparable to that of Tony Hill's *A Short History of the Wheel* (1992) that used a similar technique.

¹⁴ Sies + Höke Galerie website. <https://www.sieshoeke.com/exhibitions/joao-maria-gusmao-pedro-paiva-papagaio-berlin> (accessed 12th May 2016)

The absence of narrative progression in these films encourages the viewer to explore the exhibition space in search of assimilation, and for the pleasure of looking. The novelty of much of the imagery maintains a viewer's attention by neither fully satiating nor disrupting their curiosity. Viewed in any direction or succession the installed films continue to play out in arrays of intriguing imagery that accumulate but remain inconclusive.¹⁵

Three films of eggs frying in a black pan are superimposed and projected in slow motion. The multiple eggs echo the three iterations of the sun in a film projected nearby, both consisting of triple yellow globes. The images of the eggs and the suns begin to suggest biological cells, dividing, repeating and multiplying. Which came first? Which is the source of the other?



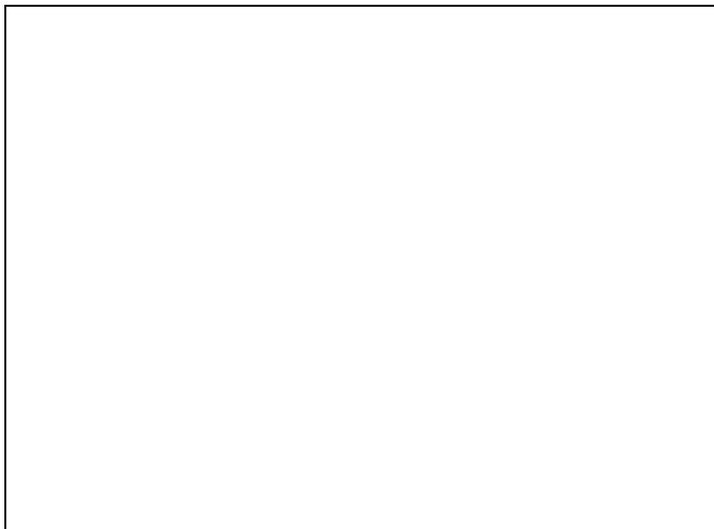
João Maria Gusmão and Pedro Paiva, *Papagaio*, Camden Arts Centre, London, 2015

To encourage a sense of visual continuity between shots cinematic devices such as editing between camera positions or panning to reveal visual information are eschewed in favour of the depiction of staged, static demonstrations. Each film loop is separated into a portion of anterior time that has been situated in an otherwise empty space. The presence of the projectors on plinths helps

¹⁵ The show's title *Papagaio* is the Portuguese name for Parrot, a creature that appears in one of the films but offers no further reference or metaphoric function. A comparison might be made here to the writings of countryman Fernando Pessoa, under his heteronym Alberto Caeiro, and his poetic statements of the literal and the absolute. The personality of Caeiro was developed as an anti-poet; one who sees with the eye only and avoids the associative feelings and intellectual or metaphysical considerations that would normally constitute the poetic when describing the experience of such vast topics as nature, humanity and society. Instead Caeiro used language to transcribe the actual; what is *being seen*, often in the real time of its apprehension, without sentiment, to a point that approaches the concrete. In this regard Caeiro stated that; 'Things have no meaning. They have existence.' Simon Critchley, '*Surficiality: Some poems by Fernando Pessoa*' <http://www.enl.auth.gr/gramma/gramma06/critchley.pdf> (accessed 22nd February 2016)

perpetuate the separateness between the content of the work and the similarity in the means of its presentation. The screens ultimately become filmic objects in a minimal theatrical setting, appearing to the observer both in succession and simultaneously in space, and allowing each to be linked or montaged subjectively.

A camera-obscura image of a bicycle wheel is projected onto a wall from an adjacent space. The wheel is lit against a darkened ground and rotating slowly. The soft blurred quality of this image is similar to that of the adjacent film projections. It is not immediately obvious that this image is not a film projection but an inverted optical effect. Differences between darkness and light, the image and the object itself, are implied. It exists as if to suggest that the illusion of representation and projection, of recording and seeing, might collapse by stepping outside the exhibition space and witnessing this visual magic to be no more than circumstance, a trick of the light.



João Maria Gusmão and Pedro Paiva, *Papagaio*, Fondazione HangarBicocca, Milan, 2014

On both of the occasions that I witnessed *Papagaio* the exhibition consisted of numerous 16mm film projectors on plinths, film screens of different sizes and a camera obscura, installed together in a large darkened space. Moving among these mechanisms made me aware that I was building a cognitive map, an overview of the screens' spatial relationships, whilst assimilating the films in concurrent states of exploration and engagement. What became clear as a result of viewing *Papagaio* on more than one occasion was that in order to apprehend this work this dual state of mind was necessitated by the films' separateness in space. My experience reflected the separateness of the work's temporality from its spatial dimensions by requiring that I maintain an awareness of image subject *and* the means by which it was being presented.

Kate Mondloch refers to this dual state of engagement as *spectatorial doubleness*, a term that she applies to the process by which screen-based installations require the viewer to ‘...be mindful of the material exhibition space (as experienced in “real” time)’ and the ‘... space of the... technological media itself’, whilst concurrently engaging with the representational content of the exhibited moving image.¹⁶ In making this point Mondloch broadly outlines the means by which viewers engage with exhibited works that in different ways incorporate aspects of the cinematic with the traditionally sculptural concerns of spatial relationships and material presence.¹⁷ She identifies the initial examples of such work in the late 1960s, and cites film-maker Malcolm Le Grice’s point that a focus on the ‘concrete’ dimension of cinema and cinema experience resulted from an increasing employment of extended duration and the resultant movement of the viewer in relation to the work as a means of refuting the established linearity of the cinematic.¹⁸

Mondloch’s description of the dual awareness of form and content in the experience of multi-screen installations offers a context for my examination of the perception of such works in relation to their temporal and spatial qualities. It is in relation to my experience of these two screen-based installations that I outline the thinking behind my studio practice as an encounter with flows of recorded time in adjacent space. In this process of situating my thinking I am also laying the ground for a subsequent examination of the phenomena of moving image phasing and extended duration. In accordance with the series of studio works built around perceived relationships between two parts this process begins with my consideration of how dual units of time and space might allude to the threshold of a viewer’s perception of degrees of simultaneity. I can draw upon Bergsonian notions of spatialised time, as flows of time that in their multiplicity are perceived as occupying separate spatial points, and again in relation to his ideas on simultaneity as the perception of space out of durational flow, as a means of examining such perceptions of selected studio works considered in relation to studies of works by contemporary artists and film makers.¹⁹

¹⁶ Kate Mondloch writes of the *spectatorial doubleness* of multi-screen installations. ‘In a curious amalgamation of gallery-based spatial experimentation and political aesthetics, this model of spectatorship proposes the viewers be both “here” (embodied subjects in the material exhibition space) and “there” (observers looking onto screen spaces) in the here and now.’ She emphasises the enhanced role of space and presence of technology that spectators move within, and likens such experiences to ‘something closer to minimalist sculpture’ Mondloch, *Screens*, 62-64

¹⁷ A common strategy adopted by video and film artists was the incorporation of sculptural concerns in which cinematic time and its means of presentation were distributed in space. Mondloch cites the ‘locational’ films of Paul Sharits that foregrounded the presence of the projectors, screen and viewing space as early examples of this. Mondloch, *Screens*, 5

¹⁸ *Ibid.*, 42

¹⁹ Bergson writes of multiples of objects or events as a form of consciousness of space. ‘Does...this amount to recognising that the very idea of the number 2, or, more generally, of any number whatever, involves the idea of

Regarding *spectatorial doubleness* as the coexistence of a viewer's reading of image content and their attendance to its form, we might consider the formal similarities between Gusmão and Paivas' film scenes. Each is conducted as an activity that is staged for the camera or framed and shot from a static viewpoint. The films are projected in slow motion so that the resultant temporal continuity enables each screen to be viewed in any order or in multiples. The process by which the viewer combines and assimilates these films is enhanced by the reverent atmosphere of the darkened rooms in which they are presented; as illuminated images in a unifying space.

It is these layered means by which I assimilated both the films' content and the form of their presentation that I am focussing on at this point, as an initial means of examining the experience of temporal flow distributed in space.²⁰ Notions of a dichotomous spectator that maintains a coexistent awareness of the image and its physicality predates such artists' and film makers' concerns with the foregrounding of form over content, but it is once these concerns became the intended subject as well as the form of such work that it is possible to identify a means of approaching such methods.²¹

In his essay *Real Time/Space* Malcolm Le Grice outlined an 'increasing concern with the problem of actuality' in his work and that of other 'underground' film makers at the time.²² And in his proclaimed challenging of the '... history of the commercial cinema...' with its '... aim of creating convincing illusionary space/time', he identified the dual conditions of a viewer's engagement with his work as spanning the film's content and the real time/space encounter at the event of its projection.²³

juxtaposition in space? ... We believe that we are adding something to the idea of two or more objects by saying that they cannot occupy the same place: as if the idea of the number 2, even the abstract number, were not already that of two positions in space!' Bergson, *Time and Free Will*, 89

²⁰ Initially this research foregrounded the role of the viewer by examining the phenomenological means by which multi-screen installations might be apprehended. In developing studio works designed to explore the retinal afterimage and perception over time I considered how this might accord with Edmund Husserl's ideas of retention and protention as a key to his writing on time consciousness. Husserl, *On the Phenomenology of the Consciousness of Internal Time*

²¹ This point relates to debates that can be traced back to the mid-twentieth century when highlighted by critic Michael Fried in his essay 'Art and Objecthood' (*Artforum* 5, June 1967), 12 in which he decried the durational qualities of the experience of looking at minimalist art. He argued that such works had a theatrical 'incompleteness' that necessitated their being experienced from numerous positions, and as such one could not determine when one has finished looking at, or completed, such a work.

²² Malcolm Le Grice, *Experimental Cinema in the Digital Age* (London: BFI, 2001), 155

²³ As with much of Le Grice's own work at the time he contextualises such activities in ideological terms, as film work that was challenging what he deemed to be the passive 'conditioning' aspects of traditional cinema and its claim to meaningful representations of reality. He described his early films as 'attacking' what he saw as the oppressive qualities of narrative cinema and outlined the methods he and like-minded film-makers such as Peter Gidal adopted in this opposition to narrative that were intended to disrupt the audience's 'culturally coded' desire for immersive storylines by drawing attention to the separateness of filmed shots. 'Traditional narrative cinema relies upon giving

In a notion that can be compared to that of Mondloch's *spectatorial doubleness* Le Grice focussed on what he termed the 'retrospective' nature of film with its pre-recorded, pre-edited production, and contrasted this with his foregrounding of the viewer's subjective experience of film encountered in space. Screening of his films were often intended to heighten a doubled awareness of 'then and now' with the introduction of performative elements designed to forge relationships between the recorded image and the real time, unique experience of its presentation.

In defining the context in which his films operated, Le Grice's associate Peter Gidal described structuralist /materialist film in terms of subjective experience that is 'constituted in and of consciousness.'²⁴ His point being that the intended subject of such work was the work *in its apprehension* rather than what it depicted on screen. His focus was on all that constitutes the process that makes the film a film, becoming present in its being watched; a definition that amounts to a reflexive doubling of the viewer's awareness by attempting to engineer a distinction between one's perceptive processes as separate from that which is depicted on screen.

While film makers associated with British structural and materialist ideas of the 1960s and 70s, such as Le Grice, Peter Gidal, William Raban or Lis Rhodes, emphasised an awareness of difference between the immersive cinematic illusion and the presence of the film apparatus, Catherine Elwes writes of the various works that have continued to foreground this duality of filmic content and its form in contemporary moving image practice.²⁵ She considers recent examples of screen-based installations in which a viewer's awareness is suspended between film content and its means of presentation and cites the aforementioned *24 Hour Psycho* by Douglas Gordon as an example in which the filmic image remains all too present whilst its temporal elements of action, dialogue and suspense have been reduced to an indiscernible duration that instead gives the work a monolithic presence in the gallery space.²⁶ It is the relationship between the flow of a moving image and its spatial presence that interests me in such work as I intend to map out the territory within which I can place the perception of image phasing as both a temporal and spatial concern. Having established this ground I can then examine the operations of works from my studio practice in terms of a proposed layering of awareness in perception on the part of a viewer, from which I will consider Bergsonian ideas of space described by such divided duration.

complete priority to represented time...I sought to reverse this order of priority by making spectator time primary and giving it clear priority.' Malcolm Le Grice, 'Time and the Spectator in the Experience of Expanded Cinema' in *Expanded Cinema: Art, Performance, Film* (London: Tate, 2011), 162-163

²⁴ Peter Gidal, *Theory and Definition of Structural/Materialist Film* (London: BFI, 1976)

²⁵ Catherine Elwes, *Installation and the Moving Image* (London & New York: Wallflower Press, 2015), 146

²⁶ *Ibid*, 149

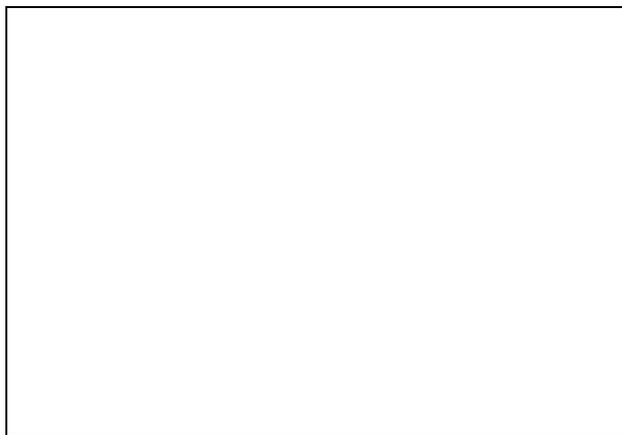
D'Est: Chantal Akerman, Ambika P3, London 2015

A camera tracks slowly along a line of people in a street so that two or three appear in frame at a time. Some are huddled together talking; others stand or sit alone, some look vaguely towards the camera. They are all wearing winter coats, hats and scarves and appear to be waiting for something. It is dark, a light snow is falling. The lateral flow of the video image appears multiplied across numerous screens and contrasts with that of scenes on adjacent screens in the exhibition space.

From the 1980s until her death in 2015 artist and film maker Chantal Akerman employed methods of durational extension and multi-screen presentation of her film and video work. The exhibition of seven of her film and video installations at the Ambika P3 exhibition space in London in the autumn of 2015 evidenced many of these creative strategies in the form of projections and monitors arranged in darkened spaces for an audience to explore.

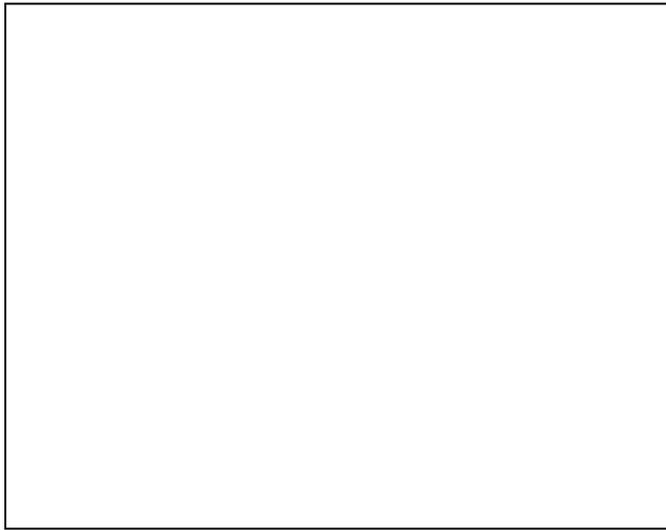
Unlike the staged and static scenes of João Maria Gusmão and Pedro Paiva, many of Akerman's installations, particularly such major undertakings as her twenty-four monitor piece *D'Est* (1993), utilise familiar filmic tropes such as camera tracking and panning across real-world subjects. *D'Est* was originally shot as a 16mm single-screen documentary film but later presented as a multi-monitor video installation. Her slow tracking shots of snowy streets and shoppers queuing in Russia and Poland during the fall of communism flow and repeat laterally across the exhibition space.

The height of the plinths makes it possible to see across the rows of TV screens in the darkened space so that a scene appears on a number of screens simultaneously. These scenes are interspersed so that the movement on one is multiplied, appearing to sweep across the span of the space in unison, whilst a different shot forms a visual counterpoint. The impression is of choreographed movement and stasis alternating and repeating through space. The images become abstracted through multiple appearances, and minutes pass before I am drawn back to seeing the depictions of people and places.



Chantal Akerman, *D'Est*, 1993

When witnessed simultaneously across multiple screens the consistency of Akerman's long camera shots becomes a means by which the documentary imagery is extended and orchestrated within the presentation space. The spatialised ebb and flow of the camera's movement is particularly effective when viewed from within the rows of monitors as a continuity of pace and flow of the scenes is echoed and repeated intermittently across successive screens. Patterns of movement are forged from the exchange of temporalities across the presentation space. Akerman's attendance to the orchestration of multiple screens encourages us to extend our attention between the evocative images of wintry post-communist cities and the interplay of on-screen movement by which this imagery is being delivered.



Chantal Akerman, *D'Est*, 1993

Numerous large video monitors depict slow, silent tracking shots from a moving car as it drives through snow-covered streets at night. Occasionally pedestrians are seen walking in front of large buildings, between kiosks, trees and street signs. The video's low resolution and colour saturation, combined with the presence of the outdated monitors, suggest these scenes are of the recent past.

Whereas Gusmão and Paiva's films offer few such cinematic devices as script, editing or characterisation, relying instead on staged theatricality to achieve consistency, Akerman's installation presents a clearer continuity of real-world subjects with recognisable locations and indications of time; in this case the documentation of a socio-political era that is about to be lost. We can see in the presence of the deconstructed elements of her original film documentary the mundane activities, the dark streets and sparse domestic interiors of East European citizens against an implied backdrop of political upheaval.

Similarity and difference

In the work of both Gusmão and Paiva, and Akerman, formal considerations such as a consistency of image quality, pace or camera movement become a means of forging continuity between separate screens. This is enhanced by the associations we might make with certain technologies: In combination with the subject of Akerman's imagery comes a legible provenance of redundancy in the form of the obsolete 1980s video monitors. Slow motion shots of low-resolution images flow across old TV monitors, their presence enhancing the atmosphere of a passing era.²⁷ Outdated technology and pictorial information combine to signify Eastern Europe during the Cold War, and displaying of such scenes on curved glass screens only enhances this reading.

In relation to legible technological provenance theorist Laura U. Marks writes of a form of aesthetics that is again not just rooted in the representational qualities of an image, be it filmic or photographic, but more in the information that it carries from what she determines to be a stage or 'interface' between a 'Bergsonian universe of images' – or the imperceptible infinity of images – both those that are possible and those that are present.²⁸ This 'information stage', as she terms it, encodes the image as it 'unfolds from the infinite' and she makes the point that the codification of the process of interpretation, if determined in terms of information, renders an image – be it filmic, photographic or digitally mediated – a carrier of a legible provenance that is inherent in its materiality. Technology and its associative historical imprints imbue an image with information about its existence that can compete with its representational remit to become the subject of that image. An indeterminate image, one that is not immediately legible or specific with regard to its pictorial or contextual remit, might instead be interpreted in terms of the watermark of its technological provenance. I suggest that the inherent visual quality of the 16mm film projections of Gusmão and Paiva – what Erika Balsom refers to as the 'Analogue aura' of film – and the film-to-video resolution in Akerman's *D'Est*, becomes a means by which a viewer's reading of continuity between the components of the work is aided by historical and technological aesthetics.²⁹

²⁷ Nadin Mai, *D'Est – Chantal Akerman (1993)* <http://theartsofslowcinema.com/2015/10/29/dest-chantal-akerman-1993/> (accessed 27th March 2016)

²⁸ Laura U Marks 'Enfolding-Unfolding Aesthetics, or the Unthought at the Heart of the Wood' in *Technology and Desire The Transgressive Art of Moving Images*, Rania Gaafar and Martin Schulz (Eds) (Bristol: Intellect, 2014), 151

²⁹ Balsom observes that, in a reversal of Walter Benjamin's notion that the quotidian and reproducible nature of media withers the aura of the unique art object, more recent associations of film lend the medium an aura of preciousness '...the recent employment of celluloid within the gallery reconfigures medium specificity in the light of obsolescence to see film as closely linked to disappearance, the historical trace, and the failed utopia from which hope for the future might be gleaned.' Erika Balsom, *Exhibiting Cinema in Contemporary Art* (Amsterdam: Amsterdam University Press, 2013), 101

Regarding Mondloch's notion of a viewer's doubled engagement we find that the experience of a work's image content can begin to saturate the space of its presentation so that the real-time engagement of the viewer can become imbued with the vagaries of the imagination. And in the examples under consideration here the presence of Gusmão and Paiva's 16mm film projectors and Akerman's 1980's TVs underpin the intended atmosphere of the works in a manner that facilitates a coexistent awareness of subject and its means of apprehension.

Christine Ross offers a critical view of the experience of certain forms of multi-screen simultaneity and subsequent layering of awareness, suggesting that such works require a degree of multi-tasking that challenges the audience to something that cannot be achieved. In examining a series of works that use computer game-like paradigms of spatialised narrative and consist of multiple concurrent recordings of events she suggests that complex simultaneousness is too often presented as a problem for the viewer to solve. Furthermore these goal-driven multi-screen works maintain an underlying linear structure that can preside in a viewer's consciousness as perceived degrees of success.³⁰ This differs from the emphasis on the experience of actuality and the material space of presentation that I argue introduces considerations of sculptural and spatial relationships as a counterpoint to narrative compulsion in the works of Gusmão and Paiva and Akerman.

Spectatorial doubleness and spatialised time

Referencing theorists Peter Osborne and Dominique Paini, Kate Mondloch describes the tensions that can result from the different temporalities of a screen-based artwork and that of a viewer. She acknowledges a distinction between multi-screen installations that privilege time in their rootedness in narrative cinema and 'media installations' that tend to emphasise the materiality of space. Works that spatialise time can, she suggests, amount to a constructed subjectivity and what she calls a 'temporal polyphony' on the part of a viewer that mirrors the means by which we negotiate the world.³¹

Papagaio and *D'Est* are pertinent examples of works that encourage a reflexive awareness on the part of the audience that spans each work's form in conjunction with its content. The necessity to explore the alignments of these repeating loops of slow-moving footage serves to emphasise

³⁰ In discussing Melik Ohanian's multi-screen video *Seven Minutes Before* Ross identifies what she calls a 'Quasi-Panorama strategy' that presents every scene as being of equal importance, which causes 'binding problems' for the spectator. 'Unable but challenged to perceive a multi-screen installation as a whole...the viewer/listener is invited to live productively the failure of all-seeing opticalities while dwelling over historical time.' Ross, *The Past is the Present; It's The Future Too*.

³¹ 'The overlapping flows of moving imagery in (such) works...allow viewers to recognise the extent to which they always live in many different times simultaneously.' Mondloch, *Screens*, 53

differences in temporality of the images on the screens from that of one's own consciousness. In my experience of both installations this dichotomy led to a state of engagement in which I attended to both the accumulation of the depicted subjects *in conjunction* with the structural and material means by which they were presented in the space. With regard to this state of dualised consciousness Mondloch suggests that a viewer might engage with spatially separated time flows by fusing the real-time process of actively exploring with that of each recording, arguing that 'out-of-frame time', or that of the space between each screen, '... will unavoidable cross pollinate with in-frame time, just as perception and memory are always coextensive.'³² This difference in temporality between the consciousness of the viewer and the recorded time of the film is acted out in the space between the works, requiring alternations between concurrent processes of perception and memory that are assimilated as lived experience.

Extrapolating from this I am compelled to consider how such examples of layered temporalities, and Mondloch's *spectatorial doubleness*, might accord with Bergson's ideas of duality in his writing about duration and consciousness. Of the experience of accumulated encounters with temporalities in space he states that, '... there is neither duration nor succession in space, if we give to these words the meaning in which consciousness takes them: each of the so-called successive states of the external world exist alone; their multiplicity is real only for a consciousness that can first retain them and then set them side by side by externalising them in relation to one another.'³³ This point corresponds with the experience of moving images encountered on separate screens that cannot be *given* or *present* for the viewer at once, and, as has been suggested by Mondloch in her paraphrasing of film theorist Dominique Piani, they are constructed and assimilated in consciousness not just by the viewer moving past each screen, but out of their resultant shifts *between* two degrees of attention.³⁴ The process of apprehending spatialised screens requires that the viewer's awareness must span temporal flow and spatial adjacency to accumulate difference between each; a process that necessitates that they both alternate and maintain their attention between a work's form and its content.³⁵ The multi-screen installations of Gusmão and Paiva and Akerman require this dividing of the viewer's awareness into a condition of doubled consciousness so that attendance to temporal content that has both continuity and meaning is maintained concurrent to the physicality of the screens and

³² Ibid, 54

³³ Bergson, *Time and Free Will*, 120-121

³⁴ Mondloch, *Screens*, 54

³⁵ Considering Mondloch's *spectatorial doubleness* in terms of a coexistent awareness of form and content we can acknowledge a comparable duality inherent in Malcolm Le Grice's favouring of the 'Real time/space' of the viewer over the 'retrospective' time of the onscreen image. Le Grice, *Experimental Cinema in the Digital Age*, 155-163

projection systems, the number of images, their scale, brightness and colour, their relationship to each other, the presence of other viewers, and so on.

In outlining his thoughts regarding the means by which we experience the multiple temporalities of the real world Bergson uses a cinematographical method to describe simultaneities as points in time that are divided so as to accumulate in current memory as the perception of movement, which he determines, in their very multiplicity, are spatialised.

Immanent in our measurement of time... is the tendency to empty its content into a space of four dimensions in which past, present and future are juxtaposed or superimposed for all eternity. This tendency simply expresses our inability mathematically to translate time itself, our need to replace it, in order to measure it, by simultaneities which we count. These simultaneities are instantaneities; they do not partake of the nature of real time; they do not endure. They are purely mental views that stake out conscious duration and real motion with full stops, using for this purpose the mathematical point that has been carried over from space to time. ³⁶

In this outline of the subjective means by which our memory functions as the apprehension of simultaneous points in time Bergson distinguishes between processes of consciousness that he calls pure-memory and memory-image/perception.³⁷ For Bergson pure-memory describes the past that no longer exists in consciousness, but remains available to be brought back to consciousness and revisited at will. When such pure-memory is returned to consciousness it is capable of producing new sensations so that it ‘... ceases to be a memory and passes into the state of present thing, something actually lived.’³⁸ Bergson determines pure-memory as virtual in that it remains outside the reality of consciousness that may call upon it; until such time that it passes back into the present as actual.

Utilising his cinematographical model Bergson argues that our perception of the world is a process of dividing time in terms of successive ‘facts’ and their impression of difference upon consciousness. He describes divisions according to difference in degree rather than that of temporal divisions based upon difference in kind, and that a means by which they divide in consciousness is reflected in our ability to describe any such difference.³⁹ It follows that such a model of the perception of movement, being based upon difference of degree, can be ascribed to the means by which we negotiate the arrangement of screens in the defined spaces of both *Paggio* and *D’Est*. In such cases

³⁶ Bergson, *Duration and Simultaneity*, 60

³⁷ ‘Perception is never a mere contact of the mind with the object present; it is impregnated with memory-images, which complete it as they interpret it.’ Bergson, *Matter and Memory*, 170

³⁸ *Ibid*, 179

³⁹ ‘If, in describing it, we are led to distinguish phases in it, we have several facts instead of one, several divided periods instead of a single period....consequently we know a change only when we are able to determine what it is about at any one of its moments.’ Henri Bergson, *Creative Evolution* (New York: Henry Holt & Company, 1911), 332

similarity as difference of degree, and simultaneity as concurrence of form, enable such works to bind in perception as spatialised experiences of temporal repetition.

The term memory-image is used by Bergson in reference to the present that he describes as being in a state of constant fusion with perception so as to make sense of the melding of object and space in consciousness. It is out of a process of what he describes as ‘oscillations’ between the persisting flow/alternation of memory-images that the process of perception of the external world is constructed for consciousness as reality, or the actual.⁴⁰ It might be deemed that the memory-image is the alternation of time and space in a concurrently immediate and adjacent condition. It is such a process of perceiving the world in terms of ongoing simultaneities of time flow and relative position that signifies continuity and therefore implies potential that Bergson suggests ‘might be defined as nascent perception.’⁴¹

Considering Bergson’s notion of the oscillating and accumulating of simultaneities allows us to reflect upon examples of art works built around adjacent and repeating moving images and acknowledge the questions that arise around their extension of temporal flow across points in space, and whether his ideas of time consciousness and simultaneity in space afford any equivalences. If, according to Bergson, pure time is that which flows, as opposed to space which consists of points of separateness, then would the dividing of temporal flow into distributed portions be perceived, not just within space, but as a time-space alternation, as the initial means by which we experience such works before we construct successive flow, in hindsight or in memory? And further to this can the experience of temporal flow across separate screens be described as an apprehension of pluralised time – as time delayed, and therefore spatialised – and might this in turn amount to a dual awareness that spans Bergsonian perception and memory?

In his essay *Time, Bergson and the Cinematographical Mechanism: Henri Bergson on the Philosophical Properties of Cinema*, theorist Donato Totaro refers to Bergson’s ‘epistemological dualism of intellect and intuition’, whereby Bergson wrote of a temporality of the intellect in terms of spatialised time, as immobility and of reality as contrasting with the ‘intuitive time’ of the continuous and indivisible flow of inner time that is immeasurable and of flux and becoming.⁴² Totaro refutes Bergson’s suggestion that the time taken in assimilating a film is unimportant because ‘A film once made is already given’ and its outcome will therefore always be the same, by emphasising the creative process of film-making and the creative means by which the presenting of film extends its meaning as

⁴⁰ ‘Succession exists solely for a conscious spectator who keeps the past in mind and sets the two oscillations or their symbols side by side...’ Bergson, *Time and Free Will*, 108-109

⁴¹ Bergson, *Matter and Memory*, 170

⁴² Donato Totaro, ‘Time, Bergson, and the Cinematographical Mechanism’, *Offscreen* (Volume 5, Issue 1. January 2001) <http://offscreen.com/view/bergson1> (accessed 12th December 2017)

a processes of encountering, suggesting that Bergson overlooked such factors in his epistemology. Totaro's point raises the importance of the role both of the means by which an artwork is presented and the role of the spectator in developing the meaning of an artwork, offering it not as a fixed and given construct but, by reminding us that an artwork is an encounter that is a process and resists the stasis of effective description, requiring instead the experience brought by the viewer. Thus, what I describe as an experience of spatialised time in the works of Gusmão and Paiva and Akerman might also be defined as alternating simultaneities and the concurrent accumulation of meaning in the consciousness of the viewer. To put it another way the spatialised experience of time as both succession and awareness of the means by which that succession is afforded in the construction and presentation of the work becomes superimposed as layered awareness in a cohesive experience of the work as distinct from the world.

In *Simultaneity and Delay* Jay Lampert conducts an in-depth analysis of Bergson's ideas of duration and simultaneity and his distinguishing between time that is experienced as pure memory and the time of perceiving the external world as memory images that oscillate in the present. Lampert acknowledges Bergson's distinction between memory of the past as a virtual consciousness that can be made simultaneous with the present, and memory images which he determined to be ongoing perception in the present, and puts particular emphasis on the relationship between simultaneity and time that is spatialised through its being delayed or separated in space.

The past cycles through the present by functions of 'oscillation', 'generalisation', and 'repetition'. Bergson's theory culminates in the latter, where the whole past is virtually available in ever new ways to the present. But we have to be able to localise particular memories, and this will create problems of delayed simultaneity.⁴³

This localising process is akin to a mapping of temporal experience, a transposing of the experience of time into spatial terms. In the case of Akerman's *D'Est* in particular what was originally shot as a single screen documentary to be watched in pre-edited succession has been extended and repeated in space. The effect of this on the process of viewing might be said to transpose Bergsonian memory-images from the perception of temporal succession to the movement of the viewer around the work and the perception of its simultaneities.⁴⁴

A cinematographic model of perception, as employed by Bergson, describes the perception of movement in terms of a succession of points. And as with frames of a film, Bergson suggests that we

⁴³ Jay Lampert, *Simultaneity and Delay: A Dialectical Theory of Staggered Time* (London: Bloomsbury, 2012), 137

⁴⁴ Bergson states that in determining order in time we must perceive events as 'multiple, simultaneous and distinct; in a word, we set them side by side, and if we introduce an order into what is successive, the reason is that succession is converted into simultaneity and is projected into space.' Bergson, *Time and Free Will*, 101

do not attend directly to each but ‘average out’ succession to remain aware of flow through space.⁴⁵ It is only at the point that space defines itself as a position that can be determined in terms of difference – from here to there – that time is seen to divide, as it can be labelled as quantifiably different in terms of relative position to become a ‘fact’ or an ‘event’. Thus time in Bergson’s model of perception is discernible in terms of difference and its subsequent division in space.

