

PROGRESS IN ACTION

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Figure 1. Terence E. T. Spencer, The road to Panguna (Progress in Action poster)
Bougainville Island, Papua New Guinea, March 1971, photographic slide, colour, 35mm

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Abstract

This doctoral project is by studio research and written exegesis.

The studio-based research is presented as the artwork *Progress in Action*—a constellation of forms including moving image, physical and organic matter. This assemblage explores the fundamental physical, ecological and political transformations that are at the core of the Panguna Copper Mine crisis and subsequent Bougainville civil war, with a particular focus on the Bougainville Revolutionary Army's use of coconut oil as an alternative fuel source.

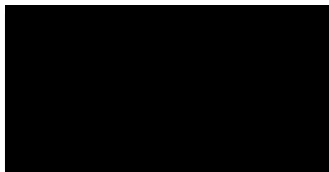
The exegesis presents an analysis of the artwork *Progress in Action*, in large part constructing an argument about this work and its relationship to transformation, duration and the material world. Methodologically, the exegesis constructs a set of insights and arguments central to my own work through an analysis of key artworks by other artists and antecedents, chosen for their potential to offer up both analogous, visual and material instances of transformations and assemblages. These arguments have been developed by drawing on the writing and philosophical positions of Henri Bergson, Dziga Vertov and Mary Ann Doane amongst others. The research works through three leading areas of inquiry around the potential for transformation: *material transformation*, *visual/cognitive transformation* and *social transformation*.

The exegesis works around this central question: *How can the convergence of film and sculpture produce a series of transformations that are contingent on their assemblage?* I explore how a work of art might describe and manifest a series of interrelated transformations, pertinent to both the character of art, specifically, sculpture and the moving image, and to the relations between art and the wider world.

Declaration of originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other institution and affirms that to the best my knowledge the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signed,

A solid black rectangular box used to redact the signature of the author.

Nicholas Mangan
27/5/2015

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Introduction

This exegesis begins with a series of transformations. It draws upon a story of a people using coconuts to produce energy on the Pacific Island of Bougainville. This story motivated me to produce an artwork that would explore the transformations at the centre of this historical event. In the following research and writing, I unpack the results of this artwork and its ramifications in an attempt to understand more fully my own work, its antecedents, and the types of transformations each entails.

Prior to commencing this research, I tended to treat sculptural and video components as single elements brought together in an installation. *Nauru Notes from a cretaceous world* (2010), for example, was one such project. It comprised a sculpture in the form of a coral coffee table and a video essay narrating the story of the economic and geological history of the material used to produce the table. The sculptural and video elements of this project operated in parallel, and the intention was for the viewer to see the Island itself as a sculptural form. However, since this was an inference only, I judged the work in the end to be unsuccessful. These elements remained merely in correspondence, rather than intersecting and enhancing the objectives of their counterparts.



Figure 2. Installation view of Nicholas Mangan, *Nauru—Notes from A cretaceous World*, 2010, Sutton Gallery, Melbourne, Australia

Since commencing my research, I have felt compelled to resolve this problem. I was working with the desire for something like an aggregation, a constellation of forms that may stimulate a more intensive dynamic, even leading perhaps to the actual “transformation” of their material elements. To take the Nauru project as an example, this aggregation would animate an experience of the temporal and material makeup of its parts, not simply props for discourse, but an experience of its time and its matter, where the table is itself, and an island, as well as the presence or activation of its vast geological time.

During the early stages of my candidature, I happened upon a story that involved processes of material conversion for the production of energy. The story of Bougainville’s eco-revolution provoked me to explore the transformative potential of collapsing the sculptural and filmic elements into an assemblage.

Figure 3. Photographer unknown, Bougainville rebels at the Panguna mine site, c.mid 1990’s, 35 mm photograph.

It was 1989 when a small-scale, but nonetheless determined group of Bougainvillians—who became known as the Bougainville Revolutionary Army (BRA)—came up against a large-scale copper mining venture on their island established by Rio Tinto and the PNG government. An uprising was ignited over disputed land use, and compensation claims for land damage that had been triggered by the transformative events of mining. It ended in a civil war lasting over a decade.

The Bougainville story offered an interesting case-study for my longstanding interest in the nature and possibilities of transformative processes, and ultimately became the artwork at the centre of this doctoral project, entitled *Progress in Action* (2013), consisting of sculptural elements, a video component, and a functioning fuel refinery. The initial objectives for dealing with these years in Bougainville's history was to explore how human intervention into the material world produced specific changes for the local population. However—and the following point is crucial to this doctoral project—the work does not claim to effect political or social transformation (for instance, as with socialist realism in the twentieth century). In this project I am interested in exploring the way materials—in this case land resources—are bound up with these transformations, which then become elements, along with the sculptural and filmic components, in activating *through their integration or interrelationship* further transformations. My inquiry for the exegesis, therefore, began with the core question: *How can the convergence of film and sculpture produce a series of transformations that are contingent on their assemblage?*

My research began with the making of *Progress in Action*. The making of this work allowed me to extend my thinking along the various trajectories that this process of making opened up. Following this process and its ramifications I undertook further research into various theories and practitioners. The research was then broken down into three leading areas of inquiry around the potential for transformation: material, visual and cognitive, and social. *Material transformations* refer to human-instigated situations that result in a disruption to the natural behaviour of a given material. *Visual* and *cognitive transformations* refer to the amalgamation of film, video, image, editing, montage and projection. I was interested in looking at the way film was dependent upon the physical apparatus and its operations. My final area of inquiry is *social transformation*, which encompasses archival footage that would show both state-supported political actions and those of the forces of resistance. My aim was to test

how the assemblage of original footage, physical documents, the images, and their political and social implications (the partiality of reportage, etc.) would operate as a means for transforming the original documentary fragments.

These leading areas of inquiry have been interrogated through the two parts of my research, my studio-based and written research. To reiterate, the studio-based component involved the production of a major body of work, *Progress in Action*, and the written exegesis served to place the studio work into an historical and contemporary context. The difficulty of articulating the material transformations of the assemblage led to further studio research, as well as research to identify possible historical antecedents. This part of the research was useful in coming to understand how the structuring of camera apparatus and its recorded material intermingle with the subject matter of the film. The examples I chose to discuss in my exegesis serve to demonstrate how certain artworks have consciously deployed a self-reflexive relationship to the medium of film and moving image. It helped me understand how I could privilege in my own practice the broader dimensions enmeshed in the transformations themselves, and how the event of transformation might be captured and portrayed through the moving image to facilitate a broader set of contingencies.

In addition, the Exegesis itself has revealed to me new connections and relationships between and across works, sometimes through needing to more fully define my terms, and sometimes through a close scrutiny of the conceptual and formal qualities of the visual works I have been examining. The objective was to set up movement across perceptual and cognitive levels, with the aim to provide new understandings of the function of transformation (material, visual/cognitive, and social). When I refer to transformation, I am using it in the broadest sense to mean change, whether this is rapid or metamorphic, induced (as from external forces) or internally generated. It is a process, an alteration, but essentially, for this

exegesis, it is a temporal unfolding that leads to change in the 'thing' itself. Studio investigations were carried out over the period of my candidature pushing the interrelationship of components—both at the level of each element and at the level of the combined elements (artefacts, sculptural elements, video). The premise that material transformation is activated by disruptive or rupturing encounters, thereby bringing into being an event that is both process-driven and durational, became the principal point of departure for the exegesis. Crucially, this was guided by the belief that the manifestation of physical and material transformations carry, inevitably, political, social and economic implications. *Progress in Action* became the framework for articulating ideas and testing hypotheses over the period of candidature, particularly the way transformation occurs at the level of the assemblage.

To provide a basic sketch of the events that are important to this project, the Bougainville Civil War was catalysed by the imposition of the Panguna Copper Mine on the indigenous inhabitants' lived reality. As a result, conflict broke out between the indigenous landowners of Bougainville, some of whom formed the Bougainville Revolutionary Army (BRA) and Rio Tinto Copper, operating as (Bougainville Copper Ltd), in collaboration with the Papua New Guinea (PNG) government and Army. In protest to the Panguna Mine, the BRA began to sabotage the mining venture by cutting power supply and blocking roads to the mine. This show of strength in turn prompted the PNG government to bring in its military forces, effectively cutting Bougainville's citizens off from the mainland and denying them resources such as fuel, food and medicine. Imprisoned on their island, the BRA ingeniously began appropriating all available materials to protect their livelihoods from PNG's army. With equipment stolen from the mine, they fashioned provisional weapons and made locally sourced coconut bio-fuel, which in turn powered what were originally diesel-powered generators.

Progress in Action operates as a form of material storytelling. As a theme upon which to present the wider conflict, the work focuses on the BRA's use of coconuts as an alternative source of fuel. I constructed a provisional coconut oil refinery producing coconut bio-fuel to power a modified diesel generator, which I then installed in a gallery space. The electricity produced by the generator supplies power to a projector, which in turn screens a film about the events. This film features imagery of the very material that is at the core of the project: the Bougainville crisis the origins of the Bougainville Civil War and the materials and land over which it was fought. It is a portrayal of energy in exchange; a series of actions and reactions, flows and interruptions guided by anthropogenic determinations.

My interest in this specific historical account is its unique situation, whereby a capitalist venture of industrial-scale mining is entangled with localised, alternative biofuel production. It is an example of the way material transformation might intersect with, and influence, social transformation. Given the complex fabric of the opposing forces, it is not only oppositional ideological drives that are shown. The work also offers explicit evidence of human-instigated transformations of matter; for example, images depicting the processes of copper extraction and refinement are seen in contrast to the refinement of coconuts. My investigation focuses on identifying the moments when the opposing forces of matter energy are both produced and expended.

These material transformations are tangible in the conversion of coconut into an effective biofuel. Transformation is additionally expressed on a visual and cognitive level, evidenced most explicitly through the conversion of digital data (the video file) into projected light but also through the re-edited archival footage, footage that contains recorded images of material transformation. Finally, evidence of social transformation is found in the archival footage of the actions involved in the BRA's eco revolution. What my project attempts to discover in both the

studio work and the written exegesis, therefore, are the layers of possible transformation occurring in the work, and to understand how their assemblage is capable of triggering further events of transformation. To clarify, my use of the term 'event' carries specific inferences. The 'historic event' refers to the occurrences that took place on Bougainville during the Panguna Mine blockade and subsequent civil war, beginning in 1989 and lasting for over a decade. I am using the term 'event' here because my access to the history of the activities comes from secondary sources, retrospectively, inscribed in documents and archival footage, and not from first-hand lived experience, such as, for instance, interviews with the people involved in the actions at the time. For my purposes, this method of interpretation—which is isolated in the analysis of archival records, and contingent upon what was available in the archival footage—constitutes the 'historical event'. I also use the term 'event' in relation to specific material transformations that pertain to this historical event. For instance, transformative events triggered by human actions, such as the event of mining, the production of bio-fuel, the firing of the rifle, the welding of provisional weapons, and so on, are separate events, and yet they come together to be marked as one historical event.

