HOW TO
CONSTRUCT
A TIME MACHINE

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Martin John Callanan
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Edgar Cleijne and Ellen Gallagher
Mat Collishaw
Ruth Ewan
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Louis Lumière
Chris Marker
Kris Martin
Georges Méliès
Manfred Mohr
Melvin Moti
Nam June Paik
Katie Paterson
Elizabeth Price
Sun Ra
Raqs Media Collective
Meekyoung Shin
Maja Smrekar
The Otolith Group
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PREFACE

What is time? Is it fact or fabrication, science or fiction? Does it have a shape or a speed? Why can it drag on or fly by in the blink of an eye? And how can there be so many different types of time?

These and many other questions have been posed by writer and curator Marquard Smith in devising this publication and the exhibition it accompanies. 26 historical and contemporary art works have been selected to reflect the broadest range and types of time: from the cosmic and geological to the man-made and tyrannical, the project also takes in historical time, clock time and experiential time. Named after French radical Alfred Jarry's 1899 text, *How to Construct a Time Machine*, which itself was a riposte to H.G. Wells' Victorian science fiction novella 'The Time Machine' (1895), this project travels from 2014 to 1896, with clusters around the present, the 1960s and the 1890s. As the inventor of 'Pataphysics, 'the science of imaginary solutions', Jarry may well have appreciated the project's range of approaches, leading us from the comical to the fantastical via the deadpan, disruptive and downright destructive. What could a decimal clock, harp, meteorite and time bomb have in common? And what could unite American comedian Harold Lloyd, astronomers propelled to the Moon in a cannon, Afro-futurist philosophy and a live, comprehensive, worldwide flight departure board? Despite their diversity each work takes the matter of time – time itself, the experience of time, how time works – and the mechanisms of time as a pressing concern.

In her excellent contribution to this publication writer and filmmaker Mieke Bal discusses how certain art forms enable 'the development of strategies for the struggle against the tyranny of clock time.' The experience of art in galleries can create a suspension of reality, of the pressure of clock time that the outside world imposes. What better metaphor then for a time machine than an art gallery itself, a Tardis-like structure that transports visitors through time and space? This suspension of reality, Bal continues, 'when actively done, is stalling' and almost an act of resistance. In his complex and insightful text, philosopher Peter Osborne identifies clock time as a central tenet of 'Modernity', devised fundamentally, since the colonisation period, in the interest of capitalism. At this moment, time was transformed from a neutral medium into an historical force; rather than chronologically, historical time could be understood qualitatively, through 'character' or a sense of experience.

Throughout this project, Smith has pondered how we as human beings experience time; and how that experience – our sense of ourselves as temporal beings – might be transformed by art. We are eternally grateful to him, all the artists, the designers and organisers for demonstrating how to play or mess with time; how to control its speed and disrupt its order. Time, after all, is just another medium that remains malleable in our hands and minds.

Anthony Spira
Director, MK Gallery

Marquard Smith

HOW TO CONSTRUCT A TIME MACHINE

> Every conception of history is invariably accompanied by a certain experience of time that is implicit to it, conditions it, and thereby has to be elucidated. Similarly, every culture is first and foremost a particular experience of time, and no new culture is possible without an alteration in this experience. The original task of a genuine revolution, therefore, is never merely to 'change the world', but also – and above all – to 'change time'.
>
> Giorgio Agamben[1]

The exhibition *How to Construct a Time Machine* at MK Gallery in Milton Keynes, England (January 23rd – March 22nd 2015) ponders how we as human beings experience time; and how that experience – our sense of ourselves as temporal beings – might be transformed by art and moving image culture.[2] The exhibition includes 26 historical and contemporary works: drawings, sculptures, films, videos, installations, a painting (together with a cardboard box), a durational-performance-as-movie, a real-time web work, a jazz composition, a minimalist composition, and an art-work-as-zoetrope. The earliest work in the exhibition is filmmaker Louis Lumière's 'Demolition of a Wall' (1896), and the most recent is Turner Prize winner Elizabeth Price's 'Sleep' (2014). From 2014 to 1896, and for each and every work in between, the matter of time – time itself, the experience of time, how time works, the mechanisms of time, and how the works probe their own mechanisms as time machines – is of pressing significance and concern.

The matter of time is always pressing. There are many fundamental questions that need to be asked of it, as it shapes and is shaped by our experience as temporal beings of being in the world, especially given that it is so tricky to define, so slippery, contradictory, and multiple.

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[1] Giorgio Agamben, *Infancy and History: On the Destruction of Experience*, trans. by Liz Heron, London Verso, 2007, p.99.

[2] I steal the term 'temporal beings' from Christine Ross' wonderful *The Past is the Present: It's the Future Too: The Temporal Turn in Contemporary Art*, London: Bloomsbury, 2012, p.7.

What is time? Is it a fact or a fabrication, science or fiction? Is it an elemental structure of our universe or have we invented it to measure duration? Is the distinction between time and duration the reason we experience time differently – why it can drag on and on or fly by in the blink of an eye? How is it that we have time, spend time, waste time, or spend time wasting time?

How can there be so many different types of time? We know for instance that there are orders of time, and thus that there is an order to time; cosmic time, geological time, natural time, archaeological time, historical time, clock time, experiential time, the contemporary. Each order presents differently the relations between the past, the present, and the future.

How can time do this? Well, we know that time is an ordering and a re-ordering, and an ordering and a re-ordering of modes of experience. It is linear, it is chronological, teleological, progressive, evolutionary, revolutionary, eternal, a continuum flowing (or percolating, as Michel Serres has it) from the past to the future, and a receding from the present into the past. It is also non-linear, anti-chronological, polychromic, heterochronic, anachronic,[3] ephemeral, fragmentary, belated, eternally returning, anachronistic, contingent, entropic…

Does time have a shape to it? We know it can be diurnal, helical, unfolding and enfolding. A duration? It is mobile, heterogeneous, a qualitative multiplicity. Does it have a speed? It does after all slow down and accelerate. Perhaps it even has a heat to it, since we say that it contracts and expands? Time is certainly a materializing force.

How is time experienced as an experience? Physically, phenomenologically, psychically, affectively? And what are we to make of feelings whose nature is temporal – like anticipation, expectation, hope, frustration, and futility?

Why also is time such a powerful cliché: time will tell, we have time on our hands, time is out of joint?

Now we are running away with ourselves. Perhaps these fundamental questions are for my purposes here too substantial, too general and generalisable to the point of being flabby, insignificant. Instead, let me be more precise. Artists have always been interested in time, but what is particular – historically, conceptually, aesthetically – to the recent temporal turn in contemporary art?[4] How might such questions fuel the artistic practices that constitute this temporal turn? What can contemporary art's interest in the question of historical time tell us about the condition of time in our own late capitalist modernity? And, what can art born of an historical moment with its accompanying experience of time do to change time, as Agamben posits in my epigraph, and thus to change history? Even more precisely still, how might such change be enacted by works of art and moving image culture as *techné* (skill, art or craft and general know-how, the possession of which enables a person to produce a certain thing): as machines, vehicles or devices for exploring, thinking, and re-thinking time, as a means by which time 'travels', and that permit us to 'travel' in time?

For the works in *How to Construct a Time Machine*, these more precise questions are, directly or indirectly, vital. These works offer rejoinders to these questions, since each artist and film-maker makes it possible to play around with, to transform and re-invent the ordering of the past, the present and the future. This is because of art's (as well as time's) capacity to make these three categories or tenses flexible, manipulable, ripe for relocation.

There is an intimate dynamic to the exhibition *How to Construct a Time Machine*, one that enables the works to contrive four distinct yet inter-articulating temporal encounters. These encounters take place between the present, the 1960s, and the 1890s; between historical and contemporary works; between works that utilize distinct forms, formats, and media; and between art and non-art works. As I will outline, such affinities – between works, and clusters of works – weave their way, conceptually, aesthetically, or both, through the gallery spaces like threads, or, better, ribbons. They are choreographed, have a rhythm to them, they overlap, loop, and fold back on themselves. As they do so, they give prominence conceptually and aesthetically to the four most systematic yet urgent answers to what is for me the ultimate question of this exhibition: how does time work? The answers are this: time is *chronos*; that is, time is metered, or measured, and managed quantatively by units of time, such as clock time. Time is protocol, that is,

[3] Having read the catalogue for *Anachronism*, but not seen the exhibition, I still get the sense that that exhibition and this one have many common characteristics. I would note, though, one striking difference: for Filopovic it was imperative to have Marker's *La Jetée* at the heart of her exhibition, for me it's absolutely imperative that it isn't. See Elena Filipova, 'This is Tomorrow (and Other Modernist Myths)', in Filipovic, ed., *Anachronism*, 2007, pp.4–7.

[4] In *The Past is the Present*, Ross notes over 20 exhibitions on time between 2005 and the book's publication in 2012. This vogue has continued unabated, and in the last year alone we might add: 'The Shadows Took Shape' at The Studio Museum in Harlem (Nov 14 2013 – March 9, 2014: http://www.studiomuseum.org/exhibition/the-shadows-took-shape); 'This is the Time. This is the Record of Time' (13 September – 9 November 2014) at Stedelijk Museum Bureau Amsterdam (SMBA) (http://www.stedelijk.nl/en/exhibitions/this-is-the-time-this-is-the-record-of-the-time), 'Kairos Time' at Tent, Rotterdam (11 July–17 August 2014) (http://www.tentrotterdam.nl/shows/ctueel/20140613_PZI2014-2.php?lang=en), 'Abandoned Futures. Tomorrow Was Already the Question' (17 October 2014 – 18 January 2015) at Fabra i Coates – Contemporary Art Centre in Barcelona (http://centredart.bcn.cat/en/), and KONTEJNER's TOUCH ME festival in Zagreb (10th November to 7th December 2014) entitled 'Now is the Time!' (http://www.kontejner.org/home-english). It's also well worth mentioning two recent conferences:

time is predefined procedures, and their limitations and possibilities; prolepsis, the future tense. Time is the deep time of cosmological time, and the geologic time of natural history. And finally time is *kairos*, the right or opportune moment, an intervention in time.

Genesis

The exhibition *How to Construct a Time Machine* takes its title from the eponymous text published in 1899 by Alfred Jarry, the French writer and inventor of 'Pataphysics, 'the science of imaginary solutions'. Jarry's text was written in direct response to H.G. Wells' Victorian science fiction novella *The Time Machine* (1895) that had earlier in the year been serialized (in a translation by Henry Davray) in the literary journal *Mercure de France*.[5]

As is well known, Wells' *The Time Machine* narrates the story of an English scientist and amateur inventor, known in the novella as the Time Traveler, who, in an after dinner conversation, engages his assembled guests in a discussion about the geometry of four dimensions. It is possible, he declares, to travel in time because 'any real body must have extension in *four* directions: it must have Length, Breadth, Thickness, and – Duration.' There are then really four dimensions, he goes on, 'three which we call the planes of Space, and a fourth, Time'. If, he continues to argue, time is really only a fourth dimension of space, then it becomes possible also to move about in time, much as we move about in the other dimensions of space. It would thus be feasible, he concludes, to get away from the present moment, to move backwards in time to the past, and forwards in time to the future. The Time Traveler informs his guests that he is building a time machine to travel through time, and, leaving the dining room, returns from his laboratory with a glittering metallic mechanism 'scarcely larger than a clock', and very delicately made with ivory in it, and some kind of 'transparent crystalline substance'. It is a model for a machine to travel through time. On the mechanism is a little white lever that, when pressed over, 'sends the machine gliding into the future' and another that, when pressed over, 'reverses the motion'. To prove there is no illusion here, he convinces one of his guests to turn the lever, and the mechanism vanishes. The Time Traveler admits that, to be honest, he doesn't know whether the mechanism has travelled into the future or into the past, since he isn't there to press the lever that would reverse the motion, and that the only way to find out is to travel himself, whereupon he takes his guests into his laboratory. There they are greeted by a larger edition of the little mechanism, which the Time Traveler evidently goes on to use because, when the following week his guests return for dinner, he is nowhere to be seen. He does in fact return mid-way through the meal, looking much the worse for wear, and begins to recount the tale of his travels in time. He has travelled to AD 802,701, then around 30 Million years from his own time, and then there followed a series of shorter travels into the future where he witnessed the end of the life of the earth, before returning home. These journeys take up the bulk of the remainder of the story.

Wells' *The Time Machine* is distinctly modern because the fiction is based on plausible science. This makes it possible to invent a distinctly modern concept of time travel itself and of a time machine as a vehicle whose driver can operate the controls voluntarily. Thus the Time Traveler can travel through time and at will. The plausibility of the science is all the more persuasive because discussions of the fourth dimension are going on for the first time in the 1880s and 1890s, when Wells was writing. When the Time Traveler in his discourse on the geometry of four dimensions refers to a Professor Simon Newcomb who had spoken recently at the New York Mathematical Society, he is referring to a real Professor Newcomb who did in fact address the New York Mathematical Society on December 28th 1893. In that address, published in the leading UK-based science journal *Nature* on 1st February 1894, Newcomb describes four-dimensional space rather beautifully as 'the fairyland of geometry'. Moreover, *The Time Machine*'s speculations on time travel would be confirmed to all intents and purposes soon enough by the publication of Albert Einstein's special theory of relativity (1905) which with its four dimensional space-time, allows the possibility of travel into the future, and the publication of his general theory of relativity (1916) which with its concept of gravity as curved or warped space-time makes possible (wormhole-like) travel into the past.[6]

'Archives for the Future' organized by Mnemoscape and held at University of Westminster in March 2014 (https://archivesforthefuture.wordpress.com/), and 'Art Out of Time' organized by the Institute for Visual Research at University of Oxford in June 2014 (http://oxfordvisualresearch.org/2014/06/10/art-out-of-time-conference-registration-and-program/).

[5] Jarry's text was published in *Mercure de France*, 110, February 1899, pp.387–396, under the pseudonym Dr. Faustroll.

[6] It's worth noting that Wells was approached by and consulted for Robert W. Paul, a manufacturer of optical and scientific instruments who, having read *The Time Machine*, drew up and applied on 24th October 1895 to patent a new invention: a device that would copy the effects of the time machine in Wells' novel. The application (British Patent Application No. 19984) was for 'A Novel Form of Exhibition or Entertainment' designed to give its audience 'the sensation of voyaging upon a machine through time'. The invention was to be a seating platform, with both rocking motion and forward propulsion, facing a screen that, via a combination of a magic lantern and kinetoscope technology, would present to viewers scenes of past epochs and hypothetical futures, thereby simulating time travel. Paul's Theatrograph, as he dubbed it, has subsequently been characterized by writer and film-maker John Baxter as 'the first audiovisual mixed media art form. (p.14) While Paul's Theatrograph was never built, it pre-dates the Lumière Brothers' commercial public screening of cinematic films at the

If Wells' *The Time Machine* offers plausible science, Jarry's paper 'How to Construct a Time Machine', reproduced in this catalogue, is crafted as a response in order to explore implausible science, or, rather, the physics of how such a machine is possible theoretically. As is perhaps less well known, Jarry begins his paper with a discourse on the nature of time as a fourth dimension, distinguishing between physical time and duration. He then goes on to describe the time machine at the centre of his 'how to…' manual. It is a gyroscopic mechanism that bears a striking resemblance to the time machine in Wells' novella. Travelling faster than the speed of light both into the future, and, unlike in Wells' plot, also into the past, the machine 'conveys the traveler… within duration itself…' Jarry concludes with a new definition of duration, characterizing it as 'The Becoming of a Memory'.

Jarry's paper is presented as serious science – and was received as such by prominent contemporary scientists. It uses the specialist and technical language of physics, and draws heavily for legitimization on the 1893 French translation of William Thomson, Lord Kelvin's *Popular Lectures and Addresses: The Constitution of Matter*. Yet while the paper seems to be non-fictional, it is at best a pseudo-scientific fiction. In fact, it presents the time machine and time travel as an instance of 'the science of imaginary solutions', the very definition of 'Pataphysics, his neologism that, with a liberal sprinkle of absurdism, extends beyond thereby overcoming the limits of both metaphysics and theoretical physics. As an imaginary solution to the challenge of time travel, the more often and the more closely one reads the paper, the more ludicrous it seems to become; although perhaps this is because we are no longer familiar enough with late 19th-century physics. When read as philosophy, though, it does seem more familiar. This is surely because of our own familiarity with Jarry's *Lycée* teacher Henri Bergson's writings on duration that have become so popular of late, largely due to the pervasiveness of Gilles Deleuze's philosophy. At around the same time that Deleuze published *Le Bergsonisme* (1966), he also published two essays on Jarry, 'How Jarry's Pataphysics Opened the Way for Phenomenology' (1964) and 'An Unrecognized Precursor to Heidegger: Alfred Jarry'. In the latter essay, Deleuze writes of how in 'How to Construct a Time Machine' Jarry 'sets forth the whole of [his] theory of time',[7] and suggests that he is perhaps recalling his Professor Bergson when he takes up the theme of Duration [*Durée*], which he first defines as an immobility in temporal succession (conservation of the past), and then an exploration of the future, or an opening toward what is to come. 'Duration is the transformation of a succession into a reversion – in other words the becoming of a memory'.[8]

It is Bergson who distinguishes between time as we experience it, lived time, or what he calls 'real duration', and the mechanistic time of space. For Bergson, as for Jarry, time as duration is lived experience, but it is not lived experience per se as it is 'experience enlarged', for Deleuze.[9] Time as duration, then, and duration is a becoming. (Bergson's conceptualisation of duration is the model of Deleuze's becomings.) Duration is, for Deleuze, 'itself a memory' because it 'prolongs the past in the present', and thus the past 'coexists with itself as present'.[10] It is Jarry's conception of time as duration, the imminent unfolding of duration as potentiality, and its enfolding of time and space which makes the unimaginable (e.g. time travel) possible.[11] Now perhaps Jarry's 'How to Construct a Time Machine' seems less ludicrous; perhaps not. Read it and see for yourself.

Wells' *The Time Machine* licences us to 'move about in time' as a modality for time-based thinking. The artists and film-makers in *How to Construct a Time Machine* utilize the processes and practices and protocols of art and film making to construct works as imaginary solutions to the challenge of time – to ask, how does time work? – for us and our sense of ourselves as temporal beings in our modern and contemporary period. This is how they work with time itself, the experience of time, the mechanisms of time, and how ultimately the works themselves probe their own mechanisms as time machines through the exhibition's four central concerns: *chronos*, protocol, deep time, and *kairos*.

Chronos

Chronos is an ancient Greek word for time as an ordering of the world. Etymologically, it gives us chronometer, as well as chronology, chronicle, chronic, and anachronistic. Since the advent of modernity in the late

Café de Paris on 28th December 1895 and Georges Méliès' *Le Voyage dans la lune* (1902), the first science fiction film, as well as anticipating later post-cinematographic technologies such as digital cinema, virtual reality, or amusement park simulator rides. For media archaeologist Erkki Huhtamo, it is 'the conceptual prototype for all subsequent motion simulator attractions'.

[7] Gilles Deleuze, 'An Unrecognizable Precursor to Heidegger: Alfred Jarry', in *Essays Critical and Clinical,* 91–98, p.95, footnote 14.

[8] Ibid, p.95.

[9] Gilles Deleuze, *Bergsonism*, p.37.

[10] Gilles Deleuze, 'Bergson, 1859–1941', p.29, p.28, p.29.

[11] Deleuze will construct his own time machine of course, in the form of his two-book taxonomy of cinema in *Cinema 1: The Movement-Image* (1983) and *Cinema 2: the Time-Image* (1989).

eighteenth century that has transformed every aspect of human life, including our experience of time, *chronos* has become the most pervasive and tyrannical form of time. It is clock time. It is the metering and measuring and managing of time quantitatively by units of time: seconds, minutes, hours, weeks, months, years, centuries, periods, millennia, era, etc.

Clock time is an integral part of the 'systemic colonization of individual experience', as Jonathan Crary has put it recently in *24/7: Late Capitalism and the Ends of Sleep* (2013). Clock time has infiltrated every aspect of our lives and beings to the point where, as temporal beings, we are ourselves subjects of and subject to it; we may still clock on and clock off, but even when we are not at work, we are never off the clock. There is no 'free' time, much like there is no such thing as a free lunch. Such a systemic colonization of individual experience historically is an inevitable triumph of industrial capitalism's standardization and rationalization of anything and everything from railway timetables internationally, and the bureaucracy and administering of Empire, to the mechanization of human activity in work environments, made most obviously visible by the appearance of clocks in train stations, factories, and offices. Such an intensification in the obsession with metering time, time as meter, is discernible in the time-and-motion studies and scientific management of efficiency in the Taylorism of Frederick Winslow Taylor and the Fordism of Henry Ford, but also in Eadweard J. Muybridge and Étienne-Jules Marey's proto-cinematic animated still or 'sequence' photography. Likewise, it is evident in the glut of nineteenth-century 'serial motion' perceptual experiences that animate the inanimate, such as phenakistoscopes, zoetropes, *tableaux vivants*, paroramas, and dioramas that simulate motion. The instituting of the rhythm of such mechanized repetition, and the pleasures therein – at work or at play, in science or entertainment – is fundamental to the forms of control and management, and the new methods of regulating human behaviour and thus experience in capitalist modernization and industrialisation. The dangers of such mechanization of human activity find legendary cinematic articulation in Fritz Lang's *Metropolis* (1927) with Freder in the machine room of the workers' city having replaced a worker who has collapsed exhausted at his post from the exertions of repetitive labour, and Charlie Chaplin's *Modern Times* (1936) with its mechanization-of-man thesis. Such an alienating, an estranging from our *Gattungswesen* or 'species-being' is a direct result of this distinctly modern figuring of *chronos*,

Chronos is stressed, contested, and transformed in *How to Construct a Time Machine* by a cluster of works which include Louis Lumière's 'Demolition of a Wall' (1896), the earliest work historically, which is in the exhibition partly because it is the first instance of reverse motion cinematography, the special effect whereby the action filmed – men demolishing a wall – is shown first forwards and then backwards (i.e. it is *time*-reversed). To include it is also to stress the prevalence of time-based work in the exhibition, and time-based work's capacity to manipulate time, and also the significance for the exhibition overall of editing as institutive, where editing institutes, where meaning, comprehension, or affect is generated by editing, is born of the (act of the) edit.

The magic of Georges Méliès' multiple exposures and time-lapse photography in films such as *Extraordinary Illusions* (1903), screened here, resonates with Mat Collishaw's marvelously retro 'Little Magic Lantern' (2010), his modern zoetrope whose own clunky obsolete magic trickery marrying inexorably with its power to conjure up wonder is akin to Walter Benjamin's reflections on the outmoded as a short-circuiting of the past and the present, where the present is shot through with the anachronistic and enchanted splinters of the past's potentialities. Similarly, Catherine Yass' 'Safety Last' (2011), after Harold Lloyd's *Safety Last!* (1924), the silent film in which Lloyd dangles from a clock, pulling the hands downwards thereby forcibly reversing time, is a projected film that tracks the damage that occurs to the surface of the film cellulose itself as it is repeatedly fed through a projector, and how such ageing and distressing is an incisively destructive act with unexpectedly alchemical results.

Ruth Ewan's wonderfully iconic 'We Could Have Been Anything That We Wanted to Be' (2012) is a decimal clock that divides the day into ten (rather than twenty four) periods, echoing a bold 18th century French Republican attempt to redefine and rationalize the day. 'Nam June Paik: Edited for Television' (1975) is a documentary produced for public television which includes an interview discussion of 'TV Clock' (1963/1989), an installation composed of twenty-four fixed-image colour television monitors mounted on twenty-four pedestals in which the image on each is compressed into a single line with the lines on succeeding monitors rotated to suggest the hands of a clock. The Otolith Group's 'The Otolith Timeline' (2003) situates in a time line *The Otolith Trilogy* (2002–2009), an interconnected series of films that relate scenarios of a speculative future projected from events in our recent past, combining fictional narration and archival and documentary footage, in order to create a set of plausible predictive outcomes for the future. And an altogether different but equally gripping time line is Maja Smrekar's 'History of the Future' (2012) that takes the viewer on a fascinating journey through the cinematic archive of science-fiction, moving about in time from 1895 to 802,701, a year familiar to us from H.G. Wells' *The Time Machine*.

Protocol

Protocol is a general rule. It is a predefined written procedural method. It is a system of rules for exchange – which includes procedures of etiquette and for diplomacy as much as it is a system of digital rules for data exchange. Protocol is put in place when there is a need for standardization and replication, and it thus determines how procedures will unfold and play out. As such protocol is *chrono*logical, and it subscribes to the time of prolepsis, the future tense.[12]

Our contemporary preoccupation with protocol feels very much like it is born of an Internet culture through which we have more generally come to comprehend networks, constituted and governed as they are by protocols, as 'a set of technical procedures for defining, managing, modulating, and distributing information throughout a flexible yet robust delivery infrastructure', as Eugene Thacker has it.[13] From this vantage point, networks constituted and governed by protocol become the zone of contestation for the politics of the future of data/information/knowledge, of ownership, and of the human. In fact, for the politics of the future itself, since this concerns not merely the systemic colonization of individual experience, but the colonization (the

[12] I steal this phrase from Pamela M. Lee, although she uses it to discuss Cybernetics and its etymology, rather than protocol which, I'd argue, because it drives Cybernetics, warrants it also. See Pamela M. Lee, *Chronophobia*, p.235.

[13] Eugene Thacker, 'Forward: Protocol Is as Protocol Does', in Alexander R. Galloway, *Protocol: How Control Exists after Decentralization*, xi-xxvi, xv.

management, the control, and the regulation) of the very idea of the future as a category of historical time; of how protocols as predictive (whether in economics, the environment, Big Pharma, security, defense, and policing, market research, forecasting, risk management, or risk itself) dictates and thus determines the future's terms and conditions, all of its activities, and ultimately of how human beings, our sense of ourselves as temporal beings, are re-configured by such envisionings.[14]

This necessary attention to protocol constituting and governing such systems as future-facing, is, though, nothing new. This is merely its extended end game. We find an origin for such an understanding of and engagement with networks as they are constituted and governed by protocol in the 1960's obsession with systems. As Thacker and others have pointed out, the Internet has its roots in the US academic and military cultures of the 1950s and 1960s, a period which spawned the information age, electronic computing, ecological complexity, and cybernetics, and marks the advent of systems art, algorithmic art, generative art, and cybernetic art.[15] This is the period of the face-off between the machine and the computer (mechanization and automation), the publication of Thomas Kuhn's *The Structure of Scientific Revolutions* (1962), the age more generally of revolution (itself a mode of temporality), and the height of futurology's popularity.[16] It is when Marshall McLuhan is writing about the Guttenberg Galaxy, the global village (in which real-time communication has proven itself victorious over real space), anticipating the World Wide Web. And, a little later, when Nam June Paik advocates passionately for tele-communicating globally via electronic super highways. It is a decade in which artists interested in the relations between time and technology are suffering a chronophobic impulse, an 'almost obsessional uneasiness with time and its measure', as Pamela M. Lee claims,[17] as a result of their concern over technological progress and its consequences for human experience due to the post-war rise of new communications and information technologies (with their rhetoric of speed and acceleration as it pertains to new modes of data processing for instance[18]). It is also a decade that culminates in the ICA's rightly lauded *Cybernetic Serendipity* in 1968, and comes to a close with the first steps of a human on the moon at 02.56 UTC on 21st July 1969.

[14] I have written about this elsewhere. See Marquard Smith, 'Theses on the Philosophy of History: The Work of Research in the Age of Digital Searchability and Distributability', *Journal of Visual Culture* 2013 12: 3, 375–403.

[15] Given out own current fascination for all things cybernetic, note that, as its etymology suggests, it is a science of control or predictive value. With its interest in the capacity of self-governing or self-regulating systems to control the transmission of information in systems (whether those systems are mechanical, electronic, or biological, and, incidentally, whose temporality is very different from either clock or experiential time), we would do well to remember that the word is used first by Plato in *Alcibiades* to refer to the governance of people.

[16] It's interesting to note that the idea of futurology develops out of Wells' 1902 lecture to the Royal Institution entitled 'The Discovery of the Future' in which he calls for a new academic study of the future.

[17] Pamela M Lee, *Chronophobia*, xii

(This is also the period in which the work of both Wells and Jarry is re-discovered. Wells' *The Time Machine* becomes the subject of serious scholarly commentary for the first time, and Jarry's *oeuvre* is revived and re-purposed by a generation of science fiction writers (as well as philosophers) from J. G. Ballard and Philip K. Dick to Jean Baudrillard and Gilles Deleuze whose *Le Bergsonisme* is published in 1966.)

In *How to Construct a Time Machine* there is an attention to protocol as it constitutes and determines networks, in networks as systems, and in systems per se. In both our own late capitalist algorithmic culture and the art, media, and communication cultures of the 1960s, there is a shared interest in systems as generative: the extent to which a system (which would include art-making practices based on mathematical and algorithmic systems) can be defined as functioning autonomously, and how such a system as generative can generate new forms.[19] For, interestingly, once a system's rules or instructions are produced and set in motion, they lead to outcomes that might either be highly predictable or, given their autonomous and generative nature, wholly unpredictable. Given such potentialities, no wonder, then, that there is a shared concern for protocol-constituting and governing networks as systems, and an impulse to play with a system's logic, and to utilise its data and information as raw material to transformative ends. In *How to Construct a Time Machine* this is articulated remarkably and daringly by way of the aesthetics of code (Manfred Mohr), percentage clocks (Jim Campbell), punch clocks (Tehching Hsieh), calendars (On Kawara), the alphabet (Thomson & Craighead), travel system information (Martin John Callanan), speed reading systems (Elizabeth Price), the prospect that time travel might 'call past and future to the rescue of the present' (Chris Marker), and via duration itself as the element shared by both silence and sound that is an essential building block of all music (John Cage).

Ways of working with and against the logic of such generative systems could include more generally: interrogating critically and to disruptive ends the means by which (and why) data is gathered, accumulated, aggregated, and distributed; utilising data/information as sources and resources to locate and challenge the logic, the structure, and the nature/status of data, information, and knowledge in ways that undermine from within the ambitions and operations of such systems; picking away at data and metadata – interrupting their logic, their rhythm, their ubiquity – as they create, shape, and pervade the informational, the communicable, the environmental, the bio-cultural, the historical, the archival, the knowable, the searchable, and the distributable; imagining how the structure and properties of datasets, as well as their content (such as climate data, space data, energy data and pharma data) can be pressured, troubled, and interrupted; and grasping how datasets might function beyond their original location and purpose, and how their transformation by the utilization of languages visually and poetically might articulate an aesthetics of system-ness as criticality.

Deep Time

We live in The Anthropocene (from the Greek *anthropo-*, 'human', and *-cene*, 'new').[20] A new geological epoch is upon us. A division of geological time, it is the first epoch of our own making. It is a geo-historical period marked by the immense and irreversible influence of humans on geo- and bio-spheres, ecosystems, and thus on the future of human, animal, plant, mineral, and molecular life. Its origins are locatable (although this is still being debated vigorously) in the Industrial Revolution of the late 18th century, with atmospheric evidences proving humanity for the first time as a geological force. The Anthropocene is, then, human-induced, and has unprecedented ecological implications.

The advent of The Anthropocene, an idea from geology, biology, and chemistry taken up recently by practitioners and scholars in the arts and humanities has, directly or indirectly, provoked our thinking about deep time. Deep time (a concept of geologic time) is an idea established in the 18th Century by Scottish geologist James Hutton and refers to his belief, contradicting contemporary scientific wisdom, that the earth was much, much older than a few thousand years. Such stretching of the time scale of geologic history is almost inconceivable: knowing now as we do that the earth is 4.54 billion years old has more than a touch of the numerical sublime about it. Yet, how to conceive it?

[18] One needs to make a distinction of course between artists working with computers, algorithms, code, etc., and the conceptual artists interested in time discussed by Lee including Hanne Darboven, On Kawara, and Alighiero Boetti with his call 'to give time to time'.

[19] Lanfranco Aceti's 2013 exhibition 'Mathematical Rhymes', which mixes contemporary and historical practitioners, is an excellent instance of this. See http://www.lanfrancoaceti.com/2013/08/mathematical-rhymes/

[20] See for instance The Anthropocene Project, a fascinating exhibition/events/education project at Haus der Kulturen der Welt in Berlin in 2013–14 (http://www.hkw.de/en/programm/projekte/2014/anthropozaen/anthropozaen_2013_2014.php)

How to imagine and wrestle with natural history as it extends seemingly indefinitely into the very distant past, and the very distant future? And, how to envisage The Anthropocene as post-natural, since there can no longer be a natural history of the natural history of the future? To conceive it is to imagine longer historical and also non-historical periods of both the past and the future; it is to distinguish between temporal processes found in nature and historical processes; it is to turn to cosmology, astronomy, and the natural history of the earth and the solar system; to construct art works as speculative time machines, as vehicles that have, do, or might travel in time (literally, figuratively, metaphorically), vehicles that embody and articulate time's travels.

It might look and sound like this: Sun Ra and his Astro Intergalactic Infinity Arkestra's track 'Space is the Place' from his 1973 album 'Space is the Place' can be heard reverberating on a loop in the public square outside MK Gallery. As one of the cornerstones for what will become known as Afro-futurism, in this paean to the galaxy Sun Ra combines free-form jazz, big band swing, and his own 'space organ', using music as a medium of transportation to 'another tomorrow'. Mark Wallinger's 'Time and Relative Dimensions in Space' (2001), an aluminium version of Dr Who's 'Tardis' police box simultaneously disappears into the space-time continuum and reflects its own surroundings. Georges Méliès' *Le Voyage dans la lune* (A Trip to the Moon) (1902) is the first science fiction movie, based on Jules Verne's *From the Earth to the Moon* (1865) and H.G. Wells' *The First Men in the Moon* (1901). Katie Paterson's 'Campo del Cielo, Field of the Sky' (2012) began life as a meteorite, which had been travelling through space and time for over 4,500,000,000 years, and was buried for over 5,000 years in Campo del Cielo, a cratered field in Argentina.

Kris Martin's '100 Years' (2004) is a small bronze sphere, a self-degrading sculpture caught between entropy and time's inevitable unfolding, which will become tarnished by oxidation and corrosion leading to its inescapable self-destruction, and is, according to an engraving on its underside, set to explode in 2104. From Meekyoung Shin's 'Translation Series' (2011) is a sculpture of a vase crafted in soap and displayed on a packing case (ordinarily for storage or shipment) that looks like it can be locatable in the history of North East Asian vase production/aesthetics, but in fact teeters between different time-frames and locations thereby thwarting all such notions of historical, material, and manufacturing specificity. Raqs Media Collective's 'Time Capsule from 2011, to be Opened in 2061' (2014) is a time travel device that makes it possible for them to claim their contemporaneity with the future. Melvin Moti's 'A Century of Light' (2010) consists of two drawings that are made using what painting laboratories refer to as 'time machines' that simulate the effect of an amount of exposure time of paint samples to air and light. 'Nothing Is…' (2013) by Edgar Cleijne and Ellen Gallagher draws its title from Sun Ra's 1970s album and poem 'Nothing Is…' A line from the poem – 'The nothing and the air and the fire are the same' – describes Sun Ra's thoughts on origins and the mutability of elements. An interest in the potential of layering is figured in the work by way of real time sound (the film itself runs through an amplified harp) with film sound (the percussive sound heard on the film's optical track accompanying the Sun Ra poem). The mutability of elements is emphasized further as, cutting directly into the film, the celluloid itself becomes the plectrum; strumming the strings as it runs through the harp tuned to the Key of Ra.