Conversely Bergson believed that the experience of pure time or duration is an indivisible flow of consciousness.⁴⁶ He indicated that once apprehended as multiples we cannot take portions of time (such as the separate scenes of Akerman’s installation) and lay them side by side in consciousness to compare them directly in the way that we might measure and compare spatial values and content directly.⁴⁷ He described how we compare time flows in terms of external spatial differences such as the location in which we encountered an event, and that each such event is lived in consciousness as a continuous flow of experience. Thus to consider the presentation and review of film recordings is to transpose such experience into events that are alignments both in and of space, linked in memory by degrees of significance. Again, according to Bergson, time must become spatialised as events so that we can apprehend, or ‘see’ it.⁴⁸

Having considered these dual states in relation to two multi-screen moving image installations I want to build upon this proposed alternation and layering of a viewer’s awareness and develop a hypothesis for the perception of two temporal flows of differing rhythms or resolutions. If the

⁴⁵ In using the metaphor of a galloping horse seen directly or recorded in successive photographs Bergson states, ‘Of the gallop of a horse our eye perceives chiefly a characteristic, essential or rather schematic attitude, a form that appears to radiate over a whole period and so fill the time of the gallop...But instantaneous photography isolates any moment...the gallop of a horse spreads out for it as many successive attitudes as it wishes, instead of massing itself into a single attitude.’ Bergson, *Creative Evolution*, 333

⁴⁶ ‘For Bergson the key to reality is that all change (time and movement) should be treated as indivisible. Time broken down is spatialised time and not duration.’ Donato Totaro, ‘Time, Bergson, and the Cinematographical Mechanism’ in *Offscreen* (Volume 5, Issue 1 January 2001) <http://offscreen.com/view/bergson1> (accessed 12th December 2017)

⁴⁷ Suzanne Guerlac puts it succinctly when she describes Bergson’s point that time is as materially real as space: ‘We consider that space holds things, whereas we are not willing to believe that time holds the psychological states that occur in succession there. When we reintroduce the perspective of action, however, space becomes a translation of time. We perceive at a distance what we will act upon, or what will act upon us in a particular interval of time.’ Suzanne Guerlac, *Thinking in Time: An Introduction to Henri Bergson* (Ithaca & London: Cornell University Press, 2006), 147

⁴⁸ ‘...each of the so called successive states of the external world exists alone; their multiplicity is real only for a consciousness that can first retain them and then set them side by side by externalising them in relation to one another...it perceives them under the form of a discrete multiplicity, which amounts to setting them out in a line, in the space in which each of them existed separately. The space employed for this purpose is just that which is called homogenous time.’ Bergson, *Time and Free Will*, 121

perception of moving images apprehended adjacently can be said to extend a spectator's awareness I will next examine this idea in reference to selected examples in contemporary art practice and within my studio practice.

Chapter 2:

The doubled image

Here I examine examples of doubled and dual-form contemporary artworks in relation to difference between two points in time and two positions in space and use this to frame the perception of image phasing. I propose that real-time image phasing can engender an awareness of chance and therefore of possibility.

The difference between two frames

Cinema is the difference between two frames... if you take two frames, the difference between them defines the smallest unit of filmic language that is possible... this difference... is a construct of a time/space relation.⁴⁹

With this statement film-maker Werner Nekes identifies the point at which the difference between two images, whether contiguous or discrete, is the means by which fundamental filmic information is imparted. Using benign examples such as the thaumatrope to illustrate his point he named the configuration *kine*, and considered it to be the fundamental aspect of filmic language.⁵⁰ Whilst the *kine* may be related to Soviet montage theory whereby shots are edited in a manner that forges meaning – in this case ideological – through accumulated associations that might supersede the film's content, it can also apply to the difference between two images in contiguous space that depict movement.⁵¹

My intention regarding Nekes's *kine* was to examine his notion of the difference between two film frames as points in time, and consider the means by which such a relationship might be mirrored

⁴⁹ The full quote reads '...what is the smallest filmic element? I came up with the answer that cinema is the difference between two frames...the work the brain has to do to produce the fusion of the two frames. This small unit which I call *kine* is the smallest particle of film one can think of...if you take two frames, the difference between them defines the smallest unit of filmic language that is possible... Every film can be regarded under the principal of this difference, which is a construct of a time/space relation.' Werner Nekes 'Whatever happens between the pictures, a lecture by Werner Nekes' *Afterimage November 1977* [http://www.vasulka.org/archive/4-30c/AfterImageNov77\(3002\).pdf](http://www.vasulka.org/archive/4-30c/AfterImageNov77(3002).pdf) (accessed 28th June 2012)

⁵⁰ Nekes' gives an example of *kine* in his analysis of the Victorian children's toy, the thaumatrope, in which an optical illusion is experienced via the rotating of a disc with a different image on each side. Spinning this disc on its axis caused the viewer to see the images fuse into a composite image. It is this repetition of difference that Nekes sees as fundamental to the cinematic process, a point of intersection that becomes more than the sum of two images.

⁵¹ Filmic montage, developed by Soviet film maker Lev Kuleshov, was adopted to international acclaim by Sergei Eisenstein. Nekes states, 'The associative montage principles of Eisenstein became well known as the montage of attractions... This question: What does this scene mean to the next scene? Or, what do they mean together? was the basis for all montage theories that followed.' Ibid

concurrently as two positions in space. And whether my relating of temporal-spatial conditions could serve as an ontological model against which Bergsonian theories of the dividing and spatialisation of temporal flow might be made legible as the concurrent difference between related points in space. By this I do not mean the space depicted by the film images but the space of presentation in which the temporal difference between frames is witnessed. It is in response to the multi-screen installations of artists such as Gusmão and Paiva and Akerman, in combination with my exploring repeating images and their degrees of synchronisation in my studio practice, that I was able to refine my position in the research process; that the ‘difference between two frames’ might be extrapolated as an essential point of exchange between two units in a relationship of temporal and spatial equivalence. Nekes’s contextualising of two film frames enabled me to consider the possibility that such difference might be both continuous and contiguous, in interplays of movement and stasis, a doubled reading of the depiction of movement with the simultaneity of two images.

To extrapolate from Nekes’ definition of a ‘filmic language’ of difference between two frames that the *kine* might be legible in wider fields of thought and activity that relate to the difference between two objects, two positions in space, two photographic images or two temporal phenomena such as pulses of light.⁵² I was aware that notions of reduced filmic content and apparatus are exemplified in the animated stereoscopic imagery of filmmaker Ken Jacobs in which he fuses elements of the filmic and the photographic in the extreme repetition of two images.

Jacobs uses the term *paracinema* to denote his moving image works that omit certain material/mechanical elements of the filmic medium such as a traditional projector or film camera. He produced a series of these works under the title *Nervous System* that consist only of projected alternations of the dual images that comprise either a stereoscopic photograph, or two consecutive frames of a film.⁵³ These related images appear in fast, layered repetitions whilst the projector’s light beam is dissected by a rotating blade to create a sequence of interstitial blanks that intersect the two alternating images.⁵⁴ The persistence of each image on the retina results in a flickering illusion that appears to float above the surface of the screen as if activated at a point somewhere between a 2D

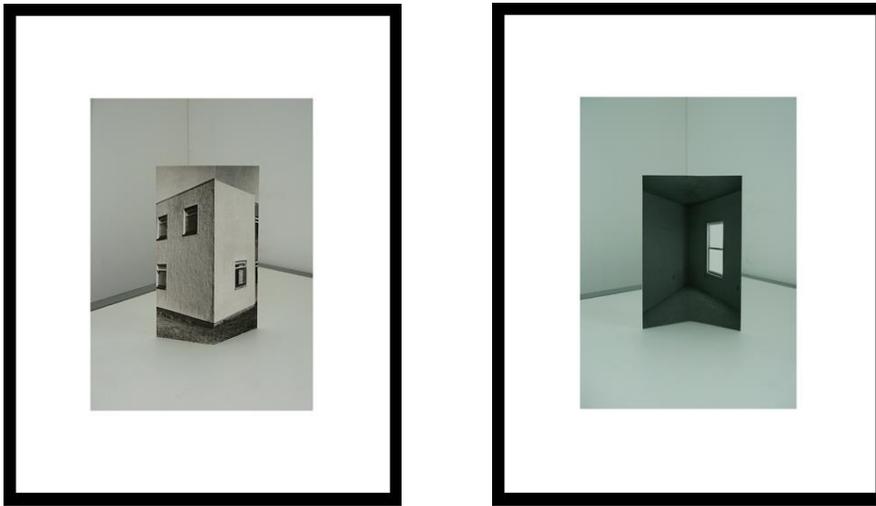
⁵² Film maker Guy Sherwin curated the *Film in Space* exhibition at Camden Arts Centre in 2012-13 presenting older medium-specific works alongside more recent takes on the moving image that operate beyond the use of celluloid or video by isolating elements such as light, space and/or time.

⁵³ Jacobs utilised Victorian stereoscopic photographs for his series called *Child Labor* (2006) and frames from the Lumière brothers early films viewed with 3D glasses in a projection work entitled *The Guests* (2013)

⁵⁴ The alternating back and fore (in fact left and right, between images recorded through two lateral lenses) has the effect of ‘fixing’ each iteration of the image in a similar manner to that of the gate of a film camera and projector. This ensures that each image is held as a static impression upon the retina for a fraction of a second before being replaced by its next/adjacent iteration. This can be compared with Neke’s example of the thaumatrope as there is in each an imperceptible point when the image disappears before being replaced by the next.

and a 3D image. The extreme alternation of adjacent images transposes the minute spatial difference in perspective between the dual lenses of the original stereoscopic camera into a temporal equivalent that yields the illusion of dimensionality. A spatial-temporal exchange might be said to take place that offers an illusion of spatial depth.⁵⁵

Seeing double: the dual image as extension in space

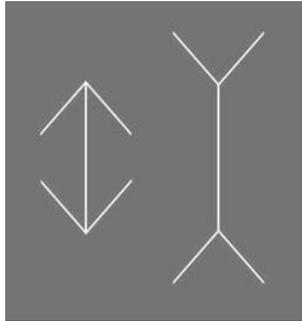


Steven Scott, *Situation #1*, 2014. Giclée prints

Situation #1 is the first of a series of works I developed as part of this research that consist of two photographs presented side by side. An architectural subject has been photographed, printed, folded and re-photographed so that the images align to suggest a spatially inverted ‘echo’ or mirroring of the represented architectural form. The interior and exterior corners of a photograph of a building become both subject and backdrop, offering an image of an architectural feature that has been mediated and situated one within another. This series of dual photographs of corners was based on the familiar optical illusion in which two vertical lines seem to differ in length (see diagram below),

⁵⁵ An illusion of depth was described by Peter Gidal as the result of repeating temporal and spatial difference between two concurrent images in his review of Malcolm Le Grice’s 1967 film *Yes No Maybe Maybe Not*. He referred to the ‘effect of bas relief’ that resulted from the superimposed projection of positive and negative versions of the same film footage with a varying difference in synch of 5-8 frames. He acknowledged such comparable factors as repetition and how the effects of such a temporal-spatial exchange might supersede the image content in the work: ‘the repetition in this film points to an obsessiveness...is it similar, or is it the same? We become deeply involved in watching...the process-viewing itself is the content of this film.’ Peter Gidal, ‘Malcolm Le Grice, Yes No Maybe Maybe Not’ in *Structural Film Anthology* (London: BFI, 1978), 29

addressing in its doubled form a staged imagery and an implied reference to illusionary possibilities that are built upon a layer of visual falsehoods.



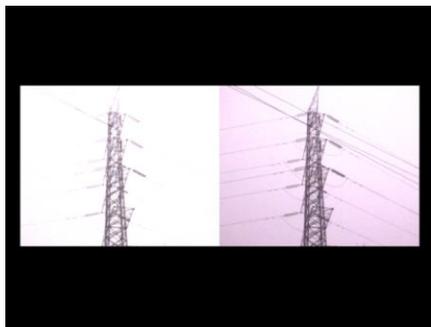
As part of the process of considering temporal and spatial adjacency of two similar images I developed a series of prototypes that used variations on the format of the dual image in which photographs were extended in space by being doubled, mirrored or paired as allusions to stereoscopic photography. An example that addressed this overtly was titled *The Constant Re-invention of Perspective*, a work in which a single point perspective determines the composition of two photographs taken on adjacent railway platforms. The reference to stereoscopic vision is intentionally reinforced by the two eye-like speed limit signs displaying 20-20 at the centre of each photograph.



Steven Scott, *The Constant Re-invention of Perspective*, 2013. Screen print

In developing these ideas to incorporate dual moving images I produced a piece titled *Sequence and Stasis* which consists of two adjacent versions of a real-time video of a thunderstorm at night. Each is identical but for a single video frame difference in time between one 30-minute video

loop and its neighbour. Such difference becomes discernible as the videos run simultaneously and gradual increments of separateness between points on the screens are revealed over the duration of the piece. Because each video consists of brief, brightly lit glimpses of an electricity pylon and cables that are lit and revealed out of darkness by the storms' intermittent lightning flashes these brief flash frames become distinct points in time, which are seen to slowly slip out of synchronisation when presented next to each other. The difference of one frame in time is used to reveal the difference between two points in space so that an image 'echo' results between the videos to offer a subtle phasing of synchronisations. This difference between points in space begins to undermine the linearity of the original real-time recording and reveal the possibility of a more subjective, spatialised temporality and subtle reflexivity.



Steven Scott, *Sequence and Stasis*, 2013. Frames from dual video projection

These works result from the multiplying of repeating points in time or the conjuring of conceptual resonance out of two parts, out of a process of extruding contiguous space from discontinuous time. In considering the form of the work that results from the interrelationships of two images – be they concerned with perceptual issues or conceptual references – my intention is that the dual image is seen as an extension of an aspect of itself. This might be in terms of the work’s temporality, its form and materiality and/or what it might be acknowledging. It was my intention that this multiplying of one component against its adjacent other would form a reflexive or layered awareness in accordance with the notion of *spectatorial doubleness*. A work might be perceived in a process forming out of experiential conjunctions, as was my intention with *Sequence and Stasis*, by presenting dual flows of time in degrees of spatial simultaneity.

Eisenstein made the point that one might read meaning in the association of two objects as the basis for his filmic montage, stating that ‘this... is not in the least a circumstance peculiar to the cinema, but is a phenomenon invariably met with in all cases where we have to deal with juxtaposition of two facts, two phenomena, two objects’⁵⁶ Lev Kuleshov’s notion of the edited film as a montage of two or more scenes sequenced to forge new interpretations only supports this principal.⁵⁷ It is at such points of intersection between two elements framed by the parameters of their medium, whether they are film shots, images or objects, that we might acknowledge the adaptivity of the notion of accumulative meaning and extend it from that of the cinematic montage towards different examples of concurrency.⁵⁸

It was my contention in making these works that doubling or repeating images, whether by mirroring in space or repeating over time, can both extend and confound the representation of movement in a process of separation and delay. As determined in the examples of the multi-screen installations examined in Chapter 1, the primary result is to spatialise movement in an array of concurrent images of difference.

⁵⁶ Sergei Eisenstein, *The Film Sense* (London: Faber and Faber (1986), 4. Eisenstein contributed to the commonly held opinion in early communist Russia that montage was the essence of the film and form could be said to supersede the content of the juxtaposed sequence of film shots. He spoke of sequence as a construct made up of ‘independent’ shots and crucially that they are perceived as if layered *on top* of each other rather than to a more traditional metaphorical construct of a visual language that is linked in a linear format.

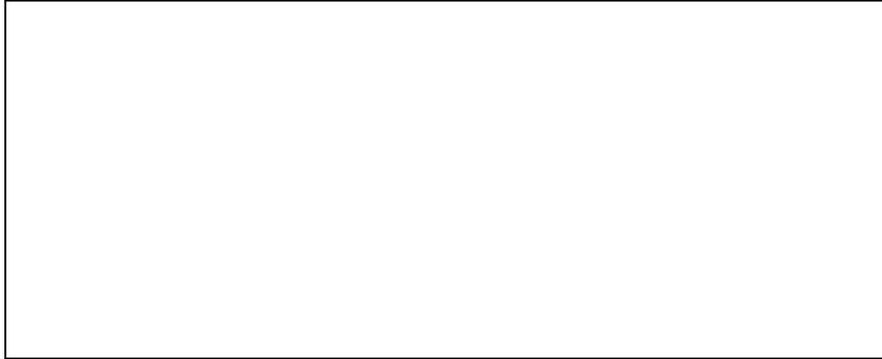
⁵⁷ Len Kuleshov, ‘The Principals of Montage’ in *Critical Visions in Film Theory: Classic and Contemporary Readings*, Timothy Corrigan (Ed) (Boston: Bedford, 2010), 137-144

⁵⁸ ‘This [associational montage] is not in the least a circumstance peculiar to the cinema, but is a phenomenon invariably met with in all cases where we have to deal with juxtaposition of two facts, two phenomena, two objects. We are accustomed to make, almost automatically, a definite and obvious deductive generalisation when any separate objects are placed before us side by side’ Eisenstein, *The Film Sense*, 4

It may also be assumed that a dual image offers more than the sum of its parts, whether in a process of comparison that reveals accumulated meaning or concrete iteration.⁵⁹ But in developing such dual image constructs it was not my intention to simply extend or reveal an element of the image to make new meaning as if by a process of enhancement of the original, but more pertinently to find a perceived point of separation between the otherwise unseen fusion of form and content, of material and subject, and so render a reading of the work somewhat unstable and open to change as an accumulation of possibilities.

And/or: The accumulation of alternating images

*'The interplay of same images creates the dialectic.'*⁶⁰



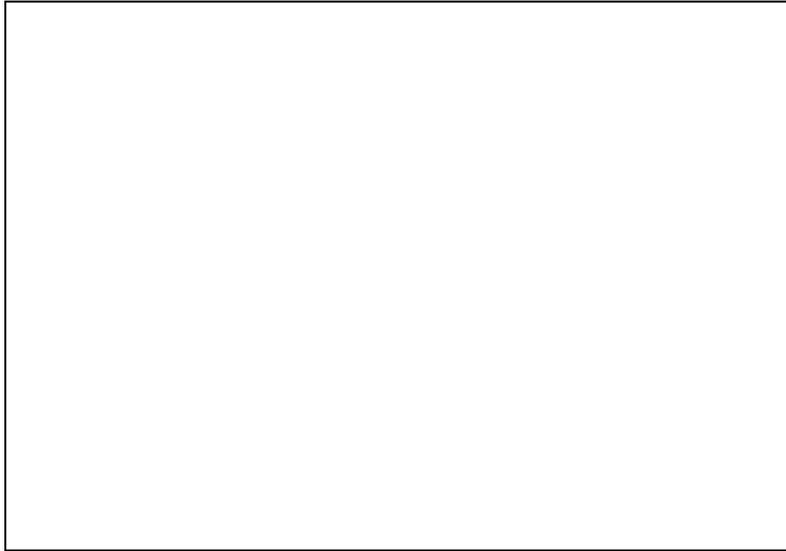
Lisa Oppenheim, *By Faith and Industry*, 2006

Artist Lisa Oppenheim's double screen film *By Faith and Industry* (2006) forges a separation between text and image, adding a delay to the viewing of the work that requires a degree of mental retention in apprehending the two screens as a cohesive work. To achieve this she projected a series of archival images of the city of Liverpool onto one side of a screen and text commentary on its inverse. This text was set against footage of the sky above each of the locations referenced in the archive imagery. Oppenheim's spatialisation of moving images requires the viewer to retain one and reposition themselves to see the other so as to forge links between each. Inevitably the film imagery will not always relate to each piece of text and a slippage of one against the other becomes an

⁵⁹ In maintaining comparisons with Soviet film one might also acknowledge Vertov's *Theory of Intervals* here. This was a structuring process in which two film images were edited for an intensifying rhythmic effect, juxtaposing their visual difference whilst maintaining the context of the film's subject. Dziga Vertov, *Kino-Eye: The Writings of Dziga Vertov* (Berkeley: University of California Press, 1984), 90-91

⁶⁰ Peter Gidal, 'Malcolm Le Grice, Yes No Maybe Maybe Not' in *Structural Film Anthology* (London: BFI, 1978), 28

analogue of the experience of subjective memory. Gaps and misalignments are experienced by the viewer that echo that of the archive and its inevitable limitations as a complete repository of history.⁶¹

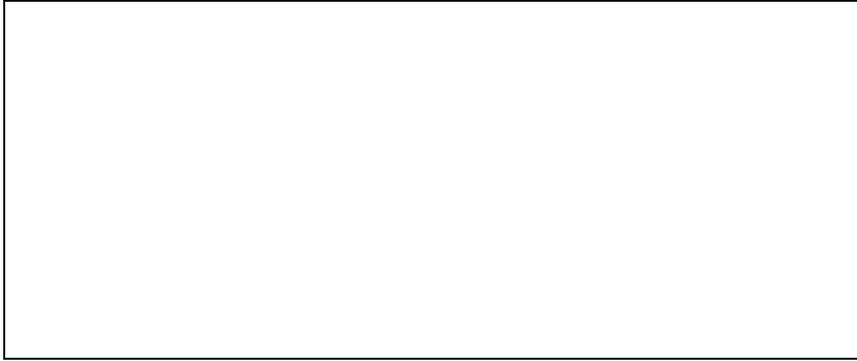


Ryan Gander, *How the Present can Pierce the Past*, 2013

Examples of recent dual photographic works include Ryan Gander's *How the Present Can Pierce the Past* (2013) which extends the visual content of a framed image to suggest spatial displacement and absence that, in correspondence with the title of the work, suggests events that might describe the immediacy of the memory of objects, or the world of physical matter and its eventual transmutation over time. By comparison Peter Liversidge's ongoing series of dual photographs examine the temporal interstitials of the everyday world sequenced on a fractional, moment-by-moment basis. In these works a scene is photographed twice in quick succession and the images presented side-by-side as unique events.⁶² The viewer can scrutinise the minute differences between the movement of ripples on water, sunlight across an interior surface or the position of the hand-held camera.

⁶¹ This encapsulation of a spectator's inability to see a work in its wholeness might be said to accord with Greenberg's critique of the 'theatricality' of minimalism, a notion that might also be extended to works that foreground spatialised duration such as Douglas Gordon's *24 Hour Psycho* (1993). The idea that viewers may become aware of what is not present in a work and extend their awareness towards possible future states is a theme I will examine in Chapter 4.

⁶² Peter Liversidge, *Twofold* (Berlin: Hatje Cantz, 2016)



Peter Liversidge, *Bedsheet*, 2014

Liversidge's dual Polaroid photographs may resemble a child's 'spot the difference' puzzle but as the shallow temporality of the work becomes discernible a more subtle set of considerations come to the fore. Liversidge is attempting to make an image and recreate an identical image immediately after, and so alluding to the futility of trying to hold onto a moment in time. We might consider such images to be closer to Nekes' cinematic *kine* and the 'difference between two frames' as a time-space construct, but this series of works remains open-ended in that one may decide that Liversidge's method is revealing this construct in terms of two successive frames in a film and at the same time see each duo as redolent of the spatial parallax of the stereoscopic photograph.⁶³



Peter Liversidge, *Cady's Hall*, 2011

⁶³ Further examples of dual imagery that function in different relations were considered as part of this research but for the sake of brevity are not addressed here, including: William Raban and Chris Welsby's *River Yar* (1972) in which the flow of a river is presented in two timelines of different temporal resolution, and Amie Siegal's *Berlin Remake* (2005) a dual screen film in which past and present coincide in the re-versioning of a previous film.

Wider references might emanate from readings of the dual image that evoke dichotomies of form and content, or material and representation. A doubled image can also carry allusions to the mirror, which in turn offers metaphorical references to the illusionary qualities of vision.⁶⁴ In this way the dual image problematises the process of seeing so that a subject is not perceived at once, instead a delay is introduced in the accumulating of the components that is akin to a process of reading. I would claim that the doubling of a selected image or the intentional interplay of meaning between two parts has an effect upon awareness comparable to the repeating of language. If, to extend Paul Valéry's famous aphorism 'to see is to forget the name of the thing one is seeing', I suggest that to see an image twice is to be reminded of the fact that one is seeing.⁶⁵

Thus I propose the potential for a meta-awareness of the process of seeing is implied in the dual form and that this might ultimately be intended to take priority over any representational content. It is worth noting here Cerith Wyn Evan's interest in what he terms 'weak connections' in which he acknowledges that the subtle shades of reference in a work have both a psychological distancing effect upon a viewer and a coming into being over time.⁶⁶ Such a notion is pertinent if an element of a work remained in consciousness as an indeterminate idea, for example the awareness of possibility in the form of alternating dialogues that lie beyond the immediate experience of viewing.

In examining the nature of the dual image and its references to the process of seeing, stereoscopic imagery, and the 'persistence of vision' I want to also acknowledge wider, less immediate contexts against which the doubled image might be perceived. In reference to Duchamp's art coefficient – as the gap between the artist's intention and the viewer's awareness of that intention – I can consider the dual form as a model for a point of perceptual exchange between these coordinates.⁶⁷ As a result of making and presenting works that in different ways foreground interrelationships between two points I began an examination of the nature of a perceived exchange

⁶⁴ Martin Jay points to the states of illusion and delusion with which the mirrored image is associated in the thinking of both Sartre and Lacan, and emphasises their 'deep distrust of the spatialised self created by the reifying look, a distrust traceable to the revaluation of temporality in Bergson and Heidegger.' Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*. (Berkeley: University of California Press, 1994), 347

⁶⁵ David Michael Levin, *The Opening of Vision: Nihilism and the Postmodern Situation* (London: Routledge, 1988), 65

⁶⁶ Hans Ulrich Obrist, *The Conversation Series. Cerith Wyn Evans* (Cologne: Walther König, 2010), 30

⁶⁷ I considered whether analogies might be made between this proposed binary interplay and Derrida's word/idea 'Differance', and in particular his notion of presence as a means of defining absence. Differance may speak of points in time that are determined by separateness and accord with his notion of Trace as a condition of what a sign differs from. Might the dual image be considered as a form that functions in numerous configurations? Perhaps this could be in terms of a sign and an element of trace that complements, opposes and extends the sign towards 'another' by its inherent misalignment. By this I refer to a trace that resonates with its sign while retaining an oblique relationship to it, as a deferral or extension of its measure rather than as a repeated copy of its form.

between two selected and/or recorded points in time and/or positions in space. In doing this I considered how such dualities of image or object can also represent a nominal matrix within which recorded time and recorded space are counterpoints out of which degrees of simultaneity might be perceived that are concurrent with that of the work's pictorial subject.

Simultaneities: The dual moving image as space and sequence

'Take my eyes and through them see you...': Cerith Wyn Evans. ICA, London 2006

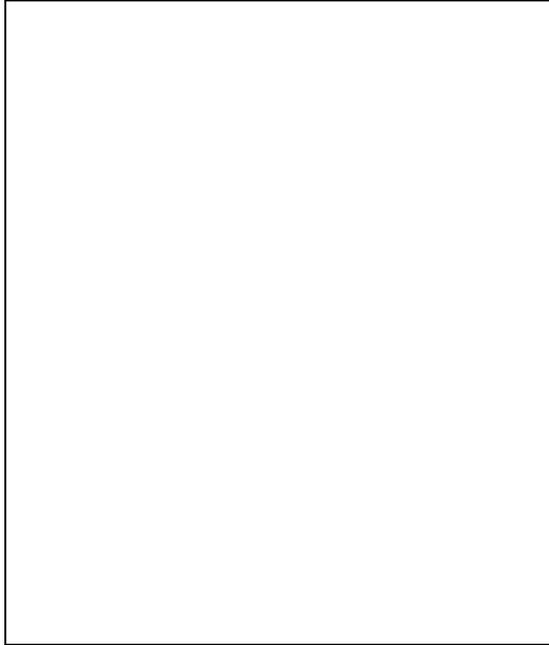
Vestiges of debt to the work of Marcel Broodthaers formed the referential layers upon which Cerith Wyn Evans's built his exhibition *'Take my eyes and through them see you...'* at the ICA, London in 2006. These references were codified as objects and strategies and revealed in accompanying texts as evocations of the Broodthaers 1975 exhibition in the same venue; an event that had a huge influence upon Wyn Evans at the time.⁶⁸ In further reflexive layers Wyn Evans also used this exhibition to frame his own history of activity of film screenings at the gallery. But further, less immediate, influences were discernible in the exhibition than his arrangements of potted palms and use of particular typography.⁶⁹ An unspoken reference to structural film can be determined in the presence of a large 35mm cinema projector installed in an upper room of the gallery that formed the titular work, *'Take my eyes and through them see you...'* This machine had an imposing physical presence in the space, a monolithic but ultimately futile object that projected just a loop of black film frames. The screen opposite remained blank and mute, and instead the obsolescence of the machine and its lost history of presenting audiences with transportative moving imagery became the subject of the work. Similarly obscured aspects of this piece included the use of two different film loops at alternate points throughout the exhibition, one consisting of black frames, the other clear, and each depicting an accumulated duration in the dust and scratches that appeared as fleeting specks and lines on the screen.⁷⁰

⁶⁸ 'This was the first exhibition that made a real impression on me in terms of contemporary art practice.' Cerith Wyn Evans, *Hans Ulrich Obrist: The Conversation Series* (Cologne: Walther Koenig, 2010), 8

⁶⁹ Broodthaers used potted palm trees as references to Belgium's colonial history in Africa, the symbolism of 19th Century Palm Courts and their common use in 1970's domestic décor. Wyn Evans employed them as 'quotes', whilst also adopting the same typographic font that Broodthaers used in the publicity for his exhibition in 1975.

⁷⁰ It is worth noting Wyn Evans thinking here in relation to difference between two states. He suggests meaning can be an 'extrapolation' of two minds that he compares with William Burroughs and Brion Gysin's writings on the Third Mind. 'In this kind of "third space" – the dialogue between one and two...there are conversations that happen... the dialogues appear to take the form of a conversation in that they're happening at the same time, somehow they are

Wyn Evans presentation of two film loops as binary opposites that alternate over periods of time resembles a early projection piece by Takahiko Iimura called *Loop Seen as a Line* (1972), in which two looped film projections, one of black frames, the other clear, were set side by side in space. In each case the detritus of accumulated duration began to appear on the film screen in both positive and negative form.⁷¹



Cerith Wyn Evans, 'Take my eyes and through them see you...' ICA, London, 2010

Commenting upon his early dual film installations Iimura referred to his interest in both the transposing of states and dimensional collapse within the works, stating that 'the loops (of film) are transformed into lines – three into two dimensions' and between the two film images, dark and light, a condition of asymmetry is maintained over long durations as scratches and lines accrue on each film, reducing the already minimal imagery in a process of material entropy.⁷²

eliding or slipping over each other, such that you could go in on many different levels.' Wyn Evans, *Hans Ulrich Obrist: The Conversation Series*, 10

⁷¹ In 1972 New York based film-maker Takahiko Iimura exhibited one of a series of film-based installations called *Loop Seen as a Line*. This used the accumulation of dust and scratches on dual film loops to spatialise the experience of time by utilising the image and the presence of the film to construct equivalences between temporal flow and movement through space. The work consisted of two 16mm film projectors running separate film loops, one of black frames, the other clear. A line was scratched along each film which ran vertically through the frame, and both positive and negative films were projected side by side.

⁷² Takahiko Iimura, *The Collected Writings of Takahiko Iimura* (Rockville, Maryland: Wildside Press, 2007), 70

Wyn Evans makes no direct reference to the implications and resonances of ‘*Take my eyes and through them see you...*’, leaving only the ubiquitous presence of potted palm trees placed around the projector to function as an established reference to the work of Broodthaers. But it is difficult to imagine that with his association with film makers such as Peter Gidal and his meticulous knowledge of the methods and intentions of such artists that he would be unaware of the temporal-spatial film works of Takahiko Iimura. It is possible that Wyn Evans was acknowledging Iimura’s use of blank and light film projections as a method of inverting and extending time between two points in space.⁷³ What specifically interests me in the comparing of these two otherwise separate works is that they both consist of binary alternations, one in extended time, the other in adjacent space. And that the subject of the work is a process of change over a durational arc that extends beyond the moments of apprehension of the physical work towards its future states. In such a process the imagination of the viewer is called upon to assume these future states of the work, the degree to which the film loops might degrade from endless repetition, that lie beyond the threshold of what they can witness.⁷⁴ Both the works thus address that which is inevitable but can be determined only out of assumptions based on current conditions and projected forward in the imagination as possibility, a condition of virtual engagement derived out of a construction of dual temporalities encountered in the present.

Commenting on the dimensional qualities of his work Wyn Evans states that, ‘The intuition of space is over determined by the intuition of time. I think that’s a truism that we can agree to...What we know or experience of space is largely coloured by our temporality in relation to our perception of that space.’⁷⁵

⁷³ ‘...this concern with the experience of time, its measured passage and the analogy between time and space, has been the main reoccurring theme at the centre of his work.’ Le Grice, ‘Takahiko Iimura-Getting the Measure of Time’ in *Experimental Cinema*, 79

⁷⁴ Iimura makes reference to scratches that ‘...appear on the projected frame adding lines, and clear scratches...The contrast of positive and negative side by side becomes asymmetrical because of the scratches’, Iimura, *The Collected Writings*, 70. The slow degrading of both films operates in a meta-temporality that extends beyond the exhibition itself.