An event is also durational. And I use the term 'durational event' to refer to the material conversions outlined above and their spatial-temporality, which I see as being conditional upon duration as lived time, a progression.¹ The temporal feature of the durational event is doubled through its inscription within pro-filmic time, 'a slice of the world in front of the camera'.² This slice of the world pertains, I suggest, to celluloid and digital technologies, and constitutes an event of progression in its own right. Henri Bergson states: 'Duration is the continuous progress of the past which gnaws into the future and swells as it advances.'³

¹ Bergson claims: 'Succession is an undeniable fact, even in the material world. Through

² Definition according to *Oxford Dictionary of Film Studies*, ed. Annette Kuhn and Guy Westwell (United Kingdom: Oxford University Press, 2012).

³ Bergson, *Creative Evolution*, 4.

Materials—Digital and Film

The archival footage in *Progress in Action* was sourced predominantly through the Australian National Film Archives and the Australian Broadcasting Corporation (ABC). A VHS compilation of footage, titled ‘Bougainville in Crisis’, was also found in the library collection of Monash University, covering a decade of the conflict. This footage had been transferred or copied from 16mm film, or VHS and Beta recordings. The footage as a whole ranges from the early days of the Panguna Mine’s construction and the events leading up to the Bougainville crisis. Other sources of footage came from the documentaries, *My brother Waritto*,⁴ and *My valley is Changing*⁵—“educational” films produced by the mining company that promoted the occupancy and operations of the Pangua mine. I then transformed all of this footage into digital files for re-editing using Final Cut Pro digital editing software.

The relevant historical works that were referenced in my research were predominately on 35mm celluloid, as opposed to digital. Therefore, it is important to stress that while the end material of the reworked footage for *Progress in Action* is a digital file, projected through an HD Video projector, I was conscious of the different effects and transformative potential of working between analogue and digital technologies. This became just one of the many conversions and exchanges that occur within *Progress in Action*. Furthermore, I will be arguing that the digital footage’s interrelationship with the assembly system of the work is interlaced with the physical and the organic components, for example, the way the projection of the video work is powered by coconut oil. I propose that the digitised footage, in its connection to matter, energy, electricity and projected light, if not retains, then at least carries reference to its material origins, be it celluloid film or magnetic strip in the case of VHS.

⁴ *My Brother Waritto*, dir. John Richardson, 1973, 16mm, colour, sound, 41 minutes.

⁵ *My Valley is Changing*, dir. Lionel Hudson, 1970, 16mm, colour, sound.

Materials—Film and Tactile Matter

While questioning the potential to converge filmic and sculptural elements into an assemblage, my research proceeded to delve into an experimental strain of films from the 1960s and 1970s that explored haptic, tactile engagement with the film material itself, as well as interrogating how the film apparatuses, both camera and projector, function within the structure of the film.⁶ These works (artists working with the material of film) often brought into question the traditional demarcation between image and material structure.⁷ In particular, my investigation into this territory concentrated on the strains of this widely divergent experimental movement that would become sub-categorised as Direct Cinema, Expanded Cinema, Structuralist and Materialist film,⁸ and sculptural film.⁹

⁶ Tony Conrad's *4X Attack 1973* presents an example of direct physical engagement with filmic material. *4X Attack* involved the action of the artist smashing up an undeveloped roll of film with a hammer and reconstituting the film roll and exposing the film to light then developing it. The camera itself is taken out of the equation and the action is recorded physically with the hammer. The projected result is the material evidence of the physical actions the filmic material was subjected to. I would argue that the resulting film is not a record or a reproduction of a physical action; the action of smashing shares equal part to the process of the exposing and developing of the battered material. One does not view scenes of the artist smashing the film, but the action is inscribed into film material as projected light emphasised each time the exposed film passes through the projector gate.

⁷ For example in constructing *Mothlight* (1963), Stan Brakhage abandoned the camera altogether opting instead for direct material engagement with his subject matter, and though an arduous process of manually attaching moth wings and other organic material such as leaves, seeds and blades of grass to clear film leader celluloid to be feed into the film projector.

⁸ In his *Theory and Definition of Structural/Materialist Film*, Peter Gidal states: 'Structural/Materialist films are at once object and procedure. The investigation of Structural/Materialist film brings forth the bearing it has on reflexivity, which is inculcated by a film through certain procedures. Reflexivity or auto—reflexivity, is a condition or self-consciousness which invigorates the procedure of filmic analysis *during* the film viewing event'. Of devices he states, 'through the usage of specific devices such as repetition with duration one is forced to attempt to decipher both the film's material and the film's construct, and to decipher the precise transformations that each co/incide/nce of the cinematic techniques produces. The attempt is primary to any specific shape; otherwise the discovery of shape (fetishing shape or system) may become the theme, in fact, the narrative of the film. Peter Gidal, *Structural Film Anthology* (London: British Film Institute, 1978), p 6.

⁹ As coined by Benjamin H.D. Buchloh in his essay 'Process Sculpture and Film in the Work of Richard Serra', in *Richard Serra: October Files*, ed. Hal Foster (Cambridge, Massachusetts and London, England: MIT Press, 2000), 1–19.

Movements/Intervals—Film/Assemblage

A second research trajectory involved my investigation of the filmic medium, which included an exploration of the use of editing techniques, or montage, of the Russian Avant Gardist Dziga Vertov and the Council of Three.¹⁰ I was particularly concerned with their emphasis on the filmic potential to explore and articulate movement.¹¹ The physical spaces of the filmic material (the photograms) would be called ‘intervals’. Vertov declared: ‘Intervals (the transition from one movement to another) are the material, the elements of the art of movement, and by no means the movements themselves, it is they (the intervals) which draw the movement to a kinetic resolution.’¹²

The methodology employed to construct a set of insights and arguments central to my own work has been articulated through an analysis of the artworks of others. These key artworks or antecedents were chosen for their potential to offer up both analogous and direct visual and material instances of transformations and assemblages.

One of my lines of inquiry into the confluence of film and sculpture began with Benjamin HD Buchloch, who analysed the artistic activities of the 1960s and 1970s through the artworks of Richard Serra, Robert Morris, Carl Andre and Eva Hesse.¹³ These artists privileged material procedures, actions and their constituent forces—procedures that were explored in relation to an interrogation of spatial and temporal fields—that led, in the case of Serra, to the inevitable inclusion of film. ‘The manifestation of process in sculpture around 1966’, Buchloch observed, ‘was based both on

¹⁰ The Council of Three comprised Dziga Vertov, Mikhail Kaufman and Elizaveta Svilova.

¹¹ ‘[A]nd hence the stress on meter, tempo, and movement, upon their synchronization in relation to the axis and coordinates of a given shot expressing the movement of construction’—Annette Michelson, Introduction, in *Kino-Eye: The Writings of Dziga Vertov* (Berkeley, California: University of California Press, 1984), p. iv

¹² Dziga Vertov, ‘We: A Variant of a Manifesto’, in *Kino-Eye: The Writings of Dziga Vertov* (Berkeley, California: University of California Press, 1984), p. 8

¹³ Buchloch, ‘Process Sculpture and Film in the Work of Richard Serra’, p. 4

the discovery and representation of the forces that constitute sculpture, and on the more precise understanding of the properties of matter itself.’¹⁴

The potential to represent to the forces that both emanate from matter and the forces that impose onto matter through the use film, to enable an understanding and visualisation of matter in the process of transformation was of great significance to my research. It presented the potential to see matter (or sculpture) no longer as an inert form, but as a vitality or moreover a constellation of active and co dependant physical entities.

Contemporary sculpture reached its climax in sculptural film [and] Serra’s process-sculptural films occupied an eminent position in his oeuvre, transforming our conception of sculpture into the historically adequate form that transcends the traditional understanding of morphology and phenomenon, material and procedure, medium of presentation and mode of perception. ¹⁵

An artwork of Serra’s created between 1967 and 1968 consisted of a hand-written list of verbs. This work was critical for my thinking in this doctoral project and led me to think about the Bougainville event as a series of actions or verbs. From Serra’s list, I isolated the verbs that convey action and constitute procedures that relate to both film and sculpture:

to open

to flow

to dig

to grasp

to distribute

to continue

¹⁴ Buchloch, ‘Process Sculpture and Film in the Work of Richard Serra’, 7.

¹⁵ Buchloch, ‘Process Sculpture and Film in the Work of Richard Serra’, 14.

Serra's list was important because it wholly resonated with my own interest in actions in the wider world that engage with and transform materials. My own research for this doctoral project is also concerned with actions stimulated through sculptural operations. As such, Serra's work should be seen as constituting a layer, albeit a subtle one, amongst the other layers to be found in *Progress in Action*. The material transformations that belong to *Progress in Action*, such as 'to dig' or 'to distribute', correlate with procedures of industrial mining activities, such as 'to open' and 'to flow', which also correlate with the processes of extracting and refining coconut oil. In relation to Serra, Buchloch states: 'sculptural reflection reaches its most advanced position precisely at the point where sculpture as a concrete phenomenon is transcended and transformed into sculptural film'.¹⁶ In Serra 'arriving at a new definition of plastic phenomena through the necessity of the use of film, [the films] demonstrate their own necessity as films.'¹⁷

This historical period, in which process sculpture intersected directly with the filmic medium and other forms of moving image, presents approaches that are also central to my own research: for instance, the 'necessity' of film in the execution of Serra's material investigations, and the way his verbs might connote gestures actioned in the world at large. However, in a contemporary art context—given that the rationale behind process sculpture is largely to move beyond the limits or confines of the studio to incorporate material transformations originating in the world at large—the work of British artist Simon Starling has become an increasingly important reference. In relation to my principal investigations, many of his works serve as examples that bridge the notion of 'process' in sculpture explored in the '60s, and how expanded definitions of process might today be negotiated.¹⁸ As Mark Godfrey observes, 'Starling's work now extends

¹⁶ Here Buchloch is referring to Serra's films *Hand Catching Lead*, *Hands Scaping* and *Hands Tied*—all from 1968.

¹⁷ Buchloch, 'Process Sculpture and Film in the Work of Richard Serra', 4.

¹⁸ As Mark Godfrey observes, 'The criticality of Starling's approach to process becomes more acute if we consider the moment in sculptural history immediately following Minimalism. In the post-minimal discourse of the 1960's process referred to the activities

what we have historically thought of as process in sculpture, so too it resurrects a sculptural notion of truth to materials, and yet the truths he wants to acknowledge are not just physical ones, but economic, environmental and political.¹⁹ Starling's practice is also important in light of his redeployment of material stories. Through a series of sculptural actions, many of Starling's works trace the flow of matter and energies from their subsequent processes of conversion, as a way to recount specific situations belonging to local or global histories.²⁰ Starling's practice is unquestionably sculptural. However, through his material investigations, the emphasis placed on process privileges a sculptural journey, a questioning of where sculpture itself begins and ends. As Starling himself has noted, 'The resulting works often foreground process over product—just as it's often the journey and not the destination that takes centre stage.'²¹

In relation to my own studio-based project, the works of Starling that hold the most relevance are from the years 2006–14. These works positioned the sculptural journey within a photographic context and its associated apparatuses of projection.²² In other words, the content or subject matter was found in the projected image—whether this was a moving image or a slide projection of still imagery—and also referred explicitly to the mechanisms used to convey the filmic material. Thus—and this is important for my own work—these works contain structural reflexivity.

to which artists subject material to in the studio'. Mark Godfrey, 'Regenerated Sculpture', *Simon Starling, Cuttings* [supplement] (Toronto and Ontario: The Power Plant, 2008), A12

¹⁹ Godfrey, 'Regenerated Sculpture', , A14.