Kairos

I am for these works in *How to Construct a Time Machine*. To be for them is to be for *kairos* time. An exceptionally dissimilar, although equally Greek, order of time from *chronos* with its metering and measuring and managing of time quantatively, *kairos* is a qualitative account of 'the right or opportune moment'. It's a moment of time lapse, a moment of indeterminate time, an intervention in time in which we, temporal beings, artists for instance, might intervene. Such institutive interventions and interruptions – for instance by way of editing, repetition, damaging, the decimal, playing the percentages, routinization, slowness, constraint, counterfactuals, system-ness as criticality, layering, encapsulation, casting and re-casting, weathering, exposure, sonicity, and the translative – are transformative of this exhibition's concerns: protocol, deep time, and even *chronos* itself. They confirm that what is at stake is not so much a matter of time per se as it is the matter of timing, and, in particular, the right timing; and that such timing necessitates human intervention. As the artist Paul Chan writes:

> For [the Greeks], qualitative time can only be achieved through human intervention. The power to act and take advantage of a special event or action that appears over the unfolding course of things is crucial to the nature of *kairos*. But this cannot happen at any time. Only at opportune moments, when time holds the most potential for change, is *kairos* possible. But again, only if the opportunity is seized and acted upon. *Kairos* is that critical point in time when a crisis or rupture opens up and is catalysed with human will to create new potentials.

Furthermore, and crucially, *chronos* and *kairos* are neither wholly distinct nor simply opposed to one another. They have relations, as the *Corpus Hippocraticum* has it: *chronos esti en ho kairos esti en ho ou pollos chronos* (*chronos* is that in which there is *kairos*, and *kairos* is that in which there is a little *chronos*). So in the end, then, and from the beginning, such relations allow or compel even that *kairos* intervene in *chronos*, and that *chronos* include the seeds of its own undoing.[21] Chan writes of artworks as being kairological. He writes that they

> embody a desperate immanence, as if what is given is not good enough but will have to do. They seize time the way a beat holds a song, to evoke the vertiginous feeling of seeing something emerge by being made and unmade at the same instant. They radiate an inner irreconcilability about what they are and what they want to be with serious and unrestrained abandon…

This is what the works in *How to Construct a Time Machine* do, and why I am for them. This is art's potential, its capacity to 'transform circumstances'. This is because, as I noted earlier, art is and is of *techné*. From Aristotle in the *Nicomachean Ethics* onwards, it is 'the skill, art or craft and general know-how, the possession of which enables a person to produce…' And crucially for Aristotle, *techné* as also an *epistêmê*, because it involves theory/pure knowledge as well as (experience-based) practice. Artists intervene, art works intervene. While it is true that such transformations may well be merely exercises of the imagination, in mind (rather than time) travel, and time travel may perhaps be impossible, a fantasy, fiction, nonsense inconceivable, impossible, and raise impossible paradoxes, nonetheless, and perhaps even because of such impossibilities, *techné* as *epistêmê* is a license to 'move about in time', is a modality for time-based thinking, is how art works (and the processes and practices and protocols therein) both propose and in fact themselves are imaginary solutions. Art makes time differently. Art gives rise to concepts. I am for how, because these works engage with and delineate the matter of time – time itself, the experience of time, the mechanisms of time, and how the works probe their own mechanisms as time machines – we can imagine further and even radically unthinkable senses for ourselves as temporal beings. The task of art is not merely to change the world but also, and above all, to change time. And us. And the best way to do this is by asking, time and time again: how does time work?

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[21] See Georgio Agamben, *The Time That Remains: A Commentary on the Letter to the Romans*, trans. by Patricia Dailey, Stanford: Stanford University Press, 2005, pp.68–9.

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Alfred Jarry

COMMENTARY AND INSTRUCTIONS FOR THE PRACTICAL CONSTRUCTION OF THE TIME MACHINE[1]

I. The Nature of the Medium

It is no more difficult to conceive a machine to travel in Time than one to travel in Space, whether one consider Time to be the fourth dimension of Space or a place differing essentially in its contents.

One usually defines Time as: the taking place of events, just as Space is the place taken by bodies. Or more simply: Time is succession, whereas Space – whether it be a question of three-dimensional or Euclidean space; four-dimensional space, implied by the intersection of several three-dimensional spaces; Riemannian spaces, where spheres may be turned inside out, since the circle is a geodesic line on the sphere of the same radius; Lobachevskian spaces, where planes cannot be flipped over; or any non-Euclidean space, distinguishable by the fact that one cannot construct two identical figures in them as one can with Euclid – Space is simultaneity.

Any parcel of Time that is simultaneous has extension, and may therefore be travelled in by means of Space Machines. The present has Extension in three directions perpendicular to one another. Whether one transports oneself to some point in the past or in the future, that point will be present and extended in three directions during the visit.

Reciprocally, Space and the Present extend into the three dimensions of Time: the space that has been covered, or past space; the space to come; and the present proper.

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[1] First published in the *Mercure de France*, 110 (February 1899) pp.387–96, under the pseudonym of 'Dr. Faustroll'. See also *The Time Machine Dossier* (details at the end of the present volume).

Space and Time are commensurable: navigating by the sighting of points in Space may only be onwardly pursued through the medium of Time; and to measure Time quantitatively, one reduces it to the Space of dials and chronometers.

Space and Time, being of the same nature, may be considered to be different physical states of the same substance, or different modes of its inner movement.[2] And even if one considers them merely as forms of thought, Space as a solid form can be seen as a rigid system of phenomena – whilst it has become banal to compare Time poetically to a liquid continuing along a straight line with uniform speed, and made up of mobile molecules whose resistance to flow, whose *viscosity*, is in short our consciousness.[3]

Since Space around us is fixed, when we wish to travel in it we employ a vehicle: Duration. The role it plays in kinematics is that of an independent variable like any other and which determines the co-ordinates of the points that are being observed. Kinematics is a form of geometry. Phenomena described in it have neither before nor after, and the fact that we create such a distinction proves that we are carried through Time along with them.

We move in the same direction and with the same speed as Time, since we ourselves are part and parcel of the present. Were we able to *remain immobile in the Flow of Time, in absolute Space*, i.e. suddenly lock ourselves away in a Machine that could isolate us from Time (bar the small amount of the normal “speed of duration” which would remain with us by dint of its inertia), then we should be able to travel through all future and past instants successively (later we shall see that the Past lies beyond the Future, *from the Machine’s point of view*), just as the sedentary spectator watching a panorama is under the impression that he is journeying rapidly through successive landscapes.

II. Theory of the Machine

A Machine which is to isolate us from Duration, or from the effects of Duration – ageing or rejuvenating, the physical shocks imparted to an inert being by a succession of movements – will need to make us *transparent* to these physical phenomena, i.e. allow them to pass through us without our being modified or displaced. This isolation will suffice (and in any case it is impossible to construe it to greater perfection) if Time, as it overtakes us, transmits a minimal impulse to us, just enough to compensate for the slowing down of our habitual duration (conserved by its inertia) – a slowing down due to an action comparable to the viscosity of a liquid or the friction of a machine.

To be immobile in Time therefore means to pass successively through all bodies, movements and forces – or to have them pass through us with impunity, as a window-pane allows free passage to a projectile without necessarily breaking asunder or, better, as a block of ice closes up again after being cut in two by a weighted iron wire or, for example, an organism may be run through by an aseptic needle without it causing any lesion – whose site is that point in Space chosen by the Traveller for the *departure* of his IMMOBILISING MACHINE.

The Time Traveller’s Machine must be:

1
Perfectly rigid (i.e. perfectly elastic), in order to be able to penetrate the densest solid, as can an infinitely rarefied vapour.

2
Subject to gravitational attraction in order to remain in the same spatial locality on Earth, but sufficiently independent of the Earth’s diurnal movement to maintain its orientation in absolute Space; and, as a corollary, incapable – though it has weight – of falling should the floor cave in during the journey.

3
Non-magnetic, so as not to be influenced in turn by the rotation of the plane of polarisation of light (we shall see why later).

There exists an ideal body which satisfies the first of these conditions: the LUMINIFEROUS ETHER, a perfectly elastic solid – since wave vibrations propagate themselves through it at the speed we know – which may be penetrated by all bodies and which may itself penetrate all bodies with negligible friction, since the Earth gravitates in it as if in a void.

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[2] One of Jarry’s principal sources for this text was the writings of William Thomson, Lord Kelvin, specifically the French translation of his works, *Conférences scientifiques. Constitution de la matière* (Gauthier-Villars et fils, 1893). Here he has adapted Thomson’s idea that elasticity may be regarded as a mode of motion (the title and subject of an article from 1881 included in *Conférences*, pp.93ff., which Thomson later set about proving by devising the gyrostatic ‘spring balance’.

[3] As a statement of one aspect of Bergson’s notion of ‘Duration’ (*la Durée*), Jarry’s image is hardy and particularly mechanistic, but quite orthodox; Bergson’s metaphor for subjective time was ‘thickness’.

[4] Cf. Thomson, ‘The gyrostatic system … constitutes an elastic solid which can have the Faraday magneto-optic rotation of the plane of polarisation of light …’ (‘Steps Towards a Kinetic Theory of Matter’, 1884, in *op. cit.*, p.157)

[5] Springs without mass: this sentence is lifted from the same paper (previous note, p.153). Thomson is quoting the so-called ‘ordinary theory of elasticity’ as propounded by Fresnel, Navier, Poisson, Cauchy, Green, etc., as the note in the French edition says – Jarry is therefore not plagiarising but being scientific and reminding the reader of the facts.

[6] Thomson uses only weightless (flexion) springs in his model of an ‘elastic solid comprising only rigid elements’ composed of two such springs, four gyrostats and a hook at the bottom for attaching a weight, which when added causes the whole system to oscillate *as if the whole were a spring balance.* Thomson’s model in itself constitutes a quasi-spring balance, and although in the article he later referred to it as ‘the spring balance’, it is misleading of Jarry to talk of ‘spring balances’ without making it clear to the reader that he means Thomson’s model and not the everyday object.

Jarry, perhaps not inadvertently, conjures up the spring balance of the physics classroom, recognisable by its big hooks but, moreover, notoriously inaccurate and erratic, since it tends to develop a ‘memory’ (as physicists say) of the previous weights applied to it. Perhaps Jarry inwardly rejoiced

But – and this is the only resemblance it bears to the *circular body* or Aristotelian ether – it is not heavy; and, turning as a single unit, it determines the magnetic rotation discovered by Faraday.[4]

Now, there exists a well-known piece of apparatus which provides an excellent model for the luminiferous ether, and which satisfies the three postulates.

Let us briefly recall to mind the constitution of the luminiferous ether. It is an ideal system of material particles acting on one another by means of springs without mass.[5] Mechanically speaking, each molecule is the envelope of a *spring balance* [6] whose suspension hooks are linked to those of its neighbouring molecules. A traction on the hook of the last molecule occasions the whole system to tremble, which is exactly what a luminous wave does to it as its wave front advances through it.

This structure made up of spring balances is analogous to the irrotational circulation of infinitely great liquids through infinitely small openings, or to an articulated system of rigid rods and rapidly rotating fly-wheels borne by all or some of these rods.[7]

Spring balances differ from the luminiferous ether only through their having weight and not turning as a single unit, no more than would the luminiferous ether in a field devoid of magnetic force.

If the angular velocities of the fly-wheels are made greater and greater, or the springs more and more stiff, the periods of the vibrational constituents of the motion will become shorter and shorter, and the amplitudes smaller and smaller, and the motions will approach more and more nearly those of a perfectly rigid group of material points moving through Space and rotating according to the well-known mode of rotation of a rigid body having unequal moments of inertia about its three principal axes.[8]

To sum up, the element of perfect rigidity is the *gyrostat*.[9]

We are all familiar with those brass frames, either round or square, with a rapidly rotating fly-wheel mounted on bearings inside them. The gyrostat, in virtue of rotation, maintains its equilibrium at any chosen angle. With its centre of gravity *not* vertically over the bearing point, it goes round in azimuth[10], *but it does not fall*.

We know that the *azimuth* is the angle between the meridian and the plane determined by the zenith and a given point, such as a star [11].

When a body is in rotation about an axis of which one point is drawn into the diurnal movement of the globe, the direction of its axis of rotation remains constant in absolute Space: this axis appears, as a consequence, to an observer carried along unwittingly with this diurnal rotation, to rotate uniformly about the axis of the globe[12], exactly as would a parallactic telescope pointed constantly at the same star low on the horizon.

Three rapidly rotating gyrostats, whose bearings are parallel to the three dimensions, engender cubic rigidity. The Traveller sitting on the seat of the Machine is – mechanically – locked inside a cube of absolute rigidity that can penetrate all bodies without modification, in the manner of the luminiferous ether.

And we have just seen that the Machine, though suspended on a line whose orientation remains constant with respect to absolute Space, is in phase with the diurnal movement of the Earth, so as to have a reference point for the time covered.

Finally, no part of it is magnetic, as its description will reveal.

III. Description of the Machine

The Machine consists of a jointed, ebony frame, analogous to the steel frame of a bicycle. The ebony bars are fixed in place with brass links soldered together.

The three tori[13] (the fly-wheels of the gyrostats), fitted in the three perpendicular planes of Euclidean space, are of ebony sheathed with brass, and are mounted along their axes on rods of *spirally-wound sheet-quartz ribbons* (sheet quartz is manufactured using the same technique employed when making quartz wire), their extremities spinning in quartz pivot-bearings.

The circular rings, or semi-circular forks, of the gyrostats are of nickel. Under the seat and a little in front are the storage cells of the electric motor. There is no iron in the Machine apart from the soft iron of the electromagnets.

The driving force is transmitted to the three tori via ratchet-boxes and endless chains of quartz wire wound over three cog-wheels, each in the same plane as its corresponding tore and connected to one

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at including these tetchy instruments in his atomic model, knowing that *no two spring balances behave identically* (they are strictly for schoolroom use only). The spring balance corresponds to the Clinamen in Jarry's model, although regrettably he does not develop its possible effects in this essay, unless there is in the final paragraphs a new twist to the concept of a spring's 'memory'. Thomson, for his part, sought to eliminate any hint of friction in his atomic model and realised that all 'spring' models are insufficiently 'mathematical'.

7
Cf. W. Thomson, *On a Gyrostatic Adynamic Constitution for Ether*, (C.R., 1889; Proc. R. Soc. Ed., 1890). [Author's note] The full reference is: (§1-6): 'Note by Sir W. Thomson' in *Comptes rendus de l'Académie des Sciences* (Paris, September 1889); (§7-15): *Proceedings of the Royal Society* (London, 17 March 1890). Presumably Jarry only read the French translation of this article as included in *Conférences scientifiques*. Thomson had suggested replacing the fly-wheels with liquids in §11-12, but Jarry lifted the first half of his paragraph from 'Steps Towards...' (*op.cit.*, p.161), and even lifted the note from p.157.

8
The entire paragraph is copied from Thomson's 'Steps Towards...' (*op. cit.*, pp.154–5).

9
The gyrostat: as defined by Thomson and the *OED*: 'the ordinary gyrostat (a rapidly rotating fly-wheel pivoted as finely as possible within a rigid case, having a convex curvilinear polygonal border, in the plane perpendicular to the axis through the centre of gravity of the whole)' (W. Thomson & P. Tait, *A Treatise on Natural Philosophy*, 1867, Vol. I, part 1, §345). A less abstract definition (paraphrased by Jarry in the next paragraph) is given in his lecture 'Ether, Electricity and Ponderable Matter' (1889), §23: 'This closed brass case, with a rapidly rotating fly-wheel mounted on bearings inside it, is called a gyrostat because in virtue of rotation it stands, however you place it, with any of its edges resting on a hard, smooth table.'

10
In azimuth: in a horizontal circle (*OED*), i.e. at a fixed angle relative to the perpendicular above the bearing point. Jarry is quoting this sentence from 'Ether, Electricity and

another and to the motor by camshafts and bevel gears. A triple brake operates on the three axes simultaneously.

The anterior fly-wheel clicks with each complete revolution, and four ivory dials, concentric or juxtaposed, mark the days, thousands of days, millions and hundreds of millions of days, by the agency of a grooved wheel and an endless chain. A separate dial remains geared to the diurnal movement of the Earth at the lowest point of the axis of the horizontal gyrostat.

The motor's acceleration is controlled by a lever with an ivory handle that is pushed forwards in a plane parallel to the centre line of the Machine; a second handle, on an articulated rod, slows the speed down. We shall later see that the return to the present from the future is achieved by slowing down the Machine's motion, and that travelling forwards into the past requires an even greater speed (to achieve a more perfect *immobility of duration*) than that required for travelling into the future. To stop at a chosen point in the duration, simply pull the lever of the triple brake to lock it.

When at rest, the Machine sits on the circular rings of two of the gyrostats at a tangent to the ground; when in use, since the gyrostatic cube is immovable in its rotation, or at least balanced by a constant couple with a constant degree of rotatory displacement, the Machine *free-wheels*[14] in azimuth upon the tip of the axis of the gyrostat's horizontal plane.

IV. THE Machine IN ACTION

The Machine, by dint of its gyrostatic actions, is *transparent to successive spaces of Time*. It does not *last*, but preserves its contents indefinitely, sheltering them from external phenomena. Regardless of whether the Machine oscillate in Space or whether the Traveller find himself upside-down, he will always see objects normally, without intermission, and always the same way up, just so long as they are at some distance from him, for he has no point or frame of reference, everything close by being transparent.

As he does not *last*, no time will have elapsed during the journey, however long it be, *even if he stops off and leaves the Machine.*[15] We have already explained that he lasts only as a viscosity, a friction of Time – a duration practically equivalent to that which he would have had to endure had he not climbed aboard the Machine.

The Machine, once up and running, always sets off in the direction of the future.

The Future is the normal sequence of events: an apple hangs from a tree, it will fall. The Past is a reverse sequence: the apple falls – from the tree. The Present is null. It is the tiniest fraction of a phenomenon. Smaller than an atom. The size of a physical atom is known: it is 1.5×10^{-8} centimetres in diameter.[16] The fraction of a second of average solar time equal to the Present has yet to be measured.

Just as in Space a moving body, if it is to move at all, must be smaller in unit size (length) than its container (Space), so in Duration the Machine, if it is to move at all, must be of shorter duration than Time (its container), that is to say more immobile in successive Time.

Now, the immobility of the Machine's duration is in direct proportion to the speed of rotation of its gyrostats in Space.

Let t stand for the future, and V for the spatial speed – or rather the slowness of duration required to explore the future – then V is a quality of time such that:

$$V < t$$

As V tends to 0, the Machine backtracks towards the Present.

Travelling back in Time consists in the perception of the reversibility of phenomena. The apple will be seen bouncing up from the earth on to the branch, the dead rising, and the cannonball re-entering the barrel of the cannon. This *visual* aspect of the succession of events is already well known, and may in theory be obtained by exceeding the speed of light and then continuing to distance oneself at a constant speed equal to the speed of light. The Machine, on the other hand, conveys the Traveller and his five senses within Duration itself, and not on a hunt after images preserved in Space. He has merely to accelerate the forward movement (remembering that the speed of the gyrostats and the slowness of duration of the Machine – i.e. the reverse speed of events – are synonymous) until the speedometer indicates:

$$V < -t$$

Ponderable Matter', *op. cit.*, §23.

[11] To paraphrase the *OED*: the azimuth is the angular distance of an arc of the heavens extending from the (local) zenith to the horizon which it cuts at right angles, from a given limit (e.g. a meridian). Or again: the angle between the vertical plane of the arc that passes through the chosen point (e.g. a star) and a fixed point (e.g. the North Pole or the magnetic North). Jarry did not specify that the azimuth is the angle between two *vertical* planes, and without this his definition is only properly comprehensible to those who already know what an azimuth is, or rather which of the particular scientific meanings of an azimuth he was referring to. Jarry calls the reader's bluff.

[12] Allusion to the instrument constructed in 1851 by Léon Foucault to prove directly the diurnal rotation of the Earth about its axis, and by him first called 'gyroscope'.

[13] Jarry here used the word '*tores*' ('tori', plural of the Latin *torus*), whereas Thomson referred to 'a hollow anchor ring, or tore' in his description of a *liquid* gyrostat made with a bun-shaped 'endless circular tube of circular cross-section'; the latter is one dictionary definition of a 'torus'.

[14] Jarry has changed the syntax of the French translation here, and only used part of a sentence. '*Elle* libre' may also be read: 'the Machine is azimuthally free…'; the translation is tentative, as no verb *librer* exists or can unequivocally be divined from the adjective *libre* (free). The word *libre* occurs in the French translation (*op. cit.*, p.342) as an adjunct to affirm the gyrostatic cube's ability to be displaced laterally, or as Thomson wrote: 'The gyrostatic domination thus provided, causes the cubes to be practically immovable in rotation, but leaves them perfectly *free* to take translatory motion.' ('Ether, Electricity and Ponderable Matter', §26, my emphasis.) Jarry conceals the main flaw in his essay – namely that 'a system of gyroscopes will not resist motion in a direct line, but only angular motion' (William Crookes, from a letter published for the first time in *The Time Machine Dossier*, see below, p.331) – by italicising the very word that precedes his omission, thus making it 'hyperobtrusive' (Poe).

And he will continue with uniform acceleration, at a rate governed by himself and in accordance – almost – with Newton's law of gravitation, since to reach a moment in the past prior to $-t$, which is therefore written $< -t$, he must be able to read a number off the dial equal to:

$$V < (< -t)$$

V. Time as seen from the Machine

We should note that there are two *Pasts* for the Machine: the past that occurred before our own living present, the real past so to speak; and the past *created by the Machine* once it has come back to our Present, and which is nothing other than the reversibility of the Future.

Likewise, since the Machine cannot reach the real Past until it has first shot into the Future, it must pass through a certain point, symmetrical to our Present – and like it a still point between the future and the past – and which we should call the *imaginary Present*.

To the Traveller on his Machine, Time thus presents itself as a curve, or better still as a closed curved surface, analogous to Aristotle's *ether*. Some time ago, we ourselves had occasion to write *Ethernity*, for reasons that were barely different (*Exploits and Opinions*, book VIII). The observer who lacks a Machine sees Time stretching out from the half that he is in, and sees *less than half of Time*, in much the same way as the Earth was first thought to be flat.

A definition of Duration may easily be deduced from the way in which the Machine works.

Since Duration results when t is reduced to 0, and then from 0 to $-t$, we can write:

Duration is the transformation of a succession into a reversion.

I.e.:

THE BECOMING OF A MEMORY.

DR FAUSTROLL.

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[15] The reader is cordially invited to vary the tenses of this sentence at will, the better to savour the effect of time travel on the meanings of tenses.

[16] A bluff: Thomson tried repeatedly to pin a figure to the diameter of the atom, but his experiments do suggest a magnitude of between 1×10^{-8} and 1×10^{-9} centimetres.

Mieke Bal

THE TIME IT TAKES

Clock Work

Is Christian Marclay's 2010 video installation *The Clock* with its duration of 24 hours, an instance of Bergsonian duration, a Deleuzian 'time image', a time machine of sorts, or does it propose another relationship to time? It is obviously 'about' clocks, but how is it 'about' time – addressing the complexities of our current thinking about time and the image? Margot Bouman's in-depth article on the intricacies between what she calls, after Bourriaud (2010), 'postproduction aesthetics' and everyday life considers the curatorial act the work performs. (2014) And although she writes extensively about what can be called duration fatigue, the ambivalent responses people express after the intense and long confrontation with time as such, duration itself is not discussed, and neither Bergson nor Deleuze appear in her references. The idea of a time machine, according to Jarry or not, is also absent from the excellent article. So, why would I bring these conceptions of time up, if, at least according to the critic in question, they are not relevant for Marclay's work? Well, because that negative answer is remarkable, and can perhaps help us to get a clearer sense of both Marclay's masterpiece and the notion of time.

I have not been able to see the full 24 hours of *The Clock,* but enough hours of it to be able to see that Bouman rightly ignored the three possible invocations of theories of time. While *The Clock* is constantly, sometimes nerve-wreckingly alerting us to the passage of time, it is the opposite of durational. You can spend as much time in the work as you like, and it neither stretches nor compresses time. Instead, it is both continuous and hectic. Through a miraculously smooth editing, the artist manages to suggest continuity between clips, and thus would seem to heal the cuts of the montage and soften the spatialisation of time that time reckoning inevitably entails. Bergson's insistence on continuous duration was a protest against just such spatialisation. But Marclay's video does all that wonderful transition work while simultaneously highlighting the ticking of the clock. He seems to attempt, that is, to reconcile clock time with Bergsonian duration. But in the end, he does that only to foreground the intractable, relentless domination of clock time. So far, however, I am merely talking about what the work is 'about'.

What is at stake, in thinking about time, is much more than the thematic obsession of the work. Marclay deploys a cinematic aesthetic in his terrific editing together of incongruously arbitrary sequences of clips. His master trick – of making the clocks in the clips coincide with real time – creates an opposition that through its very focus on the clock, questions it. He opposes, that is, the cinematic experience to the everyday aesthetic from which the former temporarily relieves us. This opposition complements the clock-duration antagonism with an awareness that begins to notice the social importance of recognizing the tyranny of clock time. As a cinematic dispositif, the work 'discusses' the clock, but not in opposition to duration.

Time Tensions

I will return to Marclay's work – already a classic, barely four years after its launch – later on. For now, I want to put the double opposition to conceptual use. The opposition between time and its spatialisation is foregrounded in the presentation of *The Clock* as an installation, not a theatre film. That tension between cinematic aesthetic and everyday experience shifts the cinematic experience as well as the experience of art in galleries from the autonomist suspension of reality to a constant interaction between the two. It is within that interaction that the question of the social importance of the tyranny of clock time and the tensions inherent in it can be considered in more depth. This helps us to get a bit closer to grasping what an image is and does, and how it relates to time.[1]

This understanding is necessary because those tensions are what compels society, including many philosophers, to adhere to clock time, or at least, to borrow from it the naturalization of the divisibility of time. What makes *The Clock* so important is that it is supersedes the opposition, not denying it or taking sides but bringing clock time to the centre, then forcing the viewers to acknowledge its power and yet, simultaneously, stay with the cinematic dream of manipulatable time, in a sampling of fictional moments. The viewer who, every now and then, looks at her watch to check if the film is not cheating, is put in the middle of experiential time and thrown out of the cinematic cushioning time. And thanks to the integration of the two, that experiential time is, precisely, made to be felt in tension with clock time. Those tensions are constantly impacting on our lives. For time is not homogeneous in our experience. Because we are so frequently multi-tasking, we are also multi-temporalising: simultaneously living different paces in the same stretch of clock time. I term this multi-paced experience *heterochrony*. (2011)

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[1] *The Clock* has been extensively discussed. I just mention the dossier edited by Catherine Russell (2013), which offers excellent analyses.

Heterochrony can be seen most clearly when we examine the relationships to time in migratory culture. The concept of *heterochrony* helps account for the experiential differences facing, or being ruled by clock time, and brought it to bear on 'migratory aesthetics'. With the qualifier 'migratory' I refer not to the culture of migrants but to the shared culture within which migrants have a normal place. For millennia, but quite drastically more recently, cultures have changed under the impact of migration, and the merger that results is a migratory culture – much enriched, by the way, including aesthetically; hence the phrase 'migratory aesthetics'. It is within such a culture – and few cultures in the world, at this point in time, are not 'migratory' – that heterochrony becomes more visible, or otherwise sensorially present. When standing in line at the registrar of a supermarket, we seem to be all equals, at least in terms of 'being in time'. But the homemaker who has children waiting, perhaps prone to mischief, will be more impatient than the student who is chatting on his mobile with a mate.[2]

Once we realize such differences in experiencing time, a little thought experiment as an exercise in migratory-cultural awareness could be to imagine being a migrant standing in that same line, who is waiting for months to hear about his residency, hence, also work permit. Meanwhile, his family back home is waiting for money – making money was the justification of his painful departure. For such a person the wait becomes oppressive – an enforced waste of time. But heterochrony gets more complex, or dense, when such a migrant has also been used, in the home country, to hanging about the village, unemployed, with all the time in the world on his hands. Then, forced into clandestine labour by the slowness of bureaucracy in the host country, suddenly every minute counts to make the hours necessary to even begin to support his own everyday life. Waiting in line at the supermarket becomes a double negative. Such a person experiences time in both durational and clock aspects, at the same time, and in tension with one another, as well as in fierce competition, with clock time winning – on penalty of death.

In light of this insight, the homemaker in the supermarket line can be understood as experiencing clock time: while wasting said time standing on already tired feet, she knows her son must be driven to a music lesson, the baby soon needs feeding, and the anxiety of not making these two urgent tasks in time makes the wait seem longer than it really is, perhaps. What such a person sees, while standing there, is not the same as what other fellow waiters perceive. Heterochrony is decisive in our experiencing of time, and no homogenised clock can regulate that away. I contend that understanding images must take this into account.

Against the background of a heterochrony that, by its very nature, is multiple and cannot be equalized, I propose to consider how an image relates to time, what difference a moving image makes in that relationship, and what space, the matter of video installation, imports into the knot of image and time. Although film is also spatially situated, video installation as a form of exhibition is primarily defined as spatial. I will argue that the successful display of video installations foregrounds, indeed, 'theorises' the fundamental temporality of images, including allegedly still images. In so doing, this art form enables reflection on, and subsequently, the development of strategies for, the struggle against the tyranny of clock time. In this sense, video installation is a time machine; not quite the one for 'exploring' time, as Jarry imagines, but for shifting priorities in experiencing time socially.

[2] The allusion to Martin Heidegger's *Being and Time* (1962) has to remain an allusion at this point. For a brilliant analysis of Heidegger's text in relation to visuality, see Silverman 2000.

Image Acts

Time is a timely topic so to speak, and many art scholars write about it. From the image in time, drawing the discussion back to contextualization, to the temporality of images, including but not exclusively, the moving images of film and video, time is currently being considered in its many aspects and manifestations. We can think of sequential ordering, duration, rhythm, memory, uncertainty and undecidability, affect and suspense, to name but a few, and the kinds of time the combinations of these aspects entail, such as deep time, geological time, narrative time, and many more. Many scholars, also, bring these considerations of time to bear on the capitalist time we are submersed in; I abbreviate, and generalise that notion to clock time, but conversely, it is useful to remember that clock time, dating from the colonisation period, is fundamentally in the interest of capitalism. A remarkable recent contribution by Sven Lütticken brings many threads of these efforts together. (2013) But not only scholars explore time in art; artists themselves do so in depth and creative research. So does, for example, William Kentridge's 2012 opera *Refuse the Hour*, which is a brilliant artistic reflection on time and specifically its anchoring in colonialism, as well as the video installation version, *The Refusal of Time*. That focus on colonialism, of course, makes an excellent contribution to the thought experiment suggested above. Kentridge's opera, with its fast-paced music, singing, and dancing, the slowly declaiming lecturer (Kentridge himself), the video projections on several screens and the odd instruments, is as fundamentally about heterochrony as Marclay's work is about multiple experiences of clock time. [3]

To understand the way images are in time, Bergson's conception of the image is my favourite. Neither Bergson nor Deleuze whose work on cinema (1986; 1989) is anchored in Bergson's work – primarily his 1896 *Matter and Memory* – give a definition of either duration or the image. And while Deleuze's exegesis of Bergson's work , published in 1966 as *Le Bergsonisme* (1988) clarifies key points, definitions remain lacking. Rather than deploring this, I applaud the absence of reifying, fixating definitions of concepts. As I have argued in a different context, (2002) also inspired by Deleuze, concepts travel, through time, space, and disciplines, and fixating them in definition denies of precludes such journeys, forcing the concepts to return unchanged to their point of origin.

Instead, Bergson's work encourages an imaginative understanding of his ideas and concepts. Given the high level of abstraction in Bergson's texts and the high degree of difficulty of Deleuze's, I propose an utterly simple way of imagining what the philosophers mean in relation to our interest, here, in time as something to be explored by a machine, considered as a construction, or as the element of social life I suggest with my term 'heterochrony'. *Matter and Memory* is subtitled as an 'essay on the relationship between body and mind'. But instead of either matter or memory or both, mind or body or both, all chapters have the (undefined) word 'image' in their titles. As it turns out, the body is the central image in the processes Bergson analyses. The book is entirely subject-centred.

As a prelude to my simplified account, imagine a vertical line, representing time, which meets a horizontal line, representing space. At the point of meeting is the subject in the act of perceiving. A point: nothing; no time, no space. But potentially, movement in both directions – past, when the present perception touches memories; and future, toward which the perception inclines. And something similar on the space line: also movement, of images-candidates to be seen. So far, it all seems utterly simple and clear. Now, imagine both lines to extend and expand and become fields, filled with a great variety of images. Suddenly it is not so simple anymore. The time line transforms into a wild, rocky landscape of heterochrony. The space line becomes a field where all kinds of things move to get the attention of the subject. No wonder the subject must be selective.

Indeed, selection is the key to live in such chaos. Bergson's book starts with the thesis that perception is not a construction but a selection. The subject makes a selection from amongst all possible things to see in the material world around her. She does this in view of her own interests, including bodily interest. This simple idea has transformed contemporary thinking on representation, which for a long time was bound to an opposition between mimesis (seen as imitation) and construction. Perception, in Bergson's radically different view, is an act *of* the body and *for* the body. The act of perception occurs in the present – a moment in time that occurs in, but has itself no duration. The meeting point of the two lines indicates the present. The result of the act is an image, based on the similarly restricted spatial selection. We can, therefore, as well speak of *image acts*. The question is, how the rigorously continuous duration – past and future – and the rest of the space surrounding the selected bit participate in the image.

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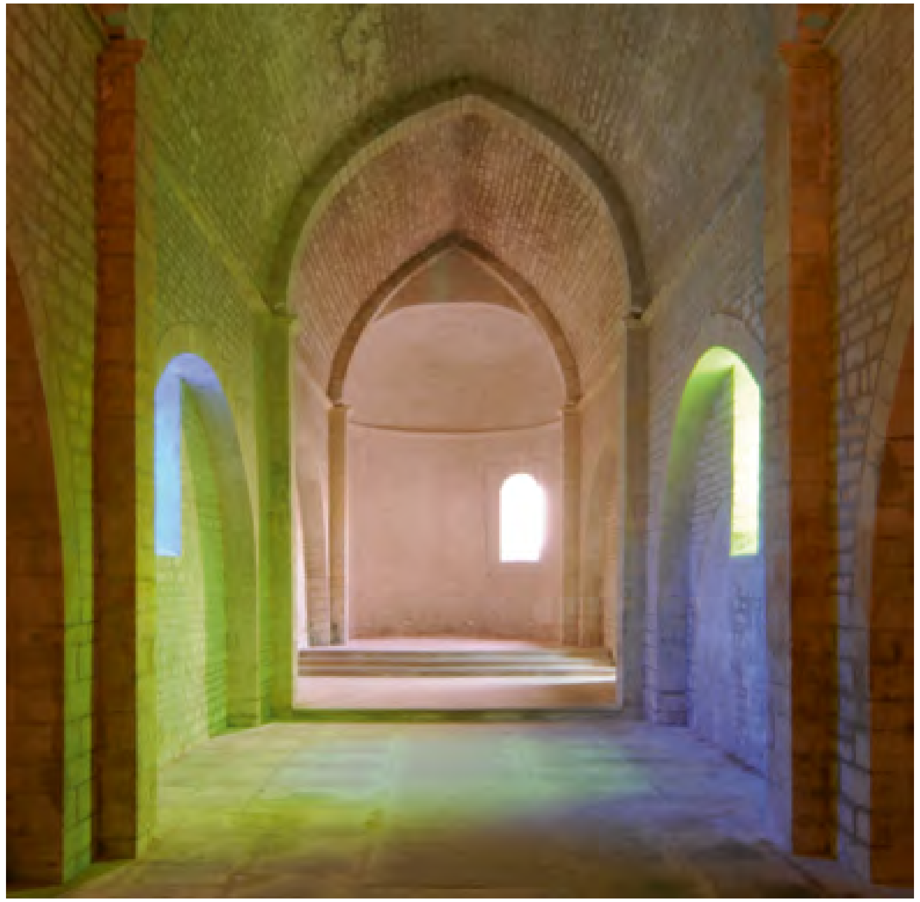
[3] Aylin Kuryel proposes the term 'image acts', coined in analogy to speech acts, for socially influential images in a detailed examination of the use of the image of Atatürk for the promotion of, but also changes in, the political landscape of contemporary Turkish society. (2015).