⁷⁵ Wyn Evans, *Hans Ulrich Obrist: The Conversation Series*, 29



Takahiko Iimura, *Loop Seen as a Line*, diagram

In both films the dark or light images – whether projected concurrently or sequentially – exist in a binary inversion in which time is transposed between the screen and the material of the film in the exhibition space in a process of slow deterioration. Each work is predicated upon degrees of difference that span the binaries of image – object, 2D – 3D, time – space and illusion – apparatus.

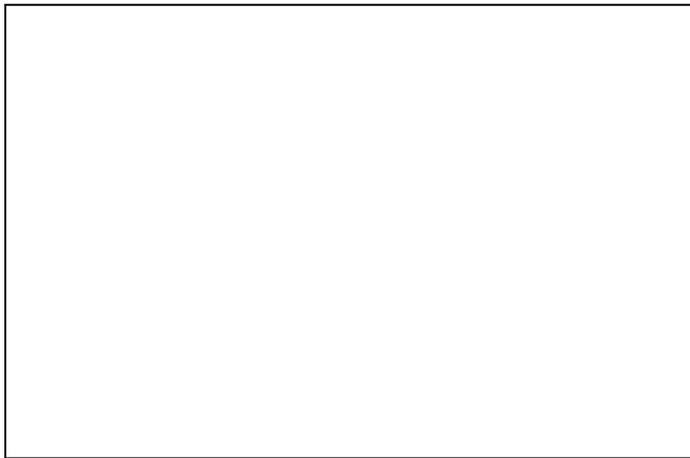
In considering these two film projections as a complementary array of dual alternations it is my intention to map the ground against which I will, in Chapter 3, examine the alternations of difference that constitute the perception of phasing. Additionally I will highlight from the operations of these two film projections the perceived element of change and decay that can raise an audience's awareness of the works' possible future states.⁷⁶

⁷⁶ I attended a one day workshop with Iimura at no.w.here production facilities in London in 2014 in which he screened a series of his videos and led a reconstruction of his video piece *Observer/Observed* (1975/1998). Afterwards I was able to discuss his work with him, focussing upon *Loop seen as a Line*, and its allusions to future states afforded by the degrading of the film loops over time.

Simultaneities: The dual moving image as repetition and delay

H.M.: Kerry Tribe *Dead Star Light*, Arnolfini Gallery, Bristol 2010

As a means of extending comparisons between dual film projections I want to now refer to an exhibition of works by Kerry Tribe at the Arnolfini Gallery in 2010, and focus on a work entitled *H.M.* I have selected this piece not only for its structural similarity to the projections by Wyn Evans and limura – consisting of two 16mm film projectors and two projected images in an exhibition space – but because I propose that it also effectively initiates a doubling of viewer awareness, encouraging alternations between filmic content and the means by which it is being apprehended. In fact Tribe's piece successfully maintains a balance between these two states, and foregrounds this as the method of the work by delaying the simultaneity of seeing and reading. From the outset this delay is both the primary form and the subject of the work.



Kerry Tribe, *HM*, Arnolfini, Bristol, 2009

Made in 2009 *H.M.* has a more cinematic remit than either Wyn Evan's or limura's projections as it maintains a representation of its subject that begins with its title and is maintained in its pictorial content. Additional background information to the exhibition enables us to approach the work with the knowledge that it addresses the experience of an anonymous psychiatric patient known only as *H.M.* who, after a brain operation to alleviate severe epilepsy, was left with only short-term memory recall of approximately twenty seconds. Tribe acknowledges that her film operates primarily as a form of documentary, but at the same time its dual presentation ensures the work maintains a strong material form that compounds a viewer's experience of its subject with the experience of its

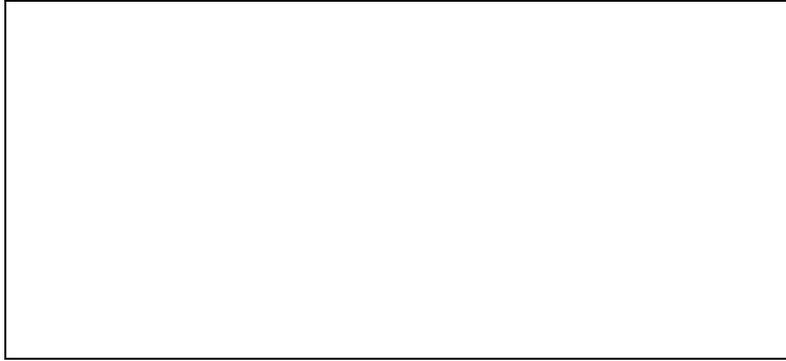
structure.⁷⁷ To do this Tribe utilises two 16mm film projectors placed side by side in the viewing space, but in a departure from the separate film loops used by Wyn Evan or limura, *H.M.* consists of a single 18-minute loop of film that runs through *both* film projectors, from left to right, with a delay of 20 seconds between the appearance of an image and its re-appearance on the adjacent screen.



Kerry Tribe, *H.M.* 2009

In this dual image presentation of a looped film installation Tribe's work has some similarities with limura's concerns with filmic binaries, but ultimately it offers a very different experience. Both Wyns Evans' and limura's binary relationships between black and clear film loops construct relationships between temporal flow and spatial distance, whereas *H.M.*'s dual screen and projector configuration operates between the poles of pictorial representation and a reflexive awareness of the work's use of actual time. This is delivered simultaneously in the tangible form of a 20-second delay that foregrounds the real-time of the film in a subjective experience of seeing an image twice in slightly differing configurations. As such she encourages the viewer to extend their focus between that of the subject *H.M.* whilst being given – if not a realistic experience of the patient's condition – then an effective demonstration of the experience of *déjà vu*. New configurations of images and text, ambient sounds, voiceovers, actors and contemplative lingering shots of landscapes collide and correspond in the present. *H.M.* spans the restaged, the observational, the scientific and the poetic and fuses it with the reflexivity of its material presence as film moving through a projector.

⁷⁷ 'The roughly 18-minute loop weaves together re-enacted, documentary, found and animated elements and lies somewhere between an experimental documentary and an independent narrative film.' Kerry Tribe, *Projects, H.M. 2009* <http://www.kerrytribe.com/project/h-m/#text> (Accessed 19th November 2014)



Kerry Tribe, *H.M.* 2009

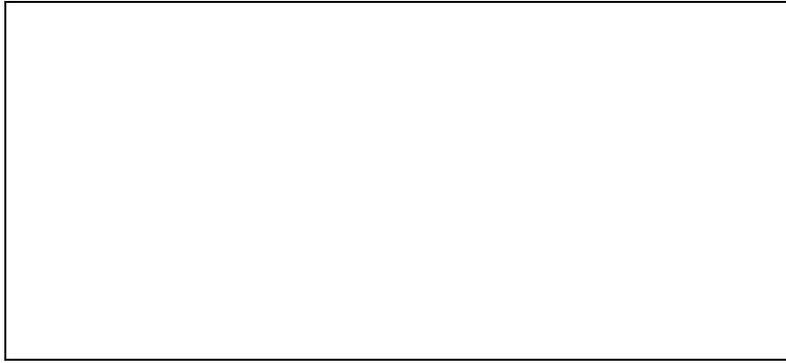
In describing *H.M.* Tribe writes that 'the structure of the installation and the nature of the material together produce a sensation of mnemonic dissonance much like that experienced by Patient H.M.'⁷⁸



Kerry Tribe, *H.M.* 2009

The dual image arrangement of *H.M.* is not so much a method of constructing new meanings out of the shifting alignments of two images as they repeat over time, but rather an attempt to open a perceptual gap between image and subject by presenting a facsimile of the experience of the film's subject in a manner that transforms apprehension into an event in consciousness. *H.M.* highlights the temporal gap between the appearance and the re-appearance of an image sequence across the two adjacent screens.

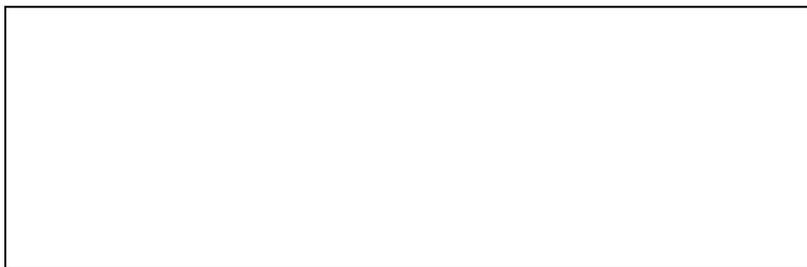
⁷⁸ Kerry Tribe, *Projects, HM 2009* <http://www.kerrytribe.com/project/h-m/#text> (Accessed 19th November 2014)



Kerry Tribe, *H.M.* 2009

Win, Place or Show: Stan Douglas Tate Britain, London, 1998

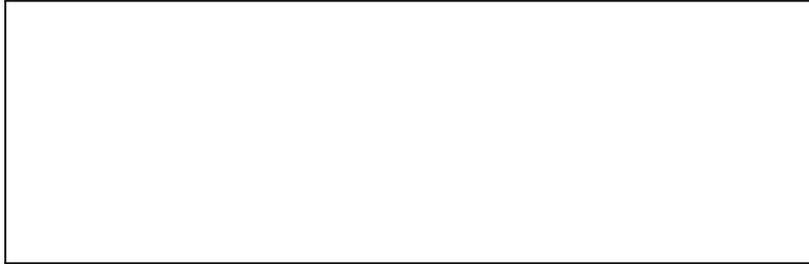
Another example of a work predicated upon the flow of dual moving images (in this case more overtly foregrounding the element of chance), is *Win, Place or Show* by Stan Douglas. This two-screen installation from 1998 was constructed from different video shots of the same set of actions that cycle and realign in configurations that always lead to an altercation between two men in a domestic interior. The many versions of the same scenes describe this simple narrative in a cycle of slightly different computer-controlled configurations. Each time we never see quite the same set of shots, but the narrative flow and its culmination is always ultimately the same: first dialogue, then argument, finally conflict. Daniel Birnbaum frames the work as a Beckett-like allegory of existential struggle and daily repetition ‘... maybe this time the outcome will be different. It never is: the two guys always end up carrying out their hopeless wrestling match. They’re locked inside a machine that offers no escape.’⁷⁹ Douglas’ incorporation of a limited form of chance in the structure of the work affords us an awareness of the possibility of change in the narrative’s outcome. But ultimately we realise that nothing of any significance will change and that the protagonist’s situation is hopeless.



Stan Douglas, *Win, Place or Show*, 1998. Two channel video/audio

⁷⁹ Daniel Birnbaum, *Chronology* (Berlin: Sternberg Press, 2005), 49

The resultant balance of doubled imagery that is apprehended via a process of slippage and repetition is comparable to Tribe's attainment of a balance in *H.M.* between documentary, poetics and the real-time experience of the process of retention of image and memory, in which the present and the recent past are framed within the scope of the work.



Stan Douglas, *Win, Place or Show*, 1998. Two channel video/audio

I want to highlight here the means by which a dual image format can function as a method in which time as repetition, and space as a mirrored image is key to otherwise different moving image works. Even a basic survey of the different utilisations of dual moving imagery begins to accord with some of the means by which I have utilised this format within my studio practice. At the core of these examples lie strategies of repetition, inversion or separation, each of which is seen to operate in time and between the spaces of the screens. In all these works degrees of difference are continually played out between relative positions and our memory of images sequenced in time.



Stan Douglas, *Win, Place or Show*, 1998. Two channel video/audio

In examples of the spatialising alternation of binaries that form Iimura's *Loop Seen as a Line*, and the extended durations of Wyn Evans 'Take me Eyes and through them see you...', I propose that a simple matrix of two points in time and two positions in space can be visualised as a measure of the works' dimensions, and defining this enables me to identify my intentions for the operations of the studio work that multiplies awareness of form alongside content. In addition I propose that these circumstances of concurrent awareness result from a viewer's perception of instability or

incompleteness in the work, and that this perception extends from the current circumstances of the work towards an implicit awareness of the work's continuing evolution.

Chance, simultaneity and possibility

Let's turn to cinema's conditions of possibility, repetition and stoppage. What is repetition? ... repetition is not the return of the identical; it is not the same as such that returns. The force and grace of repetition, the novelty it brings us is the return as the possibility of what was. Repetition restores the possibility of what was, renders it possible anew; it's almost a paradox. To repeat something is to make it possible anew. Here lies the proximity of repetition and memory...⁸⁰

From the chance configurations in the film works of Tribe and Douglas, and its presence in the form of material decay in film projections by Wyn Evans and Imura, I next want to focus on the role of chance, and subsequent perceptions of possibility, as a basis of the experience of phasing.

Incorporating a sense of the unpredictable or the performative into the presentation of film and video works are strategies that can instil a sense of uniqueness into watching a pre-recorded subject. Film maker Chris Welsby refers to the utilisation of the time differences between unsynchronised devices when he writes, 'projectors do not run at a constant speed, multiple projectors never truly run "in sync"... and there are numerous examples of moving image installations and expanded cinema performance that make use of this unpredictability.'⁸¹ Meanwhile examples of artists performing live actions in relation to the moving image, exemplified by the likes of Malcolm Le Grice, indicate methodologies designed to extend the experience of the film, emphasising projection as a live event in which actual time took primacy over pre-recorded imagery.⁸² 'Reminding the audience of their own location in the here and now' as Lucy Reynolds describes Le Grice's *Horror Film 2* (1972).⁸³ But it is the means by which such real-time strategies encourage an awareness of chance and possibility that interests me; that the encounter is taking place exclusively in that moment and

⁸⁰ Giorgio Agamben, 'Difference and Repetition: On Guy Debord's Films' in *Art and the Moving Image. A Critical Reader* (London: Tate, 2008), 330

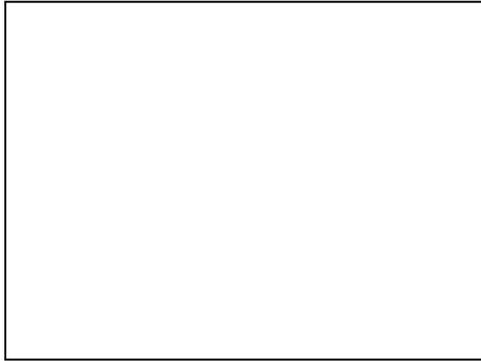
⁸¹ Chris Welsby, 'Cybernetics, Expanded Cinema and New Media' in *Expanded Cinema: Art, Performance, Film* (London: Tate, 2011), 281

⁸² Le Grice's film-based performance *Horror Film* (1971) was both a key work and an effective illustration of an overt form of such performative activity in which he positioned himself between the projector and screen, interacting with the light beam and emphasising his presence in shadow and silhouette.

⁸³ Lucy Reynolds, 'Magic Tricks? The Use of Shadow Play in Expanded Cinema' *Activating the Space of Reception*, conference at Tate Modern. London April 17th-19th 2009

http://www.rewind.ac.uk/expanded/Narrative/Tate_Doc_Session_3_-LR.html (accessed 23rd January 2018)

resolving in the actual time of the audience, which allows for the possibility of its existence being influenced by their presence.

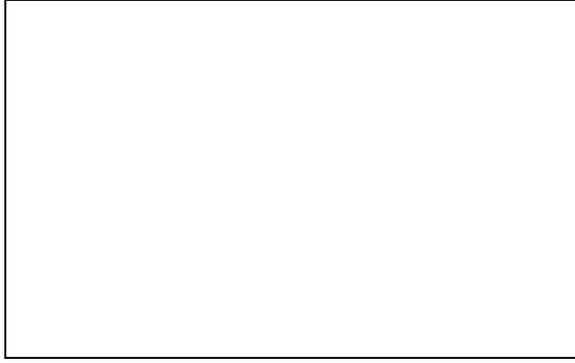


Malcolm Le Grice, *Horror Film*, 1971

The exploitation of the live appearance of difference and de-synchronisation between moving images was the basis of a series of performance projections by film-maker Nicky Hamlyn that aimed to incorporate pre-recorded movement and simultaneities between images happening in real-time. The works in question *X Fours Loops* (1974), *Rings* (2012) and *Quadrants* (2016) are structured around a common principal: that four film projectors display multiples of the same moving monochrome geometric forms such as a large 'X', arrays of circles or quarter sections of the screen which, when projected in overlapping loops, form complex fluctuating patterns. A performative dimension is central to these film events that involve the moving of projectors throughout the screening to form layered images of pulsing light patterns, or adjacent configurations of moving images of synchronising and clashing repetitions.⁸⁴

The degree of uniqueness between each presentation may be negligible but what I suggest is key to these films, and the reason I am discussing them here, is the audience's *awareness* that they are witnessing a live event that is somewhat predicated upon chance, albeit in the minute degrees of difference in time and space that the structure and technology of the work affords. And furthermore that such reflexive awareness of the live-ness of this process of film synchronising might correspond to the concurrent layers of viewer awareness described by Mondloch's *spectatorial doubleness* in the witnessing of multi-screen works.

⁸⁴ Mondloch, *Screens*, 9-10



Nicky Hamlyn, *X Fours Loops*, 1974



Nicky Hamlyn, *Quadrants*, 2016

Hamlyn refers to the appeal of visual imperfection in his projections, and I would emphasise that his use of simple shapes allows our attention to focus on the fluctuations of difference revealed in the gaps that the works form, and that this becomes in essence a simple temporal/spatial exchange between repetitions of form re-appearing on adjacent screens.⁸⁵ Shifting, flickering light levels, afterimages, and undulating patterns result from chance alignments within set parameters, and the effectiveness of the work is only increased by the awareness of the ‘live-ness’ of its operations.⁸⁶

⁸⁵ ‘Four loops of rings (as the title indicates) interspersed with black frames make possible the strange magic that emanates from vision imperfections.’ Nicky Hamlyn, *Nicky Hamlyn Film Performance*, Fundación Luis Seoane, A Coruña Spain. 2016 <http://www.s8cinema.com/portal/en/programacion/desbordamento/nicky-hamlyn-performance/> (accessed 25th August 2016)

⁸⁶ ‘I like the fact that the film image in itself is fixed, but when presented in a performance situation in which projectors are re-aligned and the images superimposed in various ways, a unique experience, in some ways the antithesis of film, is created. The lack of synchronisation between the projectors generates unexpected conjunctions and interactions between the loops, whether superimposed or adjacent to each other, recalling in some respects Steve Reich’s early phase pattern compositions. Potentially, flicker rates of higher than 24fps are also possible.’ Nicky Hamlyn <https://nickyhamlyn.com/2016/06/> (accessed 25th August 2016)

The presence of the artist, the performance of the unexpected and an emphasis on the presence of the spectator may be some of the more explicit means of foregrounding the uniqueness of an encounter with the moving image, but ultimately I am more inclined to address pattern, repetition and degrees of simultaneity as a means by which chance and actuality can be foregrounded, and want to next consider these in relation to a particular studio work entitled *Edge of Motion*.

Chapter 3:

This chapter consists of an analysis of image phasing as a perceptual process. Examples of studio works are analysed in relation to Bergson and Deleuzes' ideas of temporal plurality and simultaneity. I propose that image phasing reveals a doubling of viewer awareness between current and possible future configurations.

Phasing as cycling simultaneities

I call two instantaneous perceptions 'simultaneous' that are apprehended in one and the same mental act, the attention here again being able to make one or two out of them at will.⁸⁷

The phasing or shifting relationship between events is a phenomenon most readily associated with sound qualities and musical composition. In the case of phasing as an electronic sound effect a sustained signal such as that from an electric guitar is split and layered and one signal channel altered slightly in pitch/tempo and recombined to result in a swirling, undulating sound. But phasing is more readily associated with formal techniques utilised by composer Steve Reich in which two or more instruments, voices or recordings are designed to shift in and out of unison to give the effect of echoing, doubling or reverberating the work as a whole. These qualities can introduce phenomenological associations of spatial depth to a sound as well as multiplying the rhythmic or tonal structure of a musical phrase. The effectiveness of phasing as a compositional technique relies on the shifting of a musical refrain's structural elements as a process of repetitions that reveal fluctuating degrees of difference over the duration of the piece.

Early tape-based phase works by Reich such as *It's Gonna Rain* (1965) and *Come Out* (1966) consisted of pre-recorded sounds and voices, or electronic pulses that were multiplied and designed to slip out of synchronisation and result in patterns of sound that ranged from echo and repetition to rhythmic musical effect.⁸⁸ Reich developed these early experiments with chance into complex multilayered, shifting works using live instrumentation such as pianos and percussion in repeating permutation cycles. Although these pieces are very precisely written and played they are often described as textural, mesmerising and minimalist, due in part to their limited instrumentation and reliance on repetition and subtle fluctuation.

⁸⁷ Bergson, *Duration and Simultaneity*, 51

⁸⁸ Reich wrote '...I had the idea that if a number of single tones were all pulsing at the same tempo but with gradually shifting phase relations, a great number of musical patterns would result. If the tones were all in phase (struck at the same instant), a pulsing chord would be heard. If the tones were slowly shifting just a bit out of phase, a sort of rippling broken chord would be heard that would gradually change into a melodic pattern, then another, and so on.'

Steve Reich, 'The Shifting Pulse Gate' in *Writings on Music 1965-2000* (Oxford: Oxford University Press, 2002), 38

As an adjunct to his musical compositions Reich briefly explored image phasing in the early 1970s with the use of video tapes of individuals speaking phrases that were copied and played back on three or more monitors so that the subtle differences between each recording and player were multiplied over time to result in the phasing of sounds with images.⁸⁹

Visual interpretations of Reich's phasing compositions have been produced that attempt to accompany and expand upon his music. Choreographer Anne Teresa De Keersmaeker has developed numerous interpretations in which dancers repeat gestures and movements to recordings of Reich's phasing pieces, moving precisely in time with one repeating loop against another in which the slipping between phases happens in live performance.⁹⁰ Austrian filmmaker Norbert Pfaffenbichler has on the other hand produced video pieces in response to Reich's *Piano Phase* in which images and music are edited so that the subsequent phasing effects of the images follow the music as a pre-recorded equivalent.⁹¹ Filmmaker Guy Sherwin made short film works that, whilst not so explicitly referencing Reich, explored a perceived slippage of synchronisation between images of holes punched into film frames and sound tracks of scratches on the film's sound stripe.⁹² Such methods produce a form of phasing that consists of repetitions designed to draw attention to gaps between image and sound and reveal the process of making and watching a film as a co-constructed illusion.⁹³

In order to explore the experience of phasing as a visual phenomenon in which time is experienced in spatialised, synchronised movement I am framing the process of its perception as both a spatial and temporal concern by first outlining my consideration of phasing in relation to processes within my studio practice, and highlighting my point that such phasing operates as a matrix of differences between extensions in space and delay or repetition in time. I consider phasing as a phenomenon encountered primarily as a visual process rather than as a sonic phenomenon as this is the means by which it revealed itself in my studio work, and how I continue to explore its possibilities.⁹⁴ But whether the experience of the phasing of synchronous events is visual or auditory,

⁸⁹ Ibid, 82

⁹⁰ <http://www.rosas.be/en/productions/361-fase-four-movements-to-the-music-of-steve-reich> (accessed 8th March 2016)

⁹¹ Norbert Pfaffenbichler, *Images 4 Music* (Ars Electronica, 2004), DVD

⁹² Guy Sherwin, *Optical Sound Films 1971-2007* (LUX, 2007), DVD

⁹³ Aimee Mollaghan states 'Sherwin...often subverts this illusory perceptual effect by playing not only with points of synchronization but with the temporality and duration of the audio-visual content in order to draw attention to, both the construction and materiality of the film and the relationship between sound and image.' Aimee Mollaghan, 'Audio-visual moiré patterns: Phasing in Guy Sherwin's *Optical Sound* films' in *The Soundtrack 7* (Bristol: Intellect, 2014), 47-57

⁹⁴ I acknowledge the importance of the vast array of research conducted into the phasing of sound by a range of musicians and artists, and the relatively advanced range of projects that utilise the properties of the phasing of sound. It

the fundamental principles of the encounter can be established first in general terms as the ongoing difference of degrees of concurrency between repeating events in time emanating as a perceived interaction between two comparable points in space.⁹⁵ Thus phasing is a perceptual phenomenon formed of a recognition of relatedness over time and within space that is not beyond the thresholds of either the temporal field: not too fast or too slow to be illegible as change, and close enough and of a scale that can be perceived and categorised as being related in their proximity. Examples of simple visual two-point phasing are observable in such scenarios as the flashing yellow globes of the Belisha beacons that mark pedestrian crossings slipping in and out of synchronisation with each other, or the flashing indicator lights of a queue of vehicles waiting to turn at a road junction that present a phasing of synchronisations in their different timings. Thus phasing as a perceptual phenomenon is determined both over time and within space as a series of fluctuating and synchronous operations.

Notwithstanding that schematic equivalences to phasing might be seen to exist in the static images formed of 2D interference patterns and moiré, a deeper exploration of such ideas lies outside the scope of this text. With such comparisons acknowledged the emphasis of this research remains upon the perception of temporal and spatial separations and interrelationships of difference.

If an experience of the phasing of rhythms, be they visual or auditory, is made up of adjacent temporalities then the condition for the perception of phasing can be said to be *difference* as an indicator of change over time. In such a case the term difference must refer to a difference of *degree* not a difference of *kind*. Therefore difference as change over time must be between two, or more, similar or associated phenomena such as two waveforms or two pulses, perhaps two variations on the same subject, or even two separate objects 'composed' so as to be read as in some way bound together a relationship that is formal and/or conceptual. Such differences of degree may be seen as the inverse of similarity, repetition and alternation being a means of underlining both the commonalities and the points of departure between two or more images, objects, sounds or tracts.⁹⁶

Revisiting Werner Nekes' claim that 'cinema is the difference between two frames' we are reminded that he was determining that that film functions as the difference between two points in recorded time. This can be graphically different as that between two scenes and remain a difference of degree. In the case of the distributed moving images of Gusmão and Paiva, and Akerman continuity of pace and image quality ensures that each installation is perceived holistically even while different

is also partly because of the fact that phasing is more established as an audio phenomenon that I will, for the purposes of this research project, remain focussed upon exploring the possibilities of its visual properties in my practice.

⁹⁵ Here 'points in space' refers to visual display devices such as video screens, projectors or digital clocks, whereas the auditory phasing of Steve Reich used two or more tape recorders, performers or instruments.

⁹⁶ One example being *image differencing* as used in Astronomy to detect minute changes in position or fluctuations of brightness of distant stars through pixel-level photometric comparisons of two images of sections of the sky.

scenes play out between the screens. Our reading of these recorded events, related by degrees of consistency, allows formal difference to become the means by which each piece is comprehended. Thus *Papagaio* and *D'Est* are constructed out of concurrencies and simultaneities between the spatial presentation of recorded imagery and our active apprehension of their presence. In extrapolating from this I propose that it is such circumstances of difference in degree, adjacency and repetition that enable phasing to be apprehended as a phenomenon that is present in the otherwise separate operations of two or more objects or images.

Phase difference and frequency difference

If an alternation between two points in time describes difference in a linear exchange, such as the switching between binary states of on and off of a light at a set rate of one second, then such difference can be visualised and drawn as a simple waveform diagram.

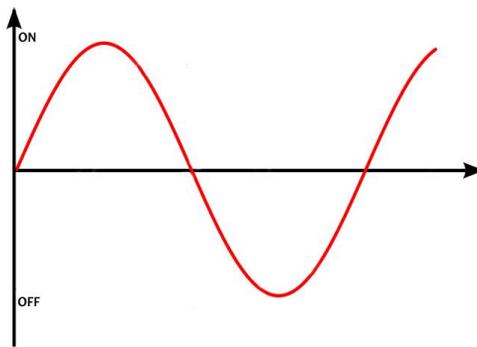


Diagram 1

The amplitude of the waves in Diagram 1 would represent the degrees of difference between each of the two states on/off or black/white, between two shades of grey, two images of greater or lesser degrees of difference, or two sounds such as musical notes on a scale. This waveform can be assumed to continue to emanate ad infinitum in a perpetual binary state.

If another identical set of switching/alternating forms with the same set rate of one second per state is triggered at exactly the same time alongside the first then no difference will be determined between the two, as in Diagram 2.

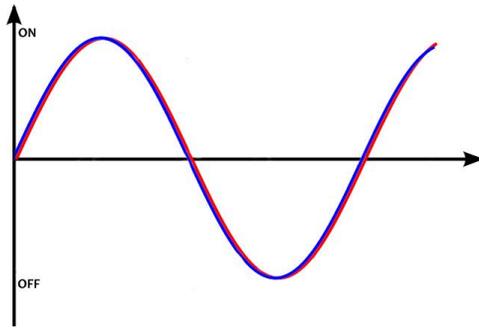


Diagram 2

But if this second otherwise identical waveform begins a fraction after the first a doubling or echoing of one against the other will be witnessed as the two states of switching will be permanently out of synchronisation with each other. This would be represented by identical waveforms with peaks and troughs arriving at different points of the time line, as in Diagram 3.

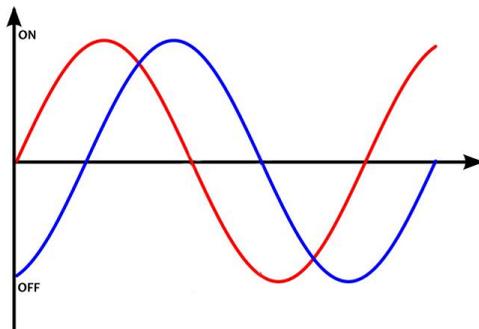


Diagram 3

This is known in physics as ‘phase difference’ and is witnessed as a complicated set of waveforms that are multiplied but remain fixed in relation to each other over time and so experienced as a looped, unchanging pattern as in Diagram 4.⁹⁷

⁹⁷ An example of this form of phasing will be examined in the next chapter in relation to Brion Gysin’s *Dreamachine* in which a more complicated version of this form of phasing is experienced as greater and lesser degrees of light and shadow alternating across each eye. The effect results from a combination of phase difference and syncopation of direct light, reflected light and shadow.

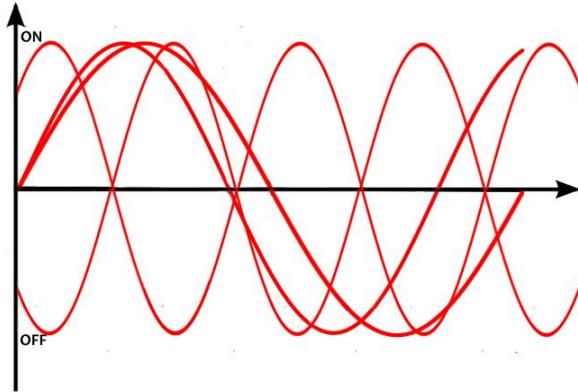


Diagram 4

Diagram 5 illustrates the type of phasing I am exploring, as a condition of perpetual shift between two points or waveforms that is witnessed when the *frequency* of one set of successive alternations is different to the other.

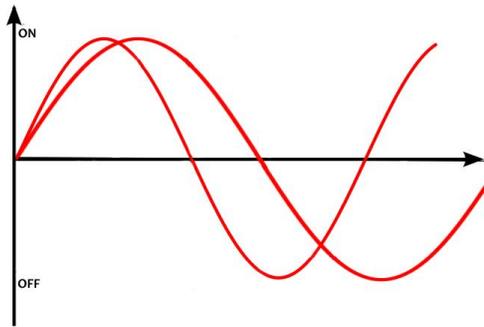


Diagram 5

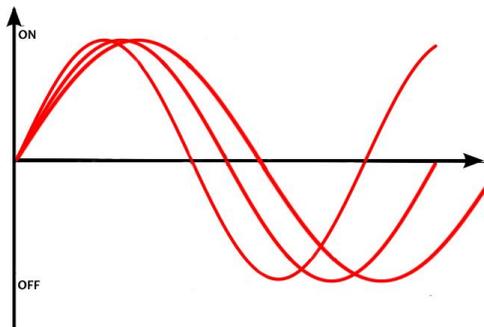


Diagram 6

When difference is spatialised between two separate components these will still contain a greater degree of similarity than difference, so that they are perceived as related. It is out of frequency difference that phasing becomes perceived as a phenomenon that has proved of interest to composers such as Steve Reich as the two or more components of a work (be it musical or visual) consist of waveforms of different length. The ‘peaks’ and ‘troughs’ of each waveform are continually slipping out of synchronisation with each other in ongoing cycles of degrees of concurrence and opposition, as in Diagram 6. Factors such as amplitude, for example the degree of graphic difference between film frames or volume between musical notes, and the regularity of the visual or audio repetitions allow for greater or lesser degrees of what we might determine to be harmony or dissonance, mesmerising undulation or irritating repetition.