²⁰ For instance, 'An interest in... a quasi-global ecosystem lies at the heart of Simon Starling's practice. Frequently his work engages the current global interdependence of cultural, political, economic and environmental conditions and alludes to the ramifications of such independence for a critically effective sculptural practice'. Gregory Burke, *Simon Starling, Cuttings* [supplement], A2.

²¹ Simon Starling quoted in 'Monash University Museum of Modern Art, Simon Starling Education Kit', *Monash University Museum of Art*, 2013; <http://monash.edu/muma/assets/pdfs/2013/education/simonstarling-educationkit.pdf>. Accessed 8 August 2014.

²² Starling has discussed his photographs in relation to their sculptural potential or in their very material chemical makeup as 'A field of potential sculptures'. See Badia Monste, *Simon Starling, Recent History* (London: Tate Publishing, 2011), p.65

The methodology employed to construct a set of insights and arguments central to my own work has been articulated through an analysis of the artworks of others. These key art works or antecedents were chosen for their potential to offer up both analogous and direct visual and material instances of transformations and assemblages. My own arguments have also been advanced with reference to the philosophies of Henri Bergson in regards to concepts of form, matter and duration as explored through his thesis *Creative Evolution*, and also Gilles Deleuze as explored in his thesis *The Movement Image*, where he discusses both Bergson and Dziga Vertov. I have made significant reference to Mary Ann Doane and her analysis of concepts of cinematic time, energy and 'the concept of the event', drawing on her thesis *The Emergence of Cinematic Time* (2002). I have also engaged closely with John MacKay's essay on Dziga Vertov, 'Film Energy: Process and Meta-narrative in Dziga Vertov's—*The Eleventh Year*' (2007).

The writings of artists whose works have been examined throughout the exegesis, such as Vertov, Robert Smithson, Anthony McCall and an interview that I conducted with New Zealand artist Michael Stevenson, have all contributed to the development and consolidation of my own thoughts and arguments.

Throughout this introduction I have brought to light the main ideas and theoretical frameworks that give the exegesis its foundation. In the paragraphs that follow, I offer a generalised introduction to each of the individual chapters, their themes and objectives. But before doing so, I would like to reflect briefly on the exegesis structure, how and why I came to stage the chapters in the order that I have. Chapter One deals with the camera, Chapter Two, the profilmic event, Chapter Three, the triangulated assemblage itself, and Chapter Four, the subject conveyed through the triangulated assemblage.

The guiding question in Chapter One is: *How can film or video's engagement with the material world participate in the transformations of that material*

world? Within my overall thesis, this chapter functions to build an understanding of how the moving image camera can be used to capture the earth in transformation. In one sense, this chapter zooms in on the key concerns of the installation, *Progress in Action*, which has at its core, the subject of earth's matter in transformation.

This chapter also undertakes a close analysis Robert Smithson's film *Spiral Jetty*, 1970,²³ and Michael Snow's *La Région Centrale* (1971).²⁴ In these works, I consider both artists to be using the camera as a way to participate in the transformation of materials through moving image. Smithson and Snow individually posit the film camera not just as a means of documenting the transformation, but as a fundamental part of the transformation itself. The chapter will argue that the camera, the images it produces, and the footage itself can be utilised to describe *and* participate in the process of material transformation. The chapter concludes by reflecting on the first studio experiments that resulted in my project, *A World Undone* (2012). This work was directly motivated by my investigations into Smithson's film *Spiral Jetty*.

In Chapter Two, I take a step back from the camera as the primary subject to investigate the profilmic events that occur in front of the camera. The chapter is split into two sections. The first section illustrates how the action of the human hand and the operation of the camera work together to generate and capture actions that produce events of material transformation. In this section, I analyse Richard Serra's film, *Hand Catching Lead* (1968),²⁵ and Robert Bresson's *Pickpocket* (1959).²⁶ The analyses centre on specific situations in which human intervention has instigated transformation to activate new flows, and how the camera can capture these flows.

The chapter aims to reveal the two-fold situation of material

²³ Robert Smithson, *Spiral Jetty*, 1970, 16mm film.

²⁴ Michael Snow, *La Région Centrale*, 1971, 16mm film.

²⁵ Richard Serra, *Hand Catching Lead*, 1968, 16mm film.

²⁶ *Pickpocket*, dir. Robert Bresson, 1957, 35mm film.

transformation that exists in the actual subject matter and through the filmic apparatus engaged to convey the work. Chapter Two also explores conveyance of matter energy through human processes within larger industrial mechanisms, which therefore permit transformation to occur beyond raw material and into the domains of economic, political and social transformation. These issues also relate to the objectives of the final chapter.

Where the focus of the first part of Chapter Two seeks to establish the presence of human agency described by the literal intervention of the human hand controlling the flow of matter energy, the second part of this chapter addresses the question: *How can the moving image be used to articulate mechanisms that are extensions of the human hand in their transformation of matter?* I return to Richard Serra, this time with a documentary film *Steelmill Stahlwerk* (1979), made in collaboration with Clara Weyergraf,²⁷ which explores the fabrication in the Ruhr Valley in Germany, and Serra's sculptural commission for the Neue Nationalgalerie, Berlin. In this chapter I also discuss Lucy Raven's film *China Town* (2009), a digital photographic animation, which follows the globalised journey of copper from its extraction as a raw material in America to its refinement in China.²⁸

Chapters One and Two introduce the camera and the profilmic event respectively. In turn, Chapter Three highlights the physicality of the installation, as an experience. I extend my exploration of material transformation at both the level of first-hand, live experience as well as through profilmic events. Through reference to my own work and the works of relevant antecedents, I posit the presence and function of a triangulated assemblage.

²⁷ Richard Serra and Clara Weyergraf, *Steelmill/Stahlwerk*, 1979, 16mm film.

²⁸ Lucy Raven, *China Town*, 2009, photographic animation.

My analysis of artworks focuses on situations in the assemblages where real time events of transformation correspond to the projected image content of the work. I open my enquiry with a work Simon Starling's titled *D1-Z1 (22,686,575:1)* (2009),²⁹ before moving on to a more extensive analysis of his work, *Wilhelm Noack oHG* (2006),³⁰ a work that includes a purpose-built looping film projector that shows his 35mm black and white film with sound.

The chapter then goes on to explore Michael Stevenson's *A Life of Crudity, Vulgarity, and Blindness* (2012), a site-specific installation in which the artist transformed the exhibition building Portikus in Frankfurt am Main, Germany, into a camera obscura. In addition to my own analysis of Stevenson's work, this chapter also contains sections from an interview that I conducted with him in Melbourne in 2013, with specific reference to this Portikus project.³¹ The chapter concludes with an investigation of my own studio research project, *Progress in Action*, in regard to the ways in which the installation was structured and how it operated as a triangulated assemblage.

The conveyance and transformation of energy are the central themes of this exegesis. The final chapter builds upon the ideas explored in the preceding chapters to convey the actual subject matter that is suspended between the three nodes of the triangulated assemblage: camera, profilmic event and sculptural element.

The focus of this chapter will be a comparison between my own project, *Progress in Action*, and Dziga Vertov's *Odinadtsatyi (The Eleventh Year)*, made in 1928.³² Both works will be explored in relation to the harnessing

²⁹ Simon Starling, *D1-Z1 (22,686,575:1)*, 2009, 35mm film, D1 projector, 30 seconds (continuous loop).

³⁰ Simon Starling, *Wilhelm Noack oHG*, 2006, purpose-built looping machine, film projector, 35mm film, black and white, sound, 4 minute-loop.

³¹ Michael Stevenson, *A Life of Crudity, Vulgarity, and Blindness*, 2012, site-specific installation.

³² *The Eleventh Year (Odinadtsatyi)*, dir. Dziga Vertov, 1928, 35mm, black and white, silent.

of energy driven by the desire to produce social transformation. I will explore Vertov's theory of the interval, as well as the Kino-Eye camera and editing techniques, in particular montage and super-imposition. I draw on the observations made by John MacKay in his essay 'Film Energy: Process and Metanarrative in Dziga Vertov's *The Eleventh Year*' with explicit reference what he calls Vertov's 'energetic montage'. And it is pertinent that this activation of the cinematic was also a construction with ideological intent, as Annette Michelson observes:

[Vertov's] concern with the technique and process, their extensions and disclosure, stamp him as a member of the constructivist generation. He shares with them an ideological concern with the role of art as an agent of human perfectibility, a belief in social transformation as the means for producing a transformation of consciousness and a certainty to a world of naked truth, paradoxically grounding his creed in the acceptance and affirmation of the radically synthetic film technique of montage.³³

Progress in Action draws on different ideological positions too. The title is a slogan appropriated from a sign located outside the mine entrance by Bougainville Copper Pty Ltd to promote the ideology of industrial progress. The slogan, positioned under a corporate logo designed to mimic tribal aesthetics, was placed next to a photograph of the natural environment brutally cut by an access service road to the mine. The aim in titling the work in this way was to question the value of 'progress' in this context, but also to give agency to the actions of a resistance movement in establishing their self-determination.

Finally, I take back the term progress from its industrial-capitalist context to refer to the work's sculptural and durational potential, as an assemblage that moves forward to a transformative moment. In other words, 'progress' here refers very specifically not to its value as a noun, but to its sense of action—to progress, a progression, a sequence or train, a duration, an

³³ Annette Michelson, Introduction, in *Kino-Eye: The Writings of Dziga Vertov*, trans. by Kevin O'Brian, ed. Annette Michelson (Berkeley and Los Angeles: University of California Press, 1984), xxv.

accumulation, an assemblage of matter. The chapters that follow—in conjunction with the exhibition for examination—are an attempt to unpack what might be contained or entailed in that word and its alternative potentials.

Chapter 1

How can film or video's engagement with the material world participate in the transformations of that material world?

This chapter will focus on the capacity of moving image to participate in the transformation of the material world, not just as a means of documenting the transformation but as a fundamental part of the transformation itself. I will argue that the camera, the images it produces, and the footage itself, can be utilised to describe *and* participate in the process of material transformation.

It is important to state that the principal studio-based work in this doctoral project relies solely on archival footage (as stated in my introduction). The work therefore draws on the footage captured by many cameras, operated by many news reportage camera operators, as well as documentary cinema photographers, at various times from the construction of the Panguna mine to the conclusion of the subsequent civil war. In the collation of footage, my aim was to treat the footage as readymade camera operations. It was footage to be reassembled in a way that worked at the service of my own project. It should also be emphasised that this archival footage retains its original gestures and objectives. My analysis of artworks as conducted in this chapter serves to build a deeper understanding of how the camera can function in relation to its recording of events, an understanding that was useful in how I approached the selection of camera shots and footage for my own filmic montage in the work *Progress in Action*.