Time-wise, this is where memory comes in. While occurring in the present, perception is bound to memory. A perception image that is not infused with memory images is impossible to understand. The subject would 'do' the image but not be able to make sense of it, and thus make it work for her own interests. At the end of the book, Bergson writes:

> In concrete perception memory intervenes, and the subjectivity of sensible qualities is due precisely to the fact that our consciousness, which begins by being only memory, prolongs a plurality of moments into each other, contracting them into a single intuition. (1991, 218–19)

The final part of this sentence explains why Bergson insisted on duration so strongly. Like time itself, memory is indivisible, and what he calls 'intuition' is an understanding – with body and mind – of the image resulting from the act of perception as filled with older images, as well as projecting futurality. As Deleuze wrote in *Bergsonism*, 'Bergsonian duration is … defined less by succession than by coexistence' (1988, 60). Think of the line, now thickened to become a field, landscape, densely heterochronic. That coexistence of different moments (or memories) has a spatial aspect to it, and as I will argue in the last section, this timespace is given shape in video installation in the simultaneous presence of – and, hence, the simultaneous movement on – multiple screens. For the concept of the image I am proposing, what matters, in Bergson's view of perception, is the movement inherent in the act of perception that leaves the images as its result. What Kuryel understands with her term 'image acts' is the subsequent deployment of such acts in the social domain. The image constantly changes in all respects:



Ann Veronica Janssens, Chapelle Saint Vincent, Cemetery, Grignan, Drôme (France) 2013.
Photo: © Isabelle Arthuis

meaning, location, use. Hence, still images can also be considered moving. [4]

Belgian artist Ann Veronica Janssens was commissioned to restore the chapel Saint Vincent of the cemetery in Grignan (Drôme, France). Janssens is an artist of light and duration. She makes installations that invite spectators to endure, so to speak, and enjoy that duration. They produce image acts, but it is the task of the viewer to perform such acts. Her most famous works with mist and colour as their primary materials make the experience of duration so strong that they can be considered time machines on their own. The principle is always extremely simple and the mechanisms of the installations are never hidden. Yet, the experience is exceptionally strong. Visitors tend to spend much more time in her installations and exhibitions than is usual, an effect I attribute to the collaboration between light and colour in movement. They are never stable, or still.[5]

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[4] This account of Bergson was the basis for my analyses of the work of Finnish video artist Eija-Liisa Ahtila (2013a).

All she did in Grignan to the decrepit medieval structure to bring it back to life was put four coloured glass plates in the windows. The result is not just a permanent invitation to a mesmerizing, immersive experience of magically changing colours. It is an emblematic demonstration, a confirmation as well as defiance of the idea of the act of perception becoming an image act. Surrounded by colour as if the air had been painted, the visitor entering the chapel is unable to do the selecting of a single image, but becomes aware that that impossible selection is what looking is. Instead, the image is sticky. It remains on the skin of the visitor who can hardly leave in an instant. Literally, the colours change every instant, faster than one can take a breath; imperceptibly, so that it seems slow; and as there is no transition between colour fields, no lines other than those of the ancient architecture, adding a long duration to the relatively brief, yet mostly rather long visit. The view of the chapel produces the kind of image that demonstrates that the image moves and is moving.

Moving Images

Bergson's view of the image, or rather, of matter and memory, or rather still, of the relationship between body and mind, has inspired Deleuze's work on cinema, which has had such an impact in cinema studies that it makes no sense to attempt summing it up. David Rodowick's work has consistently been engaging Deleuze's theory, from early on (1997) to recently (2010). Patricia Pisters (2003) offers a lucid account, and Paola Maratti's short book (2008) is perhaps the best way to access the important question of cinema *as* philosophy, rather than philosophy using cinema as a 'case', or worse, an illustration. Here, I just want to propose that cinema and video, as the techniques and aesthetics (plural) of the moving image, can be considered an extreme, or intensified case of the image that, when seen according to Bergson's view of

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[5] See my book on Janssens' work and its political effect not in spite of but thanks to its abstraction (2013b).

perception, is moving by definition anyway. This makes Bergson's conception of the image synonymous with the moving image. It also makes cinema a form of philosophy indeed; I call it a 'theoretical object' – something that enables and encourages us to explore, like Jarry's time machine, what movement means for images.[6]

Because the image – as a coexistence on that point between the two lines, of perception *in* the present and memory *of* the past – is necessarily in movement, the question, what a moving image is or does, is not simply a more specific version of W.J.T. Mitchell's 'What is an image?' to quote the title of his classic opening chapter of *Iconology*. (1986) The movement of the image in film is a technical concretization, or even an embodiment, of the movement inherent in the image as such. But not for nothing has the qualifier moving had a double meaning in so many cultures and times. If we add to this fundamental moving quality of images the second meaning of moving as emotionally – or affectively engaging, we can see the answer to the question. The knot of movements implied in the image as such entails that the image itself, not its support, is both moving and material. It is plural and functional – it *does* something. Today, we call it *performative*. If the image is performative, it moves, affects, transforms.

Let's start at the other end for a moment, not with Bergson but with the moving image. We already know that the moving image is based on two movements: that of the profilmic movements of actors or subjects doing things in front of a camera, and the movement of the unfolding of the film before the eyes of its viewers. This unfolding occurs in a duration that, as *The Clock* foregrounds so effectively, is a manipulated duration. In terms of the narratological concept of frequency – the ratio of how many times something happens and how many times it is represented – the profilmic movement is unique; it happens once, and can be seen as many times as you wish. To the profilmic movement of the unique occurrence that is recorded, Bergson's image, even regardless of whether it is still or moving, adds the movement inherent in perception and the image it makes. And if we add emotional movement, of being moved by what we see, the moving image, so skilled at affecting us emotionally in a great variety of ways, from Hollywood tearjerkers to films so beautiful that they move us

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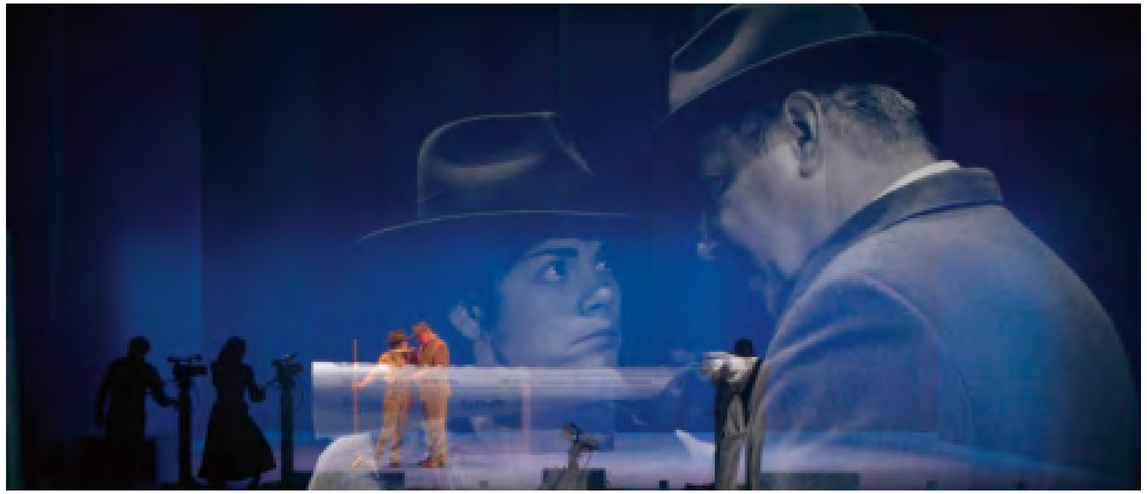
[6] The concept of 'theoretical object' has been coined by Hubert Damisch. (Bois et al. 1988). Nanna Verhoeff (2012) has coined a very interesting specific version of this concept in an analysis of new media, as 'theoretical console'.



Stan Douglas, *Helen Lawrence.* 2014. Haley McGee as Julie, Gerard Plunkett as Muldoon.

profoundly on the level of aesthetic, compels us to think what that tight connection of movements means for our relationship to time. For this, I propose to look at the 'genre' of video installation as a theoretical object that enables and compels us to think what it does to the idea of an image, a moving image, and that element that has, so far, been under-illuminated: space.

Like Janssens, Canadian artist Stan Douglas both confirms and defies the properties of the moving image, not only in his video work but also in the still photographs that are his hallmark. He recently made a work in a medium he had not yet worked in before. In his 2014 performance/play/film *Helen Lawrence* Douglas stages live actors who film one another so that the actors on stage are being composited into virtual sets in real time on a scrim before the stage. 'Real time' seems miraculous, simply because it is indeed real. The simultaneity between the two sets of images makes the viewer constantly aware of having to select the one or the other image layer, or every once in a while, the third, the led screens on the video camera. The resulting constant shifting becomes a heterochronic experience, multiplied by the historical setting (the postwar years) in tension with the presentness of the live acting, foregrounded by the contrast with the intensely cinematic images on the scrim. Heterochrony is compounded by hereto-aesthetics. The profilmic movement is staged behind the resulting, but simultaneously presented filmic movement. The latter allows, in a way the former does not, the emotional movement to become both irresistible and critically brought to awareness through interruption.

(In)stalling Time

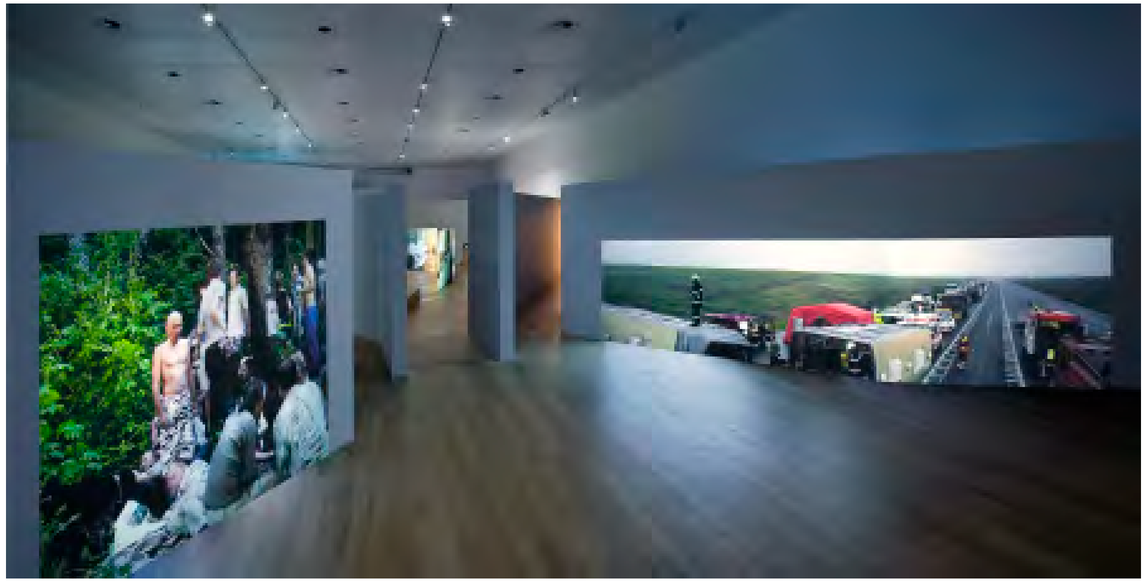
In an essay on Eija-Liisa Ahtila's work, Leevi Haapala gives a definition of sorts of video installation when he writes: '… a video installation displayed over several screens must be seen as a space for the pure movement of a *trace*' (2012, 171; emphasis added). But trace is a spatial term, although it implies time. In Derrida's work (1976) the trace is presented as temporal, both past and future oriented, and this accords nicely with Bergson's insistence on the coordination between these two temporal dimensions – the reversal of which is the ultimate goal of Jarry's time machine. But a trace is also something visible, pressed on a spatial, material substance, such as earth, or paper; an image, with all that this term implies. If we now remember the horizontal line where the vertical line of time meets to constitute an act of perception becoming image act, we can see that space, just like time, is imagined as emanating from the subject.

According to Bergson, space is not geometrical, as in Renaissance perspective; consequently, it is neither measurable nor identical for everyone who perceives it. Bergson's view is not in contradiction with linear perspective; it just displaces the centre from the space encompassed by the gaze to the subject of gazing. This makes it so intensely variable. The same space in the material sense changes as the subject turns – imagine a kaleidoscope. Instead, our sense of space develops according to what Bergson calls a 'natural feeling.' This natural feeling is heterogeneous and different for everyone, depending on wherever they are, and what their interests make them see. This heterogeneity of space is comparable to heterochrony. It is not whole, not smooth, not homogeneous. Imagine a photograph or film with shallow depth of field, and that that technical device with its strong aesthetic effect as a theoretical object. Bergsonian space would have shallow depth of field;

its order and clarity are determined by the act of perception of the subject. Even if such an image were to be ruled by the law of perceptive, if put in actual, multiple movement it begins to wiggle out of that law.

Now, let's reason back from video installation to still images in exhibition – since exhibition is the framework for this essay. In a gallery, paintings hang on the wall. Each one is an image, and if we care to actually look at it – select it for our act of perception – it will become something in its futurality, and stay with you in your image stock that is your memorable past. As a visitor, you move, through space, from spot to spot, from moment to moment. So far, nothing distinguishes such an exhibition from a video installation. Moreover, this situation is already an intensification of Bergson's image. For as a situation, an exhibition is a slice of duration where the clock time of everyday life is suspended. The acts of perception are intensified, and often prolonged, and the images to store in your past are, in the best of cases, clear and memorable, ready to resurface. In a Bergsonian framework, what Haapala wrote about pure movement as trace is not so much pure as multiple, and the trace is the coexistence, the convergence, and the gathering of images we do when slowly going through an exhibition.

Exhibition – whether of still or of moving images, equally – is a suspension of the pressure of clock time and homogeneous space as the outside world imposes them. A suspension – this suggests the definition of fiction that, while going back to Coleridge in the early nineteenth century, in chapter 14 of the *Biographia Literaria* from 1817, remains the most useful one, not to fixate the meaning of fiction, nor to establish its truth, but to use the imagination in thinking about what fiction can do for us. The willing suspension of disbelief: willing, not enforced; suspension, not cancelation; disbelief, the suspicions about truth we constantly bring to our perceptions. Importantly, being in an exhibition is endorsing fictionality as a mode of viewing. Keyword: suspension.


Aernout Mik, *Communitas*. Stedelijk Museum Amsterdam 2013

In the video installations of Dutch artist Aernout Mik, things happen but there is no outcome. There is motion, commotion, and emotion; hence, narrative, but without conclusion: no story. Nor can one identify with central figures. Suspension kills suspense, and brings fiction and reality in an intricate embrace. The experience of his exhibitions is unsettling and, as a result, profoundly empowering. He stages situations that are real, in a visual discourse that is fictional. His videos have no sound, which makes visiting his installations even more visually immersive. But the situations and the images are in a heterochronic and heterotopic tension comparable to *The Clock*. Here, too, the reality and the fictions throw upon the viewers as much a rabbit-duck dilemma as the stage and the scrim in Douglas's play do. In this exhibition, architecturally designed by Mik himself, visitors are confronted by two incommensurable situations: a leisurely happening in a park and a grim accident on a highway. The spaces waver between corridors and galleries, some wider, some narrower. Most angles are dull. There is no itinerary, no chronology. One can always see in the distance another work while watching one. Most images are flush with the floor, so that visitors and figures are in the same space, near one another. The spaces as much as the situations are arranged in an incongruous continuum.

Just as the moving image is an intensification of the image as such, video installation is an intensification of exhibition as such. Now

I would like to come to the point of all this, in the perspective of a commitment to a political view of art, one where time is a helpful tool instead of an oppressive force. What leap can we make for such an argument? Again, Bergson, in a later work, offers a conceptual possibility, in yet another kind of movement. In 1907, the philosopher proposed the concept 'creative evolution' (1983) to describe this type of movement. 'Evolution' has become a rather problematic term, but for Bergson it is a temporal term, meaning futurality. And 'creative' appeals to the imagination. The movement of this moment where perception coloured by affect and the prospect of action coincide occurs when, in perception, understanding and action are imbricated. This Bergsonian movement, the *readiness to act*, lies at the heart of the political potential of the (figurative) image, film, and video installation. And if I put these three in that order it is to indicate their staggered relation as theoretical objects, intensifying the preceding one so as to better understand it.

If we consider the art form of video installation as a concrete instance of the multiply-moving image, then this art form can create the *literal* embodiment of this potential in a *fictional* space that, with the help of the viewer, can become a political, democratic space. (Brown 1995) In such a space, thoughts are not illustrated but actualized *in*, and not *by means of*, the artworks. The result is the 'theoretical object' in action: constellations of ideas, emerging around central aspects of video installation foregrounding the work this art form can do. Multiple movement as the basis of the (moving) image as interacting with viewers who suspend their haste and their suspicion, and as they are relaxing their bodies, they relax their minds. This opens them up to an experience of all those movements, in a time of duration that is, temporarily, relieved of relentless clock time. Suspension, in terms of time, when actively done, is stalling.

Stalling is a bit like resistance, but not quite as negative. For during the stalling, another time comes in, complicating the viewer's own. Endorsing the suspension of clock time by willingly suspending it through immersing oneself in a video installation, tone encounters the sensation that the spatial extension from the subject outward, or extensity, also applies to time. Duration is linear, and the present is just a point, as argued above. 'Bergsonally', that present goes to the past to recruit memories, including those potentially strong ones of aesthetic experiences, and it goes to the future where affect morphs into the action it compels. For now – the present of the presence in the video installation – the point, astonishingly and even illogically, does acquire substance: that of the borrowed, fictional time of the moving images. This time machine that is the video installation – and in its wake, the moving image as such, and the image as such – works, not by exploring time, but by thickening it.

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PETER OSBORNE

MODERNITY IS A QUALITATIVE, NOT A CHRONOLOGICAL, CATEGORY: NOTES ON THE DIALECTICS OF DIFFERENTIAL HISTORICAL TIME

> We are weighed down, every moment, by the conception and sensation of Time. (Charles Baudelaire)

Few thickets are more tangled than that in which the idea of modernity has become enmeshed; few topics less likely to inspire confidence than the question of its relations to the 'postmodern'. Not least of the problems concerns the character and status of the concept of modernity itself. For it is far from clear that the main figures in recent debates have been writing about, and disputing, the same set of issues when the term has been used. This is of course, in one sense, precisely the point. It is the meaning of 'modernity', as much as anything else, which is in dispute, and the argument is hardly just terminological. None the less, there is reason to believe that there remains scope for reflection about what kind of concept 'modernity' is, and in particular for a more systematic consideration of the relations between its various uses. What follows is offered as a preliminary contribution to this task.

I shall concentrate on three distinct but connected approaches to the problem: the ideas of modernity as a *category of historical periodisation, a quality of social experience*, and an (incomplete) *project*. Underlying and unifying my account is a concern, derived in large part from the writings of Benjamin and Kosselleck, with modernity as a distinct but paradoxical form of temporality, and a reading of the modernism/postmodernism controversy as a dispute in the field of the politics of the philosophy of history.

I take as my starting point and thematic perspective Perry Anderson's critique of Marshall Berman's 'recovery' and celebration of modernity, *All that is solid melts into air*.[1] Berman's book, I believe, offers the most immediately appealing general account of modernity currently available; whilst Anderson's critique strikes at, but only partially hits upon, what I take to be both the main problem with the concept and the source of its enduring strength: namely, its homogenisation through abstraction of a form of historical consciousness associated with a variety of socially, politically and culturally heterogeneous processes of change. The key to the matter will be seen to lie in the relation between the meaning of 'modernity' as a category of historical periodisation and its meaning as a distinctive form or quality of social experience; that is to say, in the dialectics of a certain *temporalisation of history.*

Modernity and modes of production: Berman and Anderson

Anderson's objections to Berman's account of modernity are four-fold. In the first place, he is seen to have produced an egregiously one-sided version of Marx's account of capitalist modernisation, which falls prey to an uncritical, because undifferentiated, concept of historical time. This is reflected, secondly, in an abstract and 'perennial' concept of modernism which fails to register the historical specificity of aesthetic modernism as a portmanteau concept for what is in fact a set of distinct if conjuncturally releated movements, which are in any case now definitively over. Thirdly, his modernist ontology of unlimited self-development, although apparently derived from Marx, is actually based in an idealist form of radical liberalism which, from a materialist standpoint at least, is self-contradictory. Finally, his account of modernity as permanent revolution removes from the concept of revolution all social and temporal determinacy, robbing it, in particular, of its temporal specificity as a punctual event. ‘The vocation of a socialist revolution’, Anderson concludes with characteristic flourish, ‘would be neither to prolong nor to fulfil modernity, but to abolish it’ (Anderson 1984, p.106). What are we to make of this critique? And how does it relate to the fundamental issue of what ‘modernity’ is (supposed to be)?

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[1] Berman 1983; Anderson 1984. See also Berman's reply to Anderson, Berman 1984.

The first thing to note about Anderson’s critique is its oscillation between two quite different senses of ‘modernity’: ‘modernity’ (I) as a flawed and misleading category for the identification and analysis of historical processes which are better understood in quite other terms; and ‘modernity’ (II) as the legitimate designation for an historical phenomenon, the theoretical comprehension, but not the identification of which is contested. The difference is difficult, but crucial. Anderson equivocates. He seems, in general, to adopt the first sense – he offers a Marxist critique of the discourse of ‘modernity’. Yet his conclusion emphatically presumes the second: modernity is an historical reality, capable of ‘prolongation’, ‘fulfilment’ and ‘abolition’. The connection resides in the reflexivity of historical experience itself: ‘modernity’ has a reality as a form of cultural self-consciousness, a lived experience of historical time, which cannot be denied, however one-sided it might be as a category of historical understanding. It is the texture of this reality of cultural form that Berman sets out to re-create in the name of its admittedly contradictory emancipatory potential. For Berman, in other words, modernity is in some quite basic sense an historical given. For Anderson on the other hand, whilst it might be given as an ideological form (a mode of experience produced and reproduced by the rhythm of the capitalist market), it is ‘given’ in this specific, restricted and ultimately derogatory sense only. It is a misrepresentation, a form of misrecognition. We are thus offered in its place an alternative, Marxist account of historical development, based on a periodisation of modes of production, the rise and decline of classes, and ‘a complex and differential temporality, in which episodes or eras [are] discontinuous with each other, and heterogeneous within themselves’ (Anderson 1984, p.101).

But there is a problem with this opposition of modernity to modes of production: namely, as we shall see, that it is precisely this latter idea of a *differential* temporality which is associated, classically, with the idea of modernity itself. The question thus arises as to whether Anderson has not simply seized on a deficiency in Berman’s presentation of the concept of modernity (its reduction to a celebratory ‘dialectic of modernisation and modernism’), rather than, as he supposes, a fundamental problem with the category itself, which he wants to replace, or at the very least decode, with conjunctural analyses of the cultural consequences of capitalist development – conjunctural analyses which, in their privileging of the moment of the present, would appear to be a modification of the temporal problematic of ‘modernity’ itself. The problem derives from the absence in both Berman’s and Anderson’s accounts of an independent treatment of the logic of ‘modernity’ as a category of historical periodisation.

In the introduction to Berman’s book, modernity is periodised into three fairly conventional phases: 1500–1789, 1789–1900 and 1900 onwards (early, classical and late?). But there is no consideration of the way in which the idea of modernity itself marks a new way of periodising history; no consideration of the relation between the kind of historical time occupied by modernity as an *epochal* category and that which is internal to modernity itself and is registered by Berman in terms of the temporal logic of modern*ism*: that ‘amazing variety of visions and ideas that aim to make men and women the subjects as well as the objects of modernisation’ (Berman 1983, p.16). To this extent, Berman remains within the tradition of an unreflexive sociology of modernity wherein the attempt to establish what is new about ‘modern’ societies fails to reflect upon the temporal co-ordinates and conceptual implications of this form of investigation itself.[2] For there is something decidedly new about ‘modernity’ as a category of historical periodisation: namely, that unlike other forms of epochal periodisation (mythic, Christian or dynastic, for example), it is defined solely in terms of temporal determinants, and temporal determinants of a very specific kind. It is the failure to recognise the logic of these determinants that underlies naive concepts of ‘postmodernity’ as a new historical epoch which succeeds modernity in historical time just as modernity itself

[2] The self-fulfilling character of theories of modernism which remain unreflexively bound to the perspective of their objects is a preoccupation of Raymond Williams’ late work on modernism (William 1989, chs 1,2). But the problem is equally if not more acute in sociological theories of modernity. ‘Modernity’ is not just the privileged object of classical sociological theory; it constituted its standpoint as an academic discipline at the time of its foundation in the closing decade of the nineteenth century (Frisby 1985, p.2). See also Giddens 1971.

[3] Koselleck 1985, pp.231–66. For a more wide-ranging survey of the semantic pre-history of ‘modernity’, see Calinescu 1987, pp.11–92. The differential register of the new historical time within different European languages is bound up with the different forms and rates of economic and political development in European nation-states. This complexity, internal to European development, must however be distinguished in principal from differences in the meaning of ‘modern’ in other non-‘Western’ cultures produced by their exposure to European ideas and

succeeded the ‘Middle’ Ages.

In order to get an initial grasp of this particular temporal logic, it is useful to look at Koselleck’s reconstruction of the semantic prehistory of ‘*Neuzeit*’ (literally, ‘new time’), a German term for modernity which is found in its composite form only after 1870, in “Neuzeit’: remarks on the semantics of the modern concept of movement’ – leaving side, for the time being, the problem of the differential register of the new temporal logic within different European languages.[3]

From ‘Neue Zeit’ to ‘Neuzeit’: Koselleck’s historical semantics

The distinctive characteristic of *‘Neuzeit’* as an epochal term, Koselleck argues, is that – like ‘*der Moderne*’, *‘les temps modernes*’ or ‘the modern age’, which register the ‘presentness’ of an epoch to the time of its classification, but even more explicitly – it ‘refers only to time, characterising it as new, without, however, providing any indication of the historical content of this time or even its nature as a period’ (Koselleck 1985, p.233). The conditions for such an abstract sense of the historical meaning of the present appear to have developed in five successive stages:

1

The consciousness of a new age which developed in Europe in the course of the fifteenth century was initially registered in two ways: by the emergence of the terms ‘Renaissance’ and ‘Reformation’ for ideas denoting the threshold of a new (unnamed) period; and by the designation of the preceding epoch, subsequent to Antiquity but now definitively over, as the ‘Middle’ Ages *(Mittelalter)*.

2

In the second stage, which runs roughly from the sixteenth to the end of the seventeenth century, the threshold concepts of Renaissance and Reformation through which the consciousness of a new age was initially registered, were transformed into ideas descriptive of now completed historical periods. This called for a term denoting the new period as a whole which followed the Middle Ages. It is at this point that the phrase *‘neue Zeit’* comes into use – although only at first in a neutral, chronological sense – signifying that the times are ‘new’ by contrast with the Middle Ages or *mittlere Zeiten*. There is, however, no specification of a criterion of newness here. *Neue Zeit* is thus not, at this stage, a category of historical periodisation in any substantive sense. Rather, it stands in for the absence of one, along with the term *modernus*, meaning, as it still does, ‘of today’, as opposed to of yesterday – what is over, finished, or historically surpassed. (This is, of course, the period of the famous Quarrel of the Ancients and the Moderns, or the ‘Battle of the Books’ as it came to be known. If the Renaissance may be characterised by the replacement of the authority of the Church by the authority of the Ancients, it is this latter form of authority which now in turn becomes the object of attack.)

3

It is during the third phase, the Enlightenment, that the initially neutral phrase *‘neue Zeit’* comes to acquire the sense of a qualitative claim about the newness of the times, in the sense of their being ‘completely other, even better than what has gone before’ (Koselleck 1985, p.238). The condition for this transformation of the sense of the relationship of the present (and its immediate past) to the more distant past – from being a simple addition in a linear sequence of chronological time to a *qualitative transcendence* of the past of an epochal type which is more than the mere rebirth of a more ancient spirit – was a reorientation towards the future. This reorientation could only take place once Christian eschatology had shed its constant expectation of the imminent arrival of doomsday and the advance of the sciences and the growing consciousness of the ‘New World’ and its peoples had opened up new horizons of expectation. Only at this point was a conceptual space available for an abstract temporality of qualitative newness which could be of epochal significance,

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social forms in the context of colonial and post-colonial relations of military and economic domination. Modernity is a Western idea. Whether it can any longer be thought of as an ‘*exclusively* Western concept’ (Paz 1974, p.23), however, is doubtful. As Sakai reminds us (Sakai 1989, p.94): ‘there is no inherent reason why the West/non-West opposition should determine the geographic perspective of modernity except for the fact that it definitely serves to establish the unity of the West, a nebulous but commanding positivity whose existence we have tended to take for granted for so long.’ If, as Sakai suggests, ‘the West’ is not so much a geographic category as a geopolitical one, whereby the historical predicate of modernity is translated into a geographical one, and vice versa, then we must accept that as ‘the historico-geopolitical pairing of the premodern and the modern’ becomes increasingly problematic, new configurations of ‘modernity’ will be uncovered in non-‘Western’ places. This is well illustrated by the case of Japan (Sakai’s own example), but the point may be generalised.

[4] For an account of the postmodern sublime, see Lyotard 1982, 1984 and 1989a. It is in his treatment of the Kantian concept of the sublime that Lyotard’s view of the postmodern as a ruptural *modification of the modern* stands out most clearly. Thus he argues that whilst ‘modern aesthetics is an aesthetic of the sublime’, it is a ‘nostalgic’ one since it ‘allows the unpresentable to be put forward only as the missing contents’. The postmodern, on the other hand, is understood as ‘that which, in the modern, puts forward the unpresentable in presentation itself.’ As such, it is understood to impart ‘a stronger sense of the unpresentable’ (Lyotard 1984, p.81). Philosophically, the continuity here between the modern and the postmodern would seem to be at least as strong as the difference. For a critique of Lyotard’s sublime which stresses the conservatism of this connection, see Morris 1988.

As Lyotard’s definition of the Modern sublime in terms of ‘missing contents’ suggests, the debate over the character of the sublime is closely connected to the question of the possibility of a modern theology. It is interesting in this regard that, as because it could now be extrapolated into an otherwise empty future, without end, and hence without limit. ‘Modernity’, in the subsequently consolidated sense of *Neuzeit*, may in this respect be understood as the term for an *historical sublime* – a point of some interest in relation to recent purportedly ‘postmodern’ attempts to reappropriate the concept of the sublime.[4]

4

These developments culminate at the end of the eighteenth century in the context of the acceleration of historical experience precipitated by the Industrial and French Revolutions, in the consolidation of the emergent semantic potential of *neue Zeit* in the coinage ‘*neueste Zeit*’: a phrase which definitively separates the qualitative dimension of the idea from its continuing more ‘neutral’ usage. As Kosselleck puts it: ‘What could not be achieved in the concept of *neue Zeit* [because of the ambiguity produced by its continued neutral usage] was effected by *neueste Zeit.* It became a concept for the contemporary epoch opening up a new period [which] did not simply retrospectively register a past epoch’ (Koselleck 1985, p.249). Similarly, in the decades around 1800, ‘revolution’, ‘progress’, ‘development’, ‘crisis’, *‘Zeitgeist’* , ‘epoch’ and ‘history’ itself all acquire temporal determinations never present before:

> Time is no longer the medium in which all histories take place; it gains an historical quality … history no longer occurs in, but through, time. Time becomes a dynamic and historical force in its own right. Pre-supposed by this formulation of experience is a concept of history which is likewise new: the collective singular form of *Geschichte,* which since around 1780 can be conceived as history in and for itself in the absence of an associated subject or object.[5]

It is because of the qualitative transformation in the temporal matrix of historical terms which occurs at this time, that ‘modernity’ in the full sense of the term is generally taken to begin here.

Octavio Paz has pointed out, it is the combination of the Christian conception of irreversible time with criticism of its corresponding concept of eternity that yields the distinctive structure of the temporality of modernity (Paz 1974, p.23). In this sense, it would seem that ‘modern’ Christianity must base itself, exclusively, on a negative theology, as a religion of despair and existential crisis: a religion *after* and in the face of, if not the ‘Death of God’ then at least, the impossibility of redemption (cf. Calinescu 1987, pp.61, 78). The avant-gardist task, Lyotard writes, remains that of ‘undoing the presumption of the mind with respect to time. The sublime feeling is the name of this privation’ (Lyotard 1989a, p.211). For a further elaboration of this ‘presumption’, see Lyotard 1989b.

[5] Koselleck 1985, p.246. See also Blumenberg, ‘The epochs of the concept of an epoch’, in Blumenberg 1983, pp.457–482.