Forms of phasing

If phasing can be described as the perception of ongoing difference between adjacent points in time and space then it becomes necessary to determine the forms in which such an experience might manifest and align with the operation of certain studio works. Phasing as a shifting array of concurrences and delays over time might be encountered in different circumstances, from a pre-recorded set of movements, in a predetermined set of operations between events, or as chance fluctuations between separate systems. In each case reoccurrence and adjacency are fundamental to the perception of phasing. But a consideration that I want to address is how the means by which they are presented has bearing upon how they are perceived.⁹⁸

As stated in the introduction to this text the development of studio work from which this project is derived is rooted in a phenomenological approach to visuality; beginning with explorations of afterimages resulting from video projections, and the means by which representation might be

⁹⁸ Fixed phasing: can be determined when phasing is presented as a pre-recorded phenomenon. An example would be a recording of a piece of music such as *Variations* by composer Steven Reich (or, in the case of the initial test versions of *Edge of Motion* in which two video recordings running at slightly differencing rates were rendered together into a single channel video). This results in an image of phasing which is ‘locked’ into one timeline. In such instances the pre-recorded events, be they sound or moving images, are identical each time the recording is played.

Syncopated phasing: this form of phasing is an interference pattern of interactions born out of two or more identical rhythm cycles operating in unison to form the perception of ongoing syncopation. It may be happening ‘live’ as the result of separate timelines, but the repetition of fixed frequencies does not result in fluctuation over time.

Fluctuating phasing: a form of phasing perceived as the result of separate systems consisting of patterns of shifting frequency that slip in and out of synchronisation in real time. Examples include the live performance of musical phasing between instruments in a concert, the choreographed dances of Anne Teresa De Keersmaeker performed live to the recorded music of Steve Reich, or more prosaically the aforementioned indicator lights of vehicles in the street.

constructed over time in the viewer's perception.⁹⁹ My subsequent considerations of difference in the form of image phasing continues this focus on the visual/perceptual process, and so for the purposes of this text I am electing to acknowledge, but set aside, the array of examples of phasing that can be encountered within audio and musical realms, citing them only as a means of comparison with that of the visual phenomena. I am primarily considering phasing between two or more repeating cycles of visual events such as light and its absence or the alternation of images, positions, forms or objects that in different ways shift and slip in and out of synchronisation over time in the perception of the viewer. With reference to examples taken from the studio practice I am also examining how repetition in adjacent space is fundamental to the perception of phasing, and to what extent is it possible to reduce the complexity of such temporal and spatial cycles and still maintain a perception of perpetual slippage?

It was out of these considerations that the studio work entitled *Edge of Motion* developed, as a moving image dual video that was constructed in such a way as to exploit the perception of phasing between two repeated events and the difference between two separate systems of presentation. It is the interference patterns of ongoing difference between two or more systems in 'live' interactions that form the basis of this work.

'This is the time, and this is the record of the time'¹⁰⁰

You're seeing two temporal moments at the same time, and you're hopefully able to think of those two moments at the same time, just as one is able to look at the present and understand how the past lived the way it did.¹⁰¹

Edge of Motion began as series of experiments with pre-recorded videos of repeating phenomena such as camera movement and edited loops that were multiplied and played back in unison. My initial motivation was to examine whether at a certain point the work could be experienced as a suspension between movement and stasis that resulted from the cycling and slipping of synchronous images. The most effective recordings I made in this respect were of subjects that formed a natural cycle that began and ended in the same position, rather than the more obvious method of repeatedly editing the same video clip to unnatural effect. The imagery used in these initial explorations of multiple video loops included lateral camera pans, clock pendulums or the on-off cycles of flashing indicators and warning lights.

⁹⁹ See initial reference in the Introduction to this text to *Duration Reveals Extension*, a video installation that utilised deconstructed drawings to interrogate aspects of representation.

¹⁰⁰ Lyric from Laurie Anderson's 'From the Air' from the album *Big Science* (Warner Bros, 1982)

¹⁰¹ Stan Douglas describing the layered temporalities that underpin his dual screen installation *Der Sandmann*. Birnbaum, *Chronology*, 91



Steven Scott, *Edge of Motion*, 2013. Frame from single channel video version.

In developing these video loops I produced a version consisting of two recordings of an un-programmed LED clock displaying flashing digits '00:00'. Shot in close-up, these digital zeros appear for one second then disappear to leave an empty screen for one second, on and off, ad infinitum. Two such videos were looped to repeat seamlessly and presented side by side, identical but for a single frame difference: one recording had been reduced by a single video frame.¹⁰² A gradual accumulation of difference between the two videos became discernible as the flashing digits slipped between degrees of synchronisation. Initial test versions of these dual recordings were rendered as a single digital video, but a video made up of two recordings on the same screen was perceived as simply illustrating the effect of phasing. It was only when the work was presented via separate video projectors and separate players that the idea of accumulative difference and phasing was perceived as actual, and importantly, as a 'live' experience of chance simultaneities taking place in real time.¹⁰³

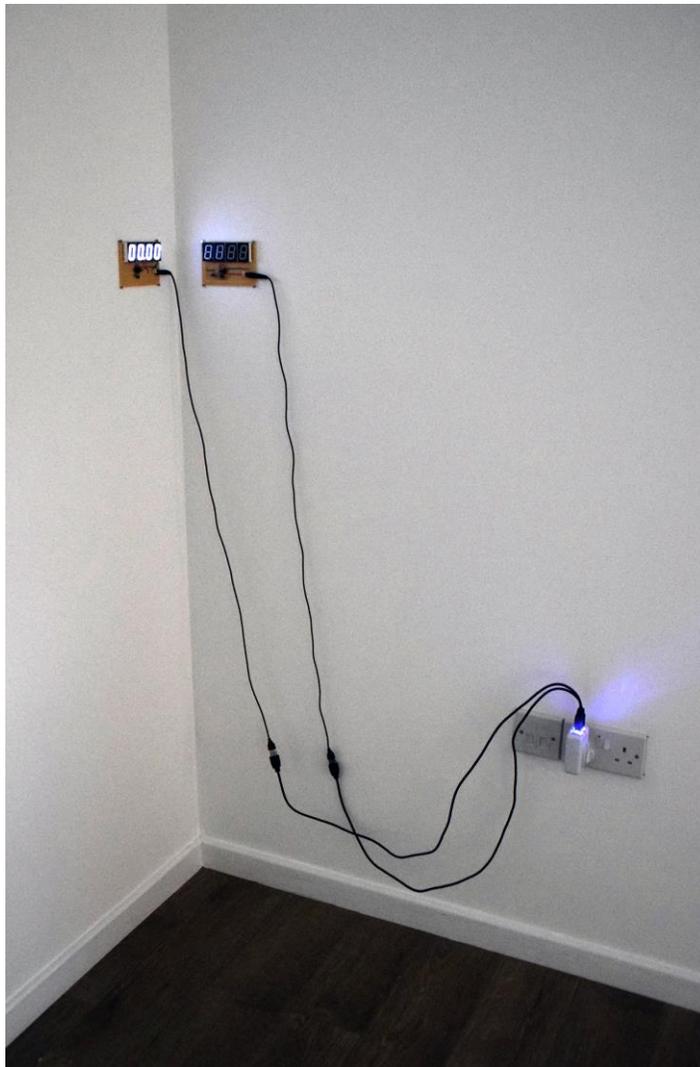
I began to consider this dual work in terms of its degrees of difference between time lines that are dissipating across space, and questions around the relationship between temporal flow and its presence in space became a focus of the research. From initial experiments with alternating images on dual screens I examined the perception of 'live-ness' as a reflexive experience of moving images arranged in a space. This method was intended to foreground a viewer's awareness of the separateness of systems of presentation – two projectors or two actual clocks – and enhance the perception of the phasing of images as patterns of chance and the work as an event in *real-time*.

Subsequent exhibitions and discussions around versions of *Edge of Motion* underpinned this stage of the research and helped clarify how the operation of the work might be perceived once I

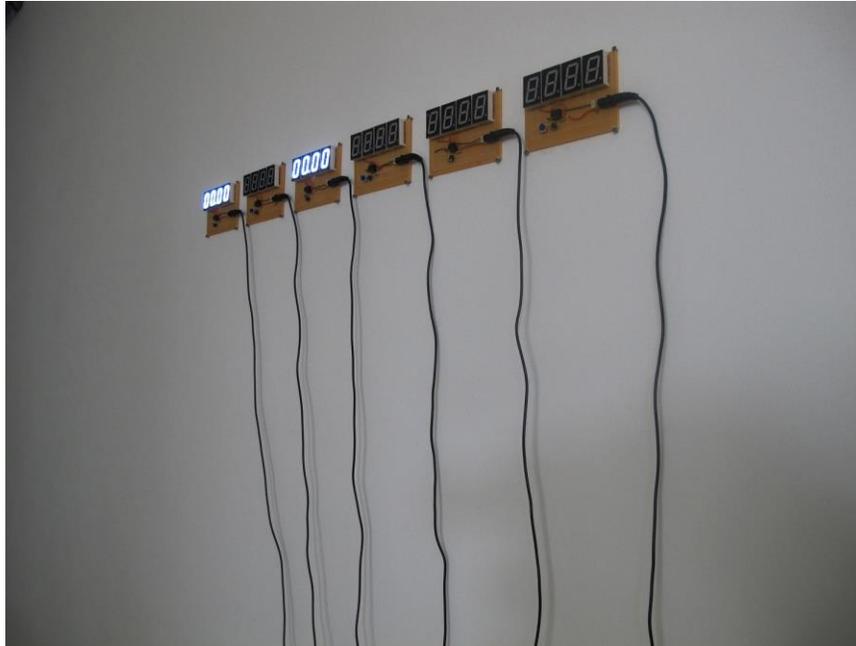
¹⁰² European video format (PAL) frame rates are 25 frames per second. Each video frame constitutes 1/25th of a second

¹⁰³ This work was presented using separate projectors was to the RCA Fine Art Research Processes group in February 2015. After much discussion it was agreed that the perceived 'liveness' of the phasing images resulting from visibly separate projectors contributed to the experience of phasing as 'actual' rather than a visual effect. Subsequent exhibitions have extended this idea with the use of multiple, visibly separate projection systems.

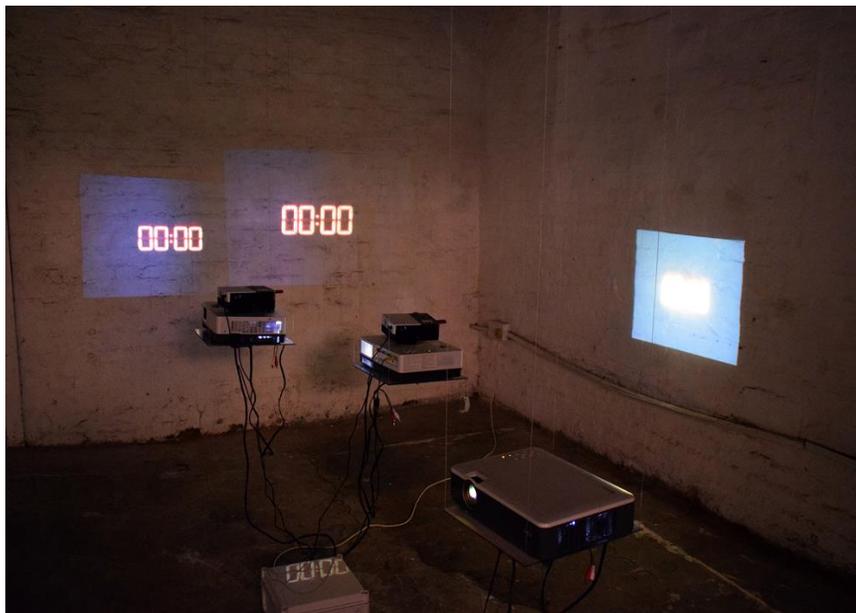
began to foreground this element of chance in the work. Research group discussions and the wider exhibiting of *Edge of Motion* as a series of LED clocks often resulted in feedback of subjective perceptions that included references to a ‘mesmerising’ effect of the digits’ synchronisations, or to a visual appeal that ‘keeps drawing the eye towards the flashing digits’. A sense of ‘tension’ within the work has most often been described, with perceived references to electrical faults, power cuts or computer crashes. Comparisons to a countdown to catastrophic events such as in Hollywood movie depictions of ticking time bombs or missile launches were also acknowledged. Whilst the flashing clock digits do not actually count down, and such specific references to danger are unintended, a sense of tension – that something is about to happen – does not undermine the initial idea of making a moving image work that is perceived to exist in a state of suspension between movement and stasis.



Steven Scott, *Edge of Motion*, 2016. Dual-LED clocks



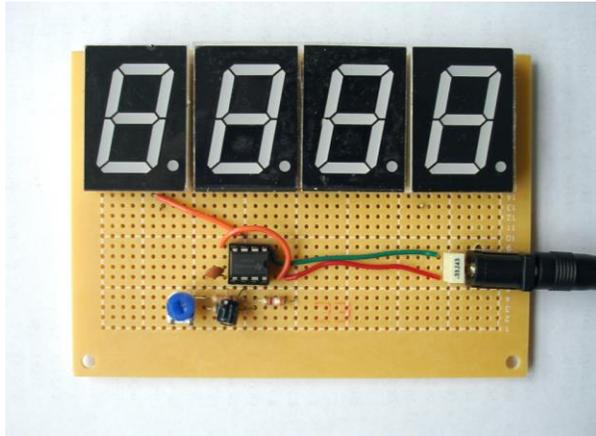
Steven Scott, *Edge of Motion*, 2016. Multi-LED clocks



Steven Scott, *Edge of Motion*, Multi video projections. 'Phase Shift', Deptford X, London 2015

My focus upon real-time image phasing led to widening definitions of the phenomena as constantly changing configurations that result from the latency and difference that accumulates over time between two or more temporal flows. I determined that the perception of the synchronisation of images in this work can be recognised as a result of the separateness of the work's display apparatus and that this is most effective when seen to be happening live, out of chance visual interactions.

Subsequent versions of *Edge of Motion* have been produced and exhibited using two or more LED clocks presented side by side. In this case I commissioned a fabricator to alter the digital chip in each clock so that each one-second-on, one-second-off, pulse of the 00:00 digits runs at a fractionally different speed to its neighbour.



Steven Scott, *Edge of Motion*, 2016. Close view of altered LED clock

Both versions – video recordings or actual clocks – give rise to questions about the nature of what is being perceived in the concurrencies between two image cycles. Whilst references to recorded time and actual time may underpin each version what is of greater interest to me is the perception that the phasing of the clock digits is happening live as a result of the temporal / spatial separateness of each component and that this is an ongoing process.¹⁰⁴

The repetitions of the clocks' digits present time as a measurable phenomenon whilst ensuring that a sense of separation remains between temporal units and numbers. An attempt to apprehend a linear flow of moments in time slips away as points that might otherwise succeed one another dissipate in the space between each clock. This absence of accumulated clock time frustrates the experience of succession and can result in a reflexive framing of awareness that reminds me of Lyotard's impossibility of now:

¹⁰⁴ Takahiko Iimura's 1973 film *Minutes and Seconds* operates in a manner comparable with these aspects of *Edge of Motion* in that his piece presents time as both non-accumulative and diffused across space by using precise markers on 16mm film divided into units of dark and light frames to evidence time flow without quantification. The piece consists of two film projectors and two film loops, one presenting alternations of dark and clear frames of a minute in length, the other presenting intervals of one second alternations between dark and clear frames. Both loops are two minutes long but present time as a subjective experience of alternating and interrelated markers in space. In both works dual temporalities dissipate chronological time into space as binary units that alternate in cycles of phasing.

The distinguishing limit between before and after, or the zone of contact between the anterior and the posterior, is itself affected by the before/after: the now is not now, it is not yet or already no longer, one cannot say now now: its already too early (before) or too late (after)... The now is precisely what is not maintained.¹⁰⁵

Bergson's position on the matter of apprehending the present as that which has passed emphasises that such successions accumulate not as moments in pure time but as points attributable to space in that they will have already become simultaneous and therefore multiple. In his cinematographic model of time temporal units appear and then disappear as the pulse of the clock digits become layered in consciousness as indeterminable and 'as one' in space. 'If we count them, the intervals must remain... how could these intervals remain, if they were pure duration and not space? It is in space, therefore, that the operation takes place'¹⁰⁶

The phasing of difference between the clocks' binary pulses culminates in cycles of longer waveforms that coalesce and dissipate in patterns of synchronisation. The lesser the fraction of difference in the frequency of alternations between the on-off switching of the clock digits the longer the time it takes for them to slip out of and back into synchronisation, and so the greater the amplitude of these virtual waveforms. In both versions of *Edge of Motion* the dual elements are displayed adjacently so one perceives their pulsing as a pattern of simultaneities. These fluctuations of difference can be seen as twofold: firstly as a binary switching between the alternating conditions of on and off in each display, and secondly as a continual shift in degrees of difference in a perceived interrelationship of time and space that alters the synchronisation of the flashing digits. The point at which the synchronisation of these virtual waveforms will occur makes a call upon the viewer's anticipation, and it is via this perceiving of the work as a projection of future probability that I propose that chance enters the equation in the form of possibility.¹⁰⁷

¹⁰⁵ Jean-Francois Lyotard, *The Differend: Phrases in Dispute* (Minneapolis: University of Minnesota Press, 1989), 74

¹⁰⁶ Bergson, *Time and Free Will*, 87

¹⁰⁷ It is acknowledged that the lesser the difference in time between the two separate elements of the work the greater the duration between points of synchronisation. Recently exhibited versions of this work have consisted of numerous LED clocks, designed to multiply the complexity of synchronisations and ensure that the points at which they come back into alignment may be as long as many days or even many weeks.



Steven Scott, *Edge of Motion*, 2016

As outlined in this analysis of *Edge of Motion* so far I have determined that phasing manifests out of the apprehension of adjacent successions that flow at different frequencies. In reference to my classification of forms of phasing outlined previously I am primarily concerned with ‘fluctuating phasing’ as the perception of a phenomenon that emanates from the real time interactions of separate successions of images. This point is important as it focuses the research on the separateness of two event sequences perceived as live patterns that are born of chance, and it is from such conditions that I make the claim that the perception of possibility is engendered. I will propose that this notion of possibility – of a tacit awareness of an array of future states – operates as a projection of current circumstances and is inherent in the experience of live phasing. I will then consider the perception of the studio work in terms of the thresholds of what we are able to perceive and what we are led to imagine or assume. But before that I intend to examine image phasing in relation to the means by which it is presented and apprehended, and support this with reference to Bergsonian considerations of perception and time consciousness.

Bergson's temporal plurality

My focus on image phasing grew out of developments with studio works that became central in my thinking about the nature of doubling, repeating or mirroring. The work *Edge of Motion* in particular presents multiples of events designed to explore the experience of simultaneity and repetition and fluctuating difference between two time flows with subtly different resolutions.¹⁰⁸ This work, presented in various forms, frames image repetitions in a cycling phase pattern of expanding and compressing difference which, I argue results from the perception of the exchange of alternations between different temporal flows and their positions in space.

From this point I can consider the means by which such image phasing is perceived with reference to Bergsonian, and subsequent Deleuzian, perspectives, and examine whether the experience of phasing accords with spatialised temporality and simultaneousness in space. From this I will address my initial point that phasing is a temporal and spatial exchange, manifesting as the perception of the alternation between flow and division, and determined as units of time that have concurrent dimension in space. Of this Bergson states that ‘... the connecting link between these two terms, space and duration, is simultaneity, which might be defined as the intersection of time and space.’¹⁰⁹ In the case of the flashing digital clocks used in *Edge of Motion* units of time are indicated and mapped between two points in space as alternations between on and off. I can begin to determine that Bergson's notions of duration and simultaneity afford clues as to the means by which one perceives such synchronisations as simultaneous stages of differing between the clocks in their alternating of awareness between succession and concurrency. With regard to his perceptual model of memory-image cycles and present perception Bergson writes,

If... I retain the recollection of the previous oscillation with the image of the present oscillation, one of two things will happen. Either I shall set the two images side by side... or I shall perceive one in the other, each permeating the other and organising themselves like the notes of a tune, so as to form what we shall call a continuous or qualitative multiplicity with no resemblance to number. I shall thus get the image of pure duration; but I shall have entirely got rid of the idea of a homogeneous medium or a measurable quality.¹¹⁰

If we accept that image phasing is apprehended as a ‘continuous multiplicity’ then I suggest that we experience it in the first instance in terms of its overall undulating momentum rather than as

¹⁰⁸ The use of LED clocks developed far in advance of my reading Bergson's texts in which he uses the examples of two adjacent clocks to illuminate his ideas regarding the perception of spatialised time. Bergson, *Duration and Simultaneity*, 55

¹⁰⁹ Bergson, *Time and Free Will*, 110

¹¹⁰ *Ibid*, 104

an arrangement of separate and quantifiable elements; a holistic system in which the clock's doubled unitisation of time is dissipated in the slippage between their positions in space. This accords with Bergson's model of temporal perception whereby we attend to the 'attitude' of a phenomenon rather than each individual point in time, until such time that we can discern a difference between these such that time divides into equivalent positions in space. I will also argue that the means by which we anticipate the interactions of the work's future synchronisations takes a concurrent complementary form; as a perceived array of static positions in space that are drawn from the experience of observing visual phasing as a flowing systemic process.

In *Time and Free Will* Bergson posits a temporal plurality that exists as both subjective and non-divisible time-consciousness in continuous duration, and, at the same time as successions of temporal events that unfold in conjunction with the objects and spaces of the external world. He writes, 'There are, indeed... two possible conceptions of time, the one free from all alloy, the other surreptitiously bringing the idea of space.'¹¹¹ He suggests that such dimensions function in concurrence, but take the form of subjective transitions from one state to another, revealing layers of internal consciousness by dividing it into the quantifiable phenomena of space. With this he describes a process of internal durational flow becoming spatialised or simultaneous with the world to equate to perception and actuality. By way of illustration Bergson examines simultaneity and succession in relation to the example of a musical phrase that might be reversed in memory so as to suggest succession, but argues that it is *also simultaneous* in that if the quality of any individual note is changed the musical phrase is altered *as an entity*. He suggests that whilst we can attend to the different elements of the experience we also determine that the flow of notes remains a cohesive whole. 'We must perceive them as multiple, simultaneous and distinct; in a word we set them side by side, and we introduce an order in what is successive, the reason is that succession is converted into simultaneity and is projected into space.'¹¹² With regard to the perception of spatialised time he states in *Duration and Simultaneity* that we do not experience time as separate events at a subjective level; for example, we cannot determine exactly when we began thinking or feeling something such as hunger or doubt, but instead we measure these flows in internal duration as events concurrent to the physical world.¹¹³ Such events are sequences of divisible moments brought about in their simultaneity with external objects that might include clocks, the position of the sun or the coincidental coming together of phenomena that become significant in the form of synchronisation. Bergson suggests that

¹¹¹ Ibid, 100

¹¹² Ibid, 101

¹¹³ 'It is the simultaneity between two instants of two motions outside of us that enables us to measure time; but it is the simultaneity of these moments with moments pricked by them along our inner duration that makes the measurement one of time.' Bergson, *Duration and Simultaneity*, 54

consciousness is constituted in time but cannot divide time and locate specific points; instead it subtly blurs over and within space to arise in awareness as a point in time that has been consolidated or spatialised in its concurrency as an event in space.

In writing about the means by which we witness time in the world Bergson suggests that we must process it as simultaneous space, and thus determine it in the form of measurable change. In *Time and Free Will* he uses examples of an analogue clock and a pendulum to describe his proposed relationship between internal time flow – pure-duration – and the perception of spatialised events that constitute the external world in its conjunctions with consciousness. ‘When I follow my eyes on the dial of a clock the movement of the hand which corresponds to the oscillations of the pendulum, I do not measure duration... I merely count simultaneities, which is very different.’¹¹⁴ In this example he illustrates his theory of what he calls the memory-image as it fuses immediate past in oscillations that are the perception of the present. ‘Outside of me, in space, there is never more than a single position of the hand and the pendulum, for nothing is left of the past positions. Within myself a process of organisation or interpretation of conscious states is going on, which constitutes true duration. It is because I *endure* this way that I picture to myself what I call the past oscillations of the pendulum at the same time that I perceive the present oscillation’¹¹⁵ It is this doubled awareness, of the present and its immediate and persisting past, that I will consider in relation to phasing as a process that also projects awareness, as expectation, towards possible future configurations.

Bergson first presented his theory of time perception in *Matter and Memory*, describing what amounts to a temporal/spatial matrix within which the body is a site of exchange between a cycle of images of the persisting past that form experience of the present. He describes perception not as ‘a mere contact of the mind with the object present’ but states that such objects/images are ‘impregnated with memory-images which complete it as they interpret it.’¹¹⁶ The memory-image, he suggests, is not a memory of something that has materially passed and is being recalled, but a constant phenomenon that is taking place in the present as the persistence of the immediate past flowing in consciousness and forming the present as perception. In this model the memory-image might be deemed to have an internal, temporal function that feeds perception as a process of interpretative flow, continually ‘oscillating’ in the present with its persisting past.

By contrast pure-memory, for Bergson, is that aspect of memory that is *of the past*; remaining available but no longer actual or present in consciousness. He writes that the memory-image ‘partakes of the “pure-memory” which it begins to materialise and of the perception in which it tends to

¹¹⁴ Bergson, *Time and Free Will*, 107-108

¹¹⁵ *Ibid*, 108

¹¹⁶ Bergson, *Matter and Memory*, 170

embody itself... it might be defined as nascent perception.¹¹⁷ For Bergson perception is the point of interaction with the world of objects in space as the cycling function of memory-images against a ground of pure-memory. In attempting to outline Bergson's ideas of perception and temporal flow I am exploring a means of examining the experience of visual phasing as perceptive processes rooted in slippage of simultaneities. With regard to this I highlight Bergson's suggestion that we cannot identify divisions between pure-memory, memory-images and perception as they constitute the flow of consciousness itself, both its engaging with, and its completing of the world. This flow of consciousness will continue to oscillate even as the objective consciousness that is required in any attempt to make such divisions disappears back into perception, or to return to Bergson's point '... each permeating the other... so as to form what we shall call a continuous or qualitative multiplicity with no resemblance to number.'¹¹⁸

The iterations of clock digits in *Edge of Motion* might demark units of time but these temporal indicators are difficult to assimilate consistently as one's attention to difference is shifting between the clocks' repetitions and their positions. The numbers synchronise and alternate in a fluctuating pattern between the space of the displays and accumulate unevenly in memory as degrees of synchronisation, so that any points of future realignment lie beyond the scope of accurate predictability. Instead the work may become imbued with a sense of instability as one's awareness remains subject to the clock's shifting alternations between time and space that both remain visually separate and at the same time fuse into the overall experience of phasing as a phenomenon in consciousness. We see both the clocks and their interactions at once, enabled by their proximity in the form of the installed work. In reference to theories of relativity and perception Bergson makes the point regarding the adjacency of two temporal flows upon simultaneity by asking 'How can we prevent our imagination, and even our understanding, from treating the simultaneity of reading of two very widely separated clocks like the simultaneity of two clocks slightly separated, that is situated 'at the same place'?¹¹⁹ He suggests that we might measure time by two or more flows in spaces of greater and lesser proximity and therefore as different types of time line as long as they are in some way conflated by the consciousness of the viewer.

The proposed layering of awareness from confluences of time in space allows for comparisons between Bergson's point that '... the attention here again being able to make one or two out of them at will'¹²⁰ and the model of *spectatorial doubleness* described by Kate Mondloch. To revisit her

¹¹⁷ Ibid, 170

¹¹⁸ Bergson, *Time and Free Will*, 104

¹¹⁹ 'More Einsteinian than Einstein' Bergson suggests that imagination is a factor that has some bearing upon perception and relativity. Bergson, *Duration and Simultaneity*, 55

¹²⁰ Ibid, 51

proposed divergence of form and content in a viewer's engagement with moving image installations one can also recognise correlations between dual images and the experience of image phasing. When witnessing the studio work *Edge of Motion* a viewer might not only see simultaneities between its alternating binaries, but recognise implied future configurations. Thus in the absence of further visual information a reflexive awareness of that which is yet to happen ultimately becomes the subject of the work.

Perception and prediction

If the experience of image phasing can be said to accord with notions of a doubling of consciousness this condition might derive from a perception of the misalignment of successive images over time and the subsequent dividing of durational flow to fuse in concurrent space. Such perception would accumulate images as simultaneities between two or more positions rather than discharging them over two, or more, separate time flows. Bergson's proposition of memory-image as the situated perception of temporality and the complement to the space in which it is experienced might therefore enable us to compare the operations of phasing to that of the layering of misalignments that form interference patterns, doubling and intermittently corresponding to the oscillation of memory image. As a thought exercise responding to Bergson's model of memory-images and perception in the present I considered whether the perceived cycles of phasing clocks might contain a reflexive awareness of time playing out in space, in which the maintaining of an immediate past as cycles of present consciousness remains neither fully temporal in their repeating binaries, or totally present and resolved in the space in which they are apprehended. It is as if the immediate past repeats and returns from a shifting position so as to alter its alignment with the present and appear in an ongoing condition of becoming something other than what it appears to be. A dual layering of awareness might be said to form in this fluctuating state that is the immediate and persisting past dissolving at the point of actuality in the form of simultaneity giving way to possibility. My intention is to examine how we apprehend image phasing as that from which we might project assumptions about future configurations of synchronicity. In short, how might the dynamic process that is phasing allude to its own future concurrencies?

Bergson claims that time experienced in the world is measurable in its relationship to how we experience space in that we are able to count such externalised time as a succession of separated units.¹²¹ It is this state of divisibility and unitisation that differentiates external time from his proposed pure internal duration. The experience of time in terms of its separateness makes it possible to

¹²¹ 'Inner duration exteriorises itself as spatialised time and...space rather than time, is measurable. It is henceforth through the intermediary of space that we shall measure every interval of time.' Bergson, *Duration and Simultaneity*, 57

consider the doubled awareness that fuses these in the experience of place as an event, or to put it another way, an event being a moment that ‘takes place’ at a point in space that is locatable. In utilising a form of Bergson’s idea of internal and external time – of lived, ‘pure’ duration and time divided into space – I can reflect upon the process of perceiving visual phasing in the studio work. And in the process of examining this I am able to extend such thoughts to incorporate the points that Deleuze makes in this regard, acknowledging the commonalities between his ideas on time consciousness and that of Bergson.

As part of this interrogation of the process by which image phasing is perceived I want to acknowledge aspects of Gilles Deleuze’s thinking that resonate with the influence of Bergson’s writings on time, memory and duration. In *Bergsonism* Deleuze addresses Bergson’s reliance upon the memory as synonymous with duration and therefore as virtual, stating that ‘Duration is essentially memory, consciousness and freedom.’¹²² And it is in relation to Deleuze’s notion of the actual and the virtual that one might find correlations with Bergson’s hypothesis of a process whereby the present is perceived out of the dynamic oscillation with memory-images of the immediate past.¹²³ This process being the determining of perception of the present and what divides to become pure memory. For Bergson, that which remains present in conscious perception relates to the world in its actuality and all else passes to the virtual in its coexisting with the present as durational flow. As Deleuze emphasises, ‘It is clear that memory is identical to duration, that it is coextensive with duration... this proposition is valid in principal.’¹²⁴ Pure memory correlates to the virtual as that which is not present in consciousness, but such memory remains available and so capable of effecting actuality.¹²⁵

In considering the actual and the virtual questions arise for me as to the awareness of potential. If the virtual is that which is not present but available to affect consciousness might this apply, not just to memory, but to forms of awareness that rely upon assumption? In short, does

¹²² Deleuze, *Bergsonism*, 51

¹²³ In defining the term virtual and actual I refer to Bergson’s model of temporal perception whereby that which is present in conscious perception can be said to be actual and that which is no longer, such as pure memory, is virtual. The virtual might be that which is available to consciousness but not present in the world and would therefore also include imagination in the form of awareness of future possibilities. Deleuze describes the crystal image as a fusion within the cinematic of the actual and the virtual; as a conflation of the present and that which is remembered or imagined. He suggests that the purest form of the crystal image is that in which ‘The actual optical image crystallizes with its own virtual image.’ Deleuze, *Cinema 2: the Time Image*, 67

¹²⁴ Deleuze, *Bergsonism*, 52

¹²⁵ Deleuze states that ‘The appeal to recollection is this jump by which I place myself in the virtual, in the past, in a particular region of the past...once we have put ourselves on a particular level where recollections lie, then, and only then, do they tend to be actualised.’ *Ibid*, 63

expectation of an outcome correlate with the virtual in a manner comparable to that of memory?

Deleuze is clear on this, stating:

The subjective or duration, is the *virtual*. To be more precise, it is the virtual insofar as it is actualised, in the course of being actualised, it is inseparable from the movement of its actualisation. For actualisation comes through differentiation, through divergent lines, and creates so many differences in kind by virtue of its own movement.¹²⁶

Accordingly the virtual can include the projections of imagination that one might devise out of present circumstance towards that which can be expected – ‘in the course of being actualised’ – towards possibility. This awareness of possibility is awareness that is coextensive and so contemporaneous with the actual.