This chapter will primarily focus on Robert Smithson's film, *Spiral Jetty* (1970),³⁴ and Michael Snow's *La Région Centrale* (1971),³⁵ as these works present conditions through which the camera and the filmic medium have participated in producing a distinctive transformation of physical subject

³⁴ Robert Smithson, *Spiral Jetty*, 1970, 16mm film, colour, 32 minutes.

³⁵ Michael Snow, *La Région Centrale*, 1971, 16mm film, colour, sound, 180 minutes.

matter. My analysis will focus, therefore, on specific situations in these films where the use of the camera (film) and physical matter (sculpture or Earthwork) have produced outcomes (shifts or changes) beyond what could be produced by these mediums alone. I will discuss how these precedents have provided points of departure for my own practice, opening up questions that could be addressed in my studio-based experimentations. These experiments resulted in *A World Undone* (2012), which then led to what became my primary work for this doctoral project, *Progress in Action*.

La Région Centrale

My interest in *La Région Centrale* is focused on how the camera works to produce transformations of spatial perception. Specifically, I will propose that the camera plays a much more active role than simply being a tool for documenting the action. In *La Région Centrale*, the camera is both documenter *and* performer of the actions, and in this process—where it becomes both camera and actor—further transformations occur. For the production of *La Région Centrale*, Snow worked with Montreal technician Pierre Abeloos to have a camera mounted on a mechanised apparatus that was coordinated by remote-control equipment.³⁶

Figure 4. Artist unknown, Construction drawing for the De LA machine used for Michael Snow, *La Région Centrale*, 1970

³⁶ Regina Cornwell, *Snow Seen: The Films and Photographs of Michael Snow* (Seattle: PMA Books, 1980), p 110

The “De La”, as the elaborate camera mount was later named, was engineered specifically for the purpose of controlling the coordinates that the camera would perform. It was left in the isolated Canadian wilderness to film continuously through the day and night for a total of six hours, scanning and identifying its central location, as well as the region of the outer parameters.³⁷ Anchored at the centre of the site, with its ability to capture a complete panoramic vision, the camera seems to sit at the centre of the world. The De La was capable of performing an infinite number of controlled moves. Snow stated: ‘The camera moves around an invisible point completely in 360 degrees, not only does it move in predetermined orbits and spirals but it itself also turns, rolls and spins. So there are cycles within cycles within cycles. Eventually there’s no gravity.’³⁸ *La Région Centrale* not only scans and describes the landscape but it also disrupts the viewer’s spatial relationship to it.

Although it is a filmic work, it explores particular themes that are fundamental to sculptural practice, such as site, form, gravity, materiality, the interrelation of object and subject, spatial perception and phenomenology. This relationship to sculpture is found not just in the kinetic sense, but also in the very object-ness of De La’s mechanism.

Figure 5. Photographer unknown, the Da La apparatus installed in Northern Quebec, 1970, 35mm photograph

³⁷ *La Région Centrale* was eventually edited down to 180 minutes.

³⁸ Michael Snow quoted in *Film Culture*, No. 52, cited in Cornwall, *Snow Seen*, 58.

The camera does not itself physically move through space, however, by using the technology of a zoom. Instead it extends out into the site at distance from its own 'body'. Although, the De La camera apparatus is not featured directly in the final three-hour film, its outline is captured as the lens passes over its shadow while performing one of its automated manoeuvres. This moment where the camera 'sees' itself, reveals how important the camera apparatus is, and one also senses that Snow wanted to present the most objective representation of the landscape possible: a camera without operator.

Figure 6. Film still from Michael Snow *La Région Centrale* 1971, 16 mm film

The first thirty minutes of *La Région Centrale* describe the Canadian wilderness, devoid of any human presence. Repetitious scanning back and forth shows the rough ground that fills the frame, only rising to the horizon at slight increments. At such moments, as a parameter is brought into view, the outermost circumference of the vast site, in relation to the camera's central position, is comprehended.

The camera view then gradually rises in the sky to the point where any reference to the horizon is lost—the viewer is completely detached from both the earth and any physical point of reference. This mediation on boundless sky, this groundlessness, endures long enough to destabilise the

viewer's reference point of the horizon that is established in the preceding sequence. Any expectation that the camera will return to the orienting horizon line is thwarted as the camera tilts at ninety degrees and the viewer sees the edge of the earth as it slices through the centre of the frame. Seeing the edge of the earth in this way, it becomes an object, rather than a surface. Critically for my argument, Snow has transformed our perception of the earth, instating the ground, the earth on which we walk, as something conceived in the way we might conceive sculpture.³⁹

So far, I have described ways in which, without any physical intervention, the earth is made into mutable material. Snow's use of the De La camera apparatus in *La Région Centrale* produces a transformation in the way we perceive the earth, and in turn, how this might relate to how we perceive sculpture. It is important to note here, however, that my research is not interested in how perception works (philosophically, scientifically), but in the way the camera might contribute to our perception of the material world.

The De La recorded what it 'saw' onto celluloid film, and this is significant for the role celluloid plays in the process of material transformation in the film. In his 1973 *Artforum* essay, 'Michael Snow's *La Région Centrale*', John W. Locke observes three distinct themes used by Snow to construct the film (along with the camera's autonomous movement): 'Frame edge concentration', 'grain motion' and 'unseen movement'. Locke states that 'grain motion' 'refers to the visible moving about of the tiny bits of colour

³⁹ Christopher Williams perhaps later echoes this transformation of perception in a work: *Model 1964 Renault Dauphine-Four, R-1095*, 2000. Although it is a two-dimensional photographic work I would argue that through the subject matter this work explores a particular historical context that has both a sculptural and social dimension. It is also an important work in the context of the broader thesis as would I argue presents an example by where transformation of an object and its subject matter can occur simultaneously to produce alteration of both meaning and material. Through the use of analogue photographic studio effects, Williams had a 1964 Renault photographed against a black background, which created the illusion that the car had been transformed from its normal upright position to having the appearance of being on its side. This gesture was enacted by the artist to recall the May '68 riots by where cars such as the French made Renault were as pushed into their sides and utilised as barricades blocking the Parisian streets.

that form film's image'.⁴⁰ Locke's observation concerning 'grain motion' is of particular interest in light of this chapter as it reinforces the notion that it is not only the camera's movement but also the material itself (the celluloid) that participates in the formation of the filmic work. It suggests a double transformation: one transformation that occurs through the camera's movement and the visual information it produces; the other occurs within the very material that the visual information is recorded 'into'.

Here I use 'into' rather than 'onto', stressing that celluloid acts like a living body *in* which things are 'held'. This refers to the chemical make up of celluloid film and the indexical process of transformation that embeds the visual information within its physical form.⁴¹ This evidences yet another process of transformation contingent on the celluloid, that holds the images 'on an emulsion made of organic gelatin, that is crushed animal bones'. As Cherchi Usai writes: 'Time leaves its trace on it: the emulsion eventually shrinks, fades, peels off, exudes, humidity, dirt, blotches and scratches become part of its identity, just like human flesh.'⁴² In reference to *La Région Centrale*'s 'grain motion', Locke claims '[i]t's like looking at a living organism under a microscope, but you are looking at unperceivable camera motion and the making perceivable by motion of the stuff that film is made of.'⁴³

In summary, *La Région Centrale* presents a situation where both the camera apparatus, as well as the material upon which its movements are recorded, participate in the event of transformation.

⁴⁰ John W. Locke, 'Michael Snow's *La Région Centrale*: How You Should Watch The Best Film I Ever Saw', *Artforum International*, Vol. 12, No. 3 (November 1973), 70.

⁴¹ Mary-Ann Doane, 'Indexicality: Trace and Sign', *Differences: A Journal of Feminist Cultural Studies*, Vol. 18, No.1 (2007), 1–6, DOI: 10.1215/10407391-2006.

⁴² Paolo Cherchi Usai, in *Tacita Dean: Film*, ed. Nicholas Cullinan (London: Tate Publishing, 2011), 60.

⁴³ Locke, 'Michael Snow's *La Région Centrale*', 70.

Robert Smithson's film *Spiral Jetty*

This film is not a documentation it is a work of art that employs the techniques of a film maker to create a subject, a thing that can transform: machines become dinosaurs and history becomes fraught with tension, as the past present and future become simultaneous... this is the transformation that film can effect.

—Diana Thater ⁴⁴

Robert Smithson and Nancy Holt shot the footage for *Spiral Jetty* during the construction of Smithson's seminal earthwork (sculpture) in 1970.⁴⁵ The work is sited at Rozel Point, The Great Salt Lake in Utah, which consists of 'mud, salt crystals, rocks, water'.⁴⁶ The film was completed with the assistance of Bob Fiore and Barbara Jarvis whom Smithson enlisted to help piece the footage together. The use of various spatial temporal events has been assembled into a unified timeline in the film in what ends up producing a new and additional event. As such, and given the range of archival footage used in my own film *Progress in Action*, Smithson's film serves as a useful case study and precursor.

As with the Earthwork, the film component of *Spiral Jetty* (1970) also produces a whirlpool of diverse possibilities out of which transformations are possible. Where Snow's structuralist film consisted of a concentrated engagement with a single subject (the landscape), through the fixed, rotating position of the camera, Smithson's film *Spiral Jetty* involves the camera's choreographed and active movement around various subject matters, not just landscape but also studio, museum, and editing table.

⁴⁴ Diana Thater, *A man becomes unstuck in time in the film that becomes a classic in Spiral Jetty: true fictions, false realities*, ed. Lynne Cooke and Karen Kelly with Bettina Funcke and Barbara Schröder (Berkeley: University of California Press, 2005), 182.

⁴⁵ Robert Smithson, *Spiral Jetty*, April 1970, Rozel Point, Great Salt Lake, Utah, mud, precipitated salt crystals, rocks, water coil 1500' long and 15' wide.

⁴⁶ Robert Smithson narration in the film *Spiral Jetty*, 1970.

Smithson incorporates a broad range of treatments in his film, such as changing camera positions, utilising different filmic effects, and, on top of the footage that was originally shot during the earthwork's construction, it utilises additional footage. This not only facilitates an expanded comprehension of the conceptual layers in *Spiral Jetty*, but the film moves the viewer through different affective registers, producing a range of mutable impressions.

Sequence/Assemblage/Expansion

The opening scene of *Spiral Jetty* displays footage of the sun churning and bubbling. Torn maps blow along a rubble cliff and along mud crusts that appear to be the bottom of a quarry pit. Footage of a dinosaur display at a natural history museum is bathed in a red filter and is set to the score of a metronome. There is an image of a pile of books, their spines revealing titles such as *Sedimentation*, *Mazes and Labyrinths* and *The Day of the Dinosaur*, which are doubled in a mirror. The next scene presents a view from an accelerating vehicle travelling on a dirt road, which, as the narration notes, 'goes forward and backward between things and places that are elsewhere.'⁴⁷ Since one assumes that the road will lead to the physical site of the work, it serves as a conduit between work's physical site and its conceptual field of exploration. This is an example of how, through the use of the filmic medium, we are offered insights into the earthwork that would not be possible from first-hand experience alone. Smithson noted, 'The movie recapitulates the scale of *Spiral Jetty*. Disparate elements assume coherence.'⁴⁸

⁴⁷ Robert Smithson narration in the film *Spiral Jetty*, 1970.