5

It is this full sense of a ‘newest time’ *(neueste Zeiten)*, opening up a new period by virtue of the quality of the temporality it involves, which was condensed and generalised in the latter half of the nineteenth century into the ideas of *Neuzeit* and *modernité*, thereby coming to be understood as constitutive of the temporality of modernity as such. It is this, the temporality of Baudelaire’s and Flaubert’s, Simmel’s and Benjamin’s late nineteenth-century modernity, the historical force of the fundamental objects of which ‘lies *solely* in the fact that they are new’ (Benjamin 1972, p.1152), which has been the focus of recent attention directed towards modernity as an aesthetic concept, and more broadly, as a form of social experience. The logic of the new, fashion, and aesthetic modernism as a ‘rebellion against the modernity of the phillistine’ (Calinescu 1987, p.45) which none the less works within the same temporal structure, may thus be understood as the result of an aestheticisation of ‘modernity’ as a form of historical consciousness and its transformation into a general model of social experience. It is in the course of this generalisation of an epochal form of historical consciousness into the temporal form of experience itself that the dialectical character of the new as the ‘ever-same’, articulated philosophically in Nietzsche’s doctrine of eternal recurrence, and deciphered economically in Marx’s analysis of the logic of commodity production, is revealed for the first time.[6]

Finally and more tentatively, to take us up to the present, we might complete Koselleck’s account by adding a sixth stage, in which the peculiar and paradoxical abstractness of the temporality of the new is at once problematised and affirmed. This is the stage after the Second World War during which, as Raymond Williams has put it, ‘ “modern” shifts its reference from “now” to “just now” or even “then”, and for some time has been a designation always going into the past with which [in English] “contemporary” may be contrasted for its presentness’ (Williams 1989, p.32). ‘Modernity’, fixed now as a discrete historical period within its own temporal scheme, as the golden age of its cultural self-consciousness, hardens into a mere name and is left stranded in the past. The Quarrel between the Ancients and the Moderns is replaced by a Quarrel between the Moderns and the Contemporaries (Calinescu 1987, p.92). ‘All that is left to us is to become post-moderns’ (Williams 1989, p.32). To become postmodern, however, in this sense at least, is simply to *remain* modern, to keep in step, a companion of the times (*Zeitgenossisch*) to be contemporary. ‘What, then, is the postmodern?’ Lyotard asks, ‘undoubtedly part of the modern. A work can only be modern if it is first postmodern. Postmodernism … is not modernism at its end but in the nascent state, and this state is constant’ (Lyotard 1984, p.79). It is in the irreducible doubling of a reflexive concept of modernity as something which has happened, yet continues to happen – ever new but always, in its newness, the same – that the identity and difference of the ‘modern’ and the ‘postmodern’ plays itself out at the level of time. What remains to be seen, what remains to be determined, is whether anything further can be extracted from this analysis by way of a second reflection which confronts it with a concrete account of the character of recent historical changes.[7]

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[6] The ‘ever-always-the-same’, Benjamin writes, ‘appears palpably in mass-production for the first time’, while ‘the idea of the eternal recurrence transforms historical events into mass-produced articles’ (Benjamin 1985, pp.48, 36). It is Benjamin’s linkage of Marx’s analysis of commodity production to Nietzsche’s concept of eternal recurrence, as the basis for his reading of Baudelaire and through him the city of Paris as the ‘Capital of the nineteenth Century’, which gives his account of modernity as a form of experience its unsurpassed combination of philosophical depth and cultural breadth.

[7] The term ‘post-modernism’ first appears in the 1930s in discussions of Latin American poetry (*postmodernismo*), but its meaning there lacks its current epochal dimension. An often cited early occurrence of the latter sense is the 1947 edition of Arnold Toynbee’s *A study of history.* The term first began to gain a general currency in American literary theory in the early 1960s, particularly through the work of Leslie Fielder. It was only in the 1970s and early 1980s, however, that

Koselleck’s semantic prehistory of *Neuzeit* shows us the lived time-consciousness of late nineteenth-century European metropolitan modernity – that ‘transitoriness’ which lies at the core of the ‘fugitive’ and the ‘contingent’ (Baudelaire 1986, p.37) – as an intensified social embodiment of a form of historiographic consciousness which had been developing in Europe for some considerable time. On reflection, this is not that surprising, since each seems likely to have its origin in a common source: the temporality of capital accumulation and of its social and political consequences in the formation of capitalist societies. (The latter, it should be noted, can in no way be reduced to the former.) None the less, an awareness of this fact can help us to distance ourselves from the apparent immediacy of the form as an all-engulfing structure of social consciousness, in order to examine it in its own right, freed from the polemical inflections it acquires in its more familiar affirmative cultural manifestations (modern*ism*). Once we do this, it becomes possible to see Anderson’s alternative analytical frame of a ‘complex and differential temporality’ leading to strictly ‘conjunctural’ analyses – derived, it seems, from Althusser’s ‘Outline for a concept

it gradually came to acquire the prominence which was the basis for its more recent wholesale circulation as a general label for the character of the times. Central to this process of popularisation were Jencks 1977, Lyotard 1984, originally published in French 1979, and Jameson 1984. For a discussion of the history of the term, see Hassan 1987, pp.84–96. The recent attempt to trump the postmodern with the idea of the ‘post-contemporary’ (as in the series of ‘Post-contemporary interventions’ edited by Stanley Fish and Frederic Jameson for Duke University Press) would seem to exhibit the same self-defeating temporal logic.

of historical time’ (Althusser and Balibar 1979, pp.91–118) – as a variation on the very temporal paradigm it sets out to oppose.

The quality of modernity: homogenisation, differentiation and abstraction

‘Modernity’, we have seen, plays a peculiar dual role as a category of historical periodisation: it designates the contemporaneity of an epoch to the time of its classification, but it registers this contemporaneity in terms of a qualitatively new, self-transcending temporality which has the simultaneous effect of distancing the present from even that most recent past with which it is thus identified. It is this paradoxical doubling or inherently dialectical quality which makes ‘modernity’ both so irresistible and so problematic a category. It is achieved through the abstraction of the logical structure of the process of change from its concrete historical determinants – an abstraction which parallels that at work in the development of money as a store of value (abstract labour-time).[8] The temporal matrix which is thus produced has three main characteristics:

1

Exclusive *valorisation of the historical* (as opposed to the merely chronological) *present over the past*, as its negation and transcendence, and as the standpoint from which to periodise and understand history as a whole. (History, as Kosselleck puts it, is ‘temporalised’. It becomes possible for an event to change its identity according to its shifting status in the advance of history as a whole (Koselleck 1985, p.250).)

2

Openness towards an indeterminate future characterised only by its prospective transcendence of the historical present and its relegation of this present to a future past.

3

A tendential *elimination of the historical present itself* as the

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For an account of money as the ‘first form of appearance of capital’ (self-expanding value), see Marx 1954, pp.97 – 172. The major work of Georg Simmel, the first sociologist of ‘modernity’, was *The philosophy of money* (Simmel 1990).

> vanishing point of a perpetual transition between a constantly changing past and an as yet indeterminate future; or, to put it another way: the present as the identity of duration and eternity, that 'now' which is not so much a gap in time as a 'gap *of* time' (Arendt 1977, p.13). (The dialectic of the new, Adorno argues, represses duration in so far as 'the new is an invariant: the *desire* for the new'.[9])

Anderson's objections to Berman's affirmation of this temporal structure centre on its homogenising tendencies and, in particular, the 'fundamentally *planar*' conception of development as 'modernisation' to which it gives rise: 'a continuous-flow process in which there is no real differentiation of one conjuncture or epoch from another save in terms of the mere chronological succession of old and new, earlier and later, categories themselves subject to unceasing permutations of positions in one direction, as time goes by and the later becomes earlier, the newer older' (Anderson 1984, p.101). Anderson is right, I think, to worry about this homogenising tendency; right too to be sceptical about the political potential attributed to it by Berman for establishing new forms of collectivity out of the common structure of experiences of disintegration and renewal – although he undoubtedly underestimates its significance in this regard. But he is wrong to understand the idea of modernity *purely* in terms of the homogenisation of historical time; an error which is compounded when he goes on to identify this homogenisation with 'the mere *chronological* succession of old and new'.

There are a whole series of problems here. The first concerns the differential temporality introduced by the category of 'modernity' by virtue of the distinction it involves between modern and earlier 'times'; and its negation by the idea of modernisation. Secondly, there is the differential character of the temporality internal to modernity itself which is established by its qualitative distinction between chronological and historical time: the 'next' is *not* necessarily the 'new', or at least, the 'next as new' is never simply the chronologically next (by what scale? – seconds, hours, days, months, years?) Thirdly, and associated with this, is the problem of the abstractness of the new, the way it is dealt with by empirical theories of modernity, and the consequent idea of

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[9] Adorno 1984, p.41. Cf. Benjamin's definition of fashion as 'the eternal recurrence of the new' (Benjamin 1985, p.46).

modernity as a project. Finally, there is the question of the form of temporality at work in conjunctural analyses and the hope held out by Anderson of thereby escaping the temporal structure of 'modernity'. The problem posed by an insufficiently differentiated concept of modernisation, it will be argued here, cannot be reduced to a simple opposition of 'homogeneous' to 'differential' historical time. Rather, it concerns the possibilities and pitfalls built into the dialectics of homogenisation and differentiation constitutive of the temporality of 'modernity', and the way in which these are tied up, inextricably, with its *spatial* relations.[10]

It should already be clear from the preceding discussion that in so far as 'modernity' as a periodising category is understood in the full sense of registering a break not only from one chronologically defined period to another, but in the quality of historical time itself, it sets up a differential between the character of its own time and that which precedes it. It is this differential that forms the basis for the transformation in the late eighteenth century in the meaning of the concepts of 'progress' and 'development' which makes them the precursors of later, twentieth-century concepts of modernisation. For it is the idea of the *non-contemporaneousness* of *geographically diverse* but *chronologically simultaneous* times which thus develops that, in the context of colonial experience, becomes the basis for 'universal histories with a cosmopolitan intent'. Once the practice of such comparisons was established in colonial discourse, it was easily transferable to the relations between particular social spheres and practices within different European countries themselves, and thereafter, once again, globally.

Such histories are 'modernising' in the sense that the results of synchronic comparisons are ordered diachronically to produce a scale of development which defines 'progress' in terms of the projection of certain people's presents as other people's futures. As such, they are indeed homogenising. But this homogenisation is premised upon a differentiation which must first be recognised in order to be negated. Furthermore, in order for this negation to occur and homogenisation to be achieved, some specific criterion must be introduced to set up a new differential, within the newly homogenised time, in order to provide a content for the concept of 'progress'. Thus, when Anderson argues that the temporality of modernity 'knows' no internal principle of variation, he is only partly right. He is right to the extent that the concept of modernity, in its basic theoretical form, itself furnishes no such principle. He is wrong, however, in so far as it *requires* one, in order that there be some way to identify the historically as opposed to the merely chronologically 'new'. This is the role of so-called 'theories of modernity' (in distinction from the more general theorisation of 'modernity' of the kind that I have sketched): to provide a content to fill the form of the modern, to give it something more than an abstract temporal determinacy. It is at this point, historically, that the *geo-political* dimension of the concept comes into its own, providing, via the discourses of colonialism, a series of criteria of 'progress' derived, first, from the history of European nation-states, and later, in modernisation theory proper, from America.[11]

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[10] It has become commonplace to assume that whilst 'modernity' is primarily about new forms of experience of time, it is 'postmodernity' which marks a revolution in spatial relations. But this is too simple. The two dimensions are inextricably bound together. Changes in the experience of space always also involve changes in the experience of time and vice versa. Spatial relations have tended to be undertheorised in discourses *on* 'modernity' and are now increasingly the object of investigation (see, for example, Soja 1989; Harvey 1989, pp.201–323), but that is a different matter. In fact as Benjamin points out, the shift from a Christian eschatological concept of historical time to a 'modern' one 'secularised time into space' (Benjamin 1989b, p.62). It is in the repressed spatial premises of the concept of modernity that its political logic is to be found. As Sakai puts it: 'The condition for the possibility of conceiving of history as a linear and evolutionary series of incidents lay in its… relation to other histories, other *coexisting* [spatially relational] temporalities…the significance of modernity for the non-West [will] never be grasped unless it is apprehended in the non-West's spatial

The problem with Anderson's reading may be illustrated with reference to his complaint that the temporality of modernity cannot accommodate the idea of decline (Anderson 1984, pp.101–3). Nothing could be further from the truth. Indeed, one might say that in its perpetual anxiety to transcend the present, modernity is everywhere haunted by the idea of decline. Anderson's account suppresses this increasingly palpable cultural anxiety because it identifies the self-transcending temporality of modernity with the blank homogeneity of chronology, on the basis of their common abstraction of purely temporal indices of periodisation. But whilst the two are thus connected, they cannot, in principle, be thought of as the *same*. Chronology alone could never be the measure of *historical* progress. Modernisation theory, notoriously, finds its content in a combination of quasi-spatial (geo-political) and economic criteria. But the idea of decline is no less applicable to the system as a whole. Just as the homogeneity of modernisation theory's measure of progress/decline depends upon differentials which it then reduces to differences within a single scale, so the possibility of an 'absolute' decline derives from modernity's continual projection of a differential into the future, which would not, in this case, be redeemed. ('Absolute' decline, in other words, is temporally relative.) The temporal structure of 'modernity' dictates that any particular modernity constantly re-establish itself in relation to an ever-expanding past. That the concept of modernity itself, in its most general form as a kind of historical time, involves only an abstract sense of what such a re-establishment involves (the 'new') is no reason to deny its reality. Rather, it is the conceptual shape to which all 'modern' theories of decline must conform, like the theories of progress they mirror.[12]

This is the problem that all 'theories' of modernity must face: modernity/modernities, in any substantive socio-historical sense, *grow old*. It is to deal with this problem that, in strict accordance with the temporal logic of modernity, the idea of the 'postmodern' has appeared, along with (at least in its more sophisticated versions) its own distinctive temporal paradoxes. Naive concepts of postmodernity, one might say, register an affirmative self-consciousness of the paradoxes and aporia of 'modernity', but fail to recognise that this is so – a truly Nietzschean form of historical knowledge based on a wilful, active forgetting. Fully reflexive concepts of postmodernity, on the other hand, take us back into the paradoxes and aporia of 'modernity' at a higher conceptual level. Alternatively, substantive theories of modernity can hold their ground, set themselves against the erosion of their historical premises, and turn themselves into *projects*.

Modernity as project: Habermas, Foucault and the history of Enlightenment

It was noted above that it was through the spatialisation of its founding temporal difference, under colonialism, that the concept of modernity first came to be universalised, and thereby, thereafter, to subordinate the differential between itself and other 'times' to differences within a single temporal scheme of 'progress', 'modernisation' and 'development'. This process was accompanied at a theoretical level by the appearance of a new kind of universalising discourse about the present: what Habermas has called the *'philosophical discourse of modernity'*.[13] If it has been the function of regional theories of modernity (economic, political, religious, aesthetic, sociological, etc.) to totalise spatially across their respective domains, on the basis of specific, geopolitically determined but empirically derived criteria of the 'modern', it is to the philosophical discourse of modernity that the task has fallen to unify

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relationship to the West' (Sakai 1989, pp.106, 114). Hence the centrality of migration and the new international division of labour to an understanding of the new configurations of the 'modern'.

[11] For an overview of theories of development, see Larrain 1989; especially the historical map on p.4. It is the critique of the concept of modernisation which provides the starting-point for that understanding of postmodernism which centres upon the construction (and deconstruction) of the idea of colonial discourse. Thus Young, for example, argues *contra* Jameson 1984 that it is 'not just the cultural effects of a new stage of "late" capitalism' that the concept of postmodernism is best thought to mark, but 'European culture's awareness that it is no longer the unquestioned and dominant centre of the world' (Young 1990, pp.19–20). The value of post-structuralism as a theoretical approach to this problem, he continues, is that unlike the idea of post-modernism 'it does not offer a *critique* by positioning itself outside "the West", but rather uses its own alterity and duplicity in order to effect its deconstruction.' My own approach, in line with the logic of Sakai's argument, accepts this point about immanence, with one important modification: namely, that since 'the West' can no longer be understood simply geographically – even, or especially, in its intrusion, as a structuring element, into its 'non-Western' other – but must embrace new 'Western' forms found *only* within this non-Western other, reflection upon it need not restrict itself to the pure ('post-critical') negativity of deconstructive techniques, but may also serve as the occasion for the development of modernity itself. In this respect, as a strong reading of the title of this volume would imply, the debate about postmodernism should not be seen simply as the occasion for a re-reading of modernity; rather, such a re-reading should be understood as the essential content of the debate. For some further reflections on the changing spatial dynamics of modernity, see Kristin Ross's contribution to this volume. Parallel to the problem of the way in which the spatial relations of 'modernity' intrinsic to the colonial character of its Western origins produce definite political effects of their own, is the question

and legitimate these enquiries within the scope of a single *practical* definition of the modern. The question thus arises as to how this discourse has fared in the face of the inevitable but paradoxical ageing of all substantive concepts of 'modernity'. The debate hinges on the fate of the concept of Enlightenment, or more specifically, the Enlightenment concept of an autonomous reason. For it is through this idea that modernity first came to be conceived philosophically, not just as a new historical period or a new form of historical time, but, more substantively, as a world-historical project. The space within the temporality of 'modernity' for alternative orientations to this project may be illustrated by the difference between Habermas and Foucault over the heritage of Kant's 1784 essay, 'An answer to the question: what is Enlightenment?'[14]

Habermas and Foucault are agreed on three main points about Kant's essay:

> 1
> It inaugurates a philosophical discourse *on* modernity – a discourse, that is, which for the first time takes the character of the present in its 'present-ness' as the specific object of philosophical thought, within the horizons of a conception of history that is free from both backward-looking comparisons with the ancients and forward-looking expectations about doomsday.[15]
>
> 2
> It inaugurates a philosophical discourse *of* modernity, in so far as the conception of the autonomy of reason that it involves is internal to the time-consciousness of a self-transcending present which cuts itself off, in principle, from the determinations of the past. Reason, for Kant, must be able to validate its own laws to itself, within the present without reference to history or tradition. As Habermas puts it: modernity 'has to create its normativity out of itself', through reflection (Habermas 1987b, p.7). Hence Kant's famous motto of Enlightenment – *'Sapere Aude*! Have courage to use your own understanding' – and his definition of Enlightenment as 'humanity's emergence from its self-imposed immaturity', where immaturity is understood as 'the inability to use one's understanding without guidance from another' (Kant 1983, p.41). Modernity is in this respect an *infinite* task.
>
> 3
> The subsequent history of 'Enlightenment' in the practices of European nation-states has involved forms of domination, as well as freedom, which, furthermore, are connected to the internal contradictions of the original Enlightenment formulation of the concept of autonomous reason itself. (Foucault refers to the areas of scientific and technical rationality, the fate of revolutions, and colonialism. Habermas is concerned with the social application of instrumental and functionalist forms of reason, but has yet to address himself to the problems of colonial and post-colonial forms of domination).[16]

Where Habermas and Foucault differ, quite radically, is in their respective analyses of the character and depth of the problem posed for the ideas of Enlightenment by these phenomena, and its relationship to the historical present. This difference may be summed up by saying that whilst Habermas wants to 'complete' the concept of Enlightenment by reworking its universalistic doctrine of autonomous rational individuality and free public reason to avoid its repressive implications (by replacing a subject-centred with an inter-subjective or communicative concept of reason), Foucault remains wedded to it only in the much broader sense of what he calls its 'philosophical *ethos*': namely, the attitude of 'a permanent critique of our historical era' (Foucault 1986b, p.42). Such an attitude, Foucault argues, demands a critique of the Enlightenment as historical event which transcends the original Enlightenment model of critique:

> Two centuries later, the Enlightenment returns: but now not all as a way for the West to take cognisance of its present possibilities and of the liberties to which it can accede, but as a way of interrogating it on its limits and the powers which it has abused. *Reason as despotic Enlightenment.*[17]

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of the *gendering* of 'modernity' as a form of historical time. Kristeva (1986, p.191) argues that 'As for time, female subjectivity would seem to provide a specific measure that essentially retains *repetition* and *eternity* from among the multiple modalities of time known through the history of civilisations', in opposition to the linear temporality of a history from which women have been symbolically excluded. She then points out that different generations within feminism have challenged this opposition in different ways (whilst another has affirmed it). Despite her desire to recover the differences beneath 'the apparent coherence which the term "woman" assumes in contemporary ideology', however, she none the less continues to use the term in such a way as to sustain its traditional symbolic unity. The problem with this strategy is that it is unable to register the disruptive *symbolic* significance of her 'first generation' feminism's demands for access to the 'men's time' of modernity (history). The success of such demands can thus only be thought in terms of the 'parallel existence' or 'interweaving' of different (already established) times within women's experience; rather than as a genuinely transformative moment which would leave neither women's time nor historical time (neither 'women' nor 'history') unchanged. Something of the dialectical tension at work in the latter perspective may be gleaned from Benjamin's remark that 'the lesbian is the heroine of modernism' (Benjamin 1973b, p.90). In opposing women's time to historical time, Kristeva explicitly associates the former with *space,* thereby not only restricting the notion of 'historical' time to a single highly specific form (linear time), but also uncritically reproducing the simple opposition of historical time to space noted above (note 10). This is not to suggest that the temporality of 'modernity' is ungendered, but only that Kristeva's pioneering essay remains both too schematic and too closely tied to traditional symbolic forms of gender representation to go beyond an initial identification of the problem.

12
My objections to Anderson here are not objections to his critique of Berman, so much as objections to his *acceptance* of Berman's reduction of

Those 'who wish us to preserve alive and intact the heritage of *Aufklärung*', Foucault insists, engage in 'the most touching of treasons'. For they suppress the very question of 'the historicity of the thought of the universal' (Foucault 1986a, p.95). By hanging on to Enlightenment in this way, we might say, they betray its *modernity.* The very existence of the post-Nietzschean challenge to Enlightenment reason undermines the latter's claim to modernity. Yet Habermas's charge against Foucault is exactly the same. For it the temporality of 'modernity' as a self-transcending break with other times ties it, logically, to the ideal of rational autonomy, and Foucault's historical challenge is a challenge to this idea, then surely it is Foucault who is the 'traitor' – purveyor of an 'irrational' anti-Enlightenment in the name of Enlightenment itself. Either way, it would seem, 'anachronism becomes the refuge of modernity' (Adorn 1974, p.221).

Clearly, the issue cannot be settled at this level of analysis. The maintenance of a reflexive normativity can no more be reduced to the recovery of the 'good' side of Enlightenment reason from its alienated other than their dialectical entanglement can be used to justify its rejection wholesale. Rather, what the dispute would seem to demonstrate (again both Haberman and Berman) is that 'modernity' is *not*, as such, a project. It is a form of historical consciousness, an abstract temporal structure which, in totalising history from the standpoint of an ever-vanishing, ever-present present, embraces a conflicting plurality of projects, a conflicting plurality of possible futures, provided they conform to its basic logical structure. Which of these projects will turn out to have been *truly* modern, only time (historical time) will tell.

Capitalism, socialism, modernity: totalisation and conjunctural analysis

Anderson's error was to overstate the continuity of modern time-consciousness, to reduce historical to chronological time and (following Berman) to confuse the idea of modernity as a structure of historical time with the logic of modernism as its affirmative cultural self-consciousness. What has yet to be determined is the relation of 'modernity' to the complex and differential temporality of conjunctural analysis, which

'modernity' to a dialectic of modernism and modernisation. By accepting Berman's account of modernity, Anderson unwittingly becomes complicit on the object of his own critique. His real complaint is against the modern*ism* of Berman's version of modernisation: his affirmation of the temporal logic of 'modernity' in abstraction from its underlying social dynamics. When he goes on to extend this critique to modernism proper, however (modernism as an artistic category), Anderson is less persuasive. Modernism is indeed a 'perennial' concept. That is its point. In its deepest and most theoretically productive sense, it is neither a merely stylistic nor a 'movement' concept (part of an empiricist art history), but a term denoting the immanent historical logic of a particular dynamic of artistic development. It provides a temporal frame for the historical interpretation of works; not that interpretation itself. (For an outline of such a conception of modernism, in the form of a reading of Adorno's *Aesthetic theory*, see Osborne 1989.) It was Benjamin who took as his explicit goal the construction of a form of historical experience 'beyond'

Anderson recommends as its replacement. It is here that the limits of 'modernity', and thus the scope of its legitimate application, begin to come into view. At this point, it is useful to return to Althusser to examine the notion of conjunctural analysis as its source.

Althusser's goal was to determine the specificity of Marx's concept of history by differentiating it, in particular, from both the 'everyday' (empiricist) concept of history and the historical logic of Hegelianism. He sought to do this, in part, by 'constructing the *Marxist concept of historical time* on the basis of the Marxist conception of the social totality.' Different conceptions of the social whole, he argued, contain 'the secret of the conception of history in which the "development" of this social whole is thought.' He thus came to contrast the 'homogenous continuity' and 'contemporaneity' of Hegelian time with the differential temporality of a Marxist conception of historical time on the basis of the difference between Hegel's 'expressive totality' and his own distinctive interpretation of the Marxist whole as a 'complex structural unity', the level or instances of which are 'articulated with another according to specific determinations, fixed in the last instance by the level or instance of the economy'.[18] What is of particular interest in this analysis is its critique of the category of the 'historical present' as a critique of 'contemporaneity', and the costs it involves for thinking history as a whole.

According to Althusser, the problem with the category of the historical present is that in it:

> the structure of historical existence is such that all the elements of the whole co-exist in one and the same time, one and the same present, and are therefore contemporaneous with one another in one and the same present (Althusser and Balibar 1979, p.94).

In the unity of the conjuncture, on the other hand, each level or instance of the whole has its own peculiar time 'relatively autonomous and hence relatively independent, even in its dependence, of the 'times' of the other levels.' Each of these peculiar histories is 'punctuated with peculiar rhythms and can only be known on condition that we have defined the *concept* of the specificity of its historical temporality

the categories of progress and decline (Benjamin 1989b, pp.44, 48; 1973). In so doing, however, he was explicitly opposing himself to precisely that homogenous continuum of modern time-consciousness which Anderson accuses of *lacking* a concept of decline.

13
Habermas 1987b. See also Habermas 1985a.

14
Kant 1983; Foucault 1980a, 1986a, 1986b; Habermas 1987b, 1989c. See also, Jane Flax's contribution to this volume, 'Is Enlightenment emancipatory?'. For an example of the way in which this dispute has been taken up by a younger generation of academics in America, see the exchange between Rajchman and Wolin in Rajchman 1988 and 1990, and Wolin 1990.

15
In Habermas 1987b (originally written as lectures delivered in 1983/4), it is initially Hegel who is credited with being 'the first to raise to the level of a philosophical problem the process of detaching modernity from the suggestion of norms lying outside of itself in the past' (p.16). Later in the same volume, however (p.295), following the remarks in his 1984 memorial

and its punctuations'. It is not enough, however, simply to think these various histories in their differences: 'we must also think these differences in rhythm and punctuation in their foundation, in the type of articulation, displacement and torsion which harmonises these different times with one another' in the unity of the whole (pp.99–100).

It is at this point that things begin to get tricky. For since there is no 'essential' unity to the Althusserian totality there is no common time within which to think the articulated coexistence of its various constitutive temporalities. Taking an 'essential section' through the complex totality, in the form of a synchronic analysis, is no good because it reintroduces precisely that contemporaneity of a 'continuous-homogeneous time' which it was the point of the idea of differential historical times to abolish. All we can do, it seems, is think the whole from the standpoint of a variety of different *localised* presents, such that the times of other levels appear within such analyses only relationally, in the form of a series of 'absences'. The problem with this, however, is that while it may allow us to build up a conjunctural analysis of the whole out of a series of disjunctive analyses of its parts, each of which contains its own 'decentred' (negative) totalisation from the standpoint of its specific locality, what it rules out *in principle* is any conception of the 'development' of the whole as a whole, whether at the level of the social formation, mode of production or of 'history' itself. The cost of Althusser's conjunctural form of differential temporality is thus the impossibility of thinking the transition from one mode of production to another: precisely that 'object' which it is the ultimate rationale of historical materialism to think. Since in the end, such transitions can be thought only as 'breaks' or 'ruptures' *between* different articulated sets of times. They have no time of their own.[19]

Althusser's analysis is instructive in two main ways. In the first place, it must be acknowledged that it does indeed point to the limits of 'modernity' as a category of historical totalisation, in so far as all such totalisations abstract from the concrete multiplicity of differential times coexisiting in the 'now' a single differential (however internally complex) through which to mark the time of the present. This is an inevitable effect of all forms of totalisation, the cost, in this case, of thinking 'history' as a whole: that very concept which, ironically, at the conclusion of his search for the specificity of Marx's concept of history, Althusser was unable to think at all. This is the second lesson of Althusser's work on historical time: a purely conjunctoral sense of the 'articulation, displacement and torsion' of differential temporalities, for all its criticisms of 'synchrony', remains outside of historical time altogether. In its reduction of a totalising present to the idea of the 'essential section', it exchanges the difficulties and possibilities of the 'now' for the no-time of a disembodied 'theory'.[20] As such, it requires the restitution of a totalising concept of historical time within which to move, to give it practical political significance. But why try to totalise history if it will inevitably homogenise and repress, reduce or forget certain differences? The short answer is: because, at one level at least, history is already totalising itself.

We have seen how it was through the spatial totalisation of a Western 'modernity' that the idea of modernity came to provide a standpoint for historical totalisation. The mechanism here was European colonialism, but the world market that was thereby established during the late feudal period in Europe soon became the medium for the development of capitalism as a world-system, once the resolution of the social struggles internal to late European feudalism had laid the basis for the development of capitalism in Europe.[21] World history, as Marx reminds us 'has not always existed; history as world [is] a result' (Marx 1973, p.109); and it is a result, primarily, of capitalism. Capitalism universalises history. Yet as Vilar points out, 'it has not *unified* it.' This, he goes on, 'will be the task of another mode of production' (Vilar 1973, p.105). Socialism as the unification of history: the idea has frightened a lot of people for whom totalisation and totalitarianism are but different words for the same thing – although they have worried rather less about the totalising capacities of capital. But there are many modes of totalisation, both theoretical and practical, positive and negative, and it is here that the real debate begins.[22]

There is a tendency to counterpose 'capitalism' and 'modernity' as alternative theoretical categories for the interpretation of the same object (Marxism versus Weberianism, for example), and there is no doubt that this is in general the way in which the terms have been used. However, the issue is primarily methodological, and just as there have

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address for Foucault (Habermas 1989c), Habermas conceded Foucault's identification of Kant as the initiator of the discourse. The absence of a discussion of Kant in Habermas 1987b, where there is no reference to Kant's essay, despite the fact that it is essentially Kant's projects that Habermas is defending, is unfortunate.

[16] Foucault 1980a, p.54; Habermas 1985b, 1987a. See also Adorno and Horkheimer 1979.

[17] Foucault 1980a, p.54. Note: 'Reason as despotic Enlightenment'; *not* 'Enlightenment as despotic reason' – a formulation that would commit Foucault to the elaboration of an alternative model of practical reason. For critiques of Foucault along the lines that he is, in any case, so committed, but unable in principle to produce such an alternative, see Dews 1984 and Fraser 1981. This is also Habermas's line in Habermas 1987a, pp.266–93, where he accuses Foucault of 'cryptonormativism'.

[18] Althusser and Balibar 1979, p.97 Cf. the important early essays, 'Contradiction and overdetermination' and 'On the materialist dialectic', in Althusser 1977, pp.87–128, 161 – 218.

[19] The inability of Althusser's Marxism to think historical change is notorious. It was the rock on which the whole project foundered. Ironically, it was precisely because of its supossed political value that Althusser focused on the notion of conjunctural analysis in the first place, which he derived from Lenin. On the other hand, his main objection to Hegelian time, apart from its incompatibility with certain features of Marxist analysis (a result, dare one say, of its *empirical* inadequacy), was that its ontologisation of the present 'prevents any anticipation of historical time, any conscious anticipation of the future... and *knowledge* of the *future.'* Consequently, he argues, there can be for it no 'science of politics': 'no Hegelian politics is possible strictly speaking' (Althusser and Balibar 1979, p.95; cf. Althusser 1977, p.204). In fact, of course, there at least two types of Hegelian politics: the famous 'left' and 'right' Hegelianisms.

[20] The knowledge of history, according to one of Althusser's more notorious formulations, 'is no more historical than the knowledge of sugar is sweet' (Althusser and Balibar

been, and will doubtless continue to be, Weberian Marxisms (conscious or not), so what I am suggesting is that there may be Marxist accounts of 'modernity' which do not reduce it to a merely idealogical concept. Born like capitalism out of colonialism and the world market, 'modernity' as a structure of historical consciousness pre-dates the development of capitalism proper. It operates at a different level of analysis from the concepts of Marxist political economy, and its shape changes with time. None the less, as our primary secular category of historical totalisation it is hard to see how we can do without it in one form or another. If 'all "new" history without totalising ambition will be a history old before its time' (Vilar 1973, p.106), we have no option but to rethink 'modernity' as the transformation of the conditions of its existence gathers pace with time.

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1979, p.106). Yet surely, from a materialist standpoint, *all* knowledge is historical – including the knowledge of sugar! For an early attempt to think 'non-synchronism' *within* historical time (in the context of an analysis of fascism), see Bloch 1977. For the elaboration of the project of a critical mediation of Hegelian-Marxist and structuralist theories of history in the form of a 'determinate negation of the structuralist negation of history', see Schmidt 1981.

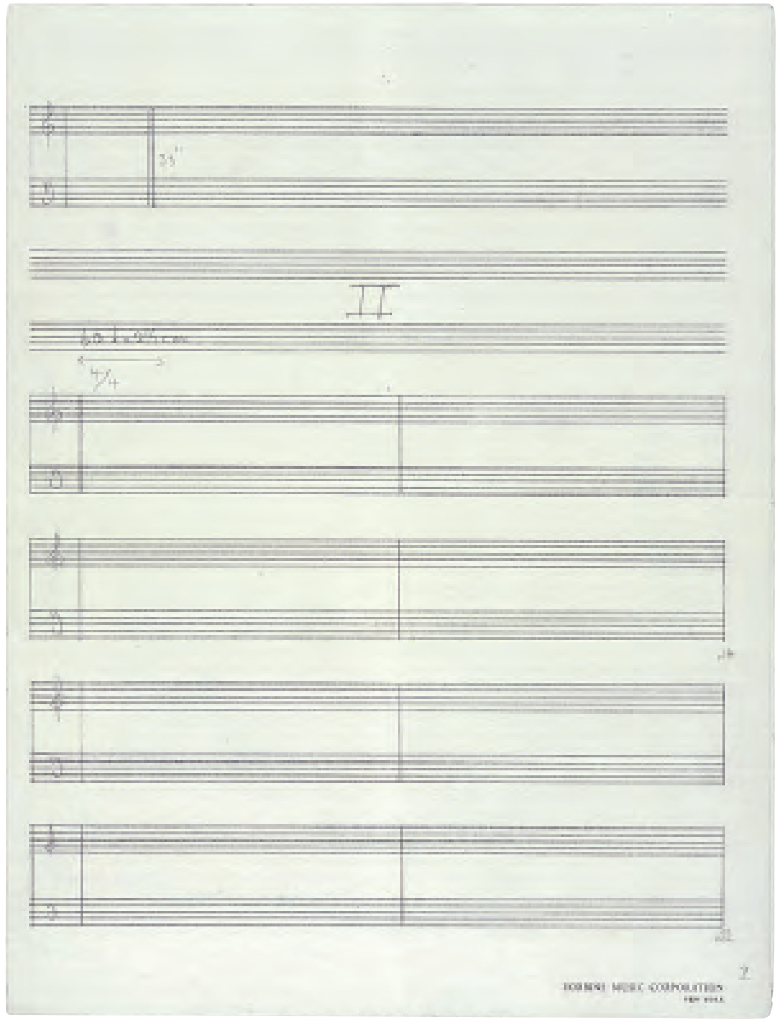
21
Braudel 1982; Wallerstein 1974; Ashton and Philpin 1985.