In considering the spatial, external world one might determine the process by which phasing is apprehended in Bergsonian terms, as the interplay of perceptual processes that in their dual form are perceived as spatialised at differing points in time, and that phasing is in this case the simultaneousness and alternation between change in one and location in the other. I suggest therefore that phasing reveals a state of in-between-ness in which Bergsonian *pure-duration* is split via dual points in space and mirrored in the slipping synchronisations that hinges between external succession and the flow of temporal perception. My interest lies in the means by which Bergson, and Deleuze in his interpretations of Bergson, considered time perception as a method for reflecting upon the experience by which phasing is apprehended. The repeated misalignments of temporal units described by the binary switches of the repeated LED clock images might initially be seen to unsettle the means by which we determine time as succession in memory, in that our focus upon the one and then the other in this cycle is continually shifting from time to space. We may witness the doubled succession of images whilst our attention is drawn to a switching that is taking place, not just between two consecutive flows in time, but also between two contiguous positions in adjacent space; unitising and thus spatialising duration whilst seemingly maintaining it in a meta-flow of cycling synchronisations. And it is out of this interchange of misalignments that this meta-pattern can begin to impose itself upon our awareness as cycles that, once witnessed, are assumed to return in future configurations. This, I argue, is how image phasing as an alternation between space and in time begins to extend or double our awareness between the perception of that which is happening now and that which might happen again in the future.

¹²⁶ Ibid, 42, 43

Phasing as a vector of exchange

A vector is a contradictory creature. In physics, a vector is the result of multiplying forces together; in digital graphics, it describes software that draws a continuous line...in both cases, the vector describes movement.¹²⁷

If phasing is apprehended as fluctuating difference between spatialised points in time, and might thus accord with Bergson's ideas of time and memory-image, I want to consider the phenomenon as an experience of a dual-dimensional movement in which the minimum difference perceivable between points in time and points in space can result in a phenomenon of self-cancelling movement/stasis. For the purpose of considering phasing from a schematic viewpoint I use the term 'vector of exchange'.

Sean Cubitt describes notional forms of drawing as a means by which time and the process of the representation of events intersect as vectors. In *The Practice of Light* he explores ideas of the vector in terms of rendering visible the video image out of mathematical codecs and considers the act of drawing on an historical continuum that is also a description of the development of a series of otherwise disparate technologies.¹²⁸

If a vector is commonly defined in terms of a multiplication or intersection of forces or flows of information, and for mathematical purposes is described in terms of its extension and direction, then I suggest phasing, as a phenomenon reduced to the perceived interactions of adjacent events at different frequencies, might also be described by a vector of operations in accordance with its temporal and spatial parameters.¹²⁹ I have been considering how the perception of the phasing of visual phenomena might be addressed as the apprehension of a system of differences and whether a focus on the minimum units of two iterations in time and in two positions in space might be considered in a constant state of multiplying in time and dividing between space, to achieve the perception of movement and stasis in concurrency, and whether this can be considered in terms of a three dimensional 'mathematical' exchange of co-ordinates between space-space, time-time to space-time, time-space. The possibility is that time frequency and number of positions in space conflated into

¹²⁷ Sean Cubitt, *The Practice of Light* (Cambridge: MIT Press 2014), 258

¹²⁸ 'A vector becomes in time. And its becoming asserts the continuum of time. The gesture of the drawing arm, whether that of Durer or of Verostko's plotter printer; a rhythm, whether that of Hogarth's line of beauty or of Susan Collin's phenomenology of duration: the engagement of the body in perception and the principal of the autonomy of the line of the mutual production of space as relational: all are examples of the vector's principal of continuous and open-ended movement' Ibid 260

¹²⁹ Definitions of a vector include, 'A variable quantity, such as force, that has magnitude and direction, and can be resolved into components that are odd functions of the co ordinates' and 'Any behavioural influence, force or drive.' *Collins English Dictionary* (London: HarperCollins, 1992)

the form of a vector might reveal patterns that describe phasing in terms of layered and staggered temporalities.¹³⁰

Edmund Husserl's writings on phenomenology suggest that we do not so much synthesise the multilayered events that constitute our experience of the world into a single flow between protention and memory but that we instead operate a form of staggered simultaneity in which the elements of an experience, be it seeing or hearing, remain separately available to us in hindsight.¹³¹ With regard to this I want to consider the possibility that the experience of multiplicities of movement in space, such as the phasing in *Edge of Motion*, is constituted in consciousness as simultaneous. This in turn offers the possibility that degrees of difference may, in the case of phasing, be a layering of memory in the present *and* expectation of the immediate future. Whilst simultaneity might suggest possible future concurrencies it is actually in delay that past, present and future are witnessed, in such a subjective accumulation of the concurrency of events.

Bergson's notion of a dual consciousness in which an 'internal' pure-time can become spatialised as consciousness in the form of simultaneity with the world, has echoes in the mirrored and doubled temporalities of Deleuze's crystal image.¹³² Deleuze described what can be deemed a model of dual consciousness in terms of its fusion of the actual and virtual, in which successive moments in the present become conflated with memory or extended out of the cycle of Bergsonian pure perception to reflect events concurrent with memory and subjectivity.

The actual image and its virtual image thus constitute the smallest internal circuit, ultimately a peak or a point, but a physical point which has distinct elements... Distinct, but indiscernible, such are the actual and virtual which are in continual exchange.¹³³

In exploring Bergsonian or Deleuzian models of layered consciousness and time perception I am looking for equivalences with the expanding and compressing undulations of image

¹³⁰ Jay Lampert conducts a close analysis of time consciousness from Bergsonian and Deleuzian perspectives and considers whether that which constitutes the perception of concurrence may not be as continuous in essence as it may seem, but staggered between events and reactions: 'In its simplest form simultaneity consists of two or more events at one time, and delay consists of one event at two or more times.' Lampert, *Simultaneity and Delay*, 227

¹³¹ Husserl, *On the Phenomenology of the Consciousness of Internal Time*, 44-49

¹³² Deleuze describes the crystal image as that which cannot be reduced or separated into constituent parts as it exists at a theoretical point at which the virtual becomes akin to the actual and the actual virtual. The crystal image might be determined as that which consists of enfolded dimensions, 'Of two mirrors face to face.' Deleuze, *Cinema 2: the Time Image*, 68. Such a description accords with Bergson's simultaneity as spatialised multiplicity. In such a configuration the present and its contemporaneous past complement each other as an image in which time and space alternate in reversible difference; as concurrent temporalities in a process of becoming spatialised.

¹³³ Deleuze, *Cinema 2: The Time Image*, 68

synchronisations that characterise the experience of phasing rhythms. As a means of comparison the notion of a vector is presented as a schematic means of identifying and articulating possible equivalences.

Sean Cubitt writes of the vector in terms of the temporal characteristics that extend from its diagrammatical remit, and it is from such schematic forms of representation that the phasing movements of *Edge of Motion* might be visualised as the mapping over time of the multiplication of the forces from which it is constituted.¹³⁴ It follows that by extrapolating from such a diagram of temporal-spatial relationships it might also be possible to anticipate the potential conditions of the work as a map of projected future states. The resultant vector would function as an abstraction of temporal experience of a Deleuzian actual and the virtual, manifest in this case as the shape of the alternating binaries of two digital clocks. The undulating patterns of two timelines ‘drawn’ over time and space by the alternating clock displays would weave diagrammatical waveforms into a vector of exchange, not as an image of a succession of moments but as a layered diagram of actuality and possibility, projected from a Bergsonian cycle of memory and perception towards the virtual of expectation. Cubitt asserts that ‘the vector belongs to this transition from actual to virtual. It emerges from the past, from the situation, from the multiple forces operating on it at a moment in time and space, unleashing the potentials hidden in the moment.’¹³⁵ This perception of phasing as an inter-dimensional layering might be accompanied by a schematic mapping of possibility as an adjunct to the work: a vector that describes its own future, the work’s spatial-temporal possibilities being the virtual extended from the actual. This notional meta-position is an indication that phasing alludes to a temporal, spatial transition that spans our perception of the actual and makes a call to the virtual realm of the imagination as expectation. And it is this span of the thresholds of the actual and the virtual that I will return to in Chapter 6 in a comparison with Duchamp’s notion of *Infrathin*: as possibility in transition.

¹³⁴ ‘A vector becomes in time. And its becoming asserts the continuum of time...’ Sean Cubitt, *The Practice of Light* (MIT Press, 2014), 258

¹³⁵ *Ibid* 260

Chapter 4:

Phasing as alternation and delay

In this chapter I consider image phasing in terms of duration and alternation. Particular studio works are examined in relation to spatialisation and duration and the writing of Bergson and Deleuze. Selected contemporary artists' works are used to reflect upon ideas of delay and repetition.

An Extension of Circumstance

The mind's eye too has its blind spot, but, because it is of the mind, cannot be unaware of it, nor treat as a simple state of non-vision, which requires no particular mention, the very act of reflection which is quoad nos its act of birth.¹³⁶

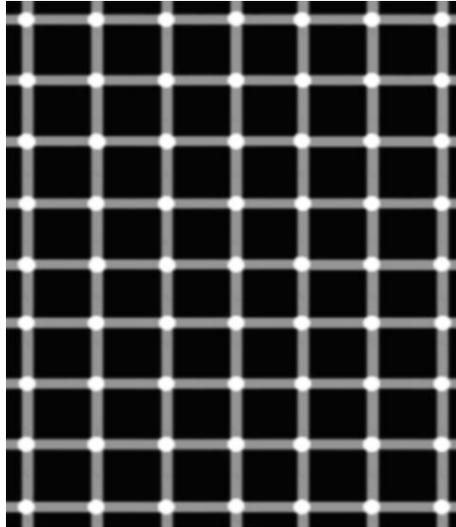
The studio works that form the basis of this thesis function as a means of identifying and thinking through ideas that began from interrogations of perception, visibility and proposed relationships between the temporal and the spatial in the form of image phasing. In turn this thinking has generated not only methods of repetition and image concurrency, but also notions of difference between the physiological and the psychological, cognition and assumption and the perception of dual image configurations. I will examine here a composite work that utilises notions of difference between two elements, whilst considering the wider implications of such perceptual thresholds.

Addressing perceptions of visual and conceptual interactions between two specific images was my intention in developing the work entitled *Occlusion*.¹³⁷ The two images that initiated my thinking behind this work are visual illusions that consist of circles and grid-like forms. One, is commonly known as a 'scintillating grid' of black squares and white circles against a grey background, the other is the image of a cross and a dot that can be used to reveal the presence of the 'blind spot' on the retina.¹³⁸ They form the basis of a series of works that utilise components that extend or subvert what I propose is both a corporeal and a conceptual relationship between each.

¹³⁶ Maurice Merleau-Ponty, *The Visible and the Invisible* (Evanston: Northwestern University Press, 1968), 33

¹³⁷ *Occlusion* has numerous definitions relating to obstruction. In Psychology, specifically depth perception, it refers to an object that is partially hidden by another, and in memory research it is used to describe the phenomena of associated memories obstructing access to the target memory, in short, the distracting effect of one subject by another.

¹³⁸ In bringing these two images together I was conscious of the point Duchamp famously made about 'the retinal' qualities of art that appeals only to the visual senses. These two images convey an illusionary experience that is purely of the retina, but when considered in unison offer dialogical possibilities that may appeal to the imagination and to notions of visibility, presence and image interpretation.



Occlusion (2016) began with these two illusions presented in a perceived alternation of appearance and disappearance. The scintillating grid offers the illusion of scattering black dots across the image, seemingly appearing briefly in the white circles of its surface.¹³⁹ When placed next to the image of the black cross and dot these illusionary dots may be seen as being counteracted by the temporary invisibility of the single black dot of the blind spot test image.

It might not be stretching one's comparative abilities too far to consider whether such a phenomenological experience, between illusion and imagination, is also comparable with the notion of *spectatorial doubleness*. In both images one is afforded a glimpse of the physicality of one's visual processes whilst inhabiting a meta-position of the awareness of an 'exchange' of appearing and disappearing dots that are designed to alternate between both images.¹⁴⁰ Thus a concurrent awareness may be engendered between what the viewer sees and what they actually know to exist. In making these two images the focus of *Occlusion* I was also exploring how one might address something of the elusiveness of temporality between points in space in that my initial intention with this work was to frame the illusion of image 'movement' and the role of the viewer in a perceptible experience.

¹³⁹ This is caused by interference between the retinas' light sensitive cells and the edges of contrasting images in what is thought to be an example of lateral inhibition; a neurobiological phenomenon resulting from a process in the retina's photoreceptor cells that aid the brain's perception of high contrast images by inhibiting the activity of photosensitive cells adjacent to those that are stimulated by intense light. In some ways this is the inverse of the blind spot test that reveals the part of the retina where there are fewer photoreceptor cells.

¹⁴⁰ As introduced in chapter 1. Mondloch, *Screens*, 62

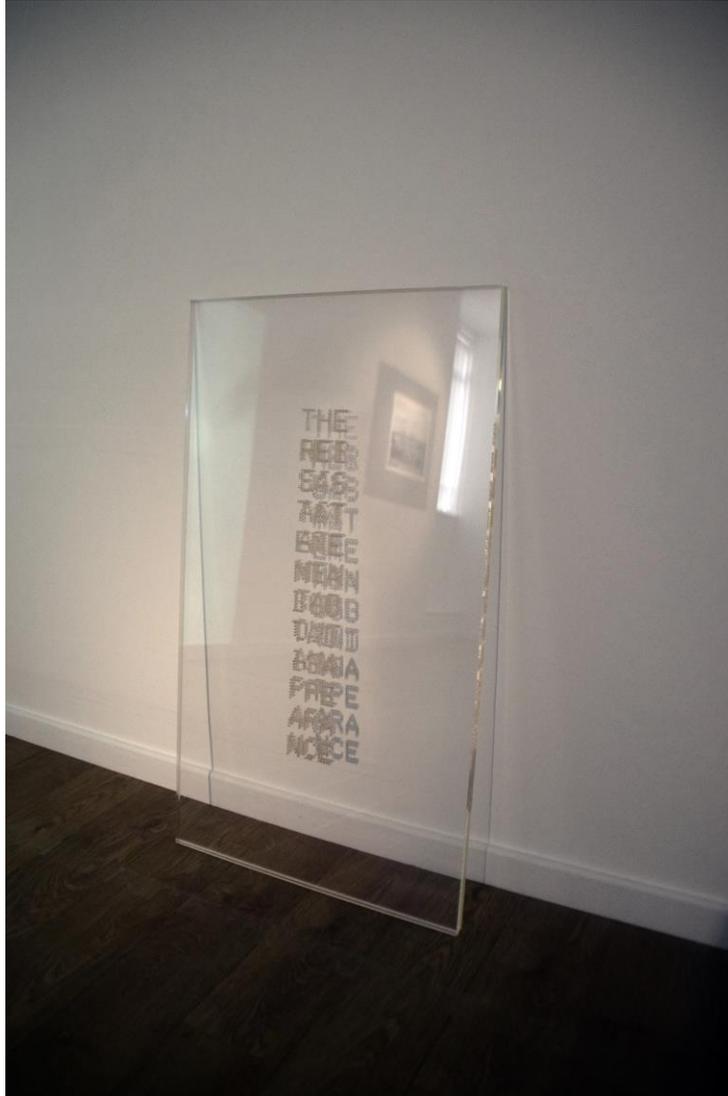
Occlusion: the grid

To examine the operations and implications of *Occlusion* I will focus on a version of the work exhibited in November 2016 in a solo exhibition at the Delta House Gallery in London titled *An Extension of Circumstance*.

This exhibition consisted of a total of four works interrelated by common features of dual forms that were intended to appeal to the presence of the viewer and operate at the thresholds of temporal perception. Each work was installed in a counterbalance of movement and stasis to foreground the perception of repetition, temporal resolution and visual phasing. The pieces presented were; *Signs*, a digital photographic print; *Edge of Motion*, consisting of 6 wall-mounted digital clocks, dual Perspex panels entitled *The Appearance of a Statement*; and *An Extension of Circumstance*. *Occlusion #3* which consisted of the core components of the scintillating grid and blind spot test, in conjunction with a video projection, adjacent to a backcloth of chromakey blue.

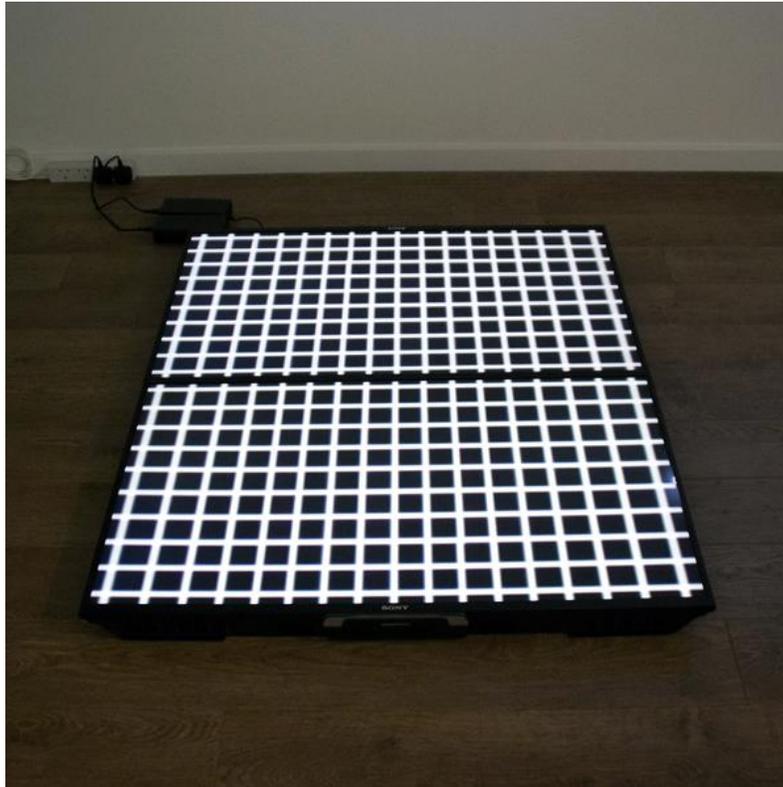


Steven Scott, *Signs*, 2016. Giclée print



Steven Scott, *The Appearance of a Statement*, 2016. Two sheets of laser-cut Perspex

In this manifestation of *Occlusion* the scintillating grid was presented on two HD flat-screen TV monitors lying face-up on the floor. Each screen displayed the same image moving imperceptibly slowly across each screen in opposite directions. This invisible movement of the grid is calculated to match that of the real-time movement of the sun, a recording of which appears in another component of this work as a video projection. Over time the positions of the grid images move out of alignment as each HD screen is laid together across their top edges so that the images are 'mirrored'. The image on each screen appears to be static but for the retinal illusion of the scattering of black dots that seem to 'shimmer' on the edges of one's field of vision.

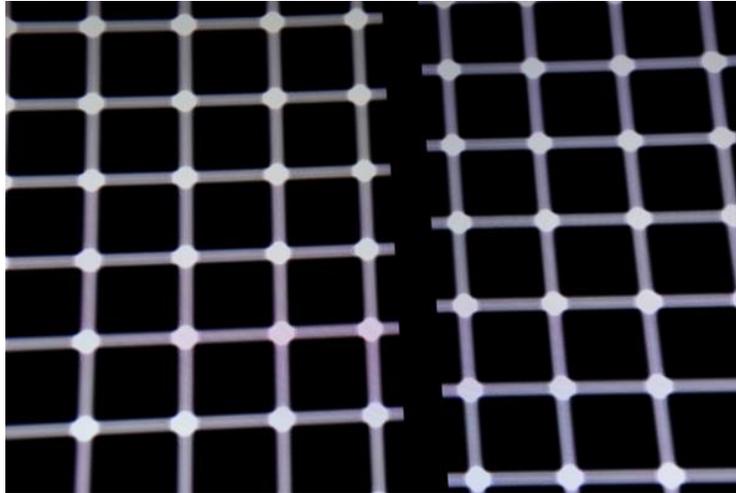


Steven Scott, *Occlusion #3*, 2016. Scintillating grid displayed on adjacent monitors.

I intended that this dual screen durational presentation of the grid offered a paradoxical interplay between seeing and not seeing. The appearance of black dots is an illusion of movement borne out of the combination of a neural process and the physicality of the eye, whilst what appears to be an otherwise static image is in fact very slowly traversing the screen in a movement that is beyond direct perception and can only be determined in the relative alignments of one image to its double over an extended period of time.

The scintillating grid is itself key as an intersection between stasis and random movement that is activated by the viewer's gaze. It is this experience of illusionary and invisible movements that gives Rosalind Krauss's point that 'a grid... is what art looks like when it turns away from nature', a particular pertinence and imbues this optically-activated image with an uneasy theatricality.¹⁴¹

¹⁴¹ Rosalind Krauss, 'Grids' in *October* Vol 9 (Cambridge: MIT Press, 1979), 50



Steven Scott, *Occlusion #3*, 2016. Detail of scintillating grid on adjacent monitors.

Occlusion: the blind spot

Operating in a bilateral relationship with the scintillating grid is the sight test that is designed to reveal the blind spot, or ‘scotoma’, in the retina where the optic nerve meets the back of the eye.¹⁴² This simple test can be made up of any two shapes or images presented laterally adjacent, but commonly consists of a black dot and a cross printed side by side onto a white surface. The image of the black dot will seem to ‘disappear’ as the viewer stares at the cross and moves their viewpoint in relation to the two images in such a way that their retina’s ‘blind spot’ coincides with the position of the dot. This means of revealing the scotoma was utilised in this work as it offers an illusion of disappearance borne of two image shapes in relation to the dual operation of the eyes and so offered an example of a simple dual image interaction in itself.

In presenting the scintillating grid and the blind spot test in an oblique manner in this exhibition I intended that a relationship between knowing the intended function of these images and witnessing their effect accords with the relationship between intention and experience.¹⁴³ As a means of examining such distance between knowing and experiencing (as Duchamp described it ‘between intention and realisation’) within this work I explored different means of presenting the cross and dot that undermined its experiential function as a sight test, presenting it instead as an appeal to a viewer’s understanding that this image configuration addresses vision and illusion. In the exhibited

¹⁴² There are no light sensitive cells in a small patch of the retina at the point at which the optic nerve passes out of the eye. This results in a blind spot in each eye that we remain largely unaware of as each is compensated for by the dual operations of the eyes and the interpretive processes of the brain.

¹⁴³ This is at the heart of Duchamp’s notion of the art coefficient, a term he used to describe the difference between an artist’s intention in making a piece of work and the audience’s experience of that work.

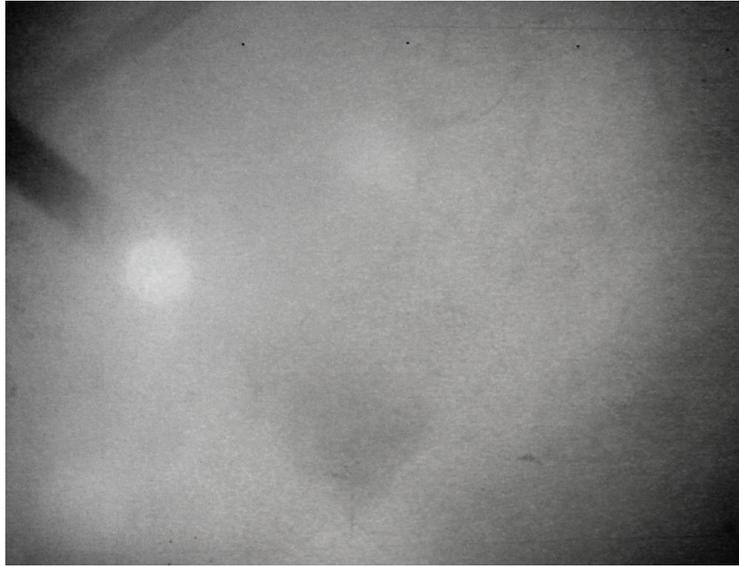
manifestation of this work the cross and dot shapes took the form of laser cut holes in a sheet of Perspex cut to the exact dimensions of the HDTV screens that present the scintillating grid. This sheet was placed against a rectangle of chromakey blue photo backdrop material cut to the same 16:9 proportions. Together the transparent Perspex with its holes and the particular blue backdrop – a colour designed to be substituted by an image and therefore a colour intended to disappear as if it were a proxy for an image – coincide to make further oblique references to notions of vision and blindness, appearance and disappearance, presence and representation.



Steven Scott, *Occlusion #3*, 2016. Laser-cut Perspex blind spot test, Chromakey backdrop



Steven Scott, *An Extension of Circumstance*, Delta House Gallery, London 2016



Steven Scott, *Occlusion #3*, 2016. Video frame depicting trace left by the trajectory of the sun

Occlusion: in/di/visible time

The third component of *Occlusion* is intended to function as a subtle temporal framing device, and takes the form of a projection of a low-resolution video recording of the sun moving in real-time across the sky. The video used is one of a series of such works that began as an attempt to make a recording of 'pure' time which contained as few pictorial indicators of movement and space as possible. The intention was to produce an image of something whilst offering minimal information about its subject, so that the image becomes its own subject. The resultant video was seemingly static as its depiction of emptiness existed outside of a perceivable representation of time flow.

In accordance with the extended movement of the scintillating grids on the video monitors the temporal resolution of the subject is beyond direct perception and requires the viewer to return to the image to determine change. An obsolete monochrome 1970s video tube camera was used for these recordings, on which the direct light of the sun leaves a permanent black trace on the vidicon camera tube as it moves imperceptibly slowly across the frame. This component of the work does not form part of the perceived alternations of appearance and disappearance that can accumulate between the grid and the sight test illusions. Instead it is intended to set this exchange against an extended temporal context that operates as a ground against which the dual image illusions may be seen to take effect. The progress of the sun 'burning' a line across the screen is so subtle that the projection might at first be assumed to be an indeterminate static image. The lack of spatial information in the video image, recording nothing but the sun against a clear sky in static

monochrome, ensures that all the usual indicators of image-space and the flow of time are reduced to imperceptibility and a viewer might struggle to determine the nature of what is being depicted.

seen – unseen

These three components that constitute *Occlusion* have been developed and presented previously in various forms, including the projecting or screening of the video recording adjacent to the sight test and the scintillating grid as either suspended digital prints, a large-format slide projection, theatrical gobo lights, shadows and reflections, printed text and light boxes. The components are altered in each case to layer the visual experience of the work with a conscious interaction and awareness of the visible and invisible, the representation of time and actual time.

The notional gap between the intention of the artist and the degree to which this is perceived by an audience is something I have attempted to make more discernible in the variations of *Occlusion*. Maintained within all versions of this work is the potential to recognise a relationship between the scintillating grid and the sight test. This relationship may begin with the viewer's awareness that the illusionary appearance of black dots within the rigid forms of the grid is complemented by the potential 'disappearance' of the circular dot of the sight-test as it reveals the retina's blind spot. But this relationship may be presented in a visible form or simply alluded to as possibility in less material versions of *Occlusion*.

Marcel Duchamp famously rejected making art that appealed only to the visual sense, or as he put it 'the retinal', in favour of an art of ideas. The images of the scintillating grid and the blind spot test used here convey an illusionary experience that is initially of the retina, but when taken in conjunction offer wider possibilities that may multiply in the imagination as allusions to visibility, presence and interpretation. Duchamp was referring to visual art that offers pleasure and satisfaction in the means by which it depicts a subject whilst conforming to preconceptions of that subject and the medium in which it is rendered, whereas the scintillating grid and the blind spot test are not images of something in any representational sense; they do not attempt to direct consciousness towards a remote subject via pictorial means but instead reveal something of the nature of vision, and might be said to refer to the condition of seeing in the process of being looked at.

Any perceivable difference between the presence of the observer and their experience of seeing either of these two images is liminal, at least until the observer recognises an interrelationship between the images. The interstitial space into which awareness of the process of seeing might begin to take place is extended with the self-referential interplay of appearance and disappearance in the viewer's experience and their awareness of that experience.

Rosalind Krauss refers to a doubling of awareness in the context of display devices when she writes of '... an experience that not only conjures up the effects of a given illusion but also reveals the

means of this illusion's production... the spectator will occupy two places simultaneously. One is the imaginary identification or closure with the illusion... The second position is a connection to the optical machine in question, an insistent reminder of its presence, of its mechanism...'¹⁴⁴ I suggest that the dual images in question, the grid and the blind spot test, operate as such a 'mechanism', as a means of display that draws attentions to form so as to remain present in the process of apprehension.

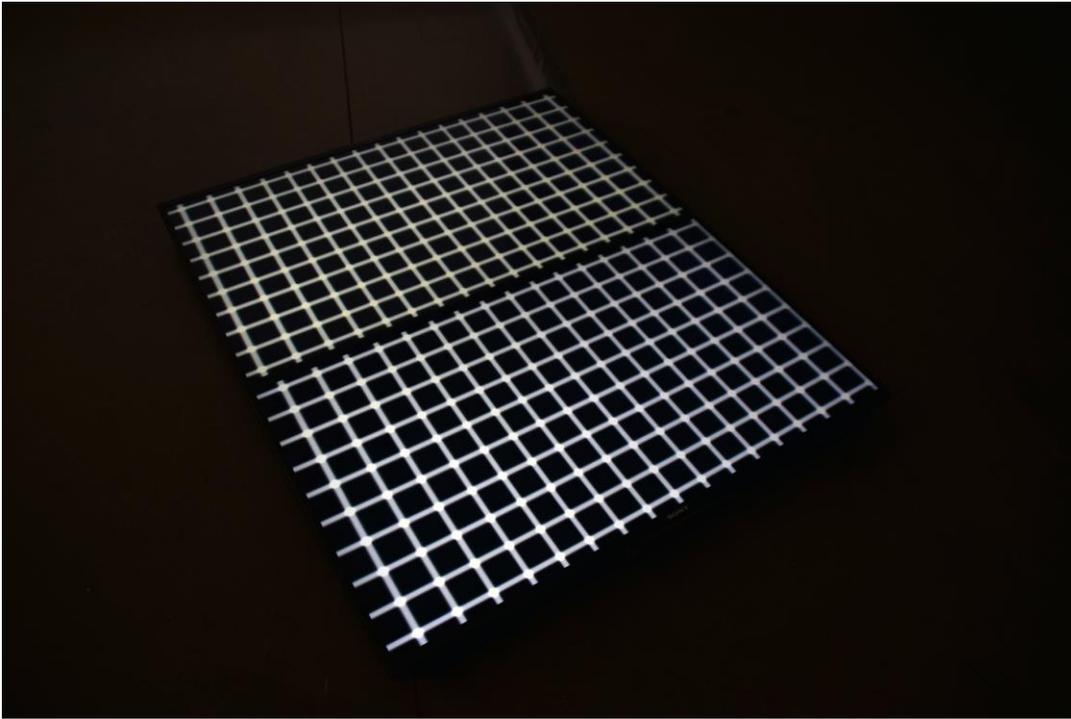
Fundamental to this work in whatever form it is presented is the spatial arrangement of the two core components, one of illusionary appearance in an alternating dialogue with the other of illusionary disappearance. A relationship between visual legibility and referential appearance is intended to engender an alternation of awareness that accumulates between the foregrounded components against the imperceptible movement of a third. A viewer is encouraged to identify resonances in the form of an intersection of visual experience, form and reference, and an active montaging of fields of legible and inferred associations. As with the illusionary characteristics of the scintillating grid and the blind spot test these are intended to impact upon the viewer first physically, via the mechanisms of the eye, and then conceptually as binary possibilities that exist between left and right, forward and back, visible and invisible. In both cases an alternation of degrees of possibility are set up as each state exists concurrently as an inverse of the other.

The iterations of *Occlusion* rely upon these components being presented spatially in arrangements in which two illusions are foregrounded against the liminal temporality of the recording of the sun. As such they may be experienced as unified in references to visibility, liminal perception and temporality between the physicality of the visual process and the subjectivity of the individual viewer. This staged relationship between invisible temporal flows and visible illusions of movement address perceptual thresholds of what can be seen and known empirically and what must be assumed or rejected as false. A cyclical interrelationship exists in this reappearance/disappearance of the real and the illusionary in an ebb and flow of tautological interactions and iterations between the objects, their associations, and the experience of viewing them.