⁴⁸ Robert Smithson, 'The *Spiral Jetty*' [1972], in *Robert Smithson: The Collected Writings*, ed. Nancy Holt (New York: New York University Press, 1996), 151.

Figure 7. Still from Robert Smithson's film *Spiral Jetty* 1970, 16 mm film

Into the Archaeozoic

As the film brings us to the site of the earthwork, we are shown a lone figure walking knee-deep in the rose-coloured salt lake, staking out the site, laying the foundations for the material manifestation of the earthwork. This long sequence that consists of the tranquil lake's rose-coloured water is, at various intervals, abruptly cut into by footage of the violent pouring of earth and rocks into the lake. Through the sequencing of this footage, Smithson envelops the viewer within the earthwork's intense process of formation and the site's transformation. This sequence evokes images of the earth's geological formation—guiding such a reading is Smithson's reference to an 'Archaeozoic world', a suspension somewhere within the present moment and deep time.⁴⁹ Smithson stated: 'Everything about movies and moviemaking is archaic and crude. One is transported by the Archaeozoic medium into the earliest known geological areas.'⁵⁰

Camera/Conversion/Movement/Matter

Smithson developed radical techniques for directly engaging the camera in his sculpture/earthworks. One such technique was to destabilise the

⁴⁹ Smithson, 'The *Spiral Jetty*', 150.

⁵⁰ Smithson, 'The *Spiral Jetty*', 150.

camera's "eye" by unhinging it from a tripod. Thus, I would argue that the camera, in producing transformations of the constructed earthworks, is in the same classification as the machinery that had first transformed the raw earth into earthworks.

More significantly, following the sequences that show the physical sculpting of the earthwork, *Spiral Jetty* is then filmed from a helicopter, achieving vertiginous perspectives that would be unattainable either from the ground or with the human eye alone. This manoeuvring, this spiralling, is formally and conceptually significant, particularly in consideration of Smithson's etymological research into the word 'helicopter': 'Coming from Greek helix, helikos meaning spiral.'⁵¹

The camera's view from the helicopter permits a doubling of the spiral between the movement of the camera eye and the helicopter's surveying of the Earthwork, *Spiral Jetty*. Smithson had made plans to multiply such an experience of the spiral by screening the film on the Staten Island Ferry: 'The ferry boat could sail out to the middle of the harbour; then sail back to the port in a spiralling voyage while the film was showing.'⁵² With this proposition, the experience of the spiral, as with Smithson's interest in language, occurs through infinite removes: the representation of the spiral as an Earthwork, the filming of the spiral, the narration in the film, the spiralling of the helicopter, the camera, and then the spiralling of the ferry, which itself churns the water into a spiral, so that the sense of the spiral becomes not only a representation but a physical experience. One can anticipate that these experiences would have arrived at a point of convergence—the filmed content and the actual physical material, flowing and spilling into one another. As George Baker observes, 'Projected in

⁵¹ At the heart of Smithson's *Spiral Jetty* project was the theme of entropy. This was exemplified by the use of the spiral motif in both the earthwork and the film. 'The term *entropy*... is derived from the Greek *en* (in) and *tropos* (turning), signaling a capacity for change, transformation'. Mary Ann Doane, 'Temporal irreversibility and the logic of statistics, the emergence of cinematic time,' 148.

⁵² Robert Smithson, 'the earth, subject to cataclysms in a cruel master', interview with Gregorie Muller, in *Robert Smithson: The Collected Writings*, ed. Nancy Holt (New York: New York University Press, 1996), 162.

motion in the water, Smithson's film would have been immersed into the flowing, transitive condition, characteristic, we might say, of its own material, of the medium of film itself.'⁵³

Figure 8. Robert Smithson, *Film Treatment (Aerial Camera Movement for Broken Circle)*, 1971, pen and ink on paper, dimensions unknown

In 1971, Smithson drew a sketch titled *Film Treatment (Aerial Camera Movement for Broken Circle)*, which contained propositional instructions for filming his Earthwork *Broken Circle* (1971).⁵⁴ Notes on the drawing indicate that Smithson intended for his camerawork to be based on the aerobatic maneuverers of a Cessna 50 aeroplane. Smithson's proposition is to develop a filmic treatment in which the camera's manoeuvrings and perspective from the aeroplane not only draw the form of the *Broken Circle* on the ground below, but also sculpt a broken circle in space. In reference to *Broken Circle*, *Spiral Hill*, Smithson had commented that 'Both the making and filming of the work informed each other'.⁵⁵ Stefan Hiedenriech observes, 'The art work itself is not taken into consideration as a sculptural piece anymore, but is exclusively seen as a stage for cinematic operation,

⁵³ George Baker, 'The Cinema Model in Robert Smithson', in *Spiral Jetty* (Berkeley: University of California Press, 2005), 80.

⁵⁴ Robert Smithson, *Broken Circle*, Summer 1971, green water, white and yellow sand flats diameter 140' canal approximately 12' wide depth quarry lake 10 to 15', Emmen, Holland.

⁵⁵ Robert Smithson, 'the earth, subject to cataclysms in a cruel master', interview with Gregorie Muller, in *Robert Smithson: The Collected Writings*, ed. Nancy Holt (New York: New York University Press, 1996), 256.

which involves different scales, such as created during flight.’⁵⁶ However, I would disagree that the sculpture is subordinate to the film, but rather that each move Smithson makes in and across media—whether drawing, film, essay, sculpture, Earthwork, and so on—is relational, facilitating a larger and more open understanding of the totality of his works. In other words, to use *Spiral Jetty* as an example, each element of that work, while independent of the other, is also drawn into the greater entity, which is itself not wholly contained but opens onto an abyss of accumulating meaning.

It is important, therefore, to point briefly to the relevance of this observation to the overall argument of my exegesis and to the actual work, *Progress in Action*. Smithson’s infinite removes, his ‘spilling into one another’, has been part of my conception of the physical experience of the converted diesel generator, the coconut oil, and the archival footage of coconut oil production. In other words, functioning analogously with Smithson’s work, I have attempted similar echoes of transformation proliferating in *Progress in Action*.

In a scene shot from the helicopter in *Spiral Jetty*, the camera eye traces from above the jetty to the centre of its spiral. The frame then flips, internalizes, zooms in, and spirals in on new footage of infinite salt crystal structures. This illustrates the film medium’s ability to sculpt, as it pushes in and out, forward and backwards through frame, material and time, creating a sense of the mutability of both time and of physicality. These actions are compounded by the camera’s engagement with the Earthwork: as the camera is tilted, the horizon is destabilised and dizzying aerial flybys are choreographed into a climax that is achieved by filming the sun’s reflection in the salt lake through the eye of the *Spiral Jetty*. Sun reflection hits the lens of the camera, creating an hallucinatory lens flare that resembles the film’s opening scene: images of the sun’s molten exterior.

⁵⁶ Stefan Hiedenreich, ‘Nullifying—McLuhan, Smithson and the Future of the Museum’, in *Robert Smithson Art in Continual Movement* (Amsterdam: Aluade Publications, 2012), 101.

This experience of a film shot at a fixed particular time, from a particular perspective, within a particular environmental condition, differs from the experience of the visitor to the site who engages with the site through lived time. And yet, both experiences build upon each other, while also operating independently.

The helicopter manoeuvred the sun's reflection through the Spiral Jetty until it reached the centre. The water functioned as a vast thermal mirror. From that position, the flaming reflection suggested the ion source of a cyclotron that extended into a spiral of collapsed matter.⁵⁷

—Robert Smithson

Figure 9. Film still from Robert Smithson, *Spiral Jetty*, 1970, 16 mm film

The final scene of the film abruptly ruptures this apparition. A large photographic image of the *Spiral Jetty* is displayed on the back wall of a room behind an editing table stacked with rolls of film. I would argue that it is here at the site where editing takes place that Smithson clearly denotes his intentions. The viewer is to understand the importance of the film's material presence to the Earthwork. This self-reflexive positioning places the viewer at a distance from the experience of the actual work and outside the film and its 'Archaeozoic world'. We are privy to the mechanics that facilitated our time travel, the editing table and rolls of film. It is the very consciousness of this experience that highlights the material

⁵⁷ Smithson, 'The *Spiral Jetty*', 149.

significance of the film. In reference to the work, Smithson stated, 'film is a spiral made up of frames.'⁵⁸ This point creates a direct relationship between the material and temporal dimensions of the film and the Earthwork, bringing all the physical properties into correlation permitting an exchange from one medium to another.

Figure 10. Film still from Robert Smithson's *Spiral Jetty*, 1970 16mm film.

Mutable Time/Mutable Matter

I would like to return to an earlier sequence of the film *Spiral Jetty* where we see a dirt road on which a vehicle travels. We will later learn that this road is leading to Rozel Point, the site of the nascent Earthwork, *Spiral Jetty*. In the sequence, the camera view alternates between the front and rear views of the vehicle, where an amorphous cloud formed of dirt spirals out from the rear of the vehicle. This momentary disturbance of the dirt road produces a fleeting and unstable form. Coupled with the narration of the previous scene, this evokes an impression of cosmological time and geological beginnings. The camera's ability to capture this fleeting form should not be understated, as it is here that we are first shown the filmic medium's capacity to capture a physical state in flux, in the process of transformation. Through the eye of the camera, Smithson's front and rear shots create a tension that pushes at the edges of linear sequences of time.

⁵⁸ Smithson, 'The *Spiral Jetty*', 148.

Time and space become mutable, reminiscent of Bergson's observation that 'Duration is the continuous progress of the past which gnaws into the future and swells as it advances.'⁵⁹ Similar to the use of the front and rear car windows in *Spiral Jetty*, Smithson had planned to also use this method of cutting between filmed objects to transport time in the film treatment of his Earthwork, *Broken Circle*:

For the film I had in mind shooting a boulder of a Hun's bed and zooming into the rock so that you only see the surface, and then pulling back so as to see the rock surface of my boulder. There would be a forward zoom and a backward zoom that would link up the two boulders in a kind of cinematic parallel that would cover the vast stretches of time.⁶⁰

Michael Ned Holte observed, 'Smithson uses the cut between two shots as a big bang.'⁶¹ This is a reference to Stanley Kubrick's 1968 film, *2001 A Space Odyssey*. In a slow motion sequence where an ape tosses a large bone into the air, Kubrick uses the cinematic editing technique known as the 'match cut'. In the scene, the bone is spinning into space, and then through match cut becomes a space ship drifting in deep space. The camera's "eye" is trained on the object's central position within the frame. The editing cut from one object to another implies parallelism between the objects. Although the match cut breaks the continuity, the objects are understood to be part of the same, continuous transformation. A fast stretch of time is compressed into seconds and the complex evolution of human technology is implied. In the case of *Spiral Jetty*, as Holte claims, Smithson 'repeatedly uses the cut to move through time as a lacuna that spans prehistoric past and post-historical future and lands at various points in between.'⁶²

⁵⁹ Bergson, *Creative Evolution*, 4.

⁶⁰ Robert Smithson, 'the earth, subject to cataclysms in a cruel master', interview with Gregorie Muller, in *Robert Smithson: The Collected Writings*, ed. Nancy Holt (New York: New York University Press, 1996), 258.