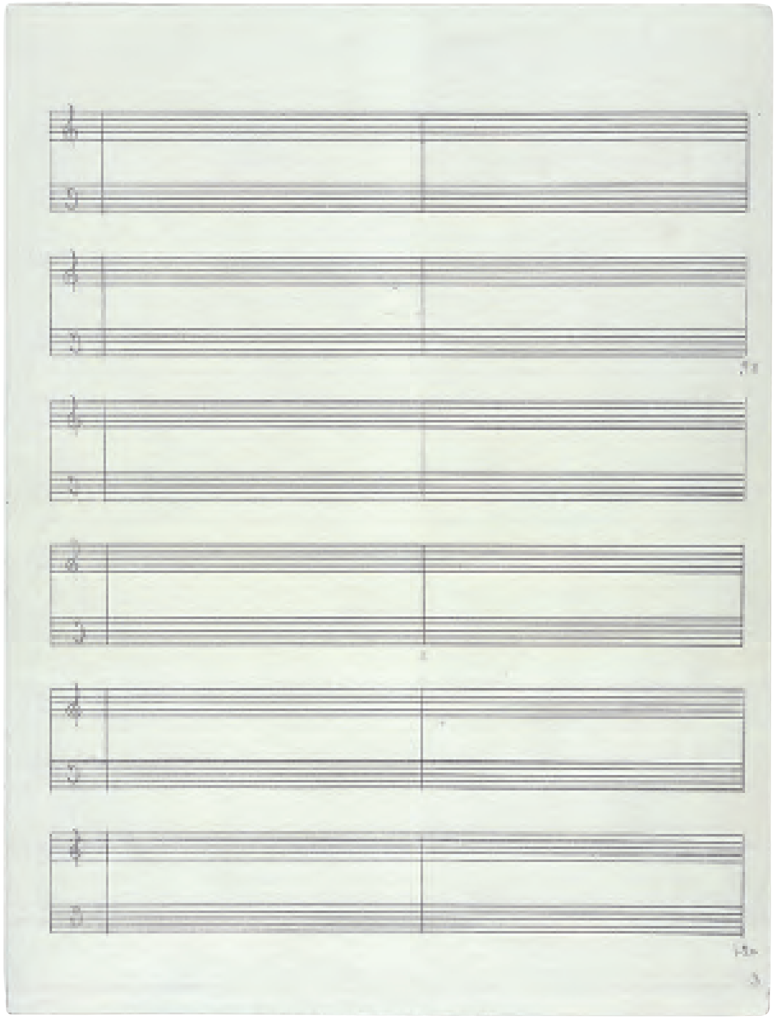
22
For a discussion of the variety of concepts of totality within Marxism, see Jay 1984. See also Jameson 1981, pp.17–102. For a summary of the continuation of the debate in the context of a post-colonial postmodernism, in the work of Said, Bhabha and Spivak, see Young 1990, pp.119–75. The crux of the matter, I would suggest, lies in how, concretely, to interpret Adorno's maxim that 'universal history must be construed and denied' (Adorno 1973, p.320).

John Cage

4'33, 1952
Film
4 min 33 sec

John Cage was an American composer, music theorist, writer, and artist. A pioneer of indeterminacy in music, electroacoustic music, and non-standard use of musical instruments, Cage was one of the leading avant-garde composers of the twentieth century. He was also instrumental in the development of modern dance, mostly through his association with choreographer Merce Cunningham and was closely connected with art and artists throughout his long career.





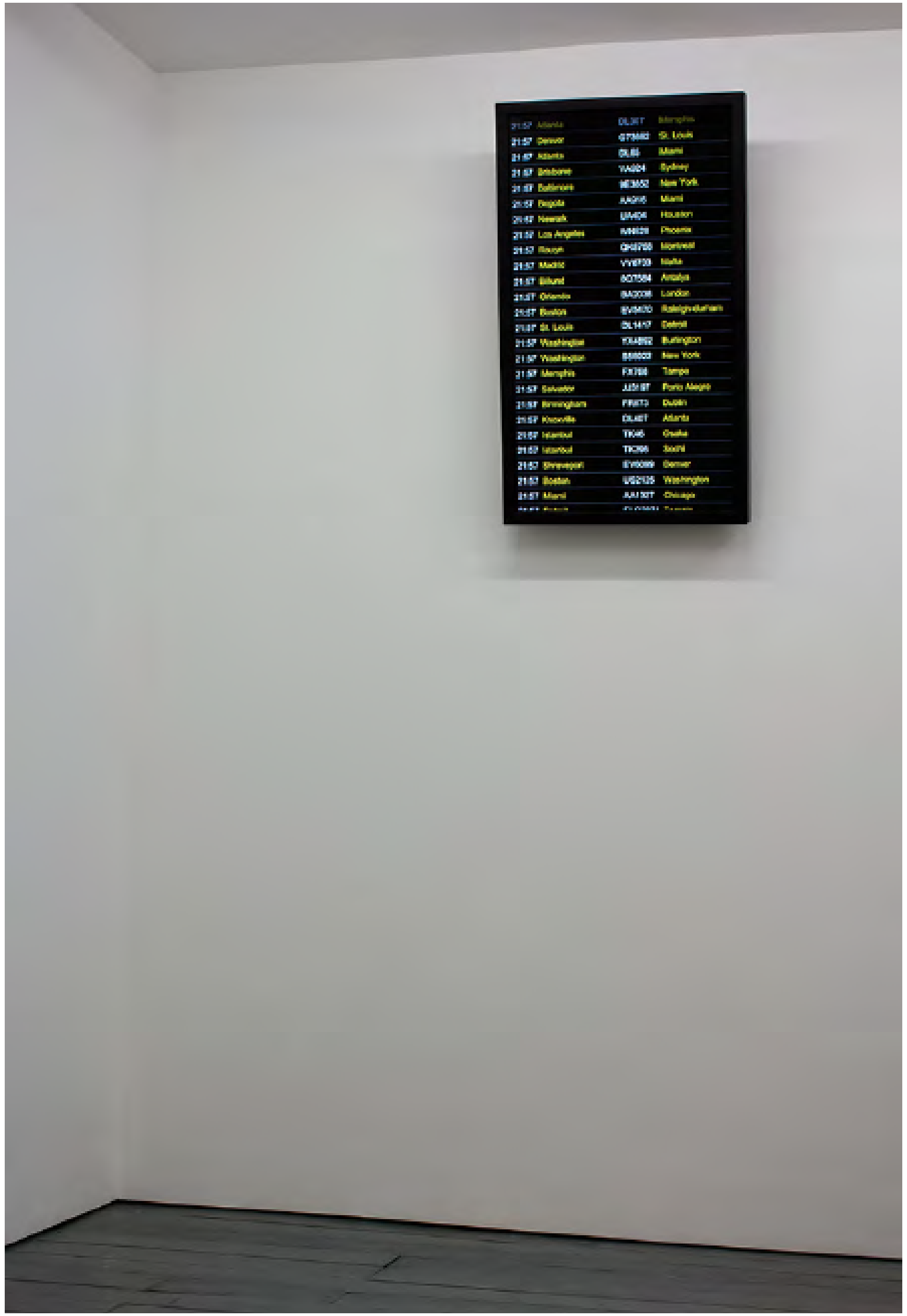
Cage is best known for his 1952 composition *4'33*, which is performed in the absence of deliberate sound; musicians who present the work do nothing aside from being present for the duration specified by the title. The content of the composition is not 'four minutes and 33 seconds of silence', as is sometimes assumed, but rather the sounds of the environment heard by the audience during performance. The work's challenge to assumed definitions about musicianship and musical experience made it a popular and controversial topic both in musicology and the broader aesthetics of art and performance.

Martin John Callanan

Departure of All, 2013
Live networked web installation

Martin John Callanan is an artist researching an individual's place within systems.

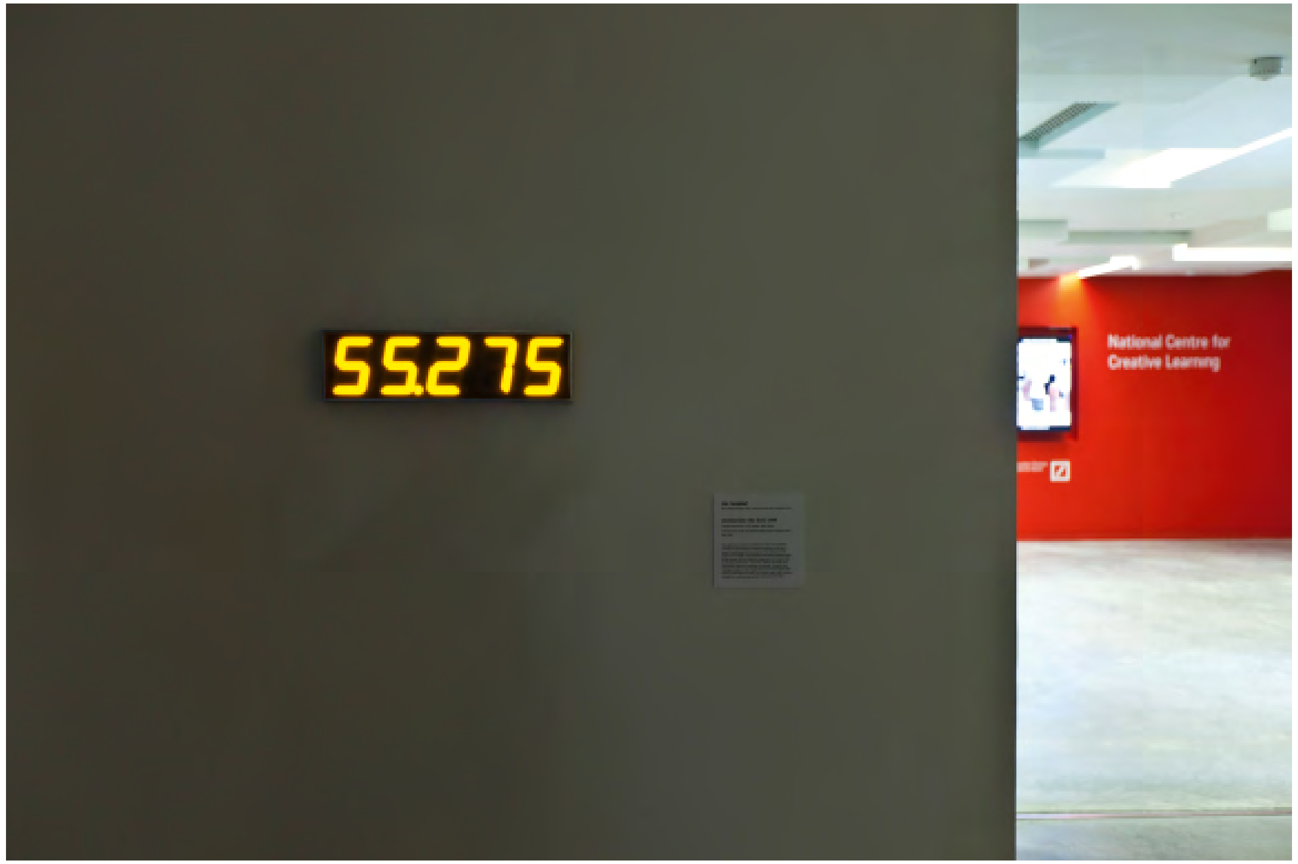
Departure of All (2013) is an artwork by Callanan that continues the artist's exploration of the systems that shape our daily lives. On a vertically mounted large scale LCD screen is a flight departure board displaying information for every departure at all international airports around the world. The departure time, city of origin, code number and destination of each flight are placed in a row that moves up as a new flight is added to the list. This amounts to around 58 flights a minute, with around 400,000 people making airborne journeys. In all of this, much like Callanan's work in general which alludes to both 1960s conceptual art and 1960s systems art, *Departure of All* renders visible the systems that shape our daily lives and yet remain largely invisible.



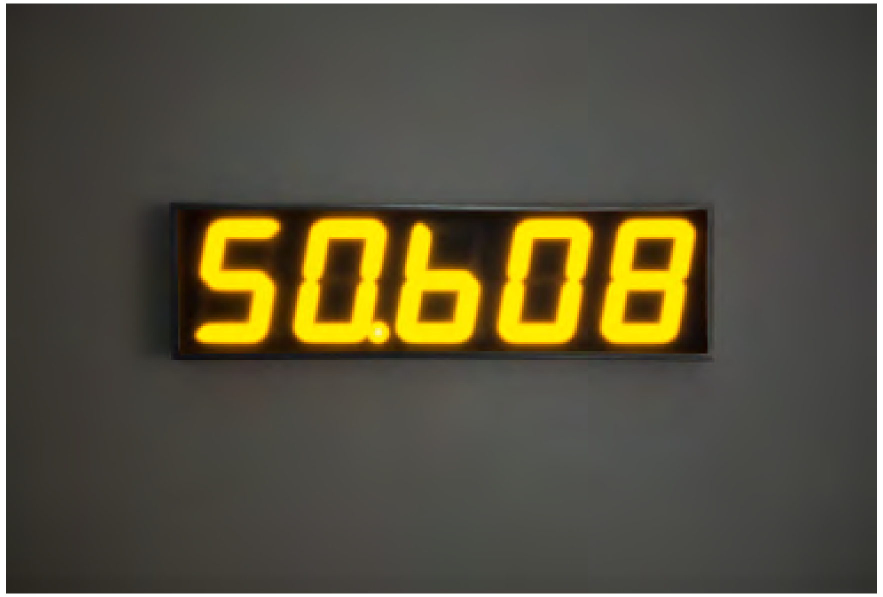
Jim Campbell

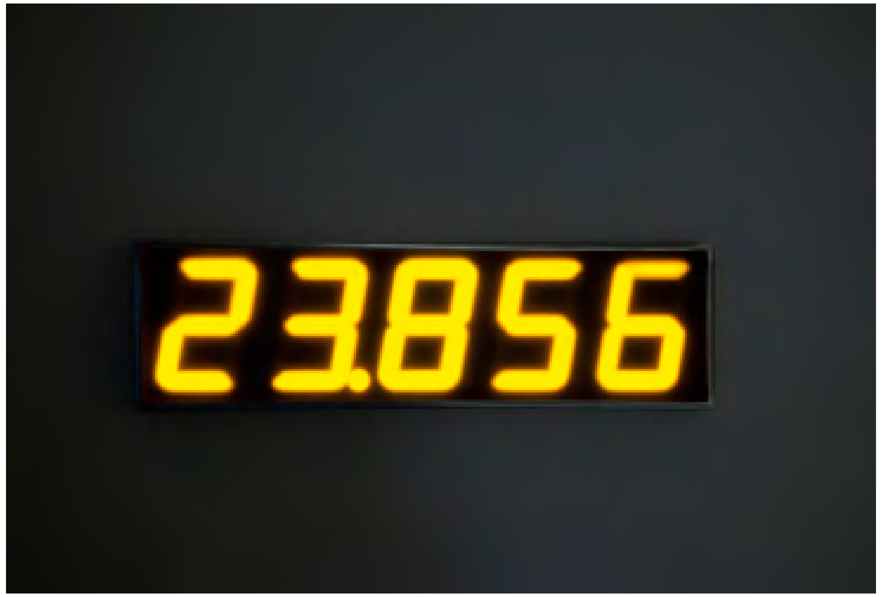
Untitled (for the Sun), 1999
LED number display, light sensor, custom electronics
47.5 × 14 × 3 cm

San Francisco based artist Jim Campbell, a trained engineer whose artwork straddles the worlds of technology and art, created custom electronics that calculate and measure day and night durations in order to synchronize the work to the rhythms of the sun.



Jim Campbell's *Untitled (for the Sun)* (1999) is a clock that displays time as a percentage of the passing day. Beginning at 00.000 at sunrise, the display – that is connected to a small light sensor that measures the light level outside – shows the percentage of daylight already spent, reaching 99.999 at sunset. As sunset concludes, the display rolls over from 99.999 to 00.000 and then describes the percentage of the night elapsed, as determined by darkness. At sunrise, the cycle begins anew.

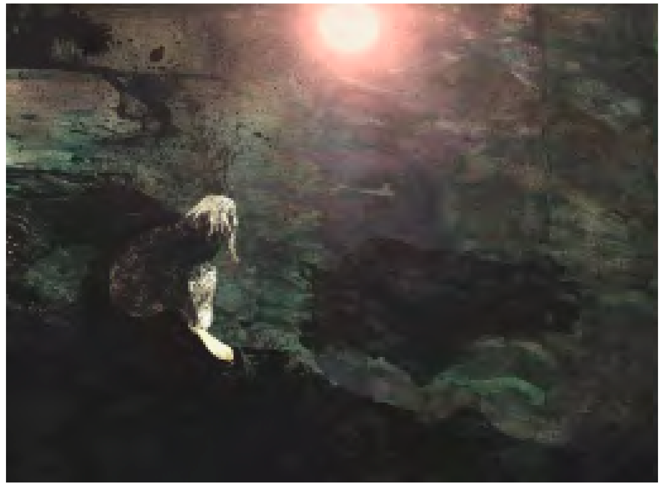


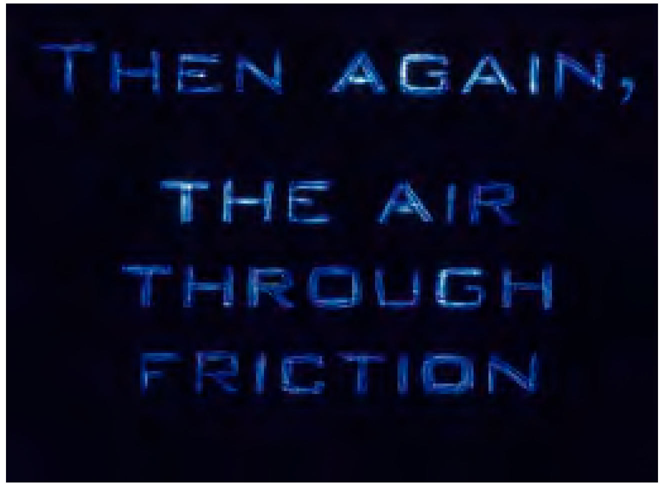


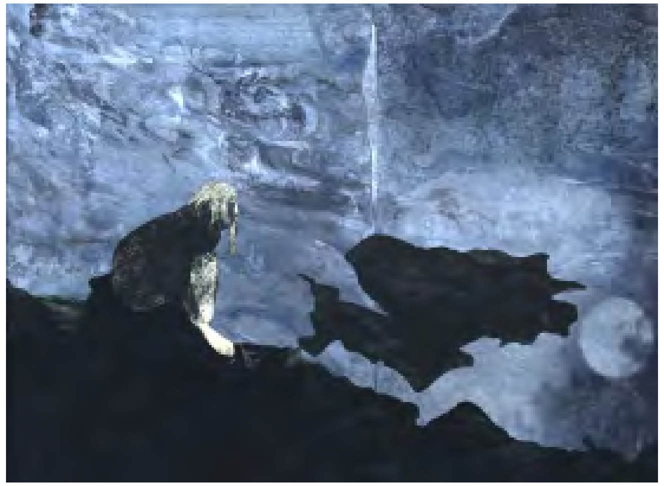
Edgar Cleijne and Ellen Gallagher

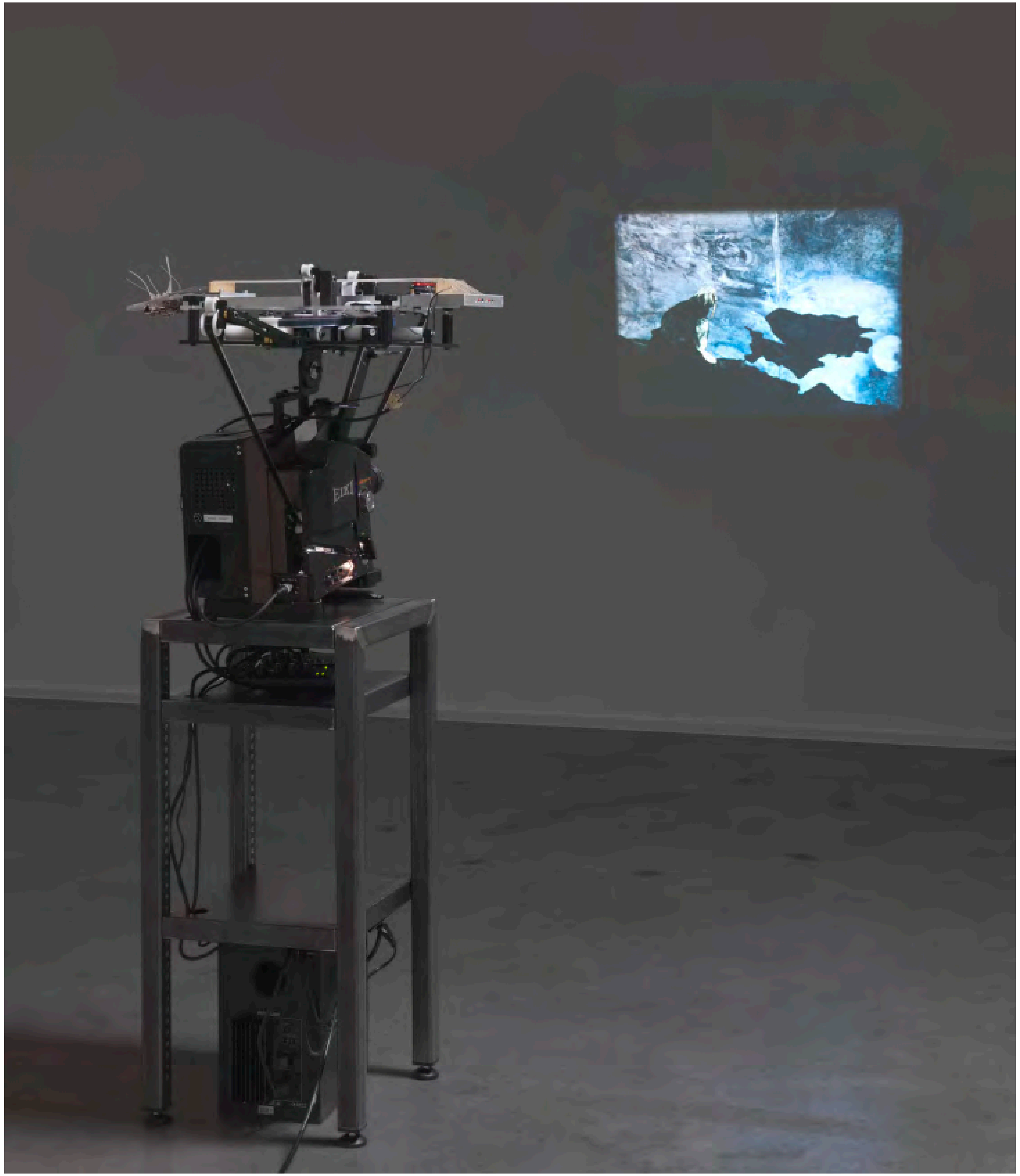
Nothing Is…, 2013
16mm film and harp
5 min 48 sec
Dimensions variable

Cleijne and Gallagher's film projection *Nothing Is…* (2013) explores what the artists call 'different aspects of representation', drawing its title from Sun Ra's 1970 album and poem 'Nothing Is …'. A line from the poem, 'The nothing and the air and the fire are really the same' describes Sun Ra's thoughts on origins and elements teetering on the brink of multiple states – simultaneously being and not-being. The mutability of elements is also a source of inspiration for science fiction writer Samuel R. Delany, who figures in the film on either side of Sun Ra's poetry; the two men converge in a state of transition, possessed by light as the film moves from one frame to the next. Cutting directly into the film the celluloid itself becomes the plectrum; strumming the strings as it runs through the harp tuned to the Key of Ra.







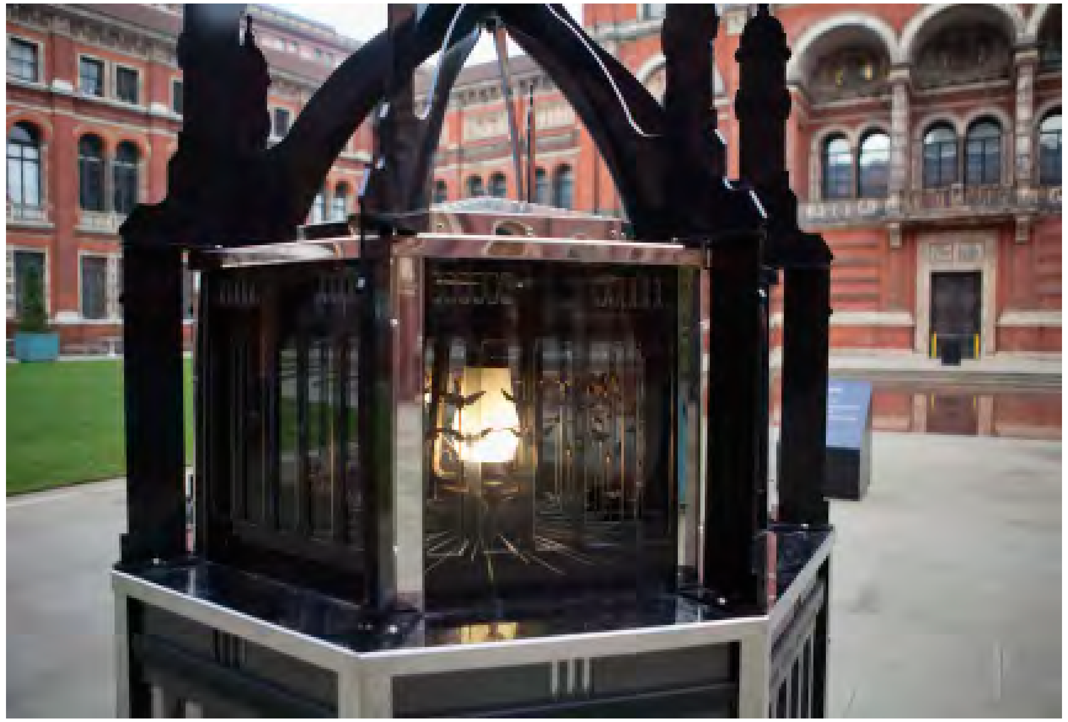


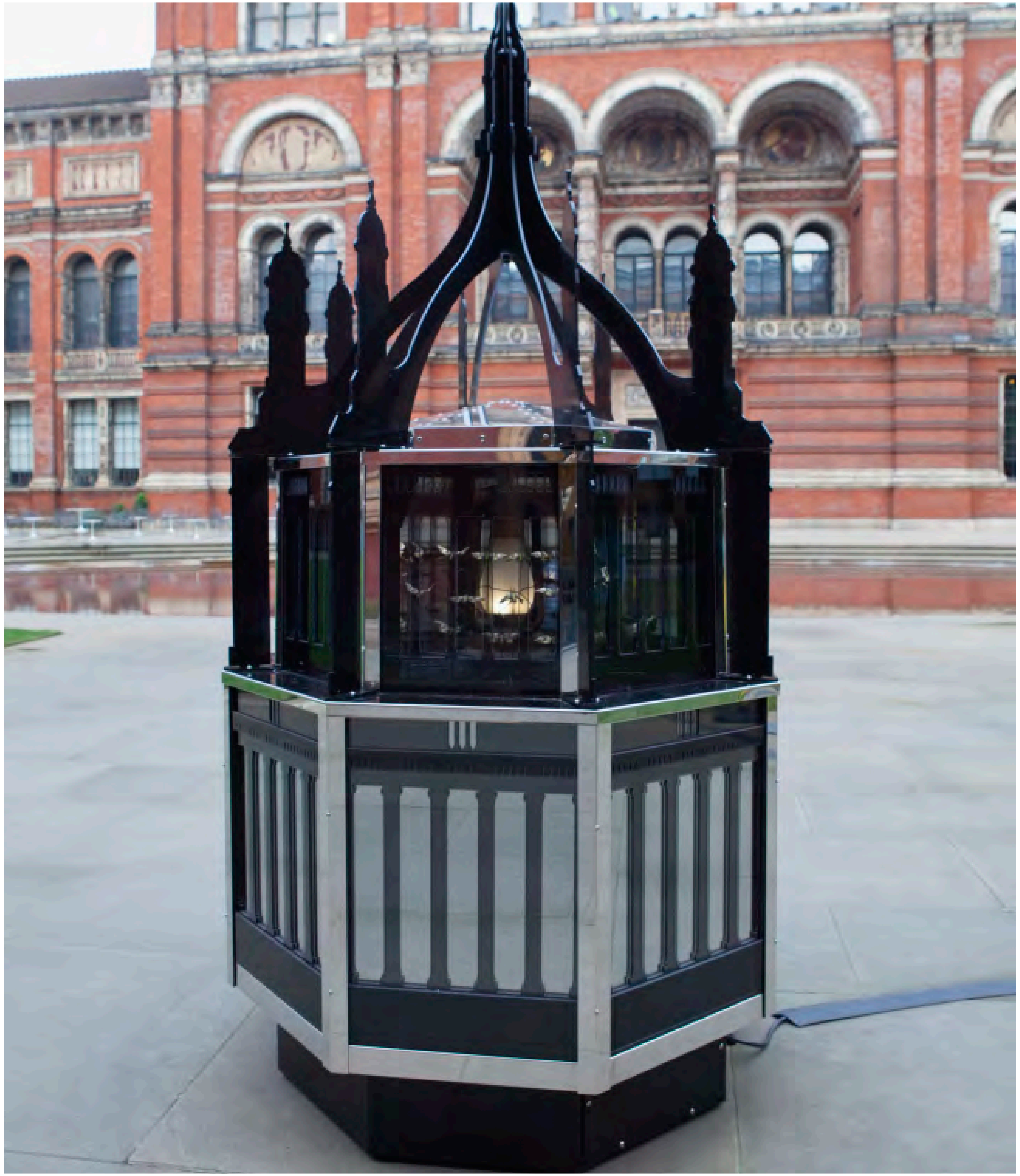
Mat Collishaw

Magic Lantern Small, 2010
Steel frame, glass, two-way mirror, aluminium, LED lights and motor
200 × 120 × 120 cm

Mat Collishaw's work includes photography, film and installation using combinations of technologies new and old. His work juxtaposes traditional notions of beauty and the revolting, the familiar and the shocking, the poetic and the morbid.

Magic Lantern (2010) was a site-specific work commissioned by The Victoria & Albert Museum, installed in the cupola above the entrance from November 2010–April 2011. The large-scale 3D zoetrope depicted animated moths dancing around a flame, and celebrated the museum's status as a beacon of culture, learning and knowledge which attracts people from around the globe. The zoetrope was invented in Victorian times and this contemporary version, as the artist states, bridges the time-span from the museum's inception to the present day. *Magic Lantern Small* (2010), is a smaller replica zoetrope which accompanied the original commission and allows a close-up view of the enchanting motion of moths in flight.

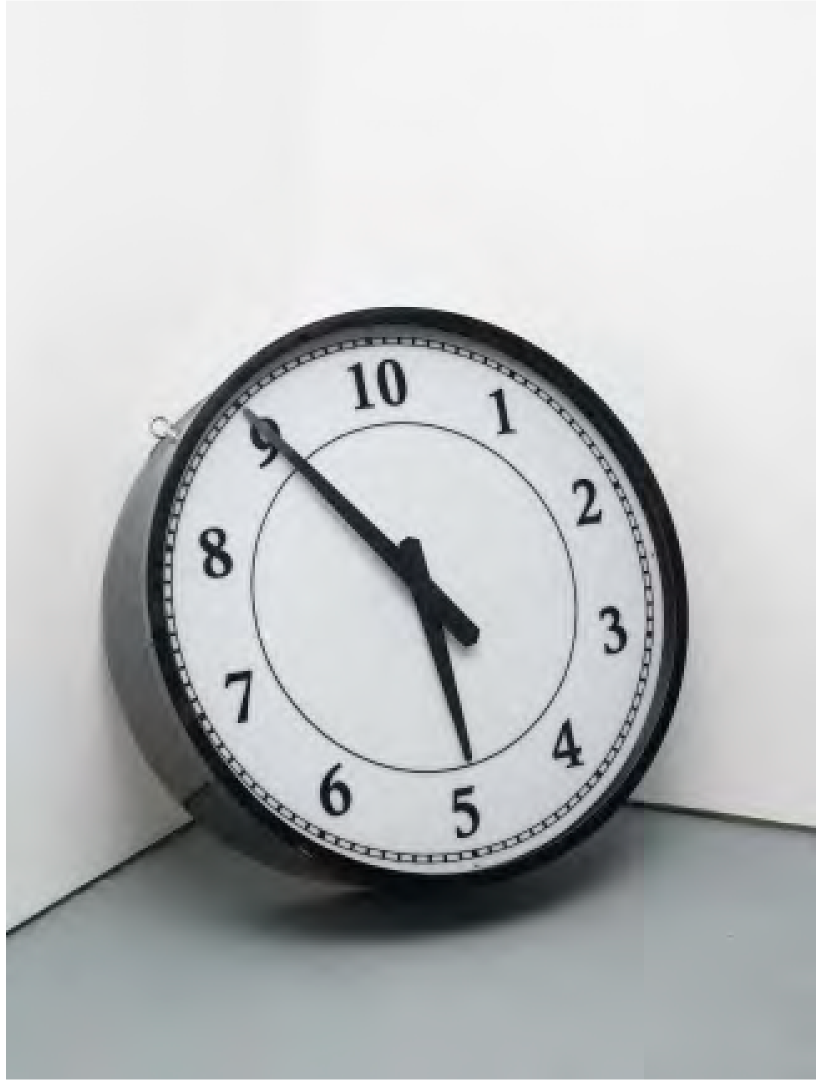




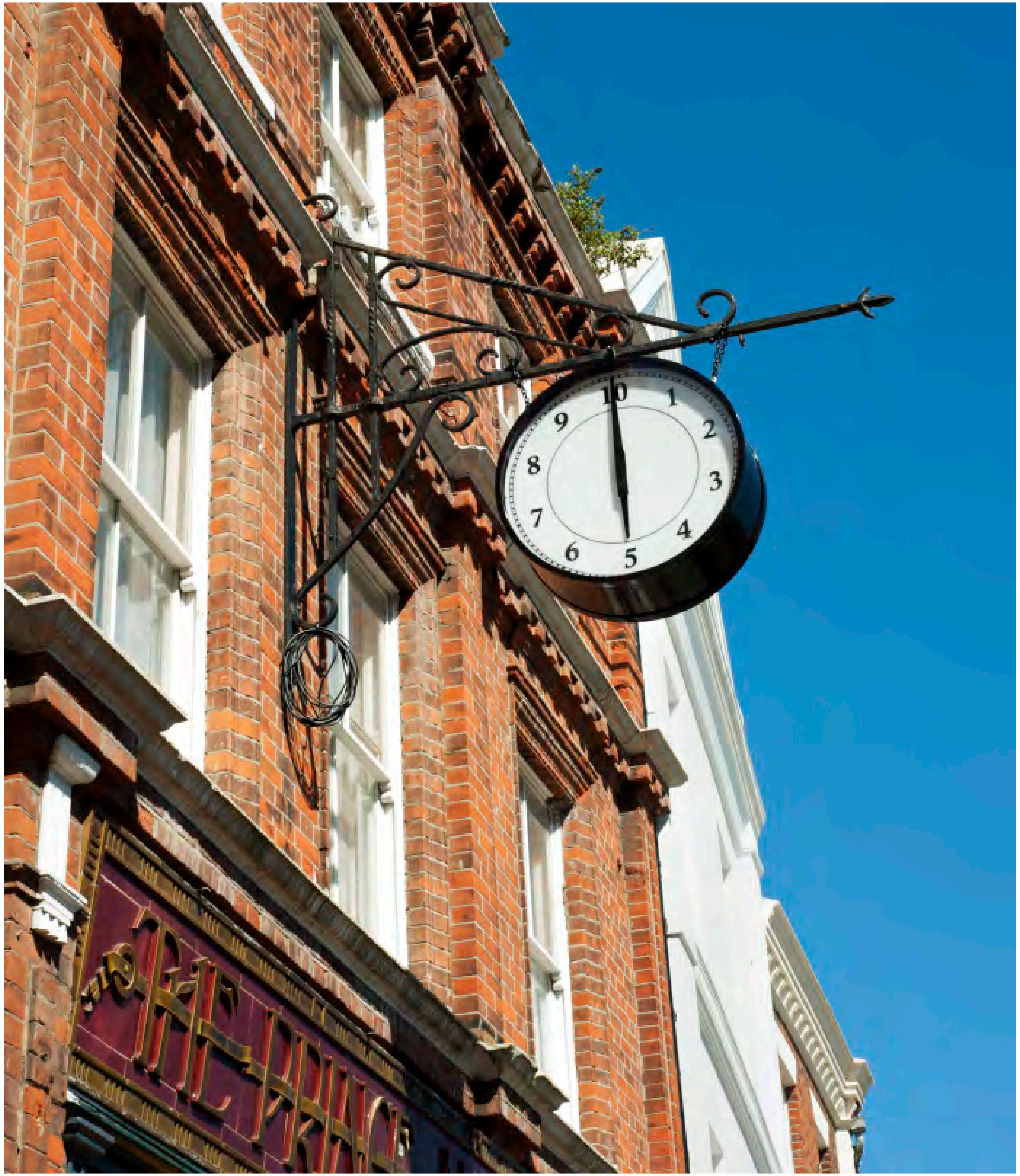
Ruth Ewan

We Could Have Been Everything That We Wanted to Be, 2011
Decimal clock
100 cm diameter × 30 cm

Ewan's work takes many forms including performance, installation and printed matter. Her practice explores overlooked areas of political and social history, presenting them in ways that highlight their continued relevance today.