¹⁴⁴ Rosalind Krauss, 'The Im/pulse to See' in *Vision and Visuality*, Hal Foster (Ed) (Seattle: Bay Press, 1988), 55



Steven Scott, *An Extension of Circumstance #4*, Dyson Gallery, London 2017



Steven Scott, *An Extension of Circumstance #4*, Dyson Gallery, London 2017

Phasing as divisible duration and spatialised time

In considering the means by which we might engage with *Occlusion's* visual illusions and invisible movement I refer again to Bergson's ideas on perception and time. In *Duration and Simultaneity* Bergson outlines his theory of the difference between pure duration as a state of internal flow of consciousness which does not divide in response to the external world. Instead he argues that our perception of the external world is formed of engagement with space and objects which we apprehend in the form of a successive flow of memory images.¹⁴⁵ As discussed in the previous chapter, Bergson's ideas of time and perception are heterogeneous in nature, describing the perception of time in the physical world as separated and unitised, as intersections in space that are apprehended as events. This spatialising of time, he suggests, co-exists with an inner consciousness of what he termed duration or 'pure' time that is independent of the world and unassociated with the physical world of objects and actions in space. 'We call two external flows that occupy the same duration 'simultaneous'

¹⁴⁵ 'If time, as the reflective consciousness represents it, is a medium in which our conscious states form a discrete series so as to admit of being counted, and if on the other hand our completion of number ends in spreading out in space everything which can be directly counted, it is to be presumed that time, understood in the sense of a medium in which we make distinctions and count, is nothing more than space.' Bergson, *Time and Free Will*, 91

because they both depend upon the duration of a like third, our own; this duration is ours only when our consciousness is concerned with us alone, but it becomes equally theirs when our attention embraces the three flows in a single indivisible act.¹⁴⁶

If the temporalities that form *Occlusion* – of the recording of the sun’s movement and the subtle shifting of the grid images – are so slow as to reside below the threshold of direct perception, then questions of accordance might arise in response as to the nature of time and duration as a phenomenon of the work. As a thought exercise in comprehending Bergson’s model of a state of inner consciousness that flows without reference to the external world this might be compared to the conditions in which recorded time remains outside perceptual awareness, only to be revealed out of a process of comparing relative positions in space of the recorded subject over extended periods of time. As a model for considering the relationships between states of conscious and awareness that arrive through such a process of comparisons between spatial positions, Bergson’s theory of such layered states of consciousness might also offer a framework for outlining the operations of *Occlusion*.

In *Time and Free Will* Bergson asserts that ‘pure duration is the form which the succession of our conscious state assumes when... it refrains from separating its present state from its former state.’¹⁴⁷ I have compared the perception of simultaneity and the spatialising of time to the experience of phasing as it layers units of time, demarked by binary images, between positions in space. I am now attempting to reflect upon some of the means by which Bergson’s writings might afford clues to the process by which one perceives the interactions of *Occlusion*. If, as suggested, this work encourages multiple readings of the illusionary and sub-visible effects of its components then I suggest the means by which this work might be navigated requires that its durational content remain indivisible by immediate physical means. In this case one may not be able to see progress taking place in the video recordings used in *Occlusion* in the form of succession, but instead one must return to the work after a period of time (itself a means of spatialising time, in this case through the movement of the viewer), having memorised its position to obtain evidence of its change in space and so prove its function as a moving image. I am reminded, in the light of the extended durations inherent in *Occlusion*, of Bergson’s point that ‘Without an elementary memory that connects (the) two moments, there will be only one or the other, consequently a single instance, no before or after, no succession, no time.’¹⁴⁸ And that in the first instance I proposed to make *Occlusion* from components that have minimal temporal or spatial indicators as a method of presenting stillness and timelessness within a recording of real time. It is such a stillness that I was aiming to achieve by using a subject that was framed so as to move both indivisibly and invisibly in tandem with the experience of movement as an illusion.

¹⁴⁶ Bergson, *Duration and Simultaneity*, 52

¹⁴⁷ Bergson, *Time and Free Will*, 100

¹⁴⁸ Bergson, *Duration and Simultaneity*, 48

Without the ability to discern difference from one moment to the next as is the case with the videos in *Occlusion*, do we see a static image? Paradoxically, one that we might come to 'know' is of movement? And in such a case do we not so much experience time flow but, instead find our awareness dividing between the absence of visible succession and our knowledge of its condition of hidden temporality? In other words do we ultimately find in the apprehension of this work another variation on the doubling or layering of consciousness considered in Chapter 1 in relation to Mondloch's *spectatorial doubleness*? If, as I argue, one's attention is shifted/split so as to alternate between looking and trying to see the evidence of what is believed to be present in *Occlusion*, then it would be possible to make that claim. This might in turn be compared to Bergson's notions of the actual and the virtual in terms of that which is present for consciousness and that which remains outside of, but available to, perception. We look for the effect of change by looking at form, and from this a reflexive loop is derived in response to the invisible succession of image frames that display no difference. We see illusionary dots before our eyes whilst overlooking the slow sequence of minute changes in the image of the sun. In other words Bergsonian inner duration and the perception of external, spatial difference fail to become simultaneous as points in time and positions in space. Time as a sequence of spatialised events fails to materialise in consciousness; and evidence of succession is accessed only by our becoming aware of the functions of the work over an extended period of time.

These are points at which difference is seen to resonate with potential and it can therefore be said to follow that – considering Deleuze's *Image Crystal* as a fusion of movement and stasis, the actual and the virtual – the repetition of difference offers more than just the sum of two images. On repetition Deleuze wrote that '... one can speak of repetition only by virtue of the change or difference that it introduces into the mind which contemplates it', and change as determined by the conscious presence in time of the viewer is evidence of time of that viewer as well as time for that viewer.¹⁴⁹ Phasing, with its layering of successive difference, seems to operate at a level upon which the sequential building blocks of recorded time are reconfigured as equivalents in the form of positions in space. Such equivalents were indicated by Bergson who suggested that unlike points in time that are continuous, points in space are indifferent to each other and so occur separately rather than successively, and that one is not tied to another.¹⁵⁰ This describes a freedom for consciousness, as well as the body, to move through space, and time flow is present only at points that arise as fusions of time in space in the form of events.¹⁵¹ What might be called an authoring of a space with such events in

¹⁴⁹ Deleuze, *Difference and Repetition*, 93

¹⁵⁰ Jay Lampert condenses Bergson point by stating that '...time consists of flow without divisions. Space consists of divisions without flow.' Lampert, *Simultaneity and Delay*, 125

¹⁵¹ 'There is no doubt that our consciousness feels itself enduring, that our perception plays a part in our consciousness, and that something of our body and our environing matter enters into our perception. Thus, our duration and a certain

the controlled environment of an exhibition space renders such points in space within a subjective temporal context.¹⁵² To extend this Bergsonian view one might also deem that an aspect of durational flow, once repeated, becomes separated and attributable to a point in space as an experience; as an event revealed as a rupture in the otherwise sub-liminal flow of subjective time. Therefore if an image is doubled in space, and our alternation of attention between each foregrounds its presence concurrent with its pictorial content, I suggest that this is a result of its condition of delay, its simultaneity in adjacent space causing awareness of both the difference and any accumulated meaning between each.

As is the case with the phasing of *Edge of Motion*, we see what is present whilst being encouraged to attend to what is not yet there, what might happen next, and what is implied out of the consequences by which the work must be apprehended. This requires that a viewer allow the perception of the work's operations to project a level of awareness from current circumstance towards future possible states. I would argue that the combination of elements that constitute *Occlusion* also utilises a form of phasing, in an alternation between seeing and knowing that results from the instability of its dual form, and, comparable to that on the image phasing of *Edge of Motion*, engender an awareness of possibility of future configurations and concurrencies.

Delay and alternation

Permit yourself to drift from what you are reading at this very moment into another situation... imagine a situation that, in all likelihood, you've never been in.¹⁵³

A distillation of the references used to describe the work of artist Cerith Wyn Evans might result in a list of keywords that include such epithets as: encryption, translation, language, vision, text, cinematic, polyphony, (in)visibility, time, stillness, light, dialogue. These would represent a sufficient sample of the commonly used descriptors applied as a measure of the span and depth of his practice over the last twenty years. To apply a further combining and filtering of these references might next

felt, lived participation of our physical surroundings in this inner duration are facts of experience.' Bergson, *Duration and Simultaneity*, 45-46

¹⁵² This spatial-temporal model accords with Lampert's interpretation of Bergsonian thought when he states that 'time is the negative character of space. That character of the point that negates the spatial continuum in favour of a particular location that makes a difference...time can be divided, just because time is that which divisible space becomes.' Lampert, *Simultaneity and Delay*, 86

¹⁵³ Taken from a review by Stephan Pfohl of Guy Debord's book 'In Girum Imus Nocte Et Consumimur Igni: a Film' (Pelagian Press, London. 1991) Stephan Pfohl, *We Go Round and Round in the Night and Are Consumed by Fire* <http://library.nothingness.org/articles/SI/en/display/87> (accessed 3rd January 2014)

result in the essential denominators: time, light, language, visibility. Despite having diverse roots these few words, when taken in combination, can suggest notions of image and textual interactions between seeing and reading.

The quote above is taken from a review by Stephen Pfohl of Guy Debord's 1978 film *In Girum Imus Nocte Et Consumimur Igni*. This was the last film Debord published in his lifetime, and one that ended with the subtitle 'To be begun again from the beginning'. A reference to a loop or repeat is inherent both in the film as a defining element within Debord's life, and constructed out of the relationship between a Nietzschean 'eternal return' of its palindrome-as-title and its interaction between the self-referential text of the title, the subtitles within the film image, and the sub-text of the film itself. Time as a cycle of progression and return is an element of the work that, by foregrounding the presence of the text as text for film, by implication also offers the possibility of the film as text.

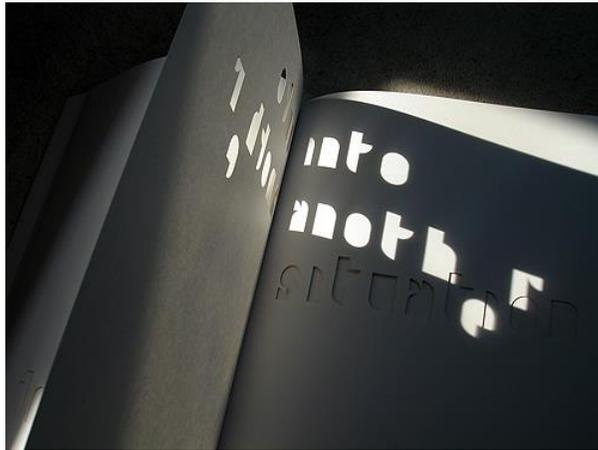
It is likely that Wyn Evans had such notions in mind when he chose to use this quote as both the subject and the form of his book "... " *Delay*, published to accompany his 2009 exhibition of the same name at the deSingel in Antwerp. This 25 cm x 33 cm book of fifteen bound 300gsm pages presents Pfohl's text in a difficult-to-read, block-like font, each letter laser cut through the page in visual compositions of two or three words at a time.

The combination of stylised font and word sequences are presented as a series of laser cut holes across a succession of pages that separates and reveals the process of reading as an otherwise invisible fusion of sign, memory and connotation. The reader must initiate this process in the role of viewer as they are initially prevented from receiving the meaning of the shaped holes. They must first *perform* the reading of the text as a process of conscious translation, turning language from a means of invisible representation towards the physical form of the book. Such a performed reading involves the adoption of external mechanisms; in this case I found the utilisation of a strong light source useful to project the text shapes forward onto the page ahead as legible text fragments, so that they become words made up of light. Fittingly, writer and critic Juliane Rebentisch observes that Wyn Evans work has an: '...indistinguishable double presence as thing and sign...' ¹⁵⁴

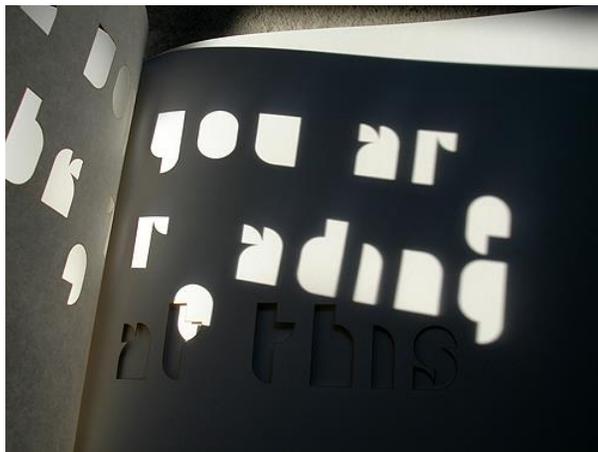
¹⁵⁴ Juliane Rebentisch, 'Decolonised Theatre' in *Cerith Wyn Evans* (Berlin: Lucas and Sternberg, 2004), 93



Cerith Wyn Evans, "... " Delay, 2009 Front cover



Cerith Wyn Evans, "... " Delay, 2009 '...into another...'



Cerith Wyn Evans, "... " Delay, 2009 '...you are reading...'

Reading the delayed text from a series of cut-out shapes requires conscious mental retention and construction that results from an interaction with the physicality of each page, reassembling the disjointed word-shapes to write the text into consciousness. Above all it requires a *repetition* of the action of reading as a means of translating the text, so that words are eventually revealed out of iteration and accumulation; a process by which spatially separate and simultaneous images are reconfigured in a temporal flow. This process moves awareness from image to letter to word until it reveals a semblance of meaning that is translated from materiality to language, yielding meaning and reflexive references out of light, space and in time.

In reference to the relationship between spoken words and visual text Derrida introduces a comparable experience of what might be termed the unstable word – the word that in various ways draws our attention from its content towards its condition – when he substitutes a letter A for an E in the word *differance*.¹⁵⁵ Once switched the visual word takes an inaudible step away from the familiar and purely indicative, toward the poetic, even beginning to take on a certain visual/pictographic quality akin to concrete poetry in the ideas he suggests are forming around this destabilising act.

When faced with such structural interventions into visual language we don't so much 'drift' out of the text we are reading and into our own imaginations as Pfohl suggests but, as a result of Wyn Evans' interventions, meaning is withheld so that we must approach his text in the form of visual objects to be decoded. We can only return to the role of reader having first enacted that of explorer and builder of disassembled shapes. These letterforms, having been rendered as objects *in* a page are remade as an image in light before they can be read as words *on* a page. Such interventions are intended to disrupt seeing/reading as a necessarily invisible experience and prevent an immersion into a nominal now by directing consciousness toward a reflexive awareness of the material and structure of language as a process of spatialised temporal events. In a Bergsonian sense the words shift from their invisible flow as internal duration towards external points in space as measures of time in their separateness. The text is not apprehended in time but present in space and thus framed and re-presented in consciousness as a sequence of events.

It is worth noting that the separation of the subject and its form again divides awareness between meaning and its means of presentation. In this case, such doubling ultimately arrives back at a point of assimilation that results from the self-referential nature of the work as a whole.

Further loops exist in the voice of Pfohl's text as reworked by Wyn Evans. As the text is decoded it is revealed that the author is imploring the reader to shift from a state of immersion in this text as a representational device and, in a plea to the imagination, to project their consciousness to an

¹⁵⁵ Jacques Derrida, 'Difference' in *Margins of Philosophy* (Hemel Hempstead: The Harvester Press, 1982), 3-27

unspecified place/time: to ‘a situation that in all likelihood, you’ve never been in.’¹⁵⁶ This allusion of a non-situation as *possibility* solidifies the spatial presentness of the text and its function becomes one of diversion rather than description. The reader is paradoxically required to cast their imagination towards a subject-in-absence to which the text has no connotative link. It is this delaying, doubling or spatialisation of the otherwise invisible flow of apprehension that I propose here as an adjunct to the extension and repetition of temporal images into spatial arrangements. The commonality between these forms is revealed as an interchangeability between temporal and spatial adjacency as the means by which disrupted or delayed presentations of text and image necessitate a shift in the requirements placed upon the viewer. This includes the adoption of an active role that can involve the movement of the viewer and a focussing upon retention as a means of reading the work’s codified forms. A deferral of meaning through strategies that direct attention toward form over content may also result in an awareness of the presence of one’s self as a factor within the resultant spatialised, delayed event of apprehension.¹⁵⁷

In *Chronology* Daniel Birnbaum describes his thoughts as they return to Nietzsche’s notion of ‘Eternal Return’ as if this repetition is in itself indicative of a wider cycle of universal repetition. ‘Since everything is bound to return, nothing is unique, not even these lines...’¹⁵⁸ He implies that such temporal cycles-within-cycles accord with Derrida’s idea of *differance* as that which perpetually returns, ‘... difference which is Chronos, or time itself.’¹⁵⁹ This is a notion that allows for a more immediate return within the subject of this text, bringing its focus back to the work of Cerith Wyn Evans only to consider another repeating cycle within a cycle, an example of cyclical language from the range of his neon text pieces: the 2006 cylindrical light sculpture entitled *In Girium Imus Nocte et Consumimur Igni*.

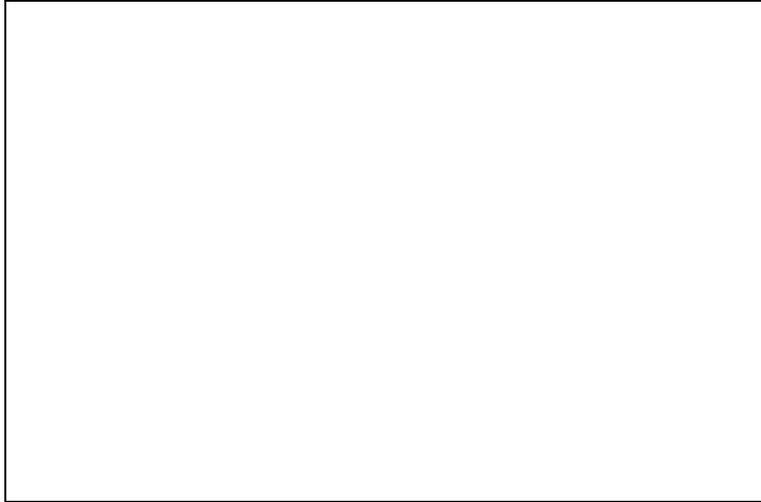
¹⁵⁶ Stephan Pfohl. *We Go Round and Round in the Night and Are Consumed by Fire*. 2000.

<http://library.nothingness.org/articles/all/all/display/87> (accessed 3rd January 2014)

¹⁵⁷ Wyn Evans has produced numerous sculptural works that incorporate forms of textual delay and flicker such as a series of chandeliers that flash translations of text in Morse code.

¹⁵⁸ Birnbaum, *Chronology*, 47

¹⁵⁹ *Ibid*, 57



Cerith Wyn Evans, *In Girum Imus Nocte et Consumimur Igni*, 2006

This work has a layered and hidden dual form of ‘a double presence as thing and sign’, operating out of a process of translation between image and text by using words rendered in neon as both a visual subject and palindromic structural presence. This suspended sculpture takes the form of a spectacle, a play of words in neon light that have a layer of dialogical reference for those aware of Guy Debord’s 1978 film of the same name. As such it demonstrates in its material presence the palindromic structure of its title, whilst alluding to the artist’s use of the film loop, the scripted narrative loop and – another ‘weak link’ – the self-referential nature of concrete text on a page.¹⁶⁰ This textual reference to what was Debord’s last film forms a meta-loop of association that returns us to the quote by Stephen Pfohl in which difference as a delay in time is considered in relation to alternations of awareness between text and image, form and material referent.¹⁶¹

¹⁶⁰ Wyn Evans refers to subtle resonances between images or objects that form associations in the imagination as ‘weak links’ Wyn Evans, *Hans Ulrich Obrist: The Conversation Series*, 22

¹⁶¹ Giorgio Agamben writes of Debord’s use of cinematic repetition as ‘the force and grace of repetition...the return as the possibility of what was. Repetition restores the possibility of what was, renders it possible anew.’ Giorgio Agamben, ‘Difference and Repetition: on Guy Debord’s Films’ in *Art and the Moving Image*, Leighton (Ed), 330

Chapter 5:

This chapter addresses visual phasing and the phenomenology of patterns of light. I describe Brion Gysin's Dreamachine, analysing its form and the subjective effects of flickering light. I propose a form of phasing takes place between the closed eyes of the user of the Dreamachine.

The Dreamachine: A phenomenology of interference patterns

Had a transcendental storm of colour visions today in the bus going to Marseilles. We ran through a long avenue of trees and I closed my eyes against the setting sun. An overwhelming flood of intensely bright patterns in supernatural colors exploded behind my eyelids: a multidimensional kaleidoscope whirling out through space. I was swept out of time. I was in a world of infinite number. The vision stopped abruptly as we left the trees.... (BG. Journal entry 21st December, 1958)¹⁶²

Artist Brion Gysin (1916-1986) referred to this chance experience of low sunlight flickering through rows of trees as the catalyst for his invention of the 'vision machine', a device that he later named the *Dreamachine* due to its propensity to cause subjective visions of patterns and images. Since its initial development, leading to a patent in 1961 for a 'procedure and apparatus for the production of artistic visual sensations', Gysin's *Dreamachine* has remained a source of intrigue for artists, writers and commentators. Examples of its continued presence within contemporary art can be found not just in books such as *Brion Gysin Dream Machine* by Laura Hoptman,¹⁶³ or copies of plans to construct a Dreamachine disseminated freely across the internet, but in major gallery exhibitions such as Susan Hiller's curated show, *Dream Machines*;¹⁶⁴ in Cerith Wyn Evans commissioning of *Dreamachines* for numerous international exhibitions;¹⁶⁵ Shezad Dawood's *New Dream Machine* project at the Parasol Unit in London 2013;¹⁶⁶ *Euphoria Now*, a show by the Danish artist group Superflex at the Gallery Von Bartha, Basel in 2015, and at the Bartha Contemporary Gallery, London in 2016.¹⁶⁷

¹⁶² Brion Gysin/Terry Wilson, *Here to Go: Planet R-101* (London: Quartet Books, 1985), 240

¹⁶³ Laura Hoptmann, *Brion Gysin Dream Machine* (New York: New Museum Merrell, 2010)

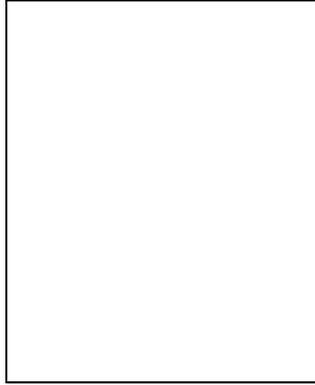
¹⁶⁴ Exhibition toured Dundee Contemporary Art, Mappin Art Gallery, Sheffield, and Camden Arts Centre, London in 2000 and consisted of nearly 50 artworks by artists including Dan Graham, Glenn Ligon and James Turrell selected to reflect upon Gysin's *Dreamachine*.

¹⁶⁵ In 1998 Wyn Evans commissioned a number of *Dreamachines* to be built in tribute to Gysin, his friend and mentor, including them in exhibitions in Tokyo, Paris and Cologne.

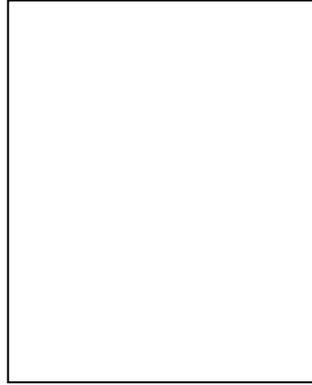
¹⁶⁶ A version that was larger in scale than most such machines but suffered from a lower level light source and was, in my experience, underpowered and far less effective than Gysin's original.

¹⁶⁷ This was one of four *Dreamachines* constructed with Gysin and Swiss gallerist Miklos von Bartha between 1976 and 1979. (Interview with Niklas von Bartha, Bartha Contemporary, London 16th March 2018)

Brion Gysin spent his life exploring all that he determined was occluded from everyday experience, using painting, collage, text, sound and writing. Some of his most well-received work operated within his primary field of interest as fusions of image and language with which he explored calligraphic glyphs discovered whilst living in Morocco.



Brion Gysin, *Calligraphie*, 1960



Brion Gysin, *Roller Poem III*, 1977

His paintings, along with numerous text cut-ups and permutation poems, are examples of work by otherwise very different artists that utilise methods of ‘textual delay’.¹⁶⁸ Such shifts in awareness between reading and seeing can be witnessed in works by artists such as Cerith Wyn Evans, an associate of Gysin’s, exemplified by the book *Delay* as discussed previously.

By using textual interventions that included the repetition and permutation of pictographic forms, Gysin explored methods of interrupting the assimilation of visual or spoken language to enhance awareness of its form.¹⁶⁹ He invariably aimed to make work that would have a discernible effect upon a viewer’s perception of themselves and their relation to the world, often beginning with himself as subject.¹⁷⁰ His intentions were not so much to traverse the interfaces between the visible

¹⁶⁸ The cutting and reassembling of pages of printed texts to produce semi-random sentences, a method adopted by writer William S Burroughs. ‘Cut ups allowed writers to use words in the manner that painters used paint, as raw material.’ John Geiger, *Nothing is True Everything is Permitted: The Life of Brion Gysin* (New York: Disinformation, 2005), 125

¹⁶⁹ Much of Gysin’s work combined text/image fusions, and word repetition such as the permutation poem ‘I Am That I Am’, broadcast on BBC Radio in 1960.

¹⁷⁰ Gysin, with life long friend and collaborator William S Burroughs, used many different means of exploring altered states of consciousness, from meditation and sleep deprivation to drugs and forms of self hypnosis. *RE/Search 4/5*. (San Francisco, RE/Search, 1982), 40

text and legible image as an artistic or literary conceit, so much as to deconstruct and reveal the workings of language modes as social, cultural and psychological phenomena.¹⁷¹

At the time of his revelatory bus trip Gysin would have been aware of the published theories of Dr William Grey Walter, having been given a copy of his 1952 book *The Living Brain* by William Burroughs.¹⁷² Walter's book documents the years of clinical research he had conducted into the effects of flicker and stroboscopic lighting in his psychophysical experiments with volunteer psychiatric patients and members of his medical team. In these experiments he devised trigger feedback techniques whereby the flashing of light was synchronised with the measured activity of a subject's brain. Experimenting with flicker rates up to the point at which the separate pulses of light appear to merge into a steady light stream he began to record that 'strange patterns, new and significant emerged'.¹⁷³ But when synchronised with the brain's rhythmic pulses, known as the 'alpha' bandwidth of between 8 to 12 pulses per second, he recorded patients' reports of hallucinations of a more tangible nature: 'Colour developed in magnitude and complexity of pattern as long as the stimulation lasted'.¹⁷⁴ 'Some subjects saw whirling spirals, whirlpools, explosions, Catherine wheels.' Thus he concluded that 'flicker proved to be a key to many doors'.¹⁷⁵

Gysin was also aware of the writings of Aldous Huxley on the subject of flickering light and its effects upon consciousness. In his essay *Heaven and Hell* (1952) Huxley describes the flickering of the stroboscopic light as 'an aid to visionary experience' and an effective adjunct to his experiments with mescaline. The studies of stroboscopic light experiments conducted by researchers such as Humphrey Osmond at the National Institute for Mental Health recorded correlations between the flicker rate of the stroboscope and the brain's alpha rhythms. In response to this Huxley posited the question, 'how on earth can the interference of two rhythms produce an arrangement of electrical impulses interpretable as ... preternatural light and colour, and charged with preternatural significance?'¹⁷⁶ To

¹⁷¹ Burroughs took a characteristically more extreme position on such activities, stating his intention was to 'destroy all rational thought' by undermining received language and its relationship to meaning and causality which he saw as a tool of 'Control', his term for Western society's methods of socialisation. William S. Burroughs, 'The Limits of Control' in *The Adding Machine: Collected Essays* (London: John Calder, 1985), 116-120

¹⁷² Geiger, *Chapel of Extreme Experience*. 48

¹⁷³ *Ibid*, 21

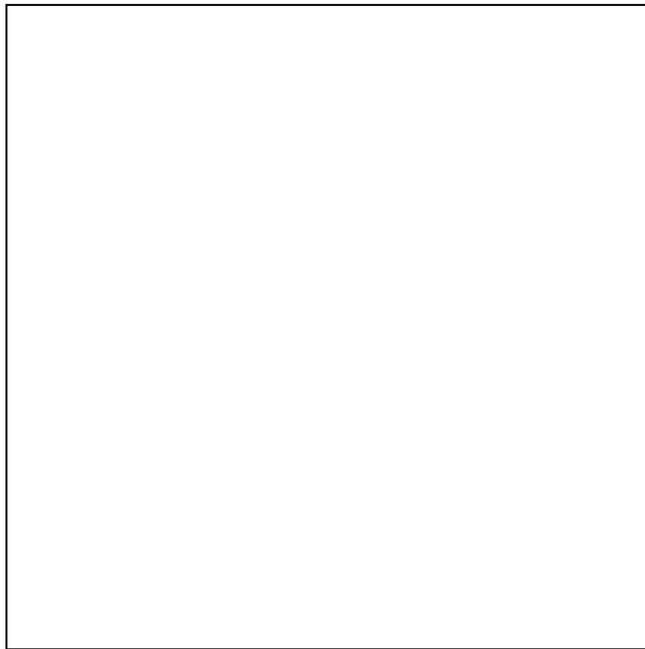
¹⁷⁴ The measuring of the brain's electrical activity, known as electroencephalograph (EEG), was invented in 1924 by German psychiatrist Hans Berger (1873 – 1941). He observed links between reflective thought and states between wakefulness and sleep and the alpha brain rhythm of between 8 and 12 pulses per second. This subsequently became known as 'Berger's Wave'.

¹⁷⁵ Walter W. Grey, *The Living Brain* (New York: WW Norton & Company, 1963)

¹⁷⁶ John Geiger, *Chapel of Extreme Experience: A Short History of Stroboscopic Light and the Dream Machine*, (Soft Skull Press, 2003), 38

Huxley such visions, otherwise associated with episodes of induced hallucination, suggested a decoupling of the link between vision and the world.

By traversing scientific, psychological, philosophical, and neurological considerations, Gysin set out to develop a means of experiencing visualisations of what might be termed ‘images without a source’, brought about by retinal stimulation that conjures visual form out of consciousness with no direct referent or index. In conjunction with mathematician Ian Sommerville he designed a device made up of a large rotating metal cylinder cut with precisely shaped and calibrated holes that allowed a bright light suspended at its centre to emanate flashes of moving light and shadow across the *closed eyelids* of a participant.¹⁷⁷ Intended by Gysin to exist as a limited edition fine art object, the *Dreamachine* was designed to function as a device to ‘paint pictures in the head’ and as such was ‘the first art object designed to be viewed with the eyes closed.’¹⁷⁸ In creating it he severed the causal link between the material world and the retina. Seeing this as an extended form of artistic image-making he stated that ‘painting has become something else.’¹⁷⁹

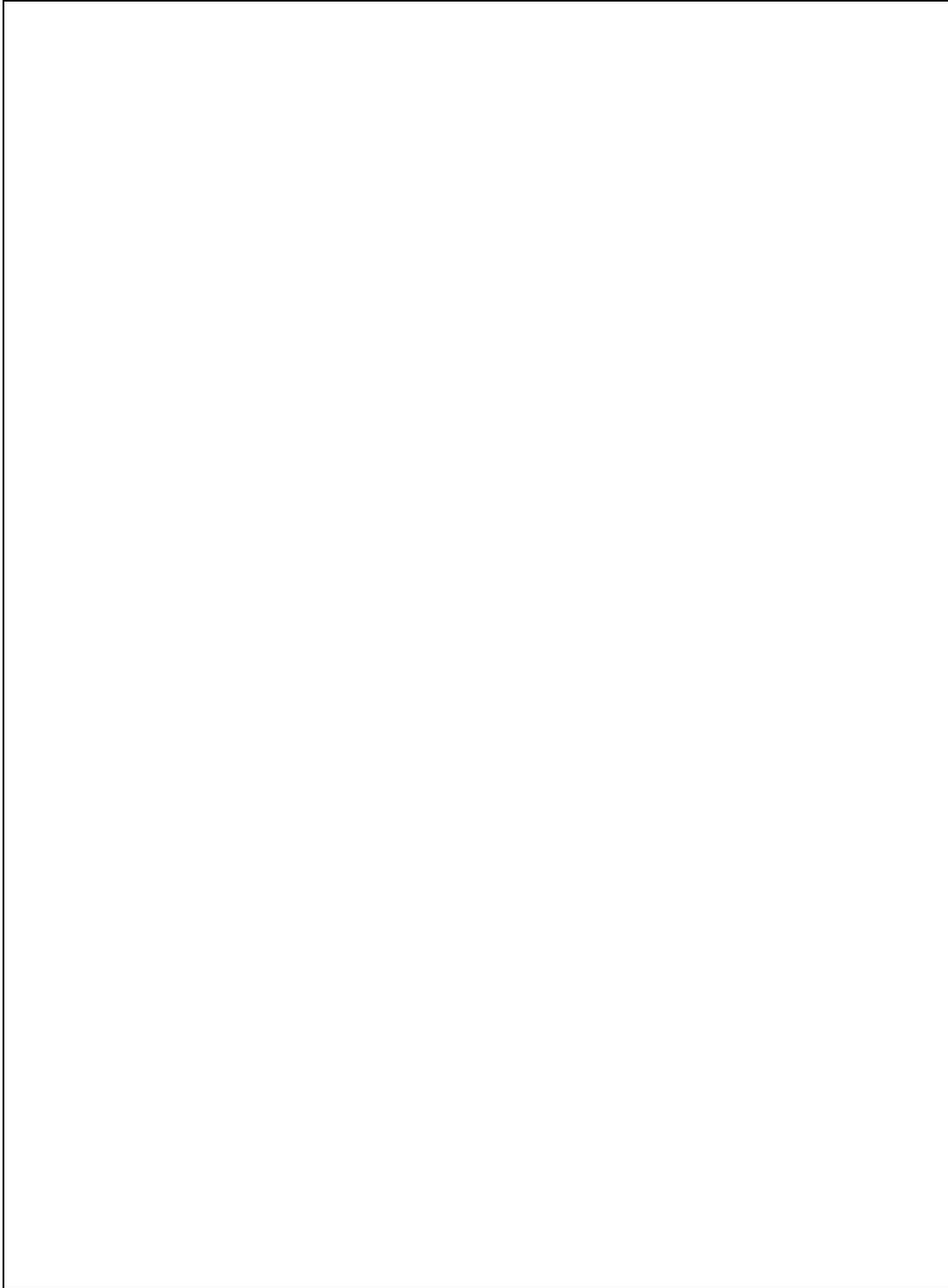


Dreamachine plan diagram http://www.bluestwave.com/toolbox_dreammachine.php
(accessed 18th June 2013)

¹⁷⁷ Importance was also attached to this light filling a space in a manner akin to a kinetic light sculpture. Antje Von Graevenitz, ‘The Dream Goes on’ in *Von Bartha Quarterly Report 02/09*, (Basel: Von Bartha, 2009), 9

¹⁷⁸ *Ibid*, 54

¹⁷⁹ Brion Gysin, ‘Unpublished Notes on Painting’ in *Back in No Time: The Brion Gysin Reader*, Jason Weiss (Ed.) (Middletown, Connecticut: Wesleyan University Press, 2001), 118



Brion Gysin, *Dreamachine*, 1976. Acrylic glass, card, light bulb, electric motor. Height: 120.5 cm, diameter: 29.5 cm
National Museum of Modern Art, Pompidou Centre Paris.