⁶¹ Michael Ned Holte, 'Shooting the Archaeozoic', *frieze*, Issue 88 (January–February 2005), P. 80

⁶² Holte, 'Shooting the Archaeozoic', p.80

Testing the question—How can film or video’s engagement with the material world participate in the transformations of that material world?

Made in the decades before digital technology, Snow’s and Smithson’s artworks used analogue film. Conversely, my initial studio-based research attempted to address how transformation might be produced using current modes of digital video. *A World Undone* (2012) set up a small and focused experiment. Utilising a digital slow motion camera to transform the impression of gravity, there was a slowing down of the speed of matter in a state of flux. The point of departure for this filmic work was to bring together geological material and machine (the slow speed camera) in an attempt to situate technological time (in this case, filmic) within geological time. The age of the rock matter that I filmed, said to be 4.4 million years, was a critical feature of the work, serving as evidence of when the earth began to ossify and aggregate into tectonic plates, forming a hardened shell around its molten core. This event marked a significant point in the earth’s transformation from the residual gasses and matter of the big bang into a solidified entity.

While *A World Undone* was a significant work in its own right, it is important to note that in the context of this exegesis, it is included primarily as background to the initial experimentation I undertook in the studio, and as such, it is not discussed at length beyond this chapter, nor is it included as an artwork in the final exhibition.



Figure 11. Still from Nicholas Mangan, *A world Undone* 2012 HD digital file.

As with the film *Spiral Jetty*, the geological material featured in *A World Undone* was enfolded within a time-based medium, the former through analogue and the latter through digital technology. But unlike the subject matter of *La Région Centrale* and *Spiral Jetty*, the subject of *A World Undone*, zircon, was displaced from its original geological context and relocated to the studio. There it was crushed, first into rock crumbs and then into granular dust, in an attempt to disaggregate its composition. The crushed matter was then filmed in airborne flux by a slow motion camera. The airborne dust attempted to describe the earth's crust in a state of dematerialisation. Filmed against a black background, the crushed material was devoid of any reference to scale.

Related to my argument that the analogue camera participates in processes of transformation, I argue that digital video permits impressions of matter, perceptual transformations that are impossible to see with the naked eye. One such transformation, specific to this research, is the camera's capacity to augment duration. The transformation that is recorded as a profilmic event by the camera's digital sensor is then further transformed by the camera's internal processor. This processor in turn modifies the frame rate speed at which the real-time events are recorded.

The actual camera that was used in the making of *A World Undone* was a Phantom Flex HD slow motion camera, shooting four-second takes at 2400 frames per second. When replayed at the standard twenty-four frames per second, such footage can be stretched to four minutes without motion blur or loss of fidelity. This time-stretch enables a transformation of the falling speed, altering the perceived movement of the geological material. *A World Undone* attempted to destabilise the laws of gravity and physics by augmenting the behaviour of time and duration, through the camera apparatus and its bond with (cinematic) time.

Like *La Région Centrale*, *A World Undone* permits an interface between camera apparatus and earthly material. However, unlike *La Région Centrale* and *Spiral Jetty*, the camera is not a physically active agent. Rather than manoeuvring the camera to guide (to control) the viewer's perception of the subject matter, the camera remains stable in a fixed position. It transforms the information that is received through its digital sensor.

Summary

The objectives of this chapter have been to explore how film or video's engagement with the material world can participate in the transformation of materials. Beyond a passive recording device, my aim was to scrutinise the camera's potential, in the capturing of the event of material transformation, to become a fundamental agent in the transformation itself. My analysis of Smithson's *Spiral Jetty* and Snow's *La Région Centrale* have aided my assertion that the functions of the camera, a self-reflexive articulation of those functions, and its physical properties as matter activates a distinct mode of material transformation. This initiates a range of mutable impressions, reached at both the visual and material level.

Through the analysis of *La Région Centrale*, I observed that the camera produced a transformation of the viewer's spatial relationship to the subject matter, which in turn influenced the perceived mutability of the

material of inquiry. In the case of *Spiral Jetty*, I explored how the manoeuvring of the camera in relation to the Earthwork produced a complex series of transformations that provide the viewer with an augmented understanding of the physicality of the Earthwork.

I examined how the camera's operation can participate in producing an example of a perceptual mutability of time, which I described through the dirt road sequence of Smithson's *Spiral Jetty*. Through the analysis of this particular sequence, I argued that the camera's recorded and edited material operates to conflate and expand the contours of what can be framed as a durational event, where the process of transformation is recorded. This observation provoked the first studio-based experiments and resulting artwork, *A World Undone*.

Chapter 2: Matter Conveyed

In the previous chapter, I addressed specific historical antecedents, works that augmented analogue camera operations in relation to recorded events of earthly material transformations. This chapter proposes that certain artworks have consciously deployed a self-reflexive relationship to the medium of film or video that is useful in understanding the intermingling of the camera apparatus as a structuring device and the material or profilmic events it records.

In the following analysis, I attempt to illustrate how both the action of the human hand or industrialised procedures and the operation of the camera work together to capture actions that generate an event of material transformation. Divided into *Part A: The Hand* and *Part B: Industrial Extensions of the Hand*, this chapter utilises another set of antecedents. I will begin by examining two earlier artworks dealing with the hand as a transformative agent: Robert Bresson's *Pickpocket* (1959),⁶³ and Richard Serra's *Hand Catching Lead* (1968).⁶⁴ In these works, the specific reference is to human-initiated transformation at the direct level of the hand. Then, as a way of understanding transformation in terms of industrial-scale production, such as steel mill fabrication, I go on to discuss two works: Richard Serra's and Clara Weyergraf's *Steelmill/Stahlwerk* (1979),⁶⁵ and Lucy Raven's *China Town* (2009), both of which explore different stages of ore mining and refinement.⁶⁶ The focus for this chapter has evolved, therefore, to provide both context and deeper understanding of how transformation might be explored in my studio-based project, *Progress in Action*, in particular at the small-scale level of the hand in the refinement of coconuts, and at the large-scale, industrialised level of copper ore refinement. Through these profilmic events, I endeavour to explore ways

⁶³ *Pickpocket*, dir. Robert Bresson, 1959, black and white 35mm film, 77 minutes.

⁶⁴ Richard Serra, *Hand Catching Lead*, 1968, 35mm film.

⁶⁵ Richard Serra and Clara Weyergraf, *Steelmill/Stahlwerk*, 1979, 16mm film.

⁶⁶ Lucy Raven, *China Town*, 2009, photographic animation, colour, sound, 51:30 minutes.

in which singular gestures are drawn into larger assemblages of actions and effects.

Part A: The Hand

Serving as an introduction to the way the filmic medium can stimulate the transformative agency of the human hand is Yoko Ono's *Lighting Piece (Light a match and watch it till it goes out)* (1955).⁶⁷ In Ono's film—which shares with my own project, *A World Undone*, a high-speed frame rate capture—the artist's hand is shown to strike a match. The footage was shot on a high speed camera that captured 2,000 frames per second, which is eighty times faster than the standard twenty-five frames per second, real-time viewing rate.

In this film, different forces are assembled to produce transformation. The friction driven by the muscular force of the hand produces heat energy. This heat energy in turn catalyses a reaction in the chemical properties of the match-head, setting it alight. The duration of the burning match as lived event signifies its location within the flow of filmic time. The very action of striking the match produces light and as such has a self-reflexive relation to the function of the projection apparatus that carries this action through light.

Figure 12. Film still from Yoko Ono: *One* 1966. 16mm film

Figure 13. Film still from Yoko Ono: *One* 1966. 16mm film

⁶⁷ Yoko Ono, *One*, 1966, 16mm film, black and white, silent, 4:30 min. Camera: Peter Moore.

This profilmic event enables an understanding of the forces, frictions and gestures that have been assembled to make this event happen. Ono's *Flux Film #14* serves as a significant example for the exegesis as a whole, in the way that the function of the camera and cinematic time brings together matter, energy and duration. The durational feature of this film offers an explication or demonstration of how the transformation of matter by human action (with relation to both the production and expenditure of human and matter energy) can be witnessed and expressed through a profilmic event.

Since its first incarnations, through actions of shooting and focussing, the camera and the hand have shared a close relationship in the production of moving images. Even though today many of the camera functions that were once operated manually have been automated, these new technologies mimic human actions. For example, the force of the human hand enables pausing, recording or stopping of the camera apparatus. These actions decisively determine what floods into its celluloid film or digital sensor. As Jane Bennet observes: 'An operator is that which, by virtue of its particular location in an assemblage and the fortuity of being in the right place at the right time, makes the difference, makes things happen, becomes the decisive force catalysing the event.'⁶⁸ In the camera's recording of an event there exists a two-fold situation of 'operation': the first exists in the event captured as footage; and the second occurs through the action of operating the camera. Further to this, my investigation has studied the way in which these actions function as durational assemblages organised as either looped structures or linear progressions facilitated by cinematic time.

Before American artist Richard Serra became well known for the monumental steel sculptures he has been fabricating since the 1970s, his 'process sculptures' of the 1960s challenged previously accepted sculptural definitions. These experiments led him to explore film's capacity to

⁶⁸ Jane Bennet, *Vibrant Matter. A political ecology of things* (Durham and London: Duke University Press, 2000), 24.

destabilise torpid forms of sculpture and to represent the forces that constitute the very production of sculpture, its physical facts in continuum. The gestural forces present in Serra's films privilege processes of transformation, the theme of this chapter.

Figure 14. Photograms from Richard Serra, *Hand Catching Lead* 1968. 16mm film.

Serra's *Hand Catching Lead* describes a singular gesture, a hand trying to catch pieces of lead as they fall from a source outside of frame. The film reveals the grasping of an elusive material, as it acts according to the forces of time and gravity. A cognitive command triggers a mechanical muscular response forming a fleeting clasp around the lead. When the human hand in the film succeeds in grasping the lead, there is a disruption to this flow. *Hand Catching Lead* captures the event itself, but also makes a self-reflexive statement about Serra's own mode of production (the making with his hands). The gesture enacted by the disembodied hand as it clutches the lead could also be viewed as a critique of mechanised labour, acting as a metonym for the condition of industrialisation where hand-made production was replaced by mechanical apparatuses. More importantly, here Serra demonstrates the difficulties in the process of

attempting to capture matter in its active state. He presents us with a self-reflexive structuring of the process, with his action echoing the camera's own processes of 'capturing' and 'holding'. In film terminology, to inscribe is to hold the image within the film-strip. The function (or operation) of the camera correlates with the hand's relationship to the falling pieces of lead. In the film, the 'operator' could be, in Jane Bennett's terms, the camera that records the event, or it could be the hand, 'the human agent', the decisive force that engages the material of lead, as its natural downward course is disrupted or redirected.

Benjamin Buchloch observes, 'the falling pieces [of lead] imitate the downward movement of the film print in passing through the projector. The visualisation of the gravity of the falling metal corresponds with the materiality of the filmic medium'.⁶⁹ Buchloch highlights a critical feature in Serra's film: that it presents not only how human agency can direct matter energy flows, but also how matter flows are articulated through the mechanical apparatus of the camera. In the looping of Serra's repetitious hand gesture, we are presented with an incessant progression of flow and capture. Movement cannot be annulled. This is a fleeting interjection into the gravitational trajectory of the lead.