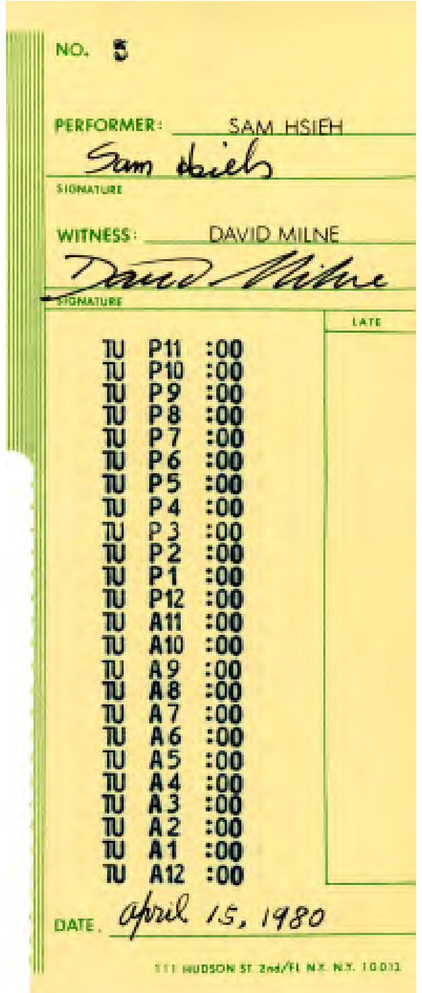
Originally commissioned as part of the second Folkestone Triennial in 2011, *We Could Have Been Anything That We Wanted to Be* is a series of ten decimal clocks, one of which is on display in the exhibition, that were installed around the seaside town of Folkestone, Kent. The clock displays decimal time dividing the day into ten periods rather than twenty-four. Midnight becomes ten o'clock, midday becomes five o'clock, each new hour contains one hundred minutes and each new minute contains one hundred seconds.
The idea was inspired by the French Republican Calendar, which became the official calendar of France for 13 years from 1793, when the recently formed Republic of France abandoned the Gregorian calendar in favour of an entirely new model where each day was made up of 10 hours.



Tehching Hsieh

One Year Performance 1980–81 (Time Clock Piece), 1980–81
Film
6 min

Tehching Hsieh, a pioneer of performance art, began his career as a painter in the late 1960s, and then made a dramatic debut as a performance artist in 1972 when he jumped from the third floor of a building in Taipei. He moved to New York in the 1970s and from the late 1970s he made a series of five separate one-year-long performances, followed by his *Thirteen Year Plan*, where Hsieh declared, 'Will make Art during this time. Will not show it publicly.' This plan lasted from 1986 until the end of 1999.



NO. 5

PERFORMER: SAM HSIEH
Sam Hsieh
SIGNATURE

WITNESS: DAVID MILNE
David Milne
SIGNATURE

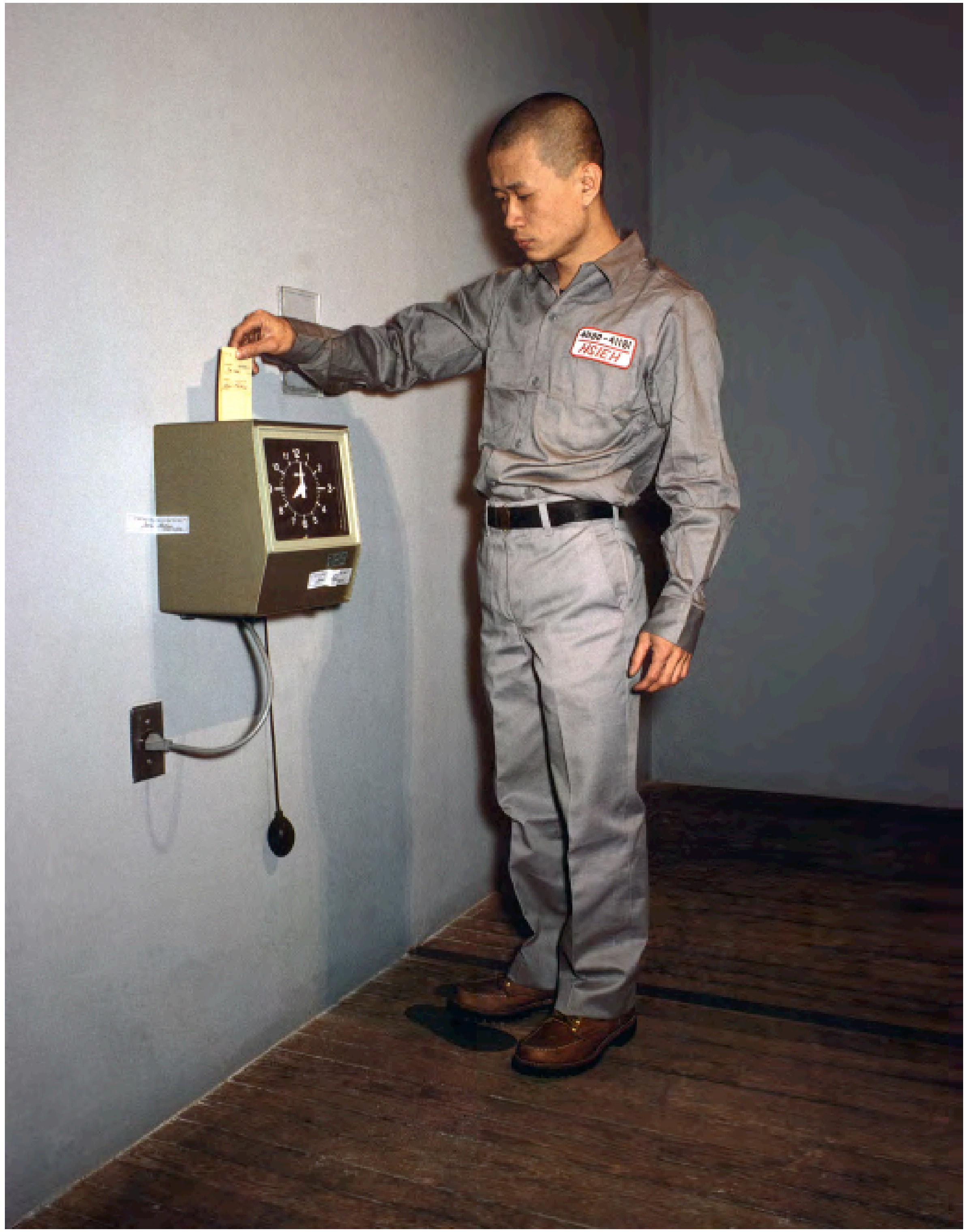
LATE

TU P11 :00
TU P10 :00
TU P9 :00
TU P8 :00
TU P7 :00
TU P6 :00
TU P5 :00
TU P4 :00
TU P3 :00
TU P2 :00
TU P1 :00
TU P12 :00
TU A11 :00
TU A10 :00
TU A9 :00
TU A8 :00
TU A7 :00
TU A6 :00
TU A5 :00
TU A4 :00
TU A3 :00
TU A2 :00
TU A1 :00
TU A12 :00

DATE. April 15, 1980

111 HUDSON ST. 2nd/FL N.Y. N.Y. 10013

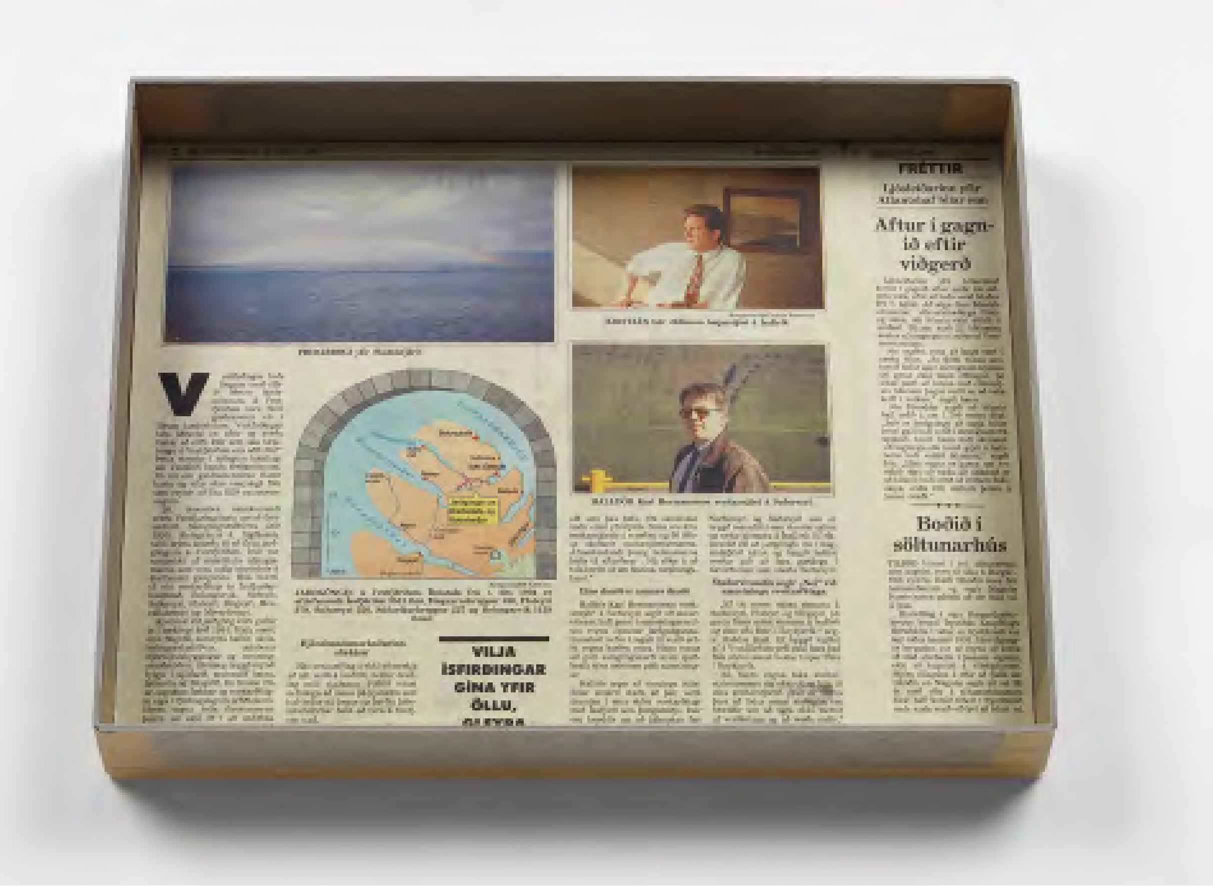
One Year Performance 1980–81 (Time Clock Piece) is a six-minute movie. During a one-year-long durational performance from 11th April 1980–11th April 1981, Tehching Hsieh punched a worker's time clock, every hour on the hour, and a composite of the 8,627 single film frames exposed every hour on that hour become the time-lapse movie (each day compressed into one second). Dressed in factory worker's clothes, but ineligible to work given his then status as an illegal immigrant, Tehching Hsieh laboured nonetheless: the labour is unproductive other than that it produces the work; for the art work is the duration of the performance as it is lived.

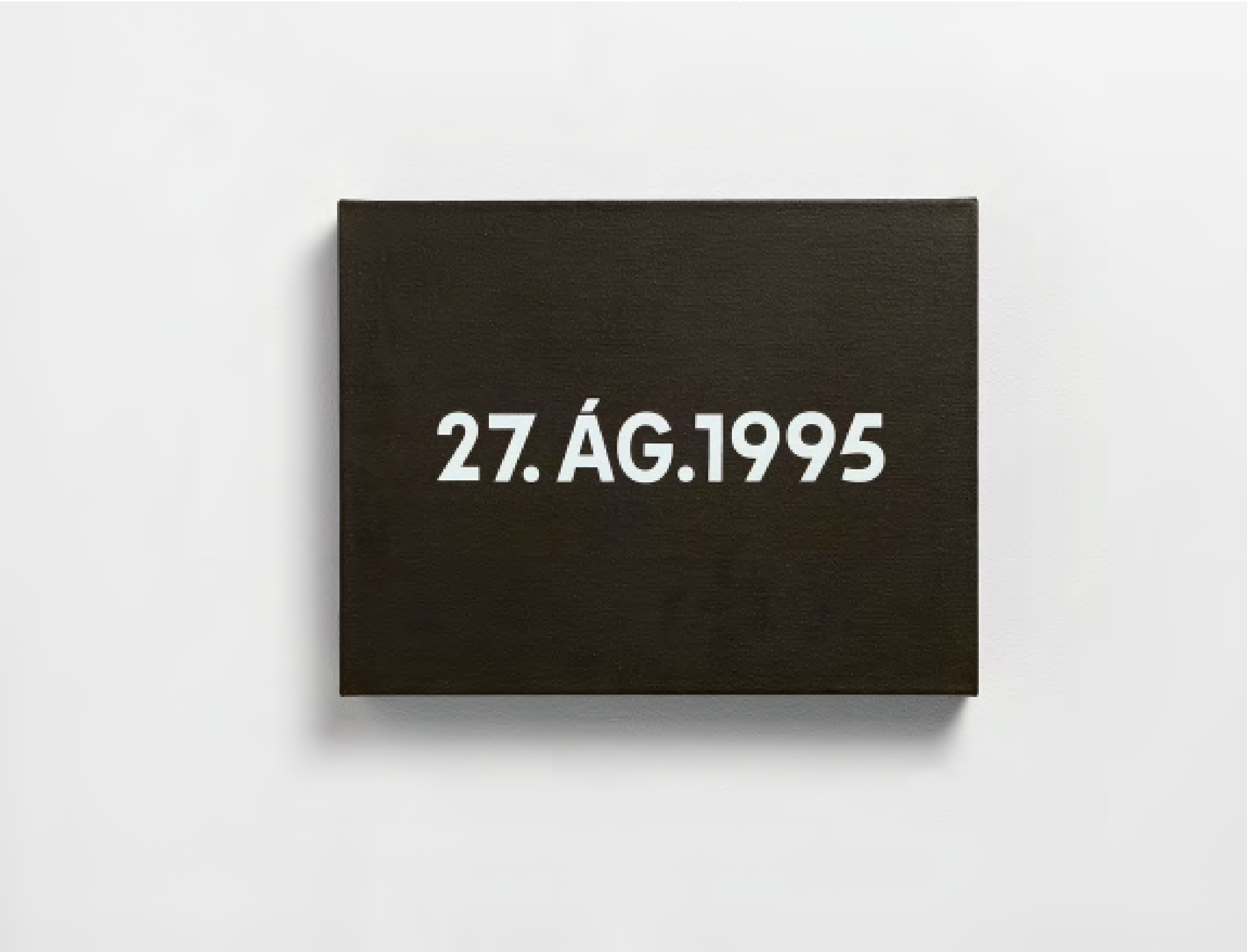


On Kawara

27.AG.1995, 1995
Liquitex on canvas with newspaper clippings in cardboard box
25.5 × 33 cm

On Kawara was a Japanese conceptual artist who lived in New York City from 1965. For over five decades On Kawara created paintings, drawings, books, and recordings that examined chronological time and its function as a measure of human existence. His artistic practice was characterised by its meditative approach to concepts of time, space, and consciousness. He began making his now signature ‘date paintings’ (known as the *Today Series*) on January 4, 1966 in New York City and continued to produce them in different parts of the world up until his death.


FRÉTTIR
Aftur í gagnið eftir viðgerð
Boðið í söltunarhús
VILJA ÍSFIRÐINGAR GÍNA YFIR ÖLLU,



27.AG.1995 is one of On Kawara’s ‘date paintings’ from his *Today Series*. The painting is of the date upon which it is painted (if it was not completed in that working day it was destroyed) in the language and grammatical conventions of the country in which it is painted, and is accompanied by a custom-made box lined with a newspaper clipping from the city in which he is dwelling for the duration of the painting. Although the boxes are part of the work, they are rarely exhibited. Each year he made between 63 and 241 paintings and each one was registered in a journal and marked on a calendar.

Louis Lumière

Demolition of a Wall, 1896
35mm transferred to DVD
1 min

The Lumière brothers, Louis (1864–1948) and Auguste (1862–1954), are considered to be among the first filmmakers in history. They patented the cinematograph, which allowed simultaneous viewing by multiple parties. Their first film, *Sortie de l'usine Lumière de Lyon*, shot in 1894, is considered the first true motion picture.

Demolition of a Wall by Louis Lumière shows the demolition of a wall in the grounds of a factory. We see the action proceeding forward as expected, but at the mid-point of the film, the footage is reversed, taking us back to the beginning. This was the first instance of reverse motion cinematography – apparently Lumière liked to show the film backwards at screenings, to general amusement and bafflement.

Chris Marker

La Jetée, 1962
Film
28 min

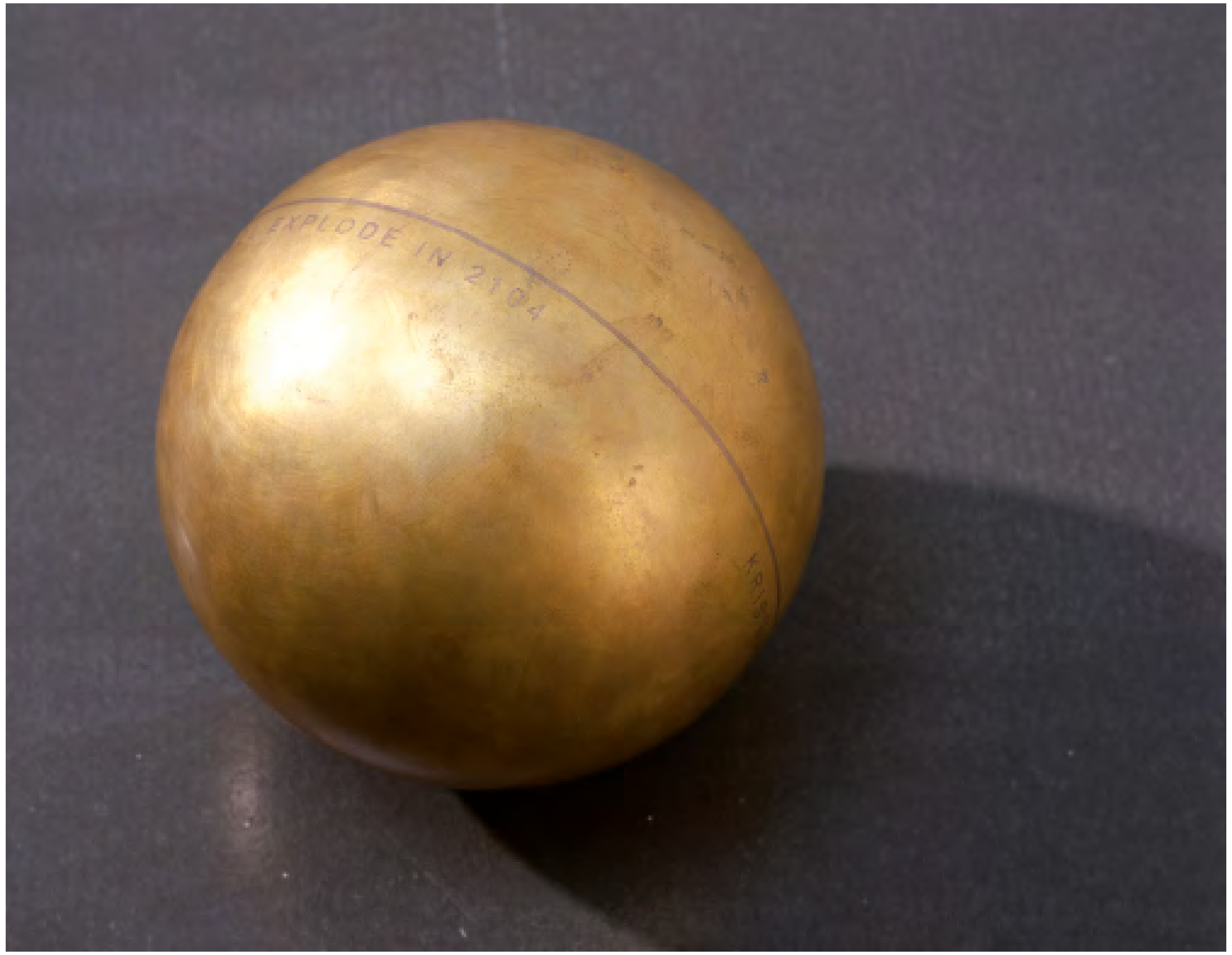
Chris Marker was a French writer, photographer, documentary film director, multimedia artist and film essayist. Marker is widely acknowledged as the finest exponent of the 'essay film' and is best known as the director of over 60 films including *Sans Soleil* (1983) and *A Grin Without a Cat* (1977).

His most celebrated work *La Jetée* (1962) is a science fiction featurette that imagines a Paris devastated by nuclear catastrophe and is composed almost entirely of black-and-white still photographs.

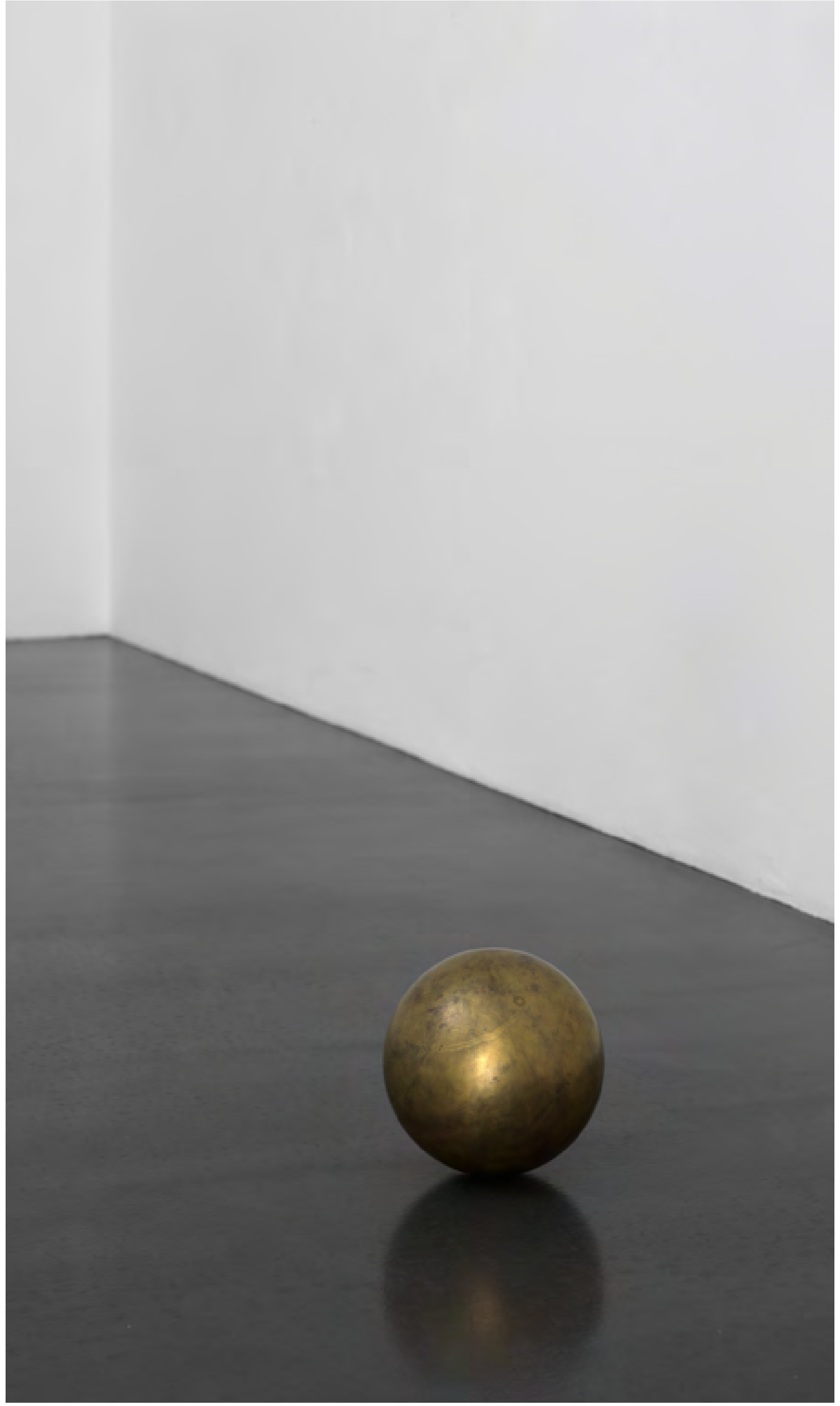
Kris Martin

100 Years, 2004
Brass
20 cm diameter

Kris Martin is a conceptual artist. He creates large and small-scale sculptures, drawings, photographs, performances and interventions, focusing on the notion of time, often by attempting to mark, halt or transcend its inevitable passing.



100 Years (2004), is a small brass sphere that, according to an engraving on its underside, is set to explode in 2104, 100 years after its manufacture. Over time, as it tick-tocks into the future, this self-degrading sculpture, caught between entropy and time's inevitable unfolding, will become tarnished by oxidation, and corrosion will lead to its inescapable self-destruction.

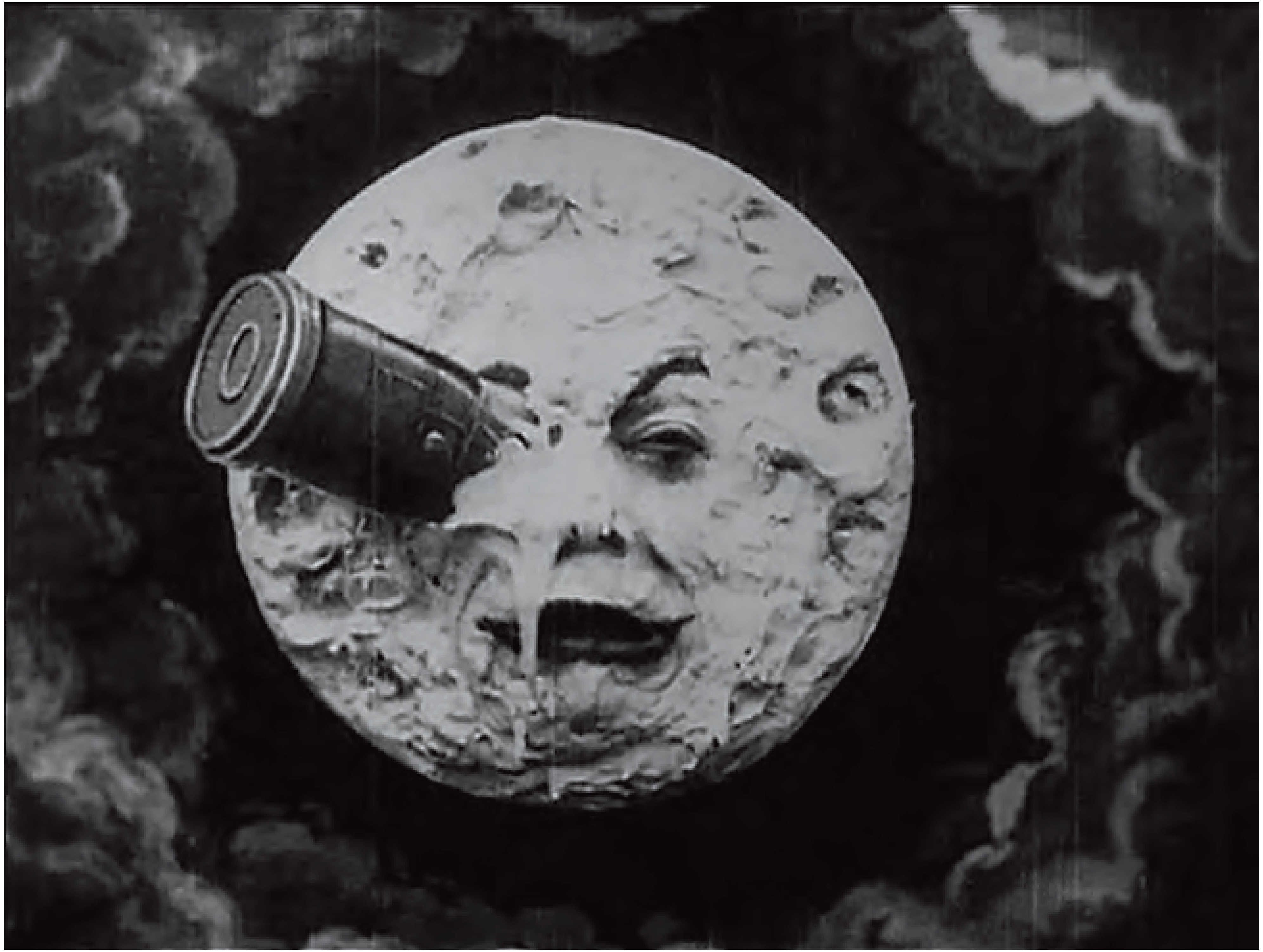


Georges Méliès

A Trip to the Moon, 1902
13 min
and
Extraordinary Illusions, 1903
2 min

Méliès was a French illusionist and filmmaker famous for leading many technical and narrative developments in the earliest days of cinema. Méliès, a prolific innovator in the use of special effects, accidentally discovered the substitution stop trick in 1896, and was one of the first filmmakers to use multiple exposures, time-lapse photography, dissolves, and hand-painted colour in his work.

In *Extraordinary Illusions* (1903) Méliès performs a cine-magic act, and his earlier film *A Trip to the Moon* (1902) involves a strange, surreal journey and is considered among the most important early science fiction films. Inspired by a wide variety of sources, including Jules Verne's novels *From the Earth to the Moon* and *Around the Moon*, and H. G. Wells' *The First Men in the Moon* the film follows a group of astronomers who travel to the Moon in a cannon-propelled capsule, explore the moon's surface, escape from an underground group of Selenites (lunar inhabitants), and return with a splashdown to Earth with a captive Selenite. It features an ensemble cast of French theatrical performers, led by Méliès himself in the main role of Professor Barbenfouillis, and is filmed in the overtly theatrical style for which Méliès became famous.

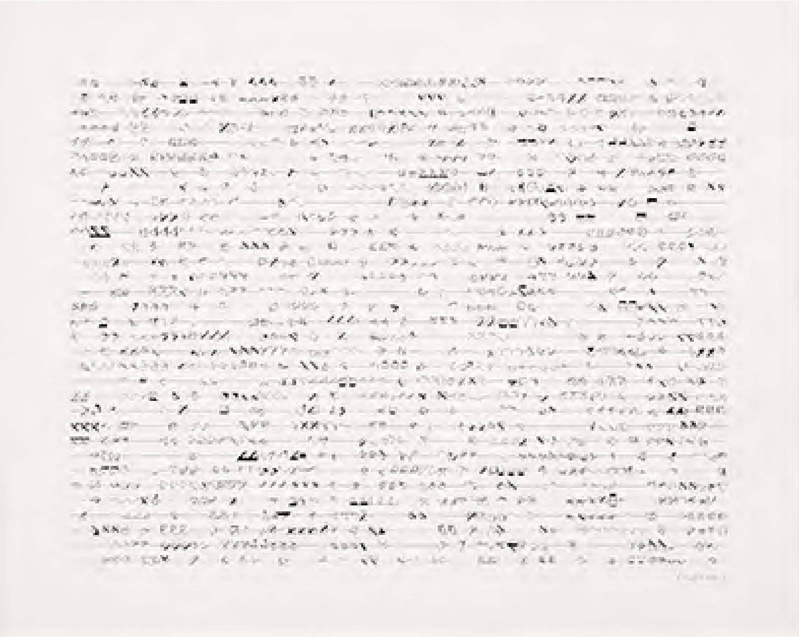


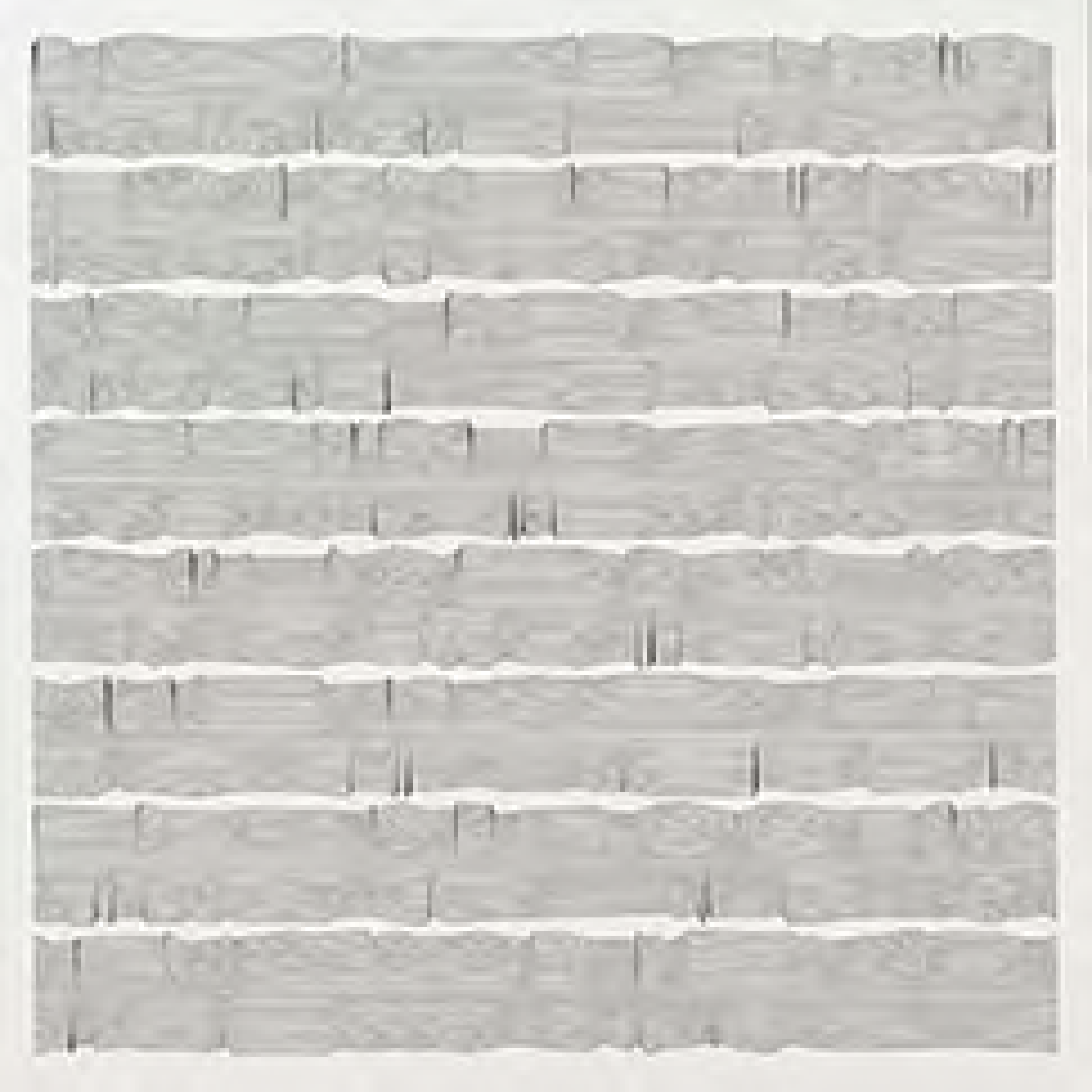
Manfred Mohr

P-036, 1971
Plotter drawing on paper
52 × 52 cm
and
P-052_D, 1970
Plotter drawing on paper
42 × 42 cm

Manfred Mohr is considered a pioneer of digital art. Since the late 1950s he had been making rigorously minimal paintings and drawings. During the 1960s, Mohr's practice evolved from abstract expressionism to computer generated algorithmic geometry. Influenced by the philosopher and information theorist Max Bense and computer music composer Pierre Barbaud whom he met in 1967, he began to develop a 'programmed expressionism' in which algorithms were used to generate art that formalised his vision in a new, logical way. Mohr programmed his first computer drawings in 1969. Since then all his artwork is produced exclusively with the computer. Mohr develops and writes algorithms for his visual ideas. In 2000, he introduced colour and animation to give fuller expression to the incredible richness of the multiple, complex variations.