Gysin and Burroughs using the *Dreamachine*

Flickering images, flickering light

Rosalind Krauss, in writing about the flickering image loop of a zoetrope – a spinning cylinder with holes alternating with a succession of images of movement on its inner surface – describes an experience of a movement-stasis impasse as the concurrency of seeing the illusion of a moving subject and its means of presentation. The illusion of a moving subject is witnessed at the same time as one's awareness of experiencing a visual effect: '... uniting the experience of both inside and outside is the beat or pulse that courses through the zoetropic field... both constructing the gestalt and undoing it at the same time – both positioning us within the scene of its active viewer and outside as its passive witness.'¹⁸⁰ Such a doubling of consciousness, seeing the moving image as effect and ourselves as witness to this effect, might result in the perception of such repetitions as time divided into units in space and held in a deadlock by the static counterpoint of meta-awareness, as a series of images that are both points in time *and* positions in space, according to their velocity. This condition of awareness – seeing an illusion as an illusion – maintains two opposing positions, in this case offering the awareness of the phenomenology of perception as a process of embodied consciousness.

The reflexive experience of being 'present' in perception can also be deduced from comments made by Peter Kubelka regarding his intentions behind his seminal flicker film *Arnulf Rainer* (1960), which he has stated were, 'To perceive film not as motion but as a quick succession of static units. Arnulf Rainer developed out of a longing for the 'now'-experience.'¹⁸¹ *Arnulf Rainer* consisted of six and

¹⁸⁰ Rosalind Krauss, 'The Im/pulse to See' in *Vision and Visuality*, Hal Foster (Ed.) (Bay Press, 1988), 59-60

¹⁸¹ Peter Kubelka, 'Frame by Frame: Peter Kubelka' Interview with Stephan Grissemann *Film Comment*, Sept/Oct 2012 www.filmcomment.com/article/peter-kubelka-frame-by-frame-antiphon-adebar-arnulf-rainer/ (accessed Dec 2017)

a half minutes of modulated flickering light, with accompanying sections of abstract sound, made from arrangements of clear and black film frames that were intended to highlight awareness of being in the moment rather than of a represented subject. Whether film frames or strobing light, such intense flickering may be seen by some as a mesmerising fusion of temporality and stasis, but just as often it can be deemed an abrasive experience that demarks the edge of our capability for assimilation, forcing an awareness of the threshold of what we can separate and recognise as meaningful difference between visual events.¹⁸²

Although it is unlikely that Kubelka had an interest in the *Dreamachine* it is known that Tony Conrad, the maker of the notorious film *Flicker* (1966), was intrigued by the reputation of Gysin's invention. Writer John Geiger suggests that this awareness encouraged his use of flickering light to deliver perceptual and optical experiences in film.¹⁸³

Gysin's intention that the *Dreamachine* was received as a sculptural object situates the device in a fine art context at a time immediately prior to the emergence of what film-maker Malcolm Le Grice later termed 'perceptual film'.¹⁸⁴ Le Grice applied this term to films such as *Arnulf Rainer* that primarily addressed the viewer's perception and cites Conrad's *Flicker* as the first to consist exclusively of intense flickering frames that were designed to explore stroboscopic optical effects.¹⁸⁵ Whereas Peter

¹⁸² Flickering light is perceived as a visible phenomenon below what is known in the field of Psychophysics (the branch of Psychology concerned with the effects of physical stimulation and the sensory thresholds of the body) as the 'flicker fusion threshold' determined to be approximately 16 frames per second (or 6.25 milliseconds). Rates above 16fps are perceived as fusing into a continuous image of movement or colour as a result of the phenomenon commonly known as persistence of vision. This particular threshold of human perception is subject to the degrees of difference between each individual frame image, how each differs in brightness and contrast, colour and contents of image, and the environmental conditions in which it is viewed. The lower frames rates of what we might conceivably call flicker are more subjective but rates slower than 4 to 5 frames per second begin to be perceived as a series of individual moments in time. George A. Gescheider, *Psychophysics: The Fundamentals* (London: Psychology Press, 1997), 19

¹⁸³ 'Conrad had heard of Brion Gysin's *Dreamachine*, and although he never met Gysin, he was impressed with the idea that a process with such a daunting aura could arise from the simplest and most easily constructed mechanisms. Conrad had the idea to make a film, *The Flicker*, based entirely on such effects, basically by "turning off" frames in an organised sequence.' Geiger, *Chapel of Extreme Experience*, 74

¹⁸⁴ In his book *Experimental Cinema in the Digital Age* Le Grice introduced the term 'perceptual film' stating that: 'The term normally used is the 'flicker film' though it is too specific to define it by a single characteristic rather than its region of function. This area of cinema attempts to examine, or create experience through devices which work on the autonomic nervous system.' Le Grice, *Experimental Cinema in the Digital Age*, 50

¹⁸⁵ 'The (hallucinatory) sensations to which Conrad refers are caused by "harmonic frequency relationships" (Tony Conrad, *Letter to Henry Romney*, (Film Culture 41, 1966),153) created by rapidly strobing black and white frames that trick the eye into seeing meshing, overlapping, or mixing images.' Michael Joshua Rowan 'Flashes of Brilliance: A Brief History of the Flicker Film' in *Museum of the Moving Image*, June 2009, www.movingimagesource.us/articles/flashes-of-brilliance-20090611 (accessed 10th August 2014)

Kubelka's use of flicker predated that of Conrad's by six years, Kubelka's primary concern was with the exploration of the frame as a basic rhythmic unit of film, a concern that aligns him with structuralist notions of the form of film over that of visual perception or the subjective psychological experience of the viewer.¹⁸⁶ Gysin's invention can with hindsight be said to exist within a procession of ideas that included optical artworks, expanded perception and what became known as psychedelia from sources such as experimental psychology and interests in altered consciousness.¹⁸⁷ As such Gysin's work spanned areas of activity common to both experimental film-making and fine art practice as well as contributing indirectly to cultural and counter-cultural ideas.¹⁸⁸

Having spent many hours using different *Dreamachines* over a number of years, first an original machine built by Gysin for artist/musician Genesis P Orridge in the mid-1980s, and versions built from original plans by myself and others over subsequent years, I found the effects of the device to be far more subtle and its efficacy more complex than the after-images and optical effects of any stroboscopic light or 'perceptual film'.¹⁸⁹ Initially I became aware of the *Dreamachine* through published interviews with Burroughs and P Orridge, whilst I attempted to explore flickering and pulsing images in a series of experiments conducted as an undergraduate student with stroboscopic-style videos and Super 8 film.¹⁹⁰ Subsequent opportunities to explore and consider the nature and use of the *Dreamachine* in comparison with my somewhat crude attempts at flicker film-making enabled me to isolate the fundamental differences in physicality and operation of each of these forms, and identify what I deduce to be key factors that contribute to the potency of the *Dreamachine* compared with that of the stroboscope or flicker film.

¹⁸⁶ In reference to the film *Arnulf Rainer* (1960) Le Grice suggests that '...no stroboscopic rates are maintained in a sufficiently unbroken sequence to allow it to be described as concerned with optical factors.' Ibid

¹⁸⁷ Other such perceptual film experiments of the time include *Ray Gun Virus* (1966) by Paul Sharits and Birgit and Wilhelm Hein's film works such as *625* (1969) in which strobing effects were achieved using the visual interference produced by filming off a TV screen with a slow camera shutter speed. In 1969 Takahiko Imura also made a series of loop flicker/perceptual films that had holes punched out of alternate frames, and Le Grice experimented with similar techniques in his 1970 film *Spot the Microdot*.

¹⁸⁸ Cerith Wyn Evans links the *Dreamachine* and Duchamp's *Rotoreliefs*, acknowledging that they both problematise the retinal: '...I think there is a relationship to (Marcel) Duchamp and particularly the *Rotoreliefs* (1935) this playing of the conjecture between authorship and the lineage...is, I think, a stimulating one.' Wyn Evans, *Hans Ulrich Obrist: The Conversation Series*, 36

¹⁸⁹ I found the Gysin/P Orridge *Dreamachine* particularly effective in evoking subjective experiences of geometric and cyclical patterns of intense colour and mutating shape, and occasionally lucid and immersive temporal imagery. The *Dreamachine* exhibited at Bartha Contemporary, London in 2016 had a similar efficacy.

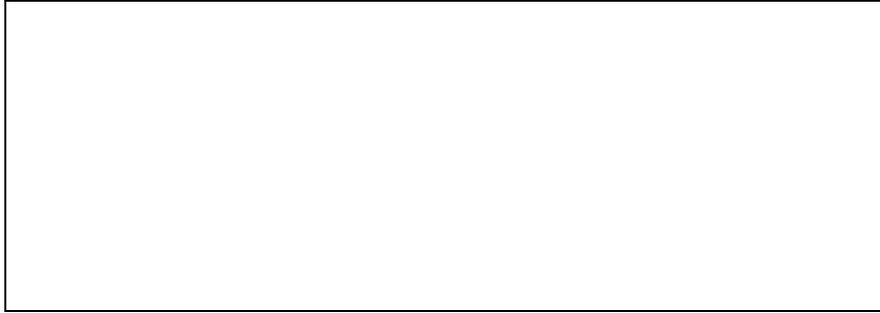
¹⁹⁰ These consisted of simple attempts at exploring the form utilising alternating black, clear and/or colour frames and multiples of frames, interstitials and geometric shapes, sometimes interspersed with single frame imagery. Such experiments led to my exploring perceptions of subliminal imagery and text/image combinations in film and video.

Phasing as syncopated patterns of light

Unlike a flat film screen of reflected light the *Dreamachine* consists of a cylinder with shaped holes spinning by mechanical means around a light source. It has an aesthetic sculptural quality and when activated has what might be termed a kinetic presence that fills a space with dancing patterns of light. Most significantly its rotation results in two interrelated factors: firstly the movement of light and shadow resulting from the holes in its cylindrical body is in a *lateral* direction, sweeping across the face, illuminating one eye a split second before the other. Secondly this lateral movement is two fold: alternations of shadow and direct light move in one direction, whilst at the same time, rotating in an opposite direction relative to the front surface of the cylinder is its back inner surface, off which light is reflected. This secondary movement of flickering light, at a lesser intensity, complements and opposes the direction of lateral movement of light emanating through the front surface. This particular physical characteristic of the *Dreamachine* results in a bi-directional flow of flickering light of greater and lesser degrees of intensity *across* the closed eyes of the participant. The ‘viewer’ receives a syncopated rhythm of differing pulses, rapidly repeating in cycles with subtle undulating shifts in accent. Importantly the *Dreamachine* is designed to be experienced with closed eyes, circumventing the stereoscopic operations of the eye/brain configuration that enables us to see the world in perspective and dimension. This factor I suggest exploits the spatial difference between each eye in a way that stroboscopic light cannot, ensuring that the eyes and brain receive each moving pulse of light *separately* and at fractionally different points in time. It is at the phenomenological level of our physicality that the difference between two images, with their propensity to make meaning, has become the difference between the position of our eyes, and in the case of the *Dreamachine* this difference is exploited to trigger subjective visual sensations.

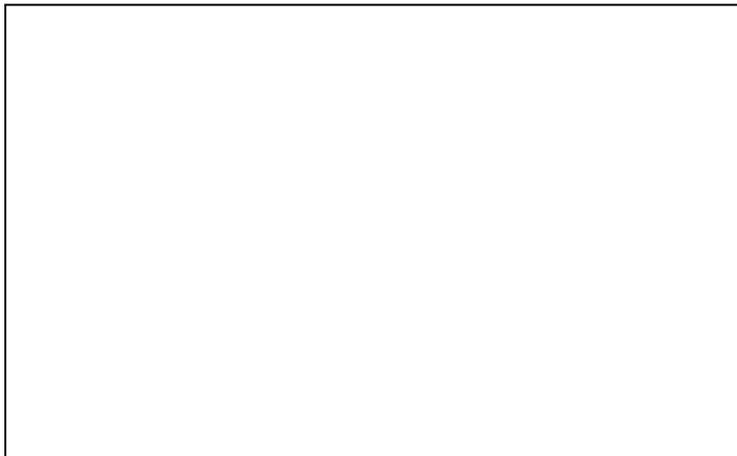
As discussed, Ken Jacob’s stereoscopic photographs, animated by flicker, also operate as an implicit reference to the separateness of the eyes in their perception of space from two adjacent image positions that are designed to be viewed by each eye concurrently.¹⁹¹

¹⁹¹ In a 2014 essay Brooke Belisle wrote ‘... much of Jacobs’s work experiments with the production of cinematic space and time, exploring how the perceptions of spatial depth and temporal continuity may overlap, intersect with, or overwrite one another.’ Brooke Belisle, ‘Depth Readings: Ken Jacobs’s Digital, Stereographic Films’ in *Cinema Journal*, Volume 53, Number 2 (Austin: University of Texas Press, 2014), 1-26



Ken Jacobs, original stereoscopic image used in animation *Capitalism: Child Labor*, 2006

A similarly bipartite example of the deconstruction of stereoscopic vision can be found in Robert Smithson's *Enantiomorphic Chambers* whereby two adjacent steel structures housing mirrors at oblique angles display reflections, not of the viewer but of the opposite mirror.¹⁹² Each system of reflections dissipates vision into itself without external referent in a manner resonant of the *Dreamachine's* 'seeing' images with closed eyes. Inversely, it might also suggest notions of a latent image formed out of spatial configurations in an array of possibilities.¹⁹³



Robert Smithson, *Enantiomorphic Chambers*, 1965/2003

¹⁹² Smithson wrote about this work 'the two separate "pictures" that are usually placed in a stereoscope have been replaced by mirrors...thus excluding any fused image'. Gary Shapiro, *Earthwards: Robert Smithson and Art after Babel* (Berkeley: University of California Press. 1995), 67

¹⁹³ In relation to repetition and reappearance Gysin wrote: 'In the Dream Machine nothing would seem to be unique. Rather, the elements seen in endless repetition, looping out from numbers beyond numbers and back, show themselves to be thereby part of the whole.' Gysin *Back in No Time: The Brion Gysin Reader*, 115

I therefore suggest that it is not simply the flicker rate of the *Dreamachine* that is important to its functioning, as most commentators indicate, but the fact that the machine in effect *spatialises* its light emissions and exploits the distance between the eyes by ‘temporalising’ this gap as a phasing of the flicker between each eye.¹⁹⁴ By requiring the user to close their eyes the light pulses reaching the retinas are divided into two bi-lateral, interlinked ‘channels’ of reception, between which a complicated syncopation of undulating brightness and shadow is produced. It is this, combined with the bi-lateral flow of the flickering light, that results in the viewer experiencing a form of *phasing* of the patterns of light *between* each eye in real time that makes Gysin’s invention unique.

If the *Dreamachine* delivers a form of phasing of light rhythms *between* the stereoscopic operations of both eyes then it should be acknowledged that the pattern that results from its mechanical movement will be fixed and repeated in a predictable manner. Such patterns are a complicated syncopated rhythm of phasing as separate from a slipping of concurrent events in time. The only variable that can affect the experience of this fixed pattern of undulation is the distance that the user is positioned from the spinning machine, as this will fractionally alter the triangulation between the single light source and the two closed eyes, resulting in subtle changes to the time difference of light pulses across the eyes. Such a variable in the syncopation is limited as there is a slim margin within which the flickering of the device is maximised; take too close or too distant a position and the optical efficacy is reduced or lost altogether.

With these defining characteristics outlined as fundamental to the *Dreamachine* I suggest one further consideration: that of its physical scale, as this factor has bearing on both the size and distance between the holes in the machine’s body. The dimensions of these holes need to be calculated carefully so as to cause a flicker at the required rate, and in my admittedly subjective and non-scientific observation of the efficacy of different machines, I determined that a device with too small an overall diameter and subsequent greater curve to its surface is less effective in instilling complex optical illusions than a larger scale device with a greater circumference and relatively larger holes. I am suggesting that there is ultimately an optimum scale for the device that, in conjunction with the stereoscopic flicker, functions in relation to, and offers a phenomenological experience with, the physicality of the viewer. All factors such as syncopated rhythms or phasing of moving light and shadow and surface curvature thus combine to determine the optimum position for the viewer to

¹⁹⁴ In most articles and essays the *Dreamachine*’s flicker rate of 8-12 flashes per second, being the same frequency as that of the alpha rhythms of the brain, is presented as the total explanation for its efficacy in stimulating visual phenomena. In the light of my research using various versions of this device I am suggesting that there are other important factors in addition to this.

place themselves so as to maximise the effect of the light flickering onto closed eyelids.¹⁹⁵ I believe that this symbiotic mirroring of the eyes is where the *Dreamachine's* unique advantage lies and the reason for the sophistication of its visual experience compared with that of the 'flat' pulsing of perceptual film and stroboscopic light. The impression on the user's closed eyes is comparable to Gysin's original experience of being in a moving vehicle and passing a row of trees that caused the low sun to flicker across his field of vision.

¹⁹⁵ A study published in the *Journal of Vision* indicates that when each eye receives separate visual stimulus conscious perception will alternate unpredictably between each in a manner that is assumed to result from neural interactions from several parts of the brain. Giving one eye a greater level of stimulus than the other does not result in monocular vision but instead consciousness attempts to adapt in a process of alternating attention known as binocular rivalry. Andreas Bartels, Yuriria Vázquez, Andreas Schindler, Nikos K. Logothetis: 'Rivalry between afterimages and real images: The influence of the percept and the eye' in *Journal of Vision*, August 2011
<http://jov.arvojournals.org/article.aspx?articleid=2121310> (accessed 11th August 2014)

Chapter 6:

Phasing and possibility

I begin this chapter with an analysis of the photograph of Duchamp's *Door, 11 rue Larrey* and examine how possible configurations implied by this image might resonate with Bergsonian notions of the virtual and relate this to phasing in the studio work. I propose that a means of considering such allusions to future possibility within a work and its image might be found in Duchamp's *Infrathin*.

Possibility as the projection of simultaneities

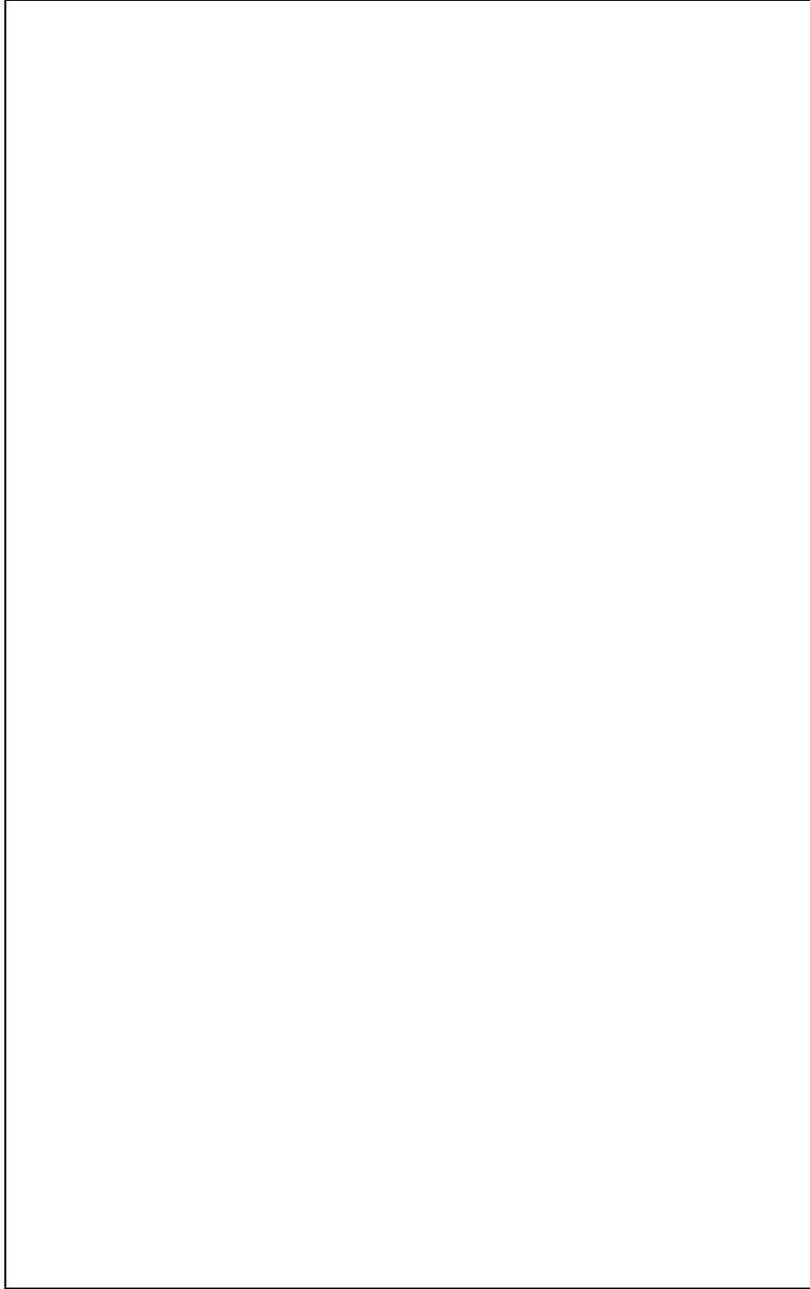
I want to now subject Duchamp's largely overlooked work, *Door, 11 rue Larrey* to examination in an attempt to identify and scrutinise what I deem to be certain liminal dynamics that are alluded to within the work. I will then correlate these observations and propose a means by which we might perceive possibility as inherent in the experience of phasing imagery.¹⁹⁶

I am employing the term liminal in both of its related definitions, as a reference to that which is barely perceptible and existing on a sensory threshold, and also as that which operates as a transitional or indeterminate state.¹⁹⁷ Regarding previous examples of dual images I would consider the term liminal in relation to the transitioning of awareness between the possibilities that bind particular images, activating them in the imagination as both a notional moving image and an image of movement.¹⁹⁸ This layered function enables the referents of a dual work to be perceived as alternating between the pictorially representational and the schematic array of its future states, or positions in space over time.

¹⁹⁶ Originally installed in Duchamp's Paris apartment in 1927, *Door, 11 rue Larrey* was bought and moved to the collection of Fabio Sargentini in Rome. This analysis is based on the one photograph of the original taken by Arturo Schwarz. Francis M. Naumann, 'Marcel Duchamp: A Reconciliation of Opposites' in *Marcel Duchamp Artist of the Century*, Rudolf E. Kuenzli and Francis M. Naumann (Eds) (Cambridge: MIT Press, 1990), 35

¹⁹⁷ The noun 'limen' refers to the point at which a perceived physiological or psychological effect begins, and 'liminal' is the adjective used to describe associations with that point as existing on a threshold. (Subliminal refers to that which is below a threshold).

¹⁹⁸ Henri Bergson's notion of the moving image was based largely upon the filmic metaphor of a succession of positions or frames, whereas Deleuze suggests that movement does not define something as separate from other things in this way but that movement and image are equivalents in that image can be defined as that which appears, thus including movement. The movement of an object is only really understood in relation to its movement-image: as that which describes it as an object separated in space.



Marcel Duchamp, *Door, 11 rue Larrey*, 1927. In situ photograph by Arturo Schwarz

Marcel Duchamp's *Door, 11 rue Larrey* consisted of a standard wooden door fixed into an interior corner of a room, hung and hinged to swing both left or right so as to fit either of the two doorways that are situated as if mirroring each other at 90 degrees. This door/doorway configuration was designed by Duchamp and installed in his apartment, allegedly for practical purposes – each doorway leading to the bedroom or the bathroom – but also for the pleasure of refuting an old French

proverb that ‘a door must be either open or closed’.¹⁹⁹ His door both opened and closed two doorways simultaneously in an alternation of complementary positions.²⁰⁰

Unlike a traditional door which is experienced in degrees of one or the other, either open or closed according to the combination of its position and the user’s intention, Duchamp’s door is both positive *and* negative simultaneously, being always both one *and* its other: opening – closing, revealing – concealing, allowing – preventing. With this seemingly simple work Duchamp might place a visitor in a state of arrested action, suspended between options of similarity and difference.²⁰¹

By doubling the aperture into which it can fit the hinged door also becomes a metaphorical ‘hinge’ that describes degrees between binary states of open and closed, and from this one might read subtle implications of the actual and the virtual in a state of balance. As such the door’s bipartite flow resists both a point of division and any default position. The work has a fundamentally dual structure, but unlike a cast object that emanates from a mould there is no primary point from which a second has been extruded, just an alternation of possible states that remain mutually inclusive. As such *Door, 11 rue Larrey* is perpetuated in the imagination in one state *and* the other, fused in an alternating recto-verso that might seem to accord with the pages of a book with its hiding and revealing of next and previous, but can also be associated with Werner Nekes’ references to the thaumatrope and its alternation of two images on opposite sides of a disc demonstrating correspondences and differences between two image frames.

I suggest that such transitioning awareness between what is ultimately an interplay between the actual and the possible is not only comparable to Kate Mondloch’s *spectatorial doubleness* but also analogous to Duchamp’s notion of *Infrathin*, a neologism that he introduced in his writing but purposefully left open-ended. Duchamp’s term *Infrathin* (or *Inframine*) is often taken on a literal level as a reference to that which is extremely thin or so diaphanous as to exist on the cusp of perception, and this may begin to approach the notion from a material perspective. But it was Duchamp himself who noted that the meaning of *Infrathin* cannot be determined exactly but that ‘one can only give examples of it’, offering just a few such examples, each of which situating the term in relation to a more psychological or sensorial dimension.²⁰²

¹⁹⁹ *Ibid*, 34-35

²⁰⁰ A single image exists of *Door, 11 rue Larrey* and it is to this that I have addressed much of this analysis.

²⁰¹ *Door, 11 rue Larrey* was not exhibited and would have only been encountered by visitors to his apartment. The photograph of the door in its situated form is the only means by which one might now witness the construction.

²⁰² Such examples often addressed subtle sensorial transitions for example, ‘The warmth of a seat that has just been vacated.’, ‘When the fumes of tobacco also smell of the mouth that exhales it, the two merge by way of *infrathin*.’ Marcel Duchamp, *Marcel Duchamp, Notes*, Paul Matisse (Ed.) (Paris: Flammarion, 1999), 33

It is in terms of the perception of liminal difference and transitions towards future states that *Infrathin* is useful as a means of surveying the subtle inferences implicit in Duchamp's *Door, 11 rue Larrey*. I suggest that these manifestations of Duchamp's thinking might coincide at the point that one considers *Door, 11 rue Larrey* as existing in concurrent states of being both more *and* less open *and* closed by degrees of difference, and that inherent in the construction of the original object lies the ongoing possibility of it shifting between these perceived states. It is this perception of the potential for a piece of visual work to inhabit an array of degrees of difference between two binaries that I am making such a comparison of Duchamp's *Door, 11 rue Larrey* with that of the perception of phasing between degrees of synchronisation between two repeating binary images, and propose that these states of difference can be apprehended as a mapping of the work's future, visualised as all its possible positions.

When considered in such terms it might be of value to consider the apprehension of such degrees of difference in that there is a cognitive engagement with the image of the door that can transpose and measure its function, signified by its open and closed states, against its possible configurations between these states. The door's concurrent states of open and closed reveal a latent temporality in our burgeoning awareness of its possible configurations, as points of entry/exit over time. It is as a result of the accumulation of such configurations that I argue a commonality can be determined between the subtle awareness of unresolved possibility and that of Duchamp's *Infrathin*. If the *Infrathin* can most effectively be defined through recourse to examples of its manifestation, how might we experience such liminal difference between the configurations of two states? Duchamp proffered a specific example of the perceived relationship between two separate objects cast from the same mould, but also indicated that such liminality might be encapsulated in multiple elements that are perceived as a *single* entity, for which he noted the examples of exhaled breath and cigar smoke and the warmth of a vacated seat.²⁰³ In such cases a difference between states might exist within, or more precisely *beyond* that of a singular form that is imbued with the implied temporality of a before and an after. The very process of transiting from one state to another, in which two conditions fuse to become indistinguishable, would be transmitted in and of the *Infrathin*.²⁰⁴

²⁰³ 'The separating value of two shapes pressed from the same mould.' Duchamp, *Marcel Duchamp, Notes*, 33.

Difference is readily determined between two moulds as they are separated by time (one begets the other) and become separated physically to remain linked via their similarity, one as a spatial inversion of the other. Whereas the smoke and breath and warmth of a seat consist of two separate phenomena that have become fused over time and experienced sensorially as a single entity.

²⁰⁴ Caitlin Murray, in her blog *Impossible Objects*, suggests that 'sensitivity to difference' is central to what the *Infrathin* might allude to. She suggests that this difference is linked to Duchamp's wider concerns with what he called the art coefficient: that an artwork describes the difference between an artist's intention and the degree to which this is

In a continuation of Duchamp's examples of mundane situations and materials in which the *Infrathin* might be located I return to *Door, 11 rue Larrey*, an everyday object which, when considered in its transitional state between open and closed, might be deemed to reveal a similarly perceived liminal transitioning. But when as object is extended or mirrored, as with Duchamp's door, there exists a compelling loop of self-referentiality in the enfolding of the artist's intentions within the experience of the everyday.

When is a door not a door?

In Chapter 2 I proposed that the coinciding of the spatial extension of the dual image and the temporal delay of repetition describe a dimensional matrix within which the spatial and temporal transpositions of image phasing can be located. Similarly I posit the notional operations of Duchamp's *Door, 11 rue Larrey* describe a movement between two points in space as degrees of open-closed and closed-open in corresponding units of spatialised time. Furthermore the degrees of difference generated by this work between its concurrent states of open and closed is maintained as potential, firstly in regard of its possible positions between one state and its other, but also in regard of its positioning a viewer at a threshold of two options – two possible narratives represented by the two doorways. *Door, 11 rue Larrey* allows for a shift in perception from the mundane – whether the door exists to protect our privacy or entrap us in a room – to a metaphorical level of circumstance and choice. Viewed from the position from which the sole photograph of this work was taken we are placed outside of the two thresholds in a position that seems to allow us an existential choice. To pass through either doorway would be to enact a binary choice that would alter our experience of the work from being at a point that is prior to (this *and* that) to a point after (this *or* that). Our viewpoint is frozen prior to making a binary choice and effectively suspended in a state between stasis and movement. In this condition possibility is maintained in the form of the two doorways and a door that alternates between revealing and concealing.

Despite such allusions to existential choice it is the perception of instability and subsequent implication of possibility that I am highlighting in Duchamp's *Door, 11 rue Larrey*. In a fusion of the quotidian and the unfamiliar I suggest that the work gives rise to the awareness of a set of possibilities inherent in its form that might occur out of its concurrent states of open and closed. The relationship between the door's alternating points in space can be imagined in the form of the repetition of the positions in space described by the door's movement between its poles. One might imagine a schematic 'mapping' of transitions of the dimensions in space and units of time revealing a vector of

realised for the audience. Caitlin Murray, *How to Isolate the Infrathin: Marcel Duchamp, Raymond Roussel and the Infrathin* <http://www.impossibleobjectsmarfa.com/isolating-the-infrathin/> (accessed 23rd March 2016)

the exchanges between time/space that *Door, 11 rue Larrey* describes, as a diagrammatical layering of the door's possible states between two poles.