Figure 15. Film Still from Robert Bresson, *Pickpocket*, 1959. 35 mm film

⁶⁹ Buchloh, 'Process Sculpture and Film in the Work of Richard Serra', 16–17.

In Robert Bresson's film *Pickpocket*,⁷⁰ a series of interconnected gestures articulate human agency in a way that extends on the logic of *Hand Catching Lead*. The way various hand gestures come together in the film works for me as an assemblage, offering a comprehension of the procedures of transformations that are linked in succession. I will argue that such temporal assemblages operate as an expanded action of conveyance. The use of the term conveyance is important for the relation it holds to industrialised processes (the subject of Part B of this chapter).⁷¹ The verb 'to convey' connotes the verb 'to carry', to transport something from one point to another and can therefore be linked to the method of film editing, most notably montage, which will be discussed in detail in Chapter Four.⁷² And since 'convey' means to suggest or to communicate, the term is also important for its relation to the visual filmic event and to its knowledge effect.

Robert Bresson was an important figure in post-war, New Wave French cinema. *Pickpocket* portrays a young male figure who is drawn into a life of thievery. Specifically, the camera focuses on the main protagonist as he operates in his world. Through its portrayal of a petty thief—much of the film focuses on closely framed scenes describing the training of a human hand in the tricks of the theft trade—the hand becomes an apparatus for obtaining objects of economical value, a protagonist itself in this story of economic transformation. It presents the hand as a tool for redirecting the flow of capital and more generally as a motif of human agency.

The theft is a small-scale transgressive act against society, which also provides a commentary on the economic effects on the individual of the wider capitalist system.

⁷⁰ *Pickpocket*, dir. Robert Bresson, 1959, 35mm film, black and white, sound, 75 minutes.

⁷¹ I refer here literally to the conveyor belt, which is featured in *Progress in Action*, 2013

⁷² It should be noted here that I have intentionally refrained from detailing the significance of editing and montage and its contribution to these events of physical conveyance; this will be discussed in isolation in the final chapter. For this chapter my attention is focussed on what occurs in front of the camera as a profilmic event.

Figure 16. Film Still from Robert Bresson, *Pickpocket*, 1959 35mm film

At one point, the cunning thief stands behind a woman who is engaged in an exchange at the ticket counter. He interchanges a folded newspaper for the woman's handbag while she is in the process of placing it under her arm. The handbag is then swiftly passed down the line, changing hands with two other accomplices, rapidly distancing the object from the victim's possession and displacing it from the gesture of the original thief. In this sequence of actions, capital flows, as does the responsibility for the crime committed. As the thieves board the stationary train, they swap each emptied, stolen wallet with the next by placing the first stolen into the pockets of innocent train commuters. The interchanging of possessions is extended to commuters who are drawn into the system of exchange as momentary conveyors of the stolen item.

Figure 17. Film still from Robert Bresson, *Pickpocket*, 1959, 35 mm Film

The initial gesture or act of theft coordinated through the fluid exchanges of the handbag and then wallets manifest the flow of capital being directed and controlled by the human hand. The editing and filmic language of this orchestrated series of exchanges are rhythmic and mechanical. As with Serra's *Hand Catching Lead*, the human hand's intervention into the physical behaviour of a material, or in this case an object is captured on film. What is distinct is that this gesture is not enfolded in a looped structure (as in the case with *Hand Catching Lead*, which appears to repeat the present moment, *ad infinitum* and was produced, not for cinema, but for an art/gallery context): instead, what is portrayed in *Pickpocket* is a linear progression conveying the unfolding of a chain of events, an evolution.

Bresson had established the human redirection of the flow of matter in an early café scene when the main protagonist explains in a monologue how using a pinball machine 'helped him with his reflexes'. In this scene, the camera zooms in on the bouncing steel ball gaining points as it pings against the walls and the reflectors of the machine's interior. We are shown the receptive gestures of the hand attempting to redirect the ball back into play as gravity forces it downwards. In another scene in the film, the main protagonist is educated in the process of obtaining a wallet from an unsuspecting pedestrian's jacket pocket, without the hand directly

touching the wallet. Instead, a knife is utilised as an extension of the hand, a tool to mediate between the two bodies. With delicate and swift action, the knife slices the bottom seam of the victim's pocket. This permits the laws of gravity to allow the wallet to fall from the pedestrian's jacket into the hand of the thief. Like Serra's *Hand Catching Lead*, matter is deliberately manoeuvred to negotiate the forces of gravity. The camera is not only a witness to this scene, but it also conveys the actions to the viewer as an active participant; a protagonist in the series of events that work as an assemblage of gestures.

The camera's operation across the duration of the event of pickpocketing enables an understanding of the thief's gestures and actions in sequence. But, moreover, it communicates the transformative potential of an individual hand's action on the larger scene, a crowded queue at a train station. This is an event as an ephemeral assemblage operating across time. In summary, it is through the moving image that these actions are translated to the viewer. Bresson was conscious of the camera's ability to capture transformation. In his book *Notes on Cinema Photography*, 1977, he writes, 'to translate the invisible wind by the water it sculpts in its passing.'⁷³ It is not so much Bresson's analogy that interests me here, but rather his observation of the camera's ability to render and unify the complexity of forces required to generate a wave. Although Bresson is speaking of natural forces, I have argued throughout this chapter that the same could be said of human forces and their engagement with physical matter, particularly the significance of the conveyance of actions as durational events.

⁷³ Robert Bresson, *Notes on Cinemaphotography*, trans. Jonathan Griffin (New York: Urizen Books, 1977), 36.

Actions—Movement—Progress?



Figure 18. Video Still from Nicholas Mangan, *Progress in Action* 2013 HD Digital file

In *Progress in Action*, there is a direct correlation between hand-initiated transformations and the industrial mechanisms that are deployed at the service of such human-initiated gestures. One sequence in the film attempts to braid a series of gestures into a larger unified assemblage. In the sequence we observe a hand circling a map, a hand overshadowing a desired location on a contour map, a field geologist holding a sample of copper-embedded rock, a copper embedded rock being placed on a corporate board room table, and the signing of a contract. These actions are edited against footage of a pick breaking through a large rock, and finally a hand distributing money. Through the assemblage of these profilmic events, the event of mining is portrayed as progressive action, as well as conveying the transformation of matter into abstract capital. In another sequence, footage of a conveyer belt implies that capital flows directly from the refining of raw matter. However, the footage of a hand shifting a bulldozer up-gear is reversed, so that the hand instead down-gears, setting the flow of molten copper backwards and thus annulling capital flow. To symbolise the rupturing effect of two opposing systems (mining and coconut refining), the edit cuts to the aggressive hand cutting

of a coconut. It is now coconut oil that flows, driving a different agenda for progress.

Progress in Action brings together transformations at the level of the hand and also through situations that involve industrialised mechanisms. Part B of this chapter, which follows, will explore situations in filmic works where matter is conveyed through industrial mechanisms working at the service of human actions. Through my analysis, I will attempt to build upon the self-reflexive gestures examined in relation to Serra's *Hand Catching Lead*. I will address actions of 'capture' and 'conveyance' relevant, equally relevant to the camera, its projection apparatus, and the film matter that is carried through it.



Figure 19. Video Still from Nicholas Mangan *Progress in Action* 2013 HD Digital file

Part B. Industrial Extensions of the Hand

Part A of this chapter brought together an analysis of *Hand Catching Lead* and *Pickpocket* to establish the presence of human agency through the intervention of the human hand. I will now introduce two antecedents, which suggest a conveyance of matter as directed by human processes belonging to larger industrial mechanisms.

In a lecture delivered in 1979, Hollis Frampton observed that tactile engagement with filmic material has been inscribed/indexed into its physicality since the time of its initial industrialised fabrication.

The brief moment during which the photographic industries fastened upon silver halide technology as the material basis of the image, which proceeded also from an unusual circumstance and that was the great silver strikes of the 1870s and '80s in Colorado and in Idaho, which released vast quantities of that element into the market within the period of a decade.⁷⁴

The significance of the camera and its filmic material was invented in time to record and inscribe the production and processes of a rapidly changing world. 'As a machine, a motor, the cinema shared the automatic appeal of other nineteenth century machines—their harnessing of energy in an unrelenting movement'.⁷⁵ This moment was exemplified by the very first film made by the Lumière brothers, *La Sortie des usines Lumière à Lyon* (1895), also known as *Employees Leaving the Lumière Factory* and *Exiting the Factory*.⁷⁶ The subjects of the film were the workers of the Lumière Factory, where the actual filmic material was being made. The workers are shown flowing out of the entrance of the factory; they are framed by both doorway and camera lens.

The flow of human labour and the flow of processed chemicals are unified into a filmstrip. They become braided together through the cinematic event. The capturing of this event is a celluloid inscription of the social labour conditions of the industrial revolution.

⁷⁴ Hollis Frampton, *The Invention Without a Future*, transcribed in *October*, No. 109 (Summer 2004), 71.

⁷⁵ Mary Ann Doane, *The Emergence of Cinematic Time* (Cambridge, Massachusetts: Harvard University Press, 2002), 108.

⁷⁶ Lumière Brothers, *La Sortie des usines Lumière à Lyon*, 1895, 35 mm film.

Figure 20. Film Still from Lumiere Brothers, *La Sortie des usines Lumière à Lyon* (1895) 35 mm film

Annulled Movements

Richard Serra's and Clara Weyergraf's *Steelmill/Stahlwerk* explores the transformative functions of a larger industrial system, underscored by a critique of human and machine work relations.⁷⁷ Rather than focusing on the hand in relation to the material world, here we are presented with a far more complex set of human relations in the context of labour conditions. The resulting film involves Serra describing the construction of a large sculptural work within its greater social and economic context, in this case a steel mill in Ruhr Valley, Germany.⁷⁸

⁷⁷ Richard Serra and Clara Weyergraf, *Steelmill/Stahlwerk*, 1979, 16mm film, black and white, 29 min.

⁷⁸ It is conceivable to think that Serra was also pointing to the significant historical context of the Ruhr Valley, the industrial heartland of the German economic miracle of the 1950s and 1960s.

Figure 21. Film Stills from Richard Serra's and Clara Weyergraf's *Steelmill Stahlwerk*, 1979, 16 mm film

Figure 22. Film Stills from Richard Serra's and Clara Weyergraf's *Steelmill Stahlwerk*, 1979, 16 mm film

The approach for this film was instigated by Clara Weyergraf who suggested to Serra that rather than simply going into the factory to produce the work, he should perhaps attempt to 'find out who the people are, what are they about, and what are their situations.'⁷⁹ The film begins with an English-subtitled, German interview with the factory workers; we do not see their faces, but hear their voices and the harsh ambient noise of the factory dubbed over a black screen with white subtitles. The anonymous workers explain their working conditions as oppressive and physically demanding. Amongst the voices, there is a strong sense of dissatisfaction with the conditions and power structures of the capitalist system under which they are subjected. The sense of each worker's oppression is made even more palpable by the factory noises, which at times drown out the words of the individual interviewee. It is striking that a raw material, in this case steel, is transformed into higher value, but the worker is not.