The exhibition includes 8 computer generated drawings dated from 1970 to 1977.



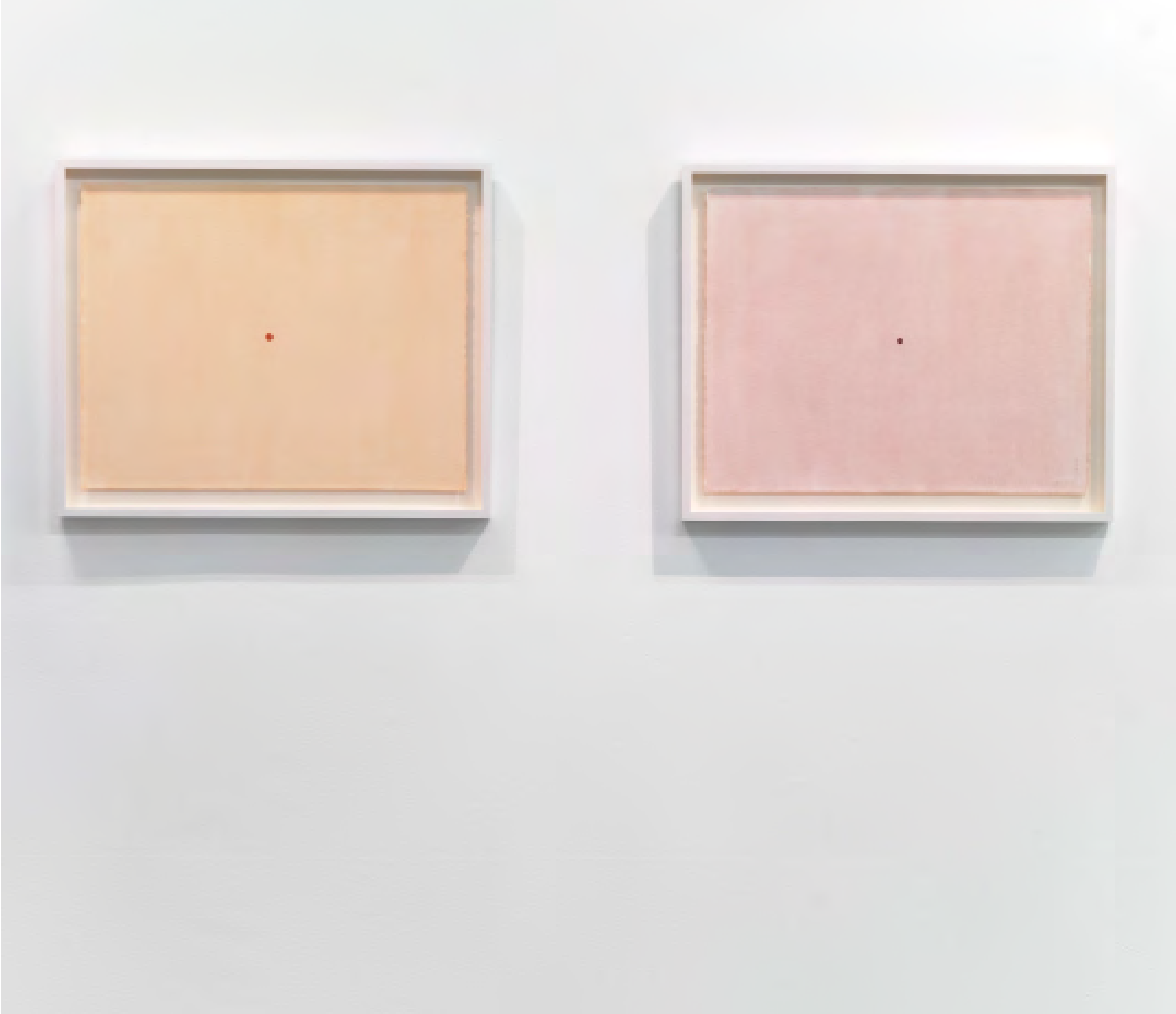


Melvin Moti

A Century of Light, 2010
Watercolour on paper
50 × 60 cm each

Melvin Moti produces works grounded in intensive research that explore neurological, scientific and historical processes in relation to visual culture. He produces films, artist books, objects, and drawings. His films and installations often reduce his chosen subject matter to the point that their visual and aural attributes become unique from their original state and independent of their original contexts.

A Century of Light (2010) consists of two drawings that are made using what painting laboratories refer to as 'time machines'. These time machines simulate the effect of an amount of exposure time of paint samples to air and light. Moti used this 'weathering' procedure on two sheets of paper that he had painted with pigments that are unstable, and that change in appearance (they lighten, they darken) or physically, and, over two months, the sheets of paper were exposed to such environmental conditions that simulated 100 years of exposure in gallery conditions.



Nam June Paik

Nam June Paik: Edited for Television, 1975
Documentary film
28 min 14 sec

Nam June Paik's video sculptures, installations, performances and single-channel videos encompass one of the most influential bodies of work in electronic media art. As a pioneering figure in multimedia art, he worked with radios, televisions, robotics and computers to explore humanity's ever-changing relationship with technology. At a time when television was still a novelty, Paik foresaw the future popularity of this new and exciting medium.

Produced for public television station WNET/Thirteen in New York, *Nam June Paik: Edited for Television* (1975) is a provocative portrait of the artist, his work and philosophies. It features an interview of Paik by art critic Calvin Tompkins (who wrote a *New Yorker* profile of the artist in 1975) and ironic commentary by host Russell Connor. Taped in his Soho loft, with the multi-monitor piece *Fish Flies on Sky* (1975) suspended from the ceiling, Paik addresses his art and philosophies in the context of Dada, Fluxus, the Zen Koan, John Cage, Minimal art, information overload and technology.

Katie Paterson

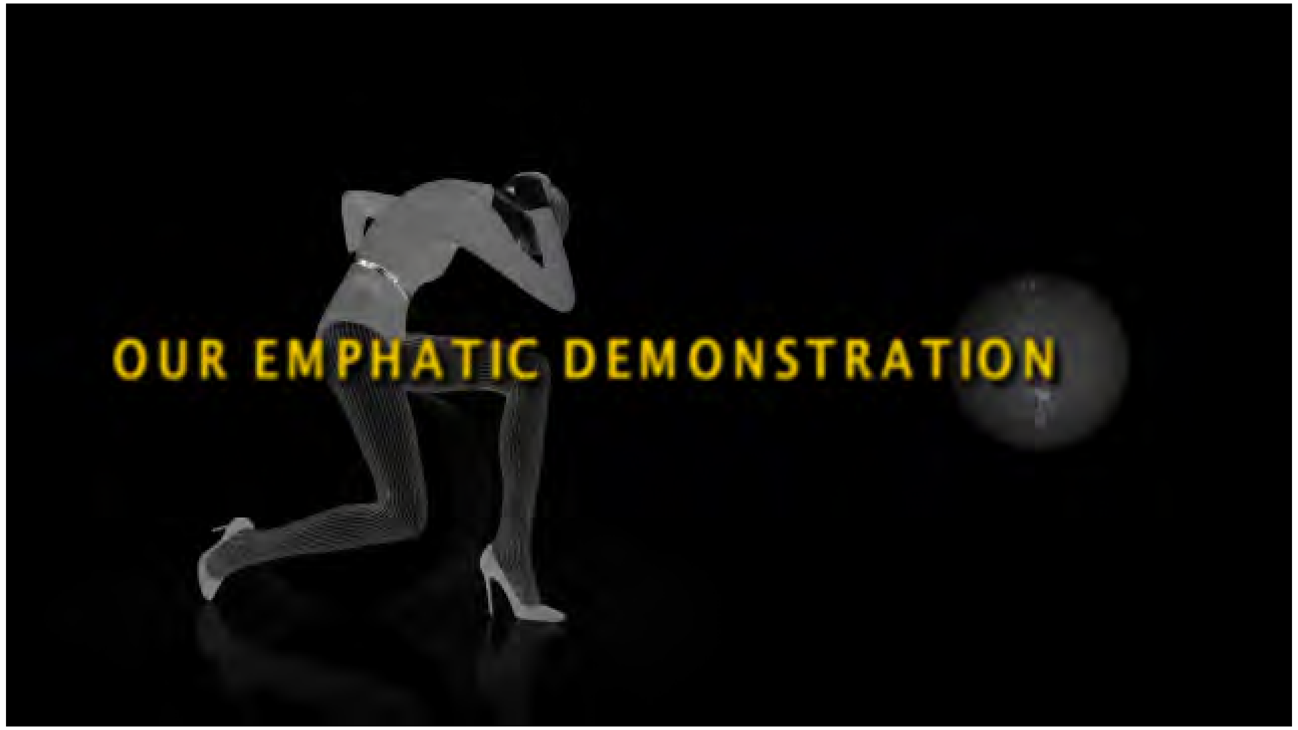
Campo del Cielo, Field of the Sky (91,800g), 2014
Found meteorite, cast melted and re-cast back into a new version of itself
40.6 × 33 × 22.9 cm

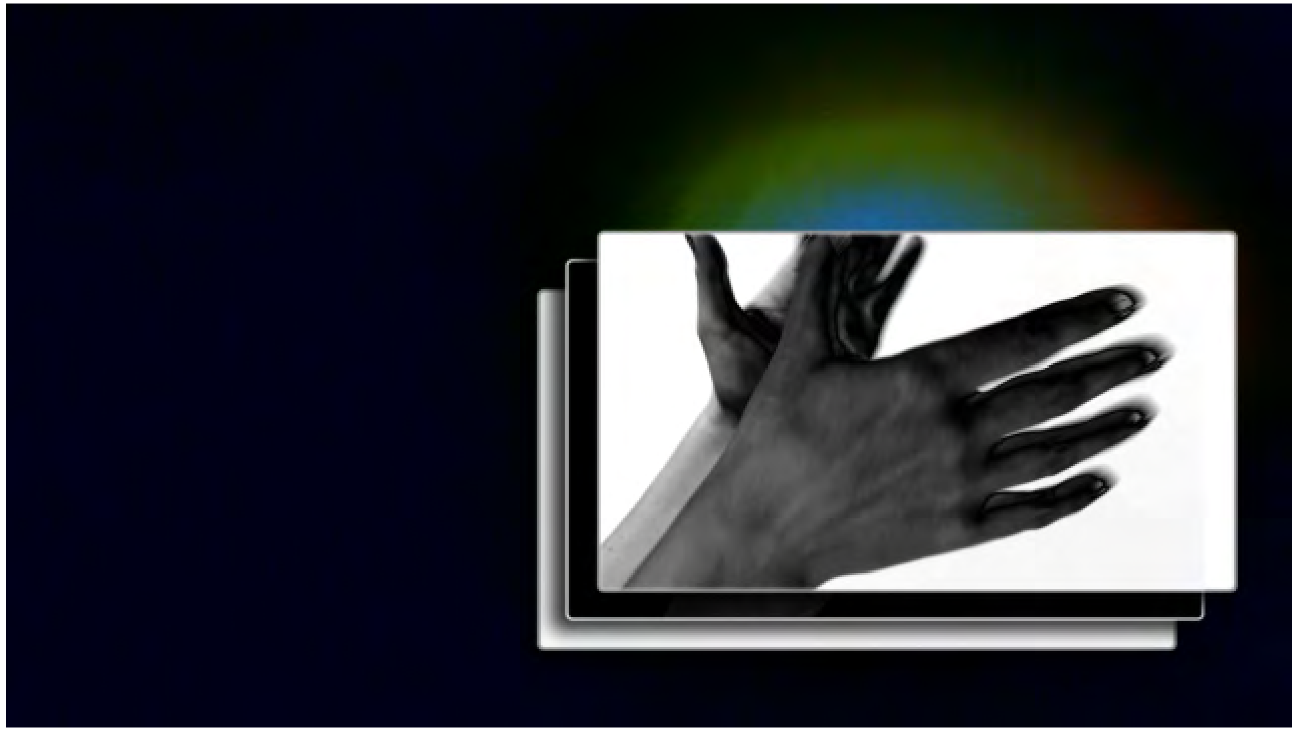
Paterson's artistic practice is cross-medium, multi-disciplinary and conceptually driven, with an emphasis on nature, ecology, geology and cosmology. *Campo del Cielo, Field of the Sky* (2012) began as a meteorite, which had been travelling through space and time for over 4.5 billion years, and was buried for over 5,000 years in Campo del Cielo, a cratered field in Argentina. More ancient than earth itself, the 120kg meteorite (92% iron, 7% nickel, and 1% other elements) has been cast, smelted and re-cast into a new version of itself. In reforming and transforming the meteorite the work both does and doesn't bear the scars of the deep layers of time engrained within it.

Elizabeth Price

SLEEP, 2014
Video installation
10 min

Elizabeth Price creates immersive video works incorporating digital moving image, text and music. She uses existing archives of film, photography and art collections to invent new, apocalyptic narratives.





SLEEP, (2014) is a new film which forms part of a developing trilogy of her works. The title of the work refers to digital 'sleep' – a term used to describe a computer on stand-by mode – which is a state of readiness, rather than one of repose. The work revisits the solar imagery from her video *SUNLIGHT* (2013), speeding chronologically through thousands of images of the sun. From glass-plate slides produced in the early twentieth century to digital moving image, Price presents this archive as a staccato animation, a rapidly ticking meter for a narrative related by a self-proclaimed 'dramatic chorus'. With a group of dancing and singing women appearing as its visual proxy, the chorus claims to have gathered all the sunlight of the twentieth century and concentrated it into a relentless stream, in order to illuminate the ritualized action: hosiery models, striking stylized, melodramatically photophobic poses, accompanied by Crystal Gayle, singing in reverse.

Sun Ra

Space is the Place, 1972
21 min 14 sec

Sun Ra was an innovative jazz composer, bandleader, piano and synthesizer player, who came to be known as much for his cosmic Afro-futurist philosophy as for his phenomenal musical compositions and performances. As both a black male and an independent producer, Sun Ra defied racist institutions and beliefs.

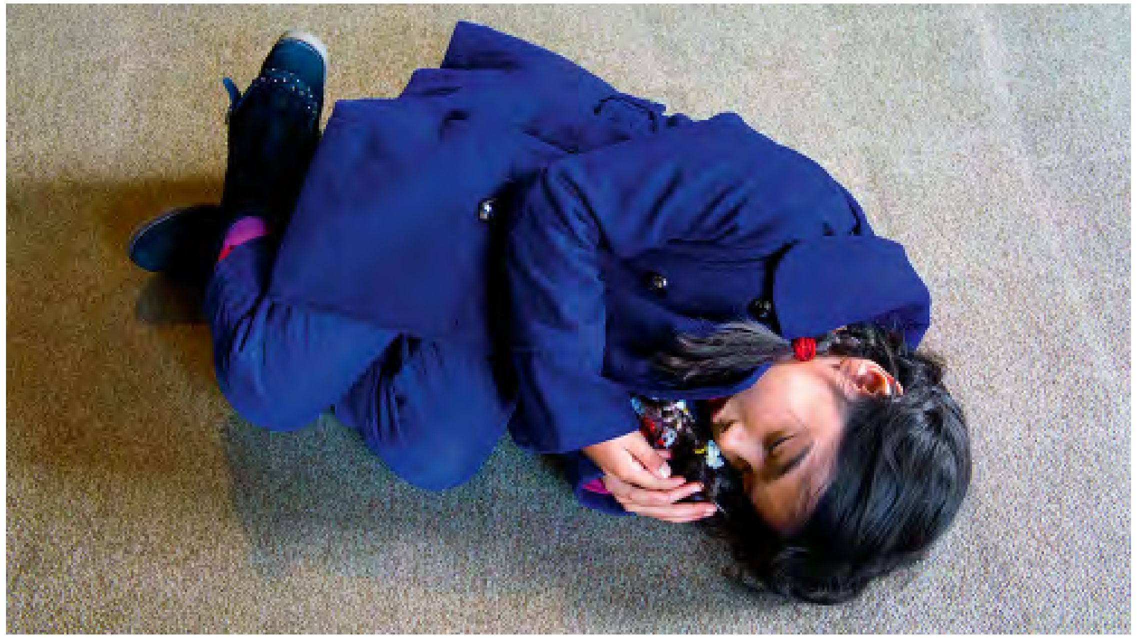
Sun Ra and his Astro Intergalactic Infinity Arkestra's track *Space is the Place* is from his 1973 album 'Space is the Place', and it will be heard throughout the exhibition's duration. Sun Ra combines free-form jazz, big band swing, and his own 'space organ', using music as a medium of transportation to 'another tomorrow'.

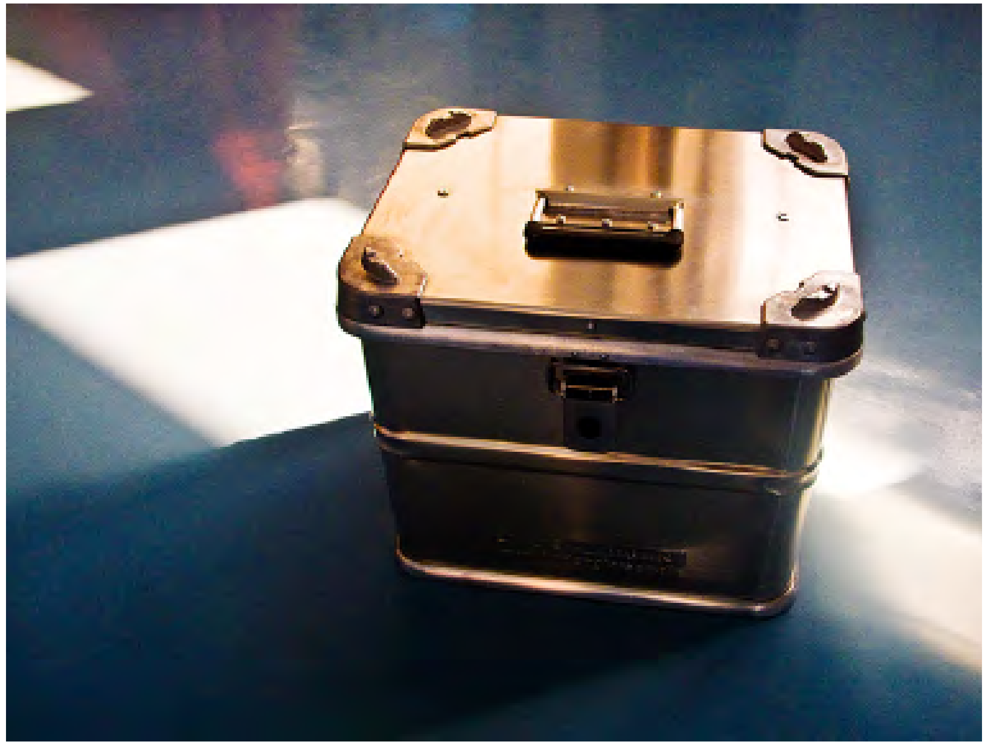
Raqs Media Collective

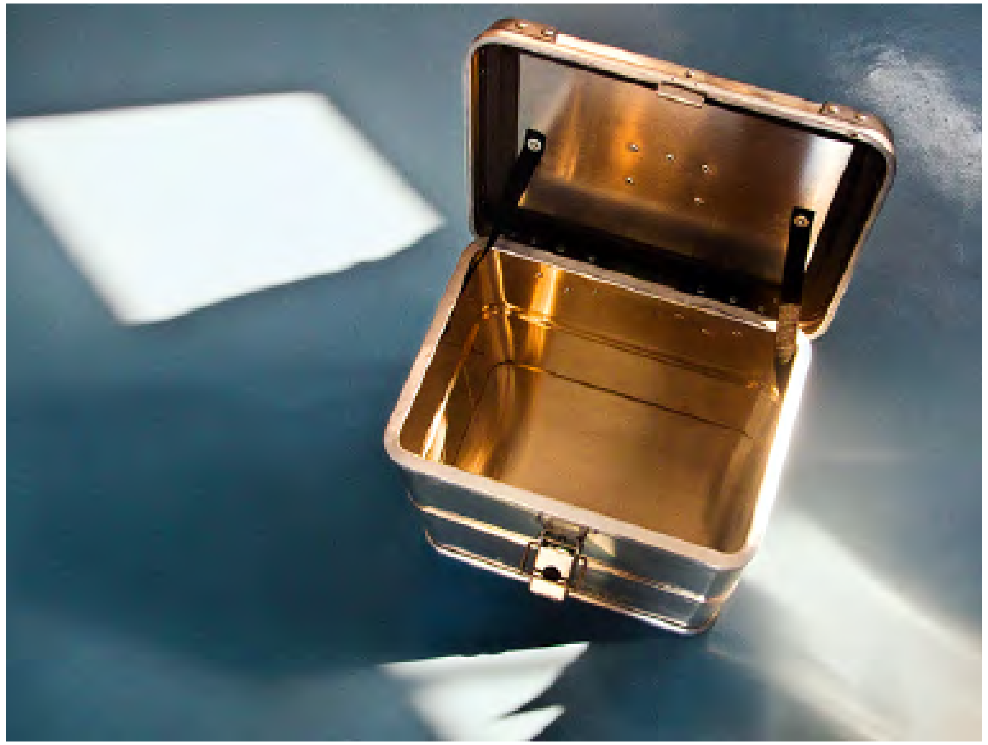
Time Capsule from 2011, to be Opened in 2061, 2014
Three photographic prints mounted on dibond, accompanying booklet
42 × 76 cm each

Raqs Media Collective, founded in 1992 by Jeebesh Bagchi, Monica Narula and Shuddhabrata Sengupta enjoys playing a plurality of roles, often appearing as artists, occasionally as curators, and sometimes as philosophical agent provocateurs. Their practice embodies an agile, kinetic contemplation of the world, its history and future.

Time Capsule from 2011 is a time travel device that makes it possible for Raqs Media Collective to claim its contemporaneity with the future. At the same time, the contents of the container are unknown. The container, an aluminium box interred into the earth on 18 June on the Alby Estate in the city of Moss, will be opened at an appropriate date in 2061. The work features two images of the box as well as a photograph of a child. The work is annotated by a text, published as a booklet – 'A Letter to Amália Jyran, Who Will be Fifty Four in 2061 CE'.





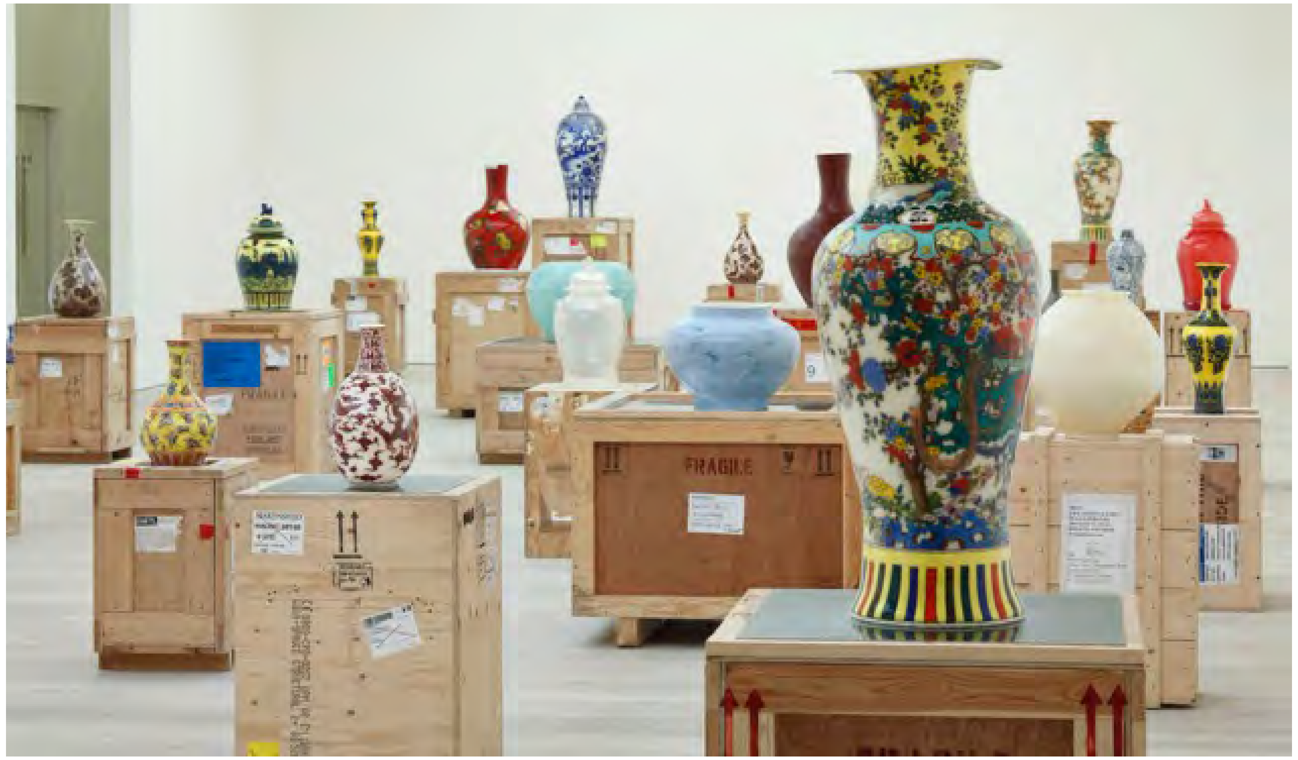


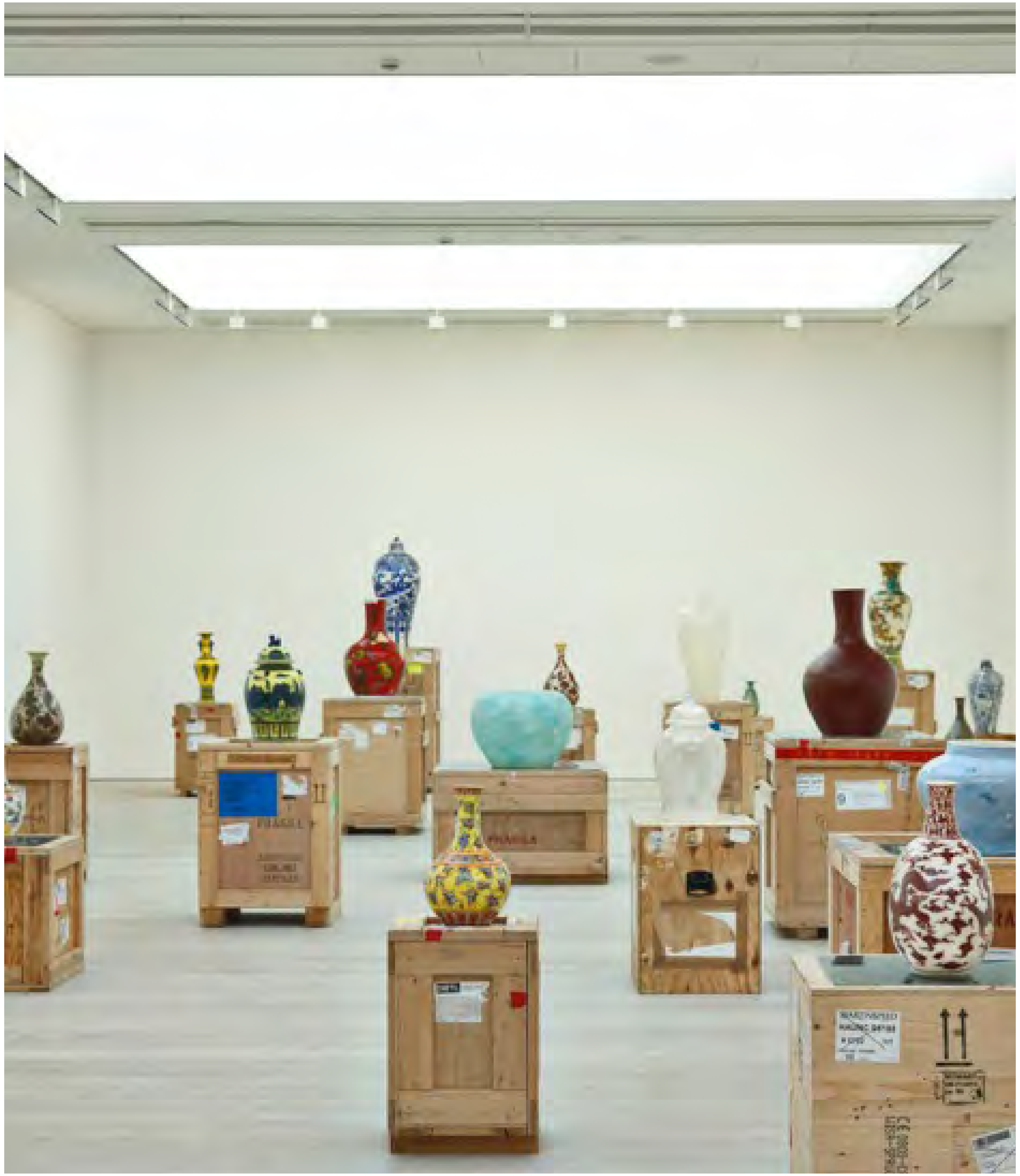
Meekyoung Shin

Translation Series, 2011
Soap, pigment, fragrance, vanish
85 × 38 × 38 cm

Meekyoung Shin creates sculptures that probe the mis- and re-translations that often emerge when objects of distinct cultural and historical specificity are dislocated from their origins. Made from soap, her work replicates artefacts and works of art, from Asian porcelain vases to Greek and Roman sculptures, translating between continents, cultures and centuries in the process.

Translation Series (2011) is a series of vases displayed on packing cases. They are crafted in soap and based on porcelain made between the 16th and 20th centuries that may look 'authentic' but were in fact created specifically for the European market. They are, then, faux antiques and the work, teetering between different historical times, takes you back to another time, which never really existed.

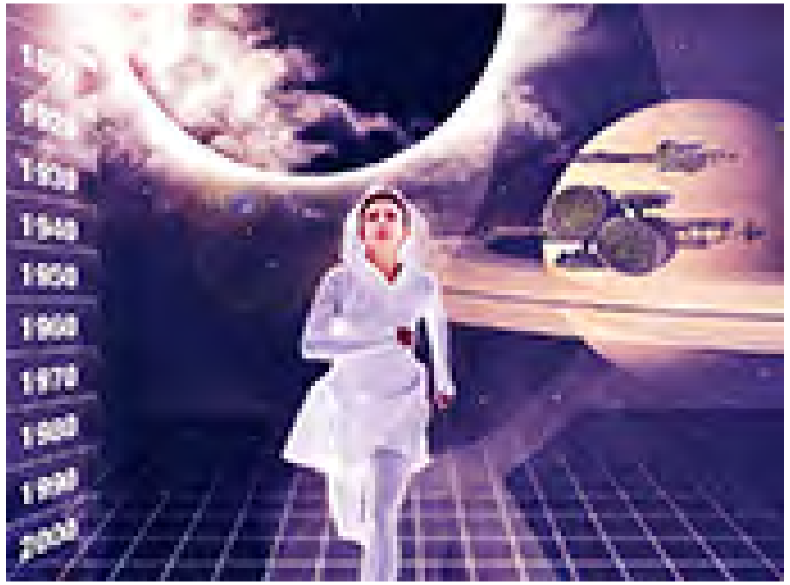




Maja Smrekar

History of the Future (2012)
mpeg4 video
1 hr 53 min

Maja Smrekar's work is based at the phenomenology of perception, which she first started researching through space phenomena by composing live video among various collaborations in interactive sound/visual projects with other artists. Her main artistic focus remains at the intermedia art field by exploring the concepts of life.



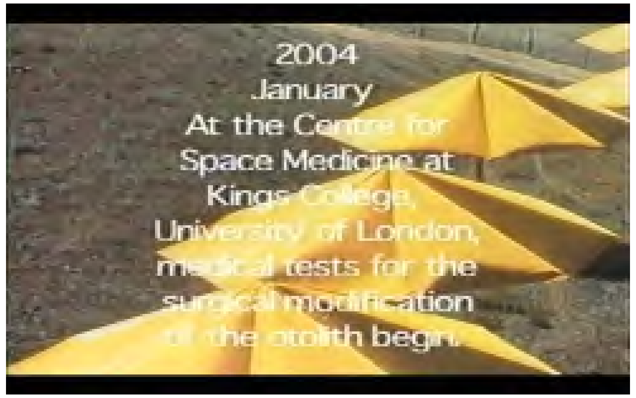
History of the Future (2012) takes the viewer on a temporal journey through the cinematic archive of international science-fiction production, organised as a presentation of content-based clusters of representations of possible realities of the future and the present, which follow chronologically from 1895 until 2009, and appear on a time line in the future, which ends in the year of 802,701.