Derrida's notion of the *Trace* provides a foundation to this analysis, initially in relation to a mapping of possibility (in the form of spatial and temporal flows or paths as equivalent to the traces of meaning within language), but in particular the notion that a sign contains within its existence the trace of that which it is not: its obverse and its inverse.²⁰⁵ To extend one of Duchamp's examples for considering the *Infrathin* – 'as the cast object relates to its mould' – this extension of an object accords with Derrida's sign as one form existing as an inversion of, and complement to, its other but without any of the temporal primacy that such a comparison may carry.²⁰⁶ *Door, 11 rue Larrey* in its variances of open and closed implies an aspect of Derrida's *Sign* as that which contains an element of what it does not mean. The door's state of being 'open' cannot be perceived and therefore cannot exist here without its inverse, in this case its concurrent state of being 'closed', also being present. Such difference in the case of Duchamp's door exists simultaneously in the consciousness as both one *and* the other. Empirically the experience of *Door, 11 rue Larrey* continues to be both at the same time, ensuring that any such attribution given the work must pre-empt an awareness of the metaphor of existential choice. As such the idea of Derrida's *Trace* resonates in this case as both the door's function and our idea of its potential as multiple points across the span of a doorway, each complimented by an inverse.

Successive differences between the components of the work do not replace each other as a sequence of film frames might. Instead each can be perceived as an extension and accumulation of positions in space. The awareness of the latent vector that describes this process of multiplying can be apprehended diagrammatically as a meta-image of the accumulation of positions of in-between-ness. A vector of movement between such states would describe the temporal possibilities of the door, made separate in space, such a notional exchange operating as a 'hinge' between its obverse and inverse conditions *simultaneously*. This imagining of Duchamp's doubled door in terms of its possibilities involves the mapping of its virtual states by unfolding its future/past simultaneities in inter-dimensional layers that are at once open and closed, of the future and of the past, and descriptive of time as a series of spatialised points.²⁰⁷ This can be seen to accord with Bergsonian

²⁰⁵ Derrida, *Margins of Philosophy*, 9

²⁰⁶ Duchamp, *Marcel Duchamp, Notes*, 33

²⁰⁷ With regard to a shift between what is seen and what might be understood Dr. Uršula Berlot underlines the relationship between the actual and the imaginary that the *Infrathin* might be said to span, writing that 'Duchamp's neologism *Infrathin* can be understood as the "elucidation of the intelligible embodied in the sensible", establishing thus a particular connection of cerebral/mental and visceral/sensual qualities.' Dr. Uršula Berlot, 'Duchamp and the Notion of Optical Tactility' *Art, Emotion and Value, 5th Mediterranean Congress of Aesthetics* (Ljubljana: University of Ljubljana, 2011), 473 <https://www.um.es/vmca/proceedings/docs/41.Ursula-Berlot.pdf> (accessed 14th June 2015)

principals of spatialised time such an awareness of the possible states of either and neither inherent in the subject as an array of static positions in concurrent time. The door's limited temporality as an arc of movement between open and closed is, as described, doubled by our seeing it as both closing one doorway whilst opening its adjacent. We see its function as doubled as a result of the binary alternation of its form, a doubling of awareness that differs from the awareness we may have of the array of possible future states of the dual film projections of Cerith Wyn Evans and Takahiko Jimura, or the dual screen scenes of Stan Douglas and Kerry Tribe. The fact that we apprehend *Door, 11 rue Larrey* as a static image and imagine the multiplication of its positions between two limited points brings it closer to the experience of the image phasing of *Edge of Motion* with its predictable alternating pattern of binary switching that slowly allows for an awareness of possibility to arise from the ebb and flow of simultaneities between each. And that this is achieved in consciousness as an array of images of relative positions in space rather than as a flowing portion of time.

A version of Duchamp's *Door, 11 rue Larrey* was produced in 1992 by artist Sturtevant. Her notion of producing copies of certain artworks – or *repetitions* to use her term – is perhaps fitting in relation to this analysis of the nature of the original work in terms of the perceptible and imperceptible means by which the door offers itself. Having proposed a relationship between Duchamp's *Door, 11 rue Larrey* and the idea of possibility, we might regard Sturtevant's version as a manifestation of the original idea, carried in a photograph and reconstituted decades later. This re-versioning of key artworks is a strategy Sturtevant maintained throughout her career and is particularly effective in this case as a response to the historical narrative of a piece that is otherwise only maintained in the form of an image. Through her process of 'repetition' Sturtevant has conjured an echo of Duchamp's original, for it also to be housed in a private collection and 'disappear', at least temporarily, from public view.²⁰⁸ This seems to compound the notion that the original may no longer exist and leaves the photograph to which I have addressed much of this chapter as its sole record.²⁰⁹

²⁰⁸ Sturtevant's *Duchamp, 11 rue Larrey* was included in the exhibition *The Russian Linesman*, curated by Mark Wallinger at the Hayward Gallery, London in 2009

²⁰⁹ Having requested information about Duchamp's *Door, 11 rue Larrey* from the Fabio Sargentini Gallery in Rome with no success I contacted the Anthony Reynolds Gallery in London for information regarding Sturtevant's version of the work. The gallery supplied images and confirmed that Sturtevant's, version titled *Duchamp 11 rue Larrey*, is in a private collection in Switzerland.



Sturtevant, *Duchamp 11 rue Larrey*, 1992. Wooden door, two wooden door frames and metal handle, left-hand side door and frame 206 x 108 cm and right-hand side frame 206 x 98 cm (Copyright the estate of Sturtevant, courtesy Anthony Reynolds Gallery, London)

Degrees of possibility

To consider potential outcomes as a finite number of separate timelines or points in space is to schematise the concept of possibility as a diagram of multi-layered abstractions derived from a situation of stasis. To be able to consider possibility as an ongoing condition would require the tacit acknowledgement of probability over time as a measure of potential being made discernible from the experience of spatial and temporal circumstances.²¹⁰

There is therefore a difference between the recognition of the possible degrees of separateness implied in the photograph of Duchamp's *Door, 11 rue Larrey* as consciousness conjuring an array of images, and the experience of possibility as real-time processes of perception. Bergson alludes to an unstable aspect of duration in its alternating to become time perceived as points in space at any given moment.²¹¹ As Iimura indicated in relation to his dual film pieces, Bergson outlined a plurality of time that functions in both subjective and non-divisible time consciousness that is experienced as continuous duration, and the time-space events of the external world that he describes as instants.²¹² These dimensions, Bergson suggests, are interrelated as a series of subjective transitions from one state to another, proceeding in a cinematographic model of time that divides as quantifiable succession attributable to points in space.

In *Duration and Simultaneity* Bergson determined that we do not experience time as separate events at a subjective level. For example, we cannot determine exactly when we began thinking or feeling something such as concern or joy, but instead we can only measure these flows over time against temporal events in the physical world, as a sequence of moments demarked by devices such as a clock, or the position of the sun, or as I have outlined in reference to dual moving images, the coincidental coming together of experiences that in time become significant to consciousness.²¹³ That

²¹⁰ Edmund Husserl posited a notion of *protention* as an extension of the immediate moment of an occurrent experience (such as the trajectory and velocity of a ball as it is caught) as being different from the notion of expectation of a future event that exists beyond the horizon of anticipation and, as such, as an abstraction of the conditions of the moment. Husserl, *On the Phenomenology of the Consciousness of Internal Time*. 117-118, 159

²¹¹ 'It is the simultaneity between two instants of two motions outside us that enables us to measure time. It is the simultaneity of these moments with moments pricked by them along our inner duration that makes this measurement one of time.' Bergson, *Duration and Simultaneity*, 54

²¹² Iimura wrote: 'In these films I was interested in realising Henri Bergson's concept of the time of duration, called "durée", in filmic time. I see Bergson's "durée" as closer to the concept of time in the east, which regards time as a duration rather than a divisible unit. If one considers the concept of Japanese 'MA' as an indivisible state of time and space, there is a common ground with Bergson's "durée".' Iimura, *The Collected Writings*, 97

²¹³ 'Instantaneity involves two things, a continuity of real time, that is, duration, and a spatialised time, that is, a line which, described by a motion, has thereby become symbolic of time. This spatialised time, which admits of points, ricochets onto real time and there gives rise to the instant.' Bergson, *Duration and Simultaneity*, 53

is to say for each such moment at which time is demarked by an external factor it is determined as a split between pure duration that becomes spatialised as an event. Bergson considers time to be constituted in and of consciousness and the latter cannot divide time and locate specific moments as separate from each other subjectively. He suggests that we become aware of time in its becoming succession in space, and this space consists of instants that correspond to time as events. In the process of perceiving phasing images we might therefore consider consciousness as consisting not of linear points in time but of layered rhythms that intersect and undulate, both through and between external instants and that phasing is an apprehension of the layering and re-layering of unitised time, as events that are alternating and fluctuating in space.

Regarding the perception of phasing of simultaneities between separate undulating images an awareness of future possibility in the experience is maintained in the recognition of such simultaneities forming out of continuous patterns of chance, and this I have argued is the result of it happening *live*, in actual time. In referring to Bergsonian ideas of a spatio-temporal exchange at the point at which time divides in alliance with space Jay Lampert outlines the perception of possibility as a process of difference in its coming into being. This dividing of duration at the point of apprehension might take the form of awareness of the divergence between the before and the after as it unfolds, unstable but indivisible from its spatial components and its possible outcomes.²¹⁴ Thus possibility in such a scenario is the transposing of duration into divisible points in space *as live experience*, as events that are ‘taking place’, as opposed to the witnessing of a pre-recorded set of circumstances in which ‘possibility’ is pre-determined and simply that which is unknown and yet to be revealed. In this live scenario the perception of possibility results from the awareness of instability, or unpredictability as ongoing and actual rather than that of the imagining of all of the conditions – positions or configurations of space – that a subject might achieve if activated in a particular manner. Theorist Shaun Gallagher succeeds in defining something of what this may mean in *The Inordinance of Time* when he suggests that ‘... the present, in its presenting, happens, but cannot be grasped in its happening.’²¹⁵

The perception of phasing of either visual or audio media begins from the recognition of patterns of behaviour over time that form out of the slipping simultaneities between points on differing rhythms or temporal resolutions.²¹⁶ The temporal resolution of *Edge of Motion* is the pace and

²¹⁴ ‘If reality consisted entirely of a succession of events, as one actual thing, and then another actual thing, there would be no concrete possibility, only reality. A real possibility cannot by definition be actual, but also cannot merely be the product of the imagination withdrawing from reality. It is the point of differing, not the point of difference between two things, but differing, where there is no answer to the question whether it is one or two.’ Lampert, *Simultaneity and Delay*, 130

²¹⁵ Shaun Gallagher, *The Inordinance of Time* (London, New York: Northwestern University Press, 1998), 101

²¹⁶ This is supported by Jay Lampert, in considering the perception of time from both Bergsonian and Deleuzian perspectives, he states that: ‘Time is not just a continuous rhythm like the ticking of a clock, or the repetition of

rhythmic pattern of the binary states of its digits. Recognition of patterns of behaviour is fundamental to the perceiving of phasing as the difference between structurally similar, in this case repeating, sequences. The regular and rhythmic appearance and disappearance of the digital display of the LED clocks used in *Edge of Motion* is multiplied by its spatial dimensions to reveal a process of greater or lesser degrees of synchronisation between one clock digits and the other. This is perceived as the slipping into and back out of synchronisation and is in itself a meta-pattern of behaviour extended over time that is built upon the simple binary patterns of clock digits switching on and off. This phasing of visible states is perceived out of a cycling pattern of spatial and temporal appearances and disappearances, and having recognised this, a viewer might accept the possibility of future cycles of synchronisation between the same states of appearance aligning in adjacent space. But the predictability of exactly when these concurrencies of digits will arise remains very difficult to measure and determine precisely without external devices, and thus a degree of assumption and intuition might become the means by which a viewer can acknowledge an aspect of this work exists beyond a perceptual threshold.²¹⁷ The finer the degrees of difference between each clock's timing the greater amount of time it takes for the cycle of synchronisations to form alignments and the more difficult it becomes for a viewer to recognise a pattern of phasing and anticipate its points of concurrency.

I argue therefore that the result of the dual independent time flows of *Edge of Motion* are such that phasing patterns are perceived in alternating suspension between the limited temporal flow of each and dividing at the point of difference between their spatialised repetitions. The experience of the work might therefore be of an undulating shift between its two (or more) components. Moreover, the viewer's awareness that this undulating shift is playing out live as a result of separate systems of presentation incorporates an instability that is the key to the perception of the possibility of their future configurations, the apprehension of is therefore as a process of differing rather than an 'illustration' of possibility derived from a pre-recorded sequence of differences.

physical events before and after. Time flow is both the piling up of, and the subsequent differentiation of one rhythm and the next...Non identity of time-flow, (i.e. constantly changing rhythms) constitutes simultaneity. It is easy to imagine simultaneity as two clocks on the same rhythm telling us which sets of events occur at the same time. Laying static photographs on top of one another, or flipping pairs of photographs on the same rhythm, no doubt produces that kind of simultaneity. But Bergsonian simultaneity depends on switching rhythms so that consciousness can add its own congealing simultaneously with the worlds.' My claim is that such 'switching rhythms' is exemplified by the phasing images of *Edge of Motion*. Lampert, *Simultaneity and Delay*, 132

²¹⁷ Whilst materially very different, art works such as Douglas Gordon's *24 Hour Psycho* and Jem Finer's sound piece *Longplayer* (2000) function in a durational manner so as to extend their operations beyond the physical circumstance in which they are witnessed. In the case of *Longplayer* self-generating, computer-based musical algorithms produce sounds patterns that are intended to continue for 1000 years.

Edge of Motion therefore engenders an awareness of possibility that extends beyond the horizon of anticipation and toward a virtual realm of pure assumption, and as such it is able to traverse the thresholds of everyday expectation that might otherwise be based upon the protention of current conditions playing out as a linear process.





Steven Scott, *Edge of Motion*, 2016. Multi-LED clock sequences

Possibility as *Infrathin*

Infra-thin is Marcel Duchamp's word for measuring the almost imperceptible margins of difference between two seemingly identical items. Infra-thin measures the all but immeasurable interstice between two things or ideas as they transition into and between one to the other, the passage between sense and non-sense, and the delay or deferral of these passages between the senses themselves. ²¹⁸

I have conducted examinations of the hypothetical concurrencies of temporal flow and events in space in the studio works *Edge of Motion* and the *Occlusion* series. This has included different formats of the dual image that were considered as either an intersection of the moving and static image, as a point of exchange between the representation of the temporal and the spatial, or as a means by which a matrix of points in time and positions in space could be used to frame the perception of image phasing. From such considerations of what might be taking place between my intention for these works, their operation and the viewer's perception I have reflected upon ideas derived primarily from Bergson and Deleuze, and referenced works and ideas from contemporary artists and film-makers. But by way of comparison I return to Duchamp's proposition of *Infrathin* to determine whether it offers a pertinent means of questioning how possibility might be perceived in the experience of phasing.

²¹⁸ www.infrathin.com (accessed 10th September 2015)

I have argued that phasing allows for a perception of future possibilities continuing to form out of chance concurrencies. The notion of possibility would in these circumstances be determined as degrees of difference witnessed at predictable points in time of the relative positions of the components of, in this case, the dual moving image work *Edge of Motion*.

At the start of this chapter I introduced Duchamp's neologism *Infrathin* as a liminal exchange of difference between states of the actual and the perceptible that I proposed are implied in his work *Door, 11 rue Larrey*. My intention was to outline how the idea of *Infrathin* might coincide with a perception of inter-dimensional exchange or alternation and how this might be imagined within this work. This I indicated might be not so much a transitioning as a transposing; of becoming one and another within multiple states so that the temporal and spatial separateness of objects and our perception of them defy the everyday binary logic of this or that, here or there, and contain a perceived fluctuating fusion of both. My idea is that a movement between spatial-temporal poles can be depicted as an object divided in time across points in space, from its being now and now, and in space between its being there and here. The inverse of this might be said to be a nominal state of all such possible conditions, of 'here' and 'there' enfolded into a singular now, and it is this nominal state of what might be called multiple-dimensionality that I am adopting as a means of approaching the idea of *Infrathin*. Ultimately I am outlining the idea as a condition which is not directly perceivable by the senses but instead determined as layered possibility, as the virtual concurrency of all possibilities inhabited at once. In this model *Infrathin* would consist of a matrix of virtual exchanges and function beyond actuality as the co-ordinates of a vector that offers an indication of possibility.²¹⁹

To do this I will refer again to the perception of differences determined in *Edge of Motion* as a pattern of cycles and alternations. The schematic vector that these perceived alternations describe would be a diagram of time doubling and enfolding as it become extended as space, and the meta-position of this perception that a diagram affords us (the Duchampian co-efficient of the work) is a diagram of flow unitised as static positions. Such a diagram would operate as a virtual map of possibility that projected forward in time out of known conditions, being simultaneously mirrored by past patterns of counterpoint and concurrency. But this proposed means by which we might consider the perception of phasing is only hypothetical and, as Bergson suggests, the means by which the experience of temporal flow can be externalised and witnessed is as multiples, in this case multiple relative positions or degrees of difference in the form of an array of comparative points in space. The perceived phasing of two repeating images might be said to have *Infrathin* tendencies in accordance

²¹⁹ Art Historian Antje Von Graevenitz describes Duchamp's *Infrathin* as 'The desert-like intermediate zone as interval in the interaction of two states.' Antje Von Graevenitz, 'Duchamp as a Scientist, Artifex, and Semiotic-Philosopher. His Notes of the "Infra-mince" (1934/35-1945)' in *Marcel Duchamp and the Forestay Waterfall*, Stephan Banz (Ed.) (Zurich: JRP/Ringier, 2010), 216

with my hypothesis that an awareness of possible future configurations can be conjured from the regular ebb and flow of the simultaneities arriving in perception. It is a process of perception that arrives as an array of alternative configurations in the imagination, drawn from accumulated patterns of memory images.

As a means of aligning such liminal aspects of the studio work I refer to the comparative investigation in which I considered Duchamp's notion of the *Infrathin* in terms of its relationship to the temporal phenomena of that which is 'becoming' in consciousness. Avoiding the commonly applied definitions of the *Infrathin* that adopt a more literal and physical take on ideas of thinness or fusions of sensations I am instead concentrating on phenomena on the thresholds of *temporal* perception. I consider the term *Infrathin* to have equivalence to the elusiveness of 'now' and its call to the meta-image and metaphor as descriptors of now as a simultaneous exchange. Duchamp left his term *Infrathin* open, as an idea without definition. To attribute literal interpretations would be to stifle the open-endedness of this idea by appealing to a spatial and static context. It is with this in mind that I consider the *Infrathin* an aspect of consciousness through which to consider the notions distilled from the examination of the research and determine whether the refractions and resonances that apply are in any way coincidental or meaningful. In the spirit of the *Infrathin* I would expect that one is ultimately the same as the other.

I have determined the relevance of the liveness of the phasing between two separate time flows – its happening in the moment of its reception out of that process of reception – in terms of possibility as it is this factor that ensures the work is open to a process of active apprehension via the engagement of the viewer. It is the idea of possibility as a prerequisite to a viewer's engagement that accords with the interpretations of the *Infrathin* that I want to foreground here, utilising Duchamp's succinct definition that: 'Possibility is infra-thin... possibility implying becoming – the passage from one to another takes place in the infra-thin...' ²²⁰

Possibility, I suggest, is derived from the accumulation of simultaneities, and the perception of this continuing in a liminal state of ongoing difference that is analogous to *Infrathin*, as a passage from one to another, at once arriving at the threshold of expectation and receding into the past.

Cal Clements writes of Duchamp's *Infrathin* in terms of difference that is no longer recognisable but perceived as being both in dual places and in dual time. ²²¹ Such a doubled condition is considered by Rosalind Kraus in terms of a refutation of the position of modernist art in its attempts to

²²⁰ Duchamp, *Marcel Duchamp, Notes*, 21

²²¹ 'Far from embracing over-arching concepts of reason, Duchamp prefers the state of *not being able to recognize similarity between* two similar objects.' Cal Clements, 'Duchamp's *Infrathin*' in *Pataphysica*, Cal Clements (Ed.) (New York: Writers Club Press, 2002), 89

achieve purity of vision in a singular moment.²²² But Duchamp made a point of offering *Infrathin* as the measure of the immeasurable interstice between states of awareness, be they actual or conceptual or inclusive of both. It is therefore possible to perceive that which can be *Infrathin* as a delay or deferral between the senses and the idea of something as it transitions perpetually between conditions. In the light of the examples of phasing examined in the studio works *Edge of Motion* and *Occlusion* this does not discount experience that is constituted in consciousness as ongoing possibility. I would therefore argue that this aligns affordances of *Infrathin* with the perception of concurrencies of temporal flow and accumulated multiplicity.

²²² Krauss, *The Im/pulse to See*, 58

Conclusion

In the introduction to this text I identify the implicit subject of Douglas Gordon's work *24 Hour Psycho* as representing the viewer's awareness of the limits of their physical presence, and claim that the work's perpetuation is implicitly understood by the audience to extend in time beyond the threshold of their ability to witness its entirety. Whilst Gordon may have intended his reworking of Hitchcock's most infamous film as an experience of cinematic suspense taken to its extreme, *24 Hour Psycho* operates beyond a comment upon an iconographic movie to become a reflexive and metaphysical experience. The experience draws attention not only to the nature of watching moving images but ultimately to a tacit awareness of the extent of the viewer's own physicality. But any inference that such durational excess – extending a work's temporal boundaries beyond the point at which one can be present – is the only means by which moving imagery can be apprehended in terms of its presence in space is dispelled when I examine multi-screen installations by João Maria Gusmão and Pedro Paiva and Chantal Akerman. In the process of this analysis I reference Bergsonian spatialised time and propose that the means by which we alternate our attention between the presence of multiple image screens and the subject matter they depict requires that we adopt a dual and concurrent awareness of such work's temporal operations in space.

If one's presence relative to the duration of *24 Hour Psycho* is implied in the experience of the work then I suggest that this is complemented by the means by which one's position in space – one's viewpoint – is also a factor. As described, Gordon situates aspects of the piece outside of one's immediate visual field by projecting the film onto opposite sides of a screen suspended in space so that one's position in relation to the screen in space (as distinct from in time) is always such that one image remains invisible. We are only able to see one version of the film or the other, the original or its inversion, in an alternation that requires us to move within the space of the work. In similar examples such as Lisa Oppenheim's *By Faith and Industry* duration is divided by projecting two different films, one on each side of a suspended screen, thus ensuring that a viewer's capability to see the simultaneities between each becomes a spatial concern that is complemented by memory.

Foregrounding an aspect of a work as being out of reach by extending it beyond the temporal or spatial threshold of the viewer's presence is a method I identify in works that are predicated upon durational excess, simultaneity and the experience of temporality as inherently spatial. Hidden dimensions are implied in the works described here that appeal to a viewer's awareness of what is not present at the point of apprehension, encouraging them to cast their attention towards either the assumption, or active imagination, of situations that may eventually arrive out of the work's ponderous or alternating dynamic.

In Chapter 1 I cite Kate Mondloch's *spectatorial doubleness* as an example of the means by which a proposed layering of consciousness of actuality and the perception of its potential outcomes have been theorised, and use this to frame the perception of alternating binaries of the studio work *Edge of Motion*. This work is foregrounded as an example of image phasing that I identify as fundamental to the experience of its dual repetitions. By highlighting interrelationships perceivable in this work between points in time and positions in space, indicated by its two separate components, I am able to outline the context of the research as the experience of forms of spatialised time that result from the application of repetition, delay and simultaneity as creative methods. It is from this point that I am able to approach the research question: What might the visual phasing perceived to be operating in the studio practice between moving and repeating images reveal about the nature of perception?

In determining how to answer this I analysed the particular perceptual characteristics of studio works that function in comparable ways, as alternations of repeated and divided time between two components. I propose that in such cases a primary subject of the work is its extension in time beyond the immediate parameters of the encounter, and that this translates into a viewer's twofold awareness of what is present in the process of the encounter with the work and what can be imagined or assumed may continue to take place beyond that encounter.

In the case of the studio work *Edge of Motion* I propose that the cycle of simultaneities of the dual clock's digits offer a subject that lies outside the actual and so encourages a viewer to consider it in terms of the thresholds of their temporal and spatial presence. I argue that we apprehend this work ultimately in terms of the possible configurations of its future states, and that these are apprehended – in a manner somewhat comparable to my analysis of the possible configurations of Duchamp's *Door, 11 rue Larrey* in Chapter 6 – as an array of separate degrees of difference and simultaneity.

Having defined my interest in phasing as visual phenomenon perceived in the alternation of cycles of simultaneity and difference between repetitions of images in space, I am able to focus on how the perceived slippage between two or more successive alternations manifests in the experience of selected contemporary art works. I propose a key factor in the perception of phasing, referring to works that utilise separate film or video projectors, is the independently operating alternations that are seen to result in repeating patterns of chance alignments. The implication of this, I suggest, is that a viewer is aware that such synchronisations are happening in real time and these dynamic patterns result from the differences between separate systems. In short the viewer deciphers the work's behaviour patterns and assumes an indefinite continuation of these cycles of simultaneity. I argue therefore that such projections arise from an awareness of the work as a non-resolving process, which allows me to describe its undulating dynamic as having 'possibility', albeit within the repeating binaries of the work's form. I use the word possibility as opposed to probability as the re-appearance over time

of the image synchronisations can be assumed, but without an accurate means of measurement and calculation it cannot be precisely forecast as to *when* each cycle will reoccur. Because the process of apprehending the work will not easily reveal the timing of the pattern's future cycles, the phasing of simultaneities between images remains unpredictable beyond that of general assumption. In short the work's concurrent flows of looping over time also alternate in space, which can give rise in consciousness to a multiplicity of comparative reoccurring moments. The binary switching between image repetition and spatial alternation divides duration into points of relative difference which, when seen as a continuous process, offer a mix of instability and probability that I term possibility.

If, as Bergson states, we apprehend image succession as separate points, and therefore numerical and adjacent, then it follows that the perceived possibility that patterns of simultaneity will reoccur over time are conceived of as separate images of difference in the work.²²³ Thus my claim is that the phasing of image successions concurs with Bergsonian ideas of time as the retained memory of differences, each separate from the next. A subjective impression of the phenomenon of the phasing of the digits of *Edge of Motion* is thus apprehended as an accumulation of static points.

I argue therefore that when recognising phasing as a series of repeating simultaneities the factors that are seen to constitute change over time are the waxing and waning of the discernible points of difference between each image, and that we retain our awareness of these points of graduated differentiation as a series of vignettes, of separated moments described by their position relative to each other. Furthermore, in interpreting a Bergsonian notion of divided duration, I argue that this array of different configurations is apprehended and maintained in consciousness as assumed possibilities for future configurations in what might be termed 'image arrays', and not as comparative temporalities replayed in memory as portions of imagined time. Such presumptions of a work's future state are therefore spatially privileged in their multiplicity of positions, while the points in time at which one might assume future synchronisations will appear remains unclear.

It is with this proposal that I claim the contribution to knowledge that constitutes this thesis. And it is with this construction of a model of a perceptual process, rooted in spatio-temporal relationships, that I formulate an answer to the research question that I posed at the start of this thesis: What might the visual phasing perceived to be operating in the studio practice between moving and repeating images reveal about the nature of perception?

In proposing this response in the form of a set of perceptual circumstance I am composing this model of the perception of phasing as a state of concurrent awareness of the real-time simultaneities between adjacent moving images and their future alignments as a set of probable

²²³ In describing his thoughts on the perception of successive points in spatialised time Bergson states, 'We are compelled to borrow from space the images by which we describe what the reflective consciousness feels about time and...succession.' Bergson, *Time and Free Will*, 91

states. I am suggesting that in the process of apprehending the phasing of the studio work and imagining their possible future states, space is privileged in a process of visualisation that takes the form of relative positions rather than of such events happening over time. These, in the case of *Edge of Motion*, are derived from the patterns of simultaneity perceived to have taken place in the work, and, to borrow once more from Bergsonian thinking, such ‘memory images’ of a piece of work that is designed around patterns of repetition represent the sum of the layered circumstances that the work might inhabit in the future.

Following the pattern upon which this thesis has been developed, as alternations between an experiential studio practice and a process of responsive dialogues and textual enquiries, this proposed model of the perception of image phasing in turn gives rise to further questions. Such questions are a continuation of an established method of generating thought, and arise at this point as an extension of the initial research question by asking how such information might next be utilised. And as an adjunct to this, whether the proposed retention of simultaneities represented by separate images might suggest a means of exploring how else we perceive representations of space out of successive vignettes.

The process of inverting an initial proposition can be useful in testing the logic of ones thought processes and orienting ones ideas. In this case an exercise of examining my thinking in reverse – successive images used to describe space rather than temporal simultaneities apprehended as points in space – leads me back to the studio work entitled *Extension Reveals Duration*, a work that was described in the introduction as having generated some of the questions that initiated this research.²²⁴ This site-specific installation presented a series of images of lines derived from a diagram of an interior. These lines were projected over extended periods of time as a sequence that described a meta-image of the architectural space hidden behind a screen on which they appeared. My intention for this work was that the separate images of relative points in space were to coalesce in a viewer’s awareness as an image of space, a process that can at this point be said to indicate a proportional inverse to the array of separate positions by which I propose the possible future configurations of the phasing images of *Edge of Motion* can be acknowledged. Such dichotomies will continue to evolve as possibilities beyond the scope of this thesis.

²²⁴ See page 10 of this text

Additional information

Examples of the studio work *Edge of Motion* can be accessed via this link,

<https://vimeo.com/242728188>

<https://vimeo.com/196722098>

Examples of the studio work *Sequence and Stasis* can be accessed via this link,

<https://vimeo.com/73559814>

Chronology of selected, exhibitions and screenings that have contributed to this thesis

1985. François Lyotard and Thierry Chaput, Curators, *Les Immatériaux*, Pompidou Centre, Paris
1990. Chrissie Iles, Curator, *Signs of the Times: A Decade of Video, Films & Slide-Tape Installation in Britain 1980-1990*, Leeds City Art Gallery
1991. *Video Positive*, Bluecoat Gallery and Tate Liverpool
1993. Gary Hill, *In the Light of the Other* Museum of Modern Art, Oxford
1993. Bill Viola, *Unseen Images* Whitechapel Gallery, London
1996. Gary Hill, *Reflex Chamber* White Cube, London
1998. Stan Douglas, *Win, Place or Show* Tate Britain, London
2000. Susan Hiller, Curator, *Dream Machines* Camden Arts Centre, London
2001. Bill Viola, *Five Angels for the Millennium* Anthony D'Offay, London
2002. Douglas Gordon, *What I have Done* Hayward Gallery, London
2003. Cerith Wyn Evans, 'Look at that picture... How does it appear to you now? Does it seem to be persisting?' White Cube, London
2003. Graham Gussin, Lisson Gallery, London
2004. *Time Zones: Recent Film and Video*, Tate Modern, London
2006. Cerith Wyn Evans, 'Take my Eyes and through them see you...' ICA, London
2008. Brion Gysin, *Calligraphiti of Fire* October Gallery, London
2009. Ken Jacobs, *Capitalism: Child Labor*, 'The Animators' conference, Tate Modern, London
2009. Mark Wallinger, Curator, *The Russian Linesman* Hayward Gallery, London
2009. David Claerbout, Hauser and Wirth, London
2010. Joao Penalva, Simon Lee Gallery, London
2010. Kerry Tribe, *Dead Star Light* Arnolfini, Bristol
2010. Rosa Barba, Tate Modern
2012. Al Rees, screenings and seminars, structural and flicker film, RCA, London
2012. Guy Sherwin, Curator, *Films in Space* Camden Arts Centre, London
2012. Anne Teresa De Keersmaeker, *Fase: Four movements to the music of Steve Reich*, 'The Tanks: Art in Action', Tate Modern, London
2012. David Claerbout, *The Time That Remains*, Parasol Unit, London
2013. Vincent Honoré, Curator, *Orpheus Twice*, DRAF, London
2013. João Maria Gusmão and Pedro Paiva, *Papagio*, Venice Biennale
2013. Shezad Dawood, *New Dream Machine Project*, Parasol Unit, London
2014. Takahiko Iimura, *Observer/Observed*, workshop and seminar, No.w.here, London
2014. *Beyond the Cut-up: William S. Burroughs and the Image*, Conference, Photographers Gallery, London
2015. Norbert Pfaffenbichler, *Notes on Film 02*, AM, London
2015. João Maria Gusmão and Pedro Paiva, *Papagio*, Camden Arts Centre, London
2015. Chantal Akerman, *NOW*, Ambika P3, London
2015. Brion Gysin, *Unseen Collaborator*, October Gallery, London

2015. Patrik Aarnivaara, *Hours of Oblique Attention*, Christine Park Gallery, London
2016. David Cotterrell, *Mirror*, Danielle Arnaud, London
2016. *Outside the Visible*, Bartha Contemporary, London
2016. Guy Sherwin, *Light Cycles*, Christine Park Gallery, London
2016. Lisa Oppenheim, *Analytic Engine*, The Approach, London
2016. Peter Gidal, *Flare Out*, Film screenings and presentation, Tate Britain, London
2016. Steve Reich, *Music for 18 musicians*, Royal Festival Hall, London
2017. Peter Liversidge, *AS SCULPTURE*, CGP, London

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