As the film progresses, Serra and Weyergraf's *Steelmill Stahlwerk* does away with the tight abstracted framing Serra had previously explored in his sculptural film *Hand Catching Lead*.⁸⁰ Both the field of view and context of production are expanded by filming the actual processes of fabrication

79 Clara Weyergraf, quoted by Richard Serra in Annette Michelson, 'The Films of Richard Serra: An interview' [1979], published in *Richard Serra: October Files*, ed. by Hal Foster and Gordon Hughes (Cambridge, Massachusetts: The MIT Press, 2000), 40.

⁸⁰ Richard Serra, *Hands Scraping*, 1968, 16mm film, black and white.

of a sculptural commission for the National Gallery in Berlin. Rather than a single, anonymous hand reaching at lead, as in *Hand Catching Lead*, here entire bodies move in relation to heavy machinery, as human intervention coordinates the production of a large steel form. Serra stated that he 'had an interest in following the product from its inception, through the making, pouring and forming of the material, and in observing the workers' relation to all of these steps.'⁸¹ This linear progression also presents a contrast to the looped structure in *Hand Catching Lead*, aligning more closely with *Pickpocket* in its conveyance of cause and effect. In reference to his editing of the footage from the forging factory, Serra explained that:

The cutting was done in a linear way to approximate what was done in the mill on a given day... to give a very definite sense of place... to track the place one or two times and then locate the working process. If you follow the cutting process, the block is introduced, it tracks down, it goes into the forge, people work on it, it's taken out of the forge, they work on it, they take it across to the other side, and they name it, and that's the end.⁸²

Serra's comment indicates a shift away from a concern for the purely formal qualities of a material such as lead in his earlier film to encompass the larger sequence of forces necessary in the total production process. He introduces a complex set of actions that intertwine material and social effects. However, these processes are also analogous to the procedures involved in editing a film sequence on an analogue Steinbeck flatbed-editing table. As such, it is analogous to the cutting and reattaching of film footage into the strip and the resulting end product, a unified reel.

What is specific to this film is that Serra's and Weyergraf's footage does not portray a fluid union between worker and process. The workers do not appear to have a command of the machines they operate, nor do they appear to have an interest in what is being produced. Instead, the scene following the introduction describes a lone worker manoeuvring the levers

⁸¹ Richard Serra quoted in Michelson, 'The Films of Richard Serra', 41.

⁸² Richard Serra in Michelson, 'The Films of Richard Serra', 51.

of a machine out of frame. The worker's face is in darkness. Only a cold white light illuminates his hands, which thus staged, appear to be disembodied. The camera frames the hands in the centre of the image; the hands read as those of a lifeless automaton. In this procedure, the viewer of the film and the worker share the same sense of disconnection from the industrial procedure. Our expectation that the following scene will cut to a finished product is thwarted. It fails to appear. As Serra states, 'you see people serving machines. You see them fragmented and you see the machines fragmented.'⁸³

In its depiction of social conditions in the industrial environment, my reading of *Steelmill/Stahlwerk* is that it sits in opposition to the revolutionary cinema of the Soviets, with its optimistic portrayal of social conditions and workers' alliances. I will explore this in relation to Dziga Vertov's *The Eleventh Year* in the final chapter.

The Chain of Events

In the works discussed in this chapter so far, I have argued that the moving image is able to articulate the human hand's capacity to instigate a transformative event, or events. I have also touched on the broader social and economic backgrounds of these films. Whereas *Hand Catching Lead* showed matter falling through the frame and *Steelmill Stahlwerk* showed matter being moved around the factory, the film I shall now turn to, Lucy Raven's *China Town* (2009),⁸⁴ elucidates, I suggest, the continuum of matter flows and human agency in respect to the global economic system.⁸⁵ This film extends the logic of the others by tracing the global journey of raw material. It exposes the mining process in Nevada, where copper is exhumed in its raw state, then transported for refinement in China, to finally enter the world's commodities markets, whence it will

⁸³ Richard Serra in Michelson, 'The Films of Richard Serra', 50.

⁸⁴ Lucy Raven, *China Town*, 2009, photographic animation, 51:30 min.

undergo yet further redistribution and transformation. An aspect of her film is to show the migration flows of humans and their working conditions.

For my own work, *Progress in Action*, the historical dimension of *China Town* is significant in illuminating an earlier example of miners' working conditions. The title of the film recalls an actual mining town in Nevada named after the Chinese immigrants who resided there in the 1880s. Chinese migrants were involved in 'the construction of the transcontinental railroad that connected both ends of the country, igniting mining production throughout Utah and Nevada.'⁸⁶ They worked under exploitative labour conditions. Raven does not recreate this history but allows it to sit as a ghostly trace in the background of contemporary mining operations, with resonances emerging when she shows the locomotive as an apparatus of conveyance for industry, carrying both people and commodities.

Figure 23. Digital Stills from Lucy Raven's *China Town*, 2009 photographic animation

⁸⁶ Mathieu Borysevicz, 'China Town: A Video by Lucy Raven', *Mass MoCA*, http://www.massmoca.org/event_details.php?id=423. Accessed 2 July 2013.

Figure 24. Digital Stills from Lucy Raven's *China Town*, 2009, photographic animation

Raven meticulously photographed, in digital format, copper production in its entirety, from its blasting from the earth, to its transportation, smelting and casting, chronologically sequencing 7000 still images into a stilted filmic montage that was projected in a gallery context. The logic of animating still images can be understood as the rudimentary structure of cinematic time—the photogram, the interval, and so on—in that its function is contingent on sequential progression. In other words, this forward movement cannot deviate from its path, if the narrative is to convey its message. As such, it has direct correlation to the train track, a series of individual uniform parts assembled together to make a continuum, a path upon which carriages are only able to travel forward or in reverse. However, Raven is not attempting to hide the interval (to produce fluid movement) but to produce a jarring effect, making the viewer conscious that this film has been constructed from separate still images. The flow and movement of copper, as it is conveyed through a complex system of exchange is both momentarily annulled through the arresting of still images and amplified through their succession as an assemblage of images, a continuum.

In her deployment of animation to visually convey the production process and the material journey of copper ore, Raven's *China Town* is unique in relation to the other antecedents discussed in this chapter. As Raven states

‘I was thinking about animation in relation to exhaustion—how animated still images could suggest an attenuation of time.’⁸⁷ In effect, what Raven’s montage suggests is that the process of animating stills builds towards a whole through the process of assemblage, fluctuating between the firm and the fluid. There are further spatial and temporal conditions that complicate this assertion. As Raven states:

In the photographic animation, the rate of change (of movement from one frame to the next) is constant for the entire image. Rather than foreground, background and middle ground moving at different rates, as they do in most animations—and in real life. The result is that the landscape moves at the same pace as the worker and as the commodity.⁸⁸

What is also implied through animation is that linear progression is necessitated by an understanding of what is moving ‘the frame’ along a demarcated trajectory. Here the world is forced through the frame.

As Mary-Ann Doane writes:

Insofar as the cinema presented itself as the indexical record of time, it allied itself with the event and the unfolding of events as aleatory, stochastic, contingent. It was capable of trapping events in all their unpredictability and pure factualness. However the fact of its own finitude—resulted in the necessity of conceiving the event simultaneously in terms of structure, as a unit of time, as not simply as a happening, but a significant happening that nevertheless remained tinged by the contingent, by the unassimilable.⁸⁹

Akin to the processes of refining copper ore, cinematic procedures work to shape its captured material into a desired form, with movement contained by the constraints of framing.

⁸⁷ Lucy Raven, ‘The Long Take: Lucy Raven and Thom Anderson in Conversation’, *Artforum*, Vol. 49, No. 1 (September 2010), 284.

⁸⁸ Fionn Meade, ‘Lucy Raven: Anamorphic Materialism’, *Mousse*, No. 31 (2011), 140.

⁸⁹ Doane, *The Emergence of Cinematic Time: Modernity, Contingency, the Archive*, 140.

Raven's attenuation of time, to return to an earlier observation, brings to mind Henri Bergson's claim: 'What is real is the continual change of form: form is only a snapshot of a transition.'⁹⁰ From a sculptor's position, both time and form, or (more importantly) matter can be understood as occupying simultaneously a fixed position and a virtual one. They are variable successions, occupying the world as measurable quantities, inescapably subject to succeeding conversion. The attenuation of time is ineffective and ultimately so is the inertia of form and matter.

Within the context of this exegesis, *China Town* is significant in describing the processes that are involved in exhuming and redirecting raw materials. It also elucidates the energies that are expended in both the refinement of a material substance, in this case copper ore, and the production of a global economy. Specific energies exist and are expended in the raw material's journey and in its refinement. We are shown the journey of matter in flow as it is guided or conveyed. Through the animated images, Raven draws geographically distant elements into an assemblage, notably Nevada rock, rich with copper ore, and the Three Gorges Dam in China. A chain of events is produced as ore becomes copper wire and images propel forward. As a broad analogy, the copper and the film projection are conduits of energy, one material, the other cognitive, but both instigate further conversions and transformations.

Summary

This chapter has analysed a small number of artworks: profilmic events that capture the human hand in direct contact with physical matter, or situations where technologies have been employed to work at the service of human-instigated transformation. I have argued that the camera's operation throughout the duration of an event enables an understanding of the series of gestures and actions that make possible a twofold situation of

⁹⁰ Bergson, *Creative Evolution*, 203.

transformation. My aim was to assert that certain artworks have deployed a self-reflexive relationship to the medium of film and moving image that is useful in understanding how the structuring of both camera apparatuses and their recorded material corresponds with the subject matter. This argument has helped build an understanding of how processes of physical transformation conveyed through moving image operate as progressions.

Chapter 3: The Triangulated Assemblage

In Chapter One, I explored the filmic medium's potential to participate in material transformations, a participation enabled by the functions and movements of the camera. In this chapter, I extend this exploration of material transformation both in the pro-filmic event, as well as through the experience of the live event (the installation). I focus on examples where there is a three-way assemblage, including: 1) the film apparatus (camera and projector); 2) the sculpture (physical, material form or forms); and 3) the projected moving image itself. Although I refer to this assemblage as a triangulation of three distinct components, in each of the works discussed there are situations where these components may overlap or be coupled. It is how these components function in relation to the other components that is the primary subject of this chapter.

Figure 25. Installation View, Simon Starling *D1-Z1* (22,686,575:1), Thyssen-Bornemisza Art Contemporary Vienna, Austria

Where my focus in Chapter One was on developing a comprehension of the manoeuvring of the camera in relation to the physical matter with which it engages, in both *La Région Centrale* and *Spiral Jetty*, I also briefly touched on the existence and self-reflexive presence of certain cinematic apparatuses. In the case of *Spiral Jetty*, this occurs through the final scene in the film, where the viewer is shown the actual editing table and coiled

(or spiralled) celluloid used to construct the film itself. In *La Région Centrale*, this self-reflexive moment occurs when the footage presents the shadows of the camera itself—the De La camera “sees” itself.

British artist Simon Starling’s practice is an important reference point for this chapter. Many of Starling’s projects function through a dynamic intersection between the subject matter and the material processes employed to execute the actual artwork