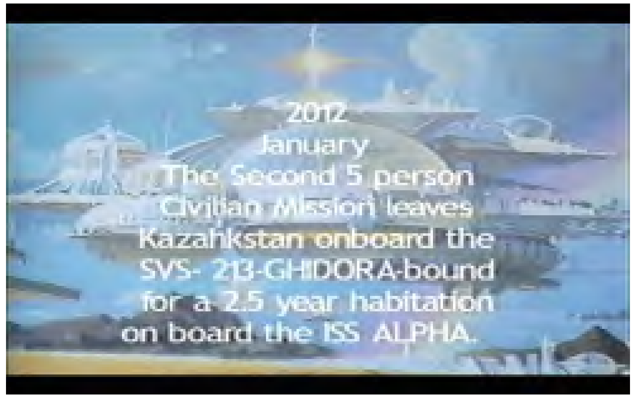
The Otolith Group

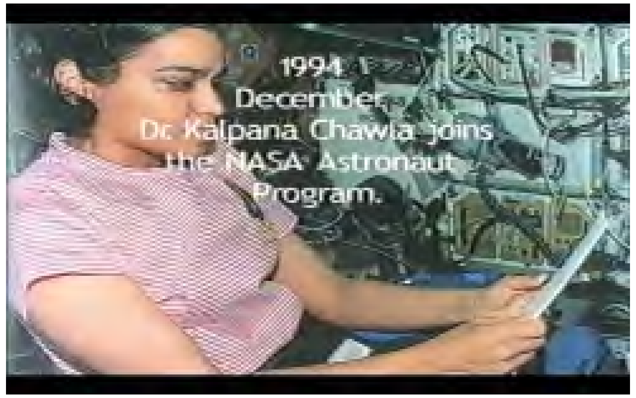
The Otolith Timeline, 2003
SD video
30 min

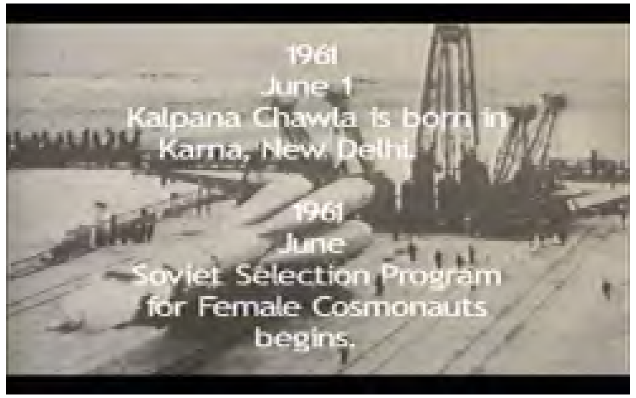
The Otolith Group question the nature of documentary history across time by using resources and material found within a range of disciplines, in particular the moving image.

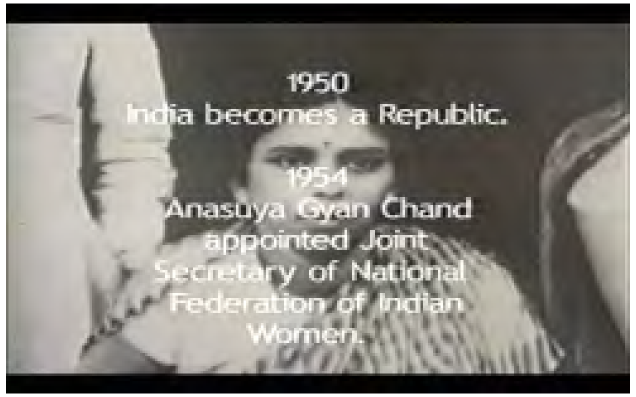
Otolith Timeline situates *The Otolith Trilogy* in a speculative history of the 20th and 21st Century.

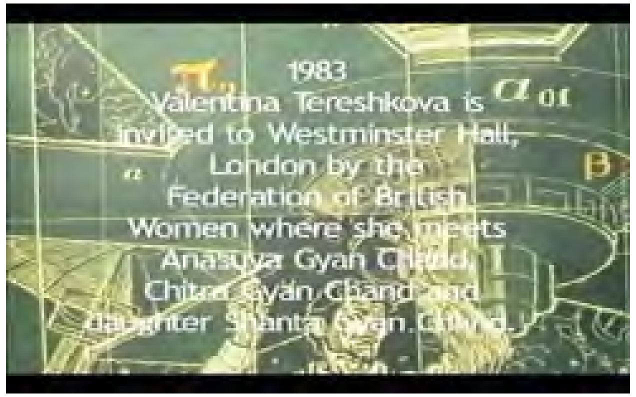

2004
January
At the Centre for
Space Medicine at
Kings College,
University of London,
medical tests for the
surgical modification
of the otolith begin.


2012
January
The Second 5 person
Civilian Mission leaves
Kazahkstan onboard the
SVS- 213-GHIDORA-bound
for a 2.5 year habitation
on board the ISS ALPHA.


1994
December
Dr. Kalpana Chawla joins
the NASA Astronaut
Program.


1961
June 1
Kalpana Chawla is born in
Karna, New Delhi.
1961
June
Soviet Selection Program
for Female Cosmonauts
begins.


1950
India becomes a Republic.
1954
Anasuya Gyan Chand
appointed Joint
Secretary of National
Federation of Indian
Women.


1983
Valentina Tereshkova is
invited to Westminster Hall,
London by the
Federation of British
Women where she meets
Anasuya Gyan Chand,
Chitra Gyan Chand and
daughter Shanta Gyan Chand.

Thomson & Craighead

The Time Machine in Alphabetical Order, 2010
Film
1 hr 36 min 55 sec

Jon Thomson & Alison Craighead make artworks and installations for galleries, and specific sites that include online spaces. Much of their recent work looks at networked global communications systems and how they are changing the way we all understand the world around us.

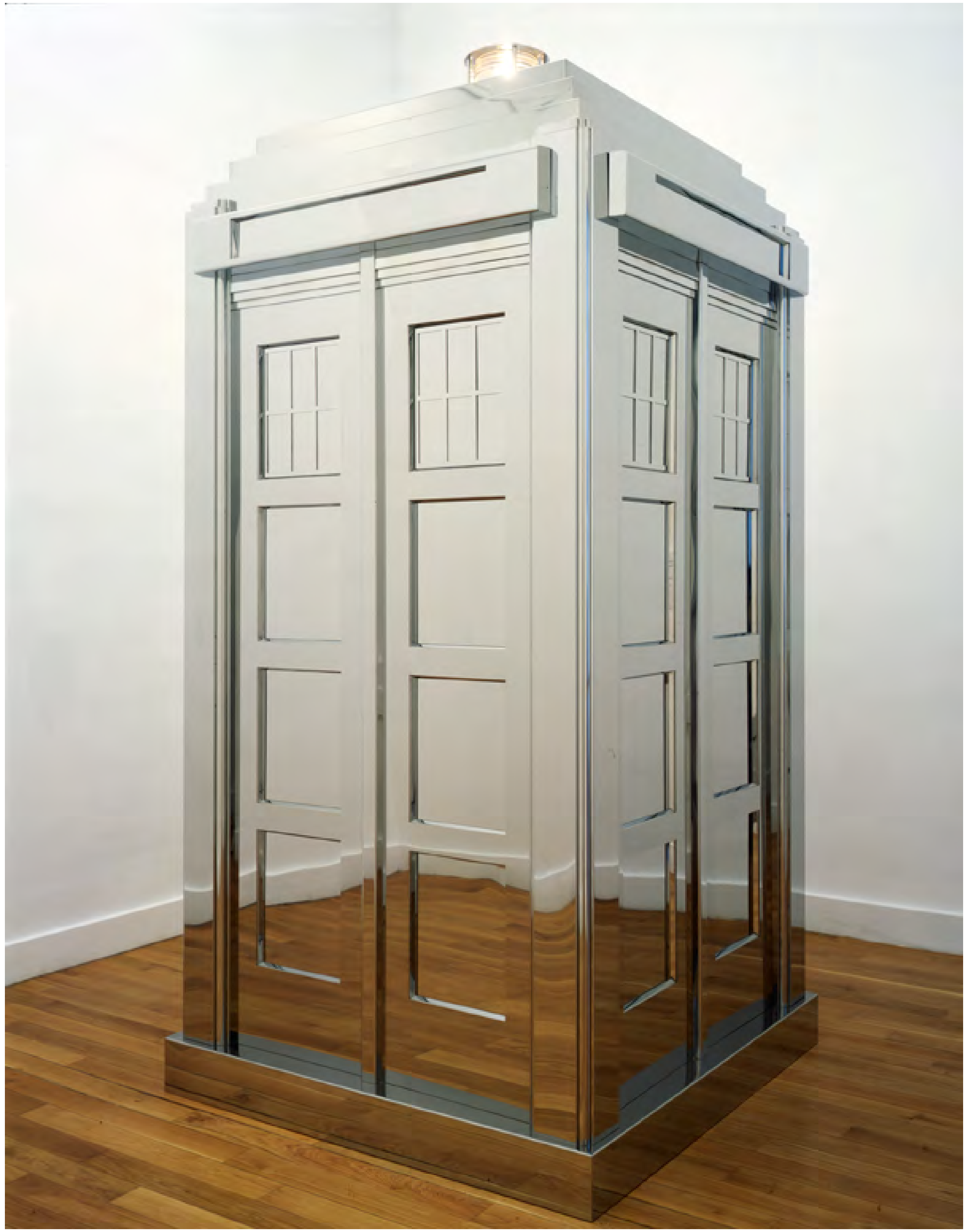
The Time Machine in Alphabetical Order (2010) is a complete rendition of the 1960s film version of HG Wells' novella re-edited by them into alphabetical order from beginning to end. In doing so, the artists attempt to perform a kind of time travel on the movie's original time line by switching from the logic of narrative unfolding over time to the logic of the alphabet as itself a system (as chronology, as database, as algorithm) of classification.

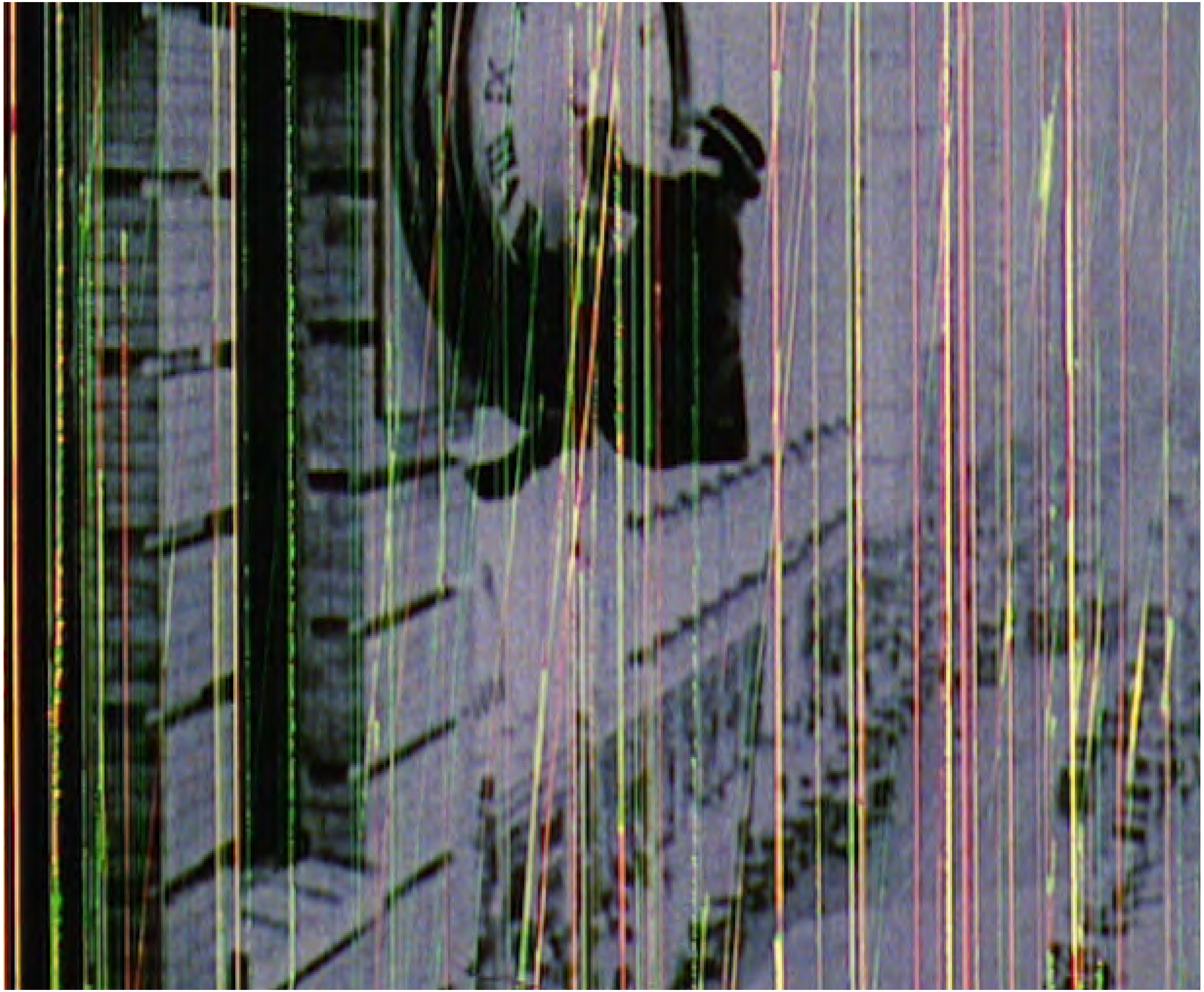
Mark Wallinger

Time and Relative Dimensions in Space, 2001
Stainless steel, MDF, electric light
281.5 × 135 × 135 cm

Mark Wallinger is a British painter, sculptor and video artist. His work is an exploration of identity, class and religion, and questions traditions and values of British society. His work has a broad appeal, in the past using subject matter such as horse racing and football and later focusing on spirituality, religion and myth.

Time and Relative Dimensions in Space (2001) is an aluminium version of Dr Who's 'Tardis' police box that simultaneously disappears into the space-time continuum and reflects its own surroundings.





Catherine Yass

Safety Last, 2011
16mm projection transferred to DVD
2 min 39 sec

Catherine Yass is a contemporary photographer and filmmaker, known for her films and light boxes of architectural space and its psychological impact.

Yass' film is a clip from Harold Lloyd's 1923 silent film *Safety Last!* It shows Lloyd hanging from the side of a building, clinging onto the clock hands, which he pulls down from the 9 to the 6, dragging time backwards as he nearly falls. At the same time the film becomes increasingly scratched as it plays, as though he is literally being erased through time by the film. The film enacts in a material way what is happening in the narrative, through the medium of the film. Yass was also investigating the damage that occurs to film as it is repeatedly fed through a projector, considering how age and distress can affect the photographic surface of the negative.

Biographies

Martin John Callanan (b.1982) graduated with an MFA from the Slade School of Fine Art, London in 2005, where he is currently Teaching Fellow in Fine Art Media, University College London and a member of Slade Centre for Electronic Media in Fine Art. He is the current holder of the triennial Philip Leverhulme Prize in Visual Art 2014–17. Recent solo exhibitions include *Departure of All,* Noshowspace; *Martin John Callanan*, Horrach Moya; *Global*, Casal Solleric; and *Along Some Sympathetic Lines*, Or Gallery. His work has been shown at White Cube Gallery; Galerie Christian Ehrentraut; James Cohan Gallery; Es Baluard Modern and Contemporary Art Museum; Whitechapel Gallery; ZKM Karlsruhe; Ars Electronic Centre; ISEA; FutureEverything; Art Exchange; LIFT 2014, Battersea Arts Centre; Kunstverein Springhornhof; Riga Centre for New Media Culture; Whitstable Biennale; and Imperial War Museum North.

Jim Campbell (b.1956) has exhibited internationally and throughout North America in institutions such as the Whitney Museum of American Art, New York; the San Francisco Museum of Modern Art; The International Center for Photography, New York; The J. Paul Getty Museum, Los Angeles and the Museum of Contemporary Art, Sydney, Australia. In 2012, he was the recipient of the San Francisco Museum of Modern Art's 13th Annual Bay Area Treasure Award. He has two Bachelor of Science Degrees in Mathematics and Engineering from MIT and as an engineer holds nearly twenty patents in the field of video image processing. A monograph of his work, Material Light, was published by Hatje Cantz in 2010.

Edgar Cleijne (b.1963) is a Dutch artist working with photography and film. He lives in Rotterdam and New York. Solo shows *Lisbon Photo Biennial*, Galeria de Mitra, Lisbon, Portugal (2003); *Edgar Cleijne*, Galerie Max Hetler, Berlin, Germany (2003); *Fotodocs*, Museum Boijmans van Beuningen, Rotterdam, The Netherlands (2002). Group shows include: *The Shadows Took Shape*, The Studio Museum Harlem, New York City, USA (2013); *Ad Lib*, Gagosian Gallery, Los Angeles (2011); *Take me to your leader*, Bergen Kunstmuseum, Bergen (2011); *Stargazers: Elizabeth Catlett in Conversation with 21 Contemporary Artists*, Bronx Museum of the Arts (BxMA), New York City US (2011); *Whitney Biennial*, New York City, NY (2010); Take Me To Your Leader! The Great Escape Into Space The Museum of Contemporary Art / Museet for samtidskunst Oslo Norway (2010).

Ellen Gallagher (b.1965) lives and works in Rotterdam, Netherlands and New York. Recent solo exhibitions include: *New Work*, Hauser & Wirth, London, England (2014); *AxME*, Haus der Kunst, Munich, Germany (Travelling Exhibition) (2014); *Ice and Salt*, SCAD Museum of Art, New York NY (2013); *Don't Axe Me*, New Museum, New York (2013); *AxME,* Tate Modern, London, England (Travelling Exhibition) (2013); *Ellen Gallagher*, Gagosian Gallery, New York (2011); *An Experiment of Unusual Opportunity*, South London Gallery, London, England (2009)

Group exhibitions include: *Collecting and Sharing: Trevor Fairbrother, John T. Kirk and the Hood Museum of Art*, The Hood Museum of Art, Dartmouth College, Hanover; *This Is No Less Curious: Journeys Through the Collection*, Johnson Museum of Art, Cornell University, Ithaca NY; *Come as You Are. Art of the 1990s*, Montclair Art Museum, Montclair NJ; *FOUND*, The New Art Gallery Walsall, Walsall.

Mat Collishaw (b.1966) is based in London. He received a BFA from Goldsmith College, London, in 1989. His work has been exhibited in numerous solo shows around the world, including: *Mat Collishaw*, Bass Museum of Art, Florida (2013); *THIS IS NOT AN EXIT,* Blain|Southern, London (2013); *Mat Collishaw: Afterimage,* Arter, Istanbul (2013); *Retrospectre,* BFI Southbank, London (2010); *Magic Lantern,* Victoria & Albert Museum (2010); *Hysteria,* Freud Museum, London (2009). Group exhibitions include: *Deloitte Ignite 2014 – Myth – The Feather and the Flame*, Royal Opera House, London (2014); *GLASSTRESS: White Light/White Heat*, collateral Event of 55th Venice Biennale, Venice (2013); *Sordid Earth*, as part of Ron Arad's Curtain Call project, Roundhouse,London (2011); *Distortion*, curated by James Putnam, Gervasuti Foundation, Venice Biennale, Venice (2009); *Reconstruction # 2* (curated by Mollie Dent-Brocklehurst & Elliot McDonald), Sudeley Castle, Gloucestershire (2007). He has recently been awarded the Pino Pascali Museum Foundation Prize (2013).

Ruth Ewan (b.1980) lives and works in London. Exhibitions of her work have been presented at Camden Arts Centre, London (2015); Tate Britain and the Collective Gallery, Edinburgh (with Astrid Johnston) (2014 and 2013); Kunsthal Charlottenborg, Copenhagen, the Glasgow International and the Badischer Kunstverein, Karlsruhe (2012); Dundee Contemporary Arts and the Centro Andaluz de Arte Contemporáneo, Sevilla (2011); the ICA, London (2008); the Northern Gallery for Contemporary Art, Sunderland (2007) and Studio Voltaire, London in 2006. She has realised projects in London for Create (2012), |Art on the Underground (2011), Frieze Projects (2009) and Artangel (2007). Her work has also been included in survey exhibitions at the Museum of Modern Art, Warsaw and Tate Liverpool (2013) and the New Museum, New York (2009).

Tehching Hsieh (b.1950). Since 2000, released from the restriction of not showing his works during the period of the *Thirteen-year Plan*, Hsieh has exhibited his work in North and South America, Asia and Europe: *One Year Performance 1980–1981* (*Time Clock Piece*) was included in the São Paulo Biennial, 2012; the Liverpool Biennial in the United Kingdom and the Gwangju Biennial in South Korea, both in 2010; and *The Third Mind: Artists Contemplate Asia, 1860–1989*, Guggenheim Museum, 2009. *One Year Performance 1978–1979* (*Cage Piece*) was shown at the Museum of Modern Art in *Performance 1: Tehching Hsieh* in 2009.

On Kawara (1932–2014). Recent exhibitions include a 2008 solo presentation at the Dallas Museum of Art, which featured all of the artist's date paintings measuring 61 × 89 inches. Starting at the Ikon Gallery in Birmingham, England in 2002, *On Kawara: Consciousness. Meditation. Watcher on the Hills* traveled clockwise around the world to a dozen venues including Le Consortium, Dijon, France, Kunstverein Braunschweig, Germany, Institute of Contemporary Arts, Singapore, and The Power Plant, Toronto, before ending at the Museo de Arte in Lima in 2006.

Kris Martin (b.1972) is based in Ghent, Belgium. Solo shows include: Kunstraum Innsbruck, Schloss Ambras, Innsbruck (2014); Kunstmuseum Bonn, Bonn (2012); Theseustempel, Kunsthistorisches Museum, Vienna (2012); *MANDI*, Lehmbruck Museum, Duisburg (2012); *The Magnificent Seven*, CCA Wattis, San Francisco (2011); *FESTUM*, White Cube, London (2010); Aspen Art Museum, Aspen (2009); Marc Foxx, Los Angeles (2008); P.S.1, MoMA, New York (2007); Sies + Höke Galerie, Düsseldorf (2007). Group shows include: *THE PROBLEM OF GOD,* K21 Kunstsammlung Nordrhein-Westfalen, Düsseldorf; *Une brève histoire de l'avenir,* Louvre, Paris; *The Importance of Being…,* Museo de Arte Contemporáneo, Buenos Aires, Argentina; *S, M, L, XL,* MCA – Museum of Contemporary Art Chicago; *Repetition and Difference,* The Jewish Museum, New York (2015).

Manfred Mohr (b.1938). Solo exhibitions include: Featured Artist at Art Basel, Basel 2013; ZKM – Media Museum, Karlsruhe (2013); Grazyna Kulczyk Foundation, Poznan (2007); Kunsthalle Bremen, Bremen (2007); Museum im Kulturspeicher, Würzburg (2005); Museum for Concrete Art, Ingolstadt (2001); Joseph Albers Museum, Bottrop (1998); *ARC*, Musée d'Art Moderne de la ville de Paris, Paris (1971). Group shows include; Fundacion Banco Santander, Madrid (2014); Museum Ritter, Waldenbuch, (2013, 2008, 2006 and 2005); MACM – Musée d'Art Contemporain, Montreal, (2013, 1985 and 1974); ZKM (Center for Art and Media), Karlsruhe (2010, 2008 and 2005); Centre Pompidou, Paris (1992 and 1978); Museo Nacional Centro de Reina Sofia, Madrid (1989); National Museum of Modern Art, Tokyo (1984); MoMA – Museum of Modern Art, New York (1980); MoCA, Los Angeles (1975).

Melvin Moti (b.1977) lives and works in Rotterdam. Recent solo exhibitions include: *MAM Project 021*, Mori Art Museum, Tokyo (2014); *Hyperspace*, Contemporary Art Centre Vilnius, Kunstverein Harburger Bahnhof (2014) and Pavilion, Leeds (2013); Mudam, Luxembourg; Wiels, Brussels; Kunstverein Harburger Bahnhof, Hamburg; Stedelijk Museum, Amsterdam; MMK, Frankfurt. Recent group exhibitions include *ART Fahrenheit 451: Sailing into the sea of oblivion*, Yokohama Triennial (2014) and *The Encyclopedic Palace*, 55th Venice Biennale (2013).

Nam June Paik (1932–2006) studied music and art history at the University of Tokyo, the University of Munich and the Academy of Music in Freiburg. In recent years, his installations have been widely exhibited internationally, including one-man shows at institutions including: Tokyo Metropolitan Art Museum; Centre Georges Pompidou, Paris; Holly Solomon Gallery, New York. Group shows at festivals and institutions include: the Whitney Museum of American Art Biennial, New York; Documentas 6 and 8, Kassel, Germany; Japan Society, New York; San Francisco Museum of Modern Art; Video Sculpture, DuMont Kunsthalle, Cologne. *The Worlds of Nam June Paik*, a major retrospective exhibition at the Solomon R. Guggenheim Museum in New York, opened in 2000 and travelled to Bilbao, Spain and Seoul, South Korea and a retrospective of his work was held at Tate Liverpool in 2010. In 2013 *Nam June Paik: Global Visionary* was organised by the Smithsonian American Art Museum in Washington, D.C.

Katie Paterson (b.1981) studied at Edinburgh College of Art and at the Slade School of Art. In 2014 *Katie Paterson: Ideas* was shown at Ingleby Gallery. She has recently participated in several group shows including: *FOCUS* at Fort Worth in Texas; *Marking Time* at The Museum of Contemporary Art in Sydney; *Light and Landscape* at Storm King Art Center in the Hudson Valley; *Light Show* at the Hayward Gallery in London; *Mystics or Rationalists?*, Ingleby Gallery (2011); BALTIC, Gateshead (2010); the Whitstable Biennale (2010); the Tate Triennale (2009); the Bonniers Konsthall, Stockholm (2009); and Modern Art Oxford (2008).

Elizabeth Price (b.1966) lives and works in London. She completed a PhD in Fine Art at the University of Leeds (1999). In 2012 Price was awarded the Turner Prize. Recent solo exhibitions and screenings include: Hå gamle prestegard, Norway (2014); Musée d'art contemporain de Montréal, Montreal (2013); Contemporary Art Society, London (2013); Tate Britain, London (2012); Bloomberg SPACE, London (2012); Bielefelder Kunstverein, Germany (2012); New Museum, New York (2011). Group exhibitions include: CAM Fundacao Calouste Gulbenkian, Lisbon; Art Basel Film, Basel; *Private Utopia: Contemporary Works from the British Council Collection*, Japanese Museum Tour, Japan (2014); *Assembly: A Survey of Recent Artists' Film and Video in Britain 2008–2013*, Tate Britain, London (2013); *The Sculpture Show*, Scottish National Gallery, Edinburgh (2012); *British Art Show 7 – In the Days of the Comet*, Nottingham Contemporary, Nottingham, Hayward Gallery, London, Centre for Contemporary Art, Glasgow and Plymouth City Museum and Art Gallery, Plymouth (2011).

Raqs Media Collective, founded in 1992 by Jeebesh Bagchi (b.1965), Monica Narula (b.1969) and Shuddhabrata Sengupta (b.1968), create installations, make videos, play with archival traces, make exhibitions and art interventions in public spaces, write essays, engage with pedagogical procedures, edit books, and foster collaborations. Their work has been shown at Documenta, the Venice, Istanbul, Taipei, Liverpool, Sydney and Sao Paulo Biennales, and at the Centre Pompidou (Paris), Tate Britain (London), Art Unlimited (Basel), Mori Museum (Tokyo), SALT (Istanbul), CA2M (Madrid), Ashkal Alwan (Beirut), and at the Hayward and Serpentine Galleries (London), amongst others. *Asamayavali/Untimely Calendar* at the National Gallery of Modern Art, New Delhi (2015) foregrounds their ongoing thinking. They have curated both in India and in Europe, including *The Rest of Now* for Manifesta 7 (2008).

Meekyoung Shin (b.1967) is a Korean artist based in London and Seoul. She completed her BFA and MFA at Seoul National University. In 1995 she moved to London to obtain her MFA at the Slade School of Art, University College London and was nominated for the Korean Artist Prize 2013. Shin has held solo exhibitions internationally including National Centre for Craft & Design, Sleaford (2014), Korean Cultural Centre UK, London (2013), and Haunch of Venison, London (2010) and she has participated in numerous group shows including the Museum of Art and Design, New York, and the 2013 Asian Art Biennial in Taiwan.

Maja Smrekar (b.1978) lives and works in Ljubljana, Slovenia. In 2005 she graduated at the Sculpture Department of Fine Art Academy in Ljubljana and is currently finishing an MA at the New Media Department. She was an artistic director at the Multimedia Centre Cyberpipe in Ljubljana between 2009 and 2011. In 2010 she organised International Festival HAIP10/New Nature. She has been honoured at the Cynetart festival 2012 by the European Centre for Arts Hellerau (Dresden/Germany) with the 1st prize, Honorary mention at the Arts Electronica festival 2013 (Linz/Austria), as well as the Golden Bird Award 2013 (Ljubljana/Slovenia).

The Otolith Group was founded in 2002 by Kodwo Eshun (b.1967) and Anjalika Sagar (b.1968). Eshun studied English Literature at University College, Oxford (1985–8). Sagar studied Anthropology and Hindi at the School of Oriental and African Studies, University of London (1994–7). The Group live and work in London. In 2010 The Otolith Group were nominated for the Turner Prize.

Thomson & Craighead.
Jon Thomson (b.1969) and Alison Craighead (b.1971) live and work in London and Kingussie in the highlands of Scotland. Both studied at Duncan of Jordanstone College of Art in Dundee. Thomson lectures at The Slade School of Fine Art, University College London while Craighead is a senior researcher at University of Westminster and lectures in Fine Art at Goldsmiths University. Recent exhibitions include; 117th Annual Exhibition, Royal Scottish Academy, Edinburgh (2014); *Thingworld*, National Art Museum of China, Beijing (2014); The Nam June Paik Award 2014, Haus Lange, Krefeld (2014); *Maps DNA and Spam*, Solo exhibition, Dundee Contemporary Arts (2014); GlobalActivism, Zentrum Kunst Media ZKM, Karlsruhe (2014); Solo exhibition Carroll/Fletcher, London (2013); Brighton Photo-biennial (2012); and *Image Counter Image*, Haus der Kunst, Munich (2012).

Mark Wallinger (b.1959) represented Great Britain at the 2001 Venice Biennale and was nominated for the Turner Prize in 1995, which he was awarded in 2007. Among his many solo exhibitions have been *One*, The Void, Derry, Northern Ireland (2013), SITE, BALTIC, Gateshead (2012), Museum De Pont, Tilburg, Netherlands (2011) and Kunstnernes Hus, Oslo, Norway (2010). His most well known works include, *Ecce Homo*, the first commission for the Fourth Plinth in Trafalgar Square (1999). He was also one of three artists commissioned for *Metamorphosis: Titian 2012* at the National Gallery in London as part of the London 2012 Cultural Olympiad. His work is in the collections of leading international museums including Tate, MoMA New York and Centre Pompidou Paris.

Catherine Yass (b.1963) lives and works in London and trained at the Slade School of Art, London; the Hochschüle der Künst, Berlin; and Goldsmiths College, London. In 2002, Yass was shortlisted for The Turner Prize. Solo exhibitions include: *Lighthouse*, Alison Jacques Gallery, London (2012); De La Warr Pavilion, Bexhill-on-Sea (2011); *Flight*, The Phillips Collections, Washington D.C.; *The China Series*, Stedelijk-Hertogenbosch Museum, The Netherlands (2009); *Descent*, St Louis Art Museum, St Louis, MO (2009). Yass has recently participated in the 13th Montreal Photo Biennale (2013) and additional group shows include *Desire Lines*, Australian Centre of Contemporary Art, Melbourne (2012); *Government Art Collection: Commissions: Now and Then*, Whitechapel Gallery, London (2012); *The World in London*, Photographer's Gallery, London (2012); *Skyscraper: Art and Architecture Against Gravity*, Museum of Contemporary Art, Chicago (2012); and *High Wire*, Tate Britain, London (2012).

Marquard Smith is Research Leader and Head of Doctoral Studies in the School of Humanities at the Royal College of Art. Marq is editor-in-chief of *Journal of Visual Culture*, and his exhibitions include 'How We Became Metadata' (2010), 'The Global Archive' (2012), and now 'How to Construct a Time Machine' (2015). His publications include *The Erotic Doll: A Modern Fetish* (Yale), *What is Research in the Visual Arts? Obsession, Archive, Encounter* (The Clark Art Institute/Yale, co-editor), *The Prosthetic Impulse* (The MIT Press, co-editor), *Stelarc: The Monograph* (The MIT Press), and *Visual Culture Studies: Interviews with Key Thinkers* (Sage).

Mieke Bal is a cultural theorist and video artist. She is based at the Amsterdam School for Cultural Analysis (ASCA), which she co-founded, and she was Royal Netherlands Academy of Arts and Sciences (KNAW) Professor from 2005-2011. Mieke is author of books including Looking in: The Art of Viewing, Quoting Caravaggio, Double Exposures, Travelling Concepts in the Humanities, as well as books on Eija-Liisa Ahtila, Veronica Janssens, Doris Salcedo, Jeanette Christensen, and Louise Bourgeois. Working with Michelle Williams Gamaker, her video works include Reasonable Doubt, Madame B, and A Long History of Madness.

Peter Osborne is Professor of Modern European Philosophy in the Faculty of Arts and Social Sciences at Kingston University, and a member of the Radical Philosophy editorial collective. Peter's books include Anywhere or Not at All: The Philosophy of Contemporary Art, The Politics of TIme: Modernity and avant-garde, Spheres of Action: Art and Politics (edited, with Eric Alliez), and The State of Things (edited, with Marta Kuzma and Pablo Lafuente).

Photocredits

Front cover:
Ruth Ewan, *We Could Have Been Anything That We Wanted to Be*, 2012
Image courtesy the artist and Rob Tufnell, London
Photo: Andy Keate

Back cover:
Still from Georges Méliès, *A Trip to the Moon*, 1902

John Cage:
Performed by William Marx, filmed at McCallum Theatre, Palm Desert, CA

Martin John Callanan:
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Jim Campbell:
Installation view, Museum of Contemporary Art Australia, 2012
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We Could Have Been Anything That We Wanted to Be, 2012
Photo: Andy Keate
Installation view, Folkestone Triennial 2011
Photo: Thierry Bal

Tehching Hsieh:
One Year Performance 1980–1981, 'Time Card'
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Courtesy the artist and Sean Kelly Gallery, New York
One Year Performance 1980–1981, 'Punching the Time Clock'
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On Kawara:
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Louis Lumière:
Démolition of a wall, II (Cat. Lumière N°40)
Louis Lumière, 1896
France, Lyon, Monplaisir, Lumière Factory with Auguste Lumière
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The Otolith Group:
Otolith Timeline (film still), 2003
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Mark Wallinger:
Installation view, British Pavilion, Venice Biennale, Venice, 2001
Courtesy the artist and Hauser & Wirth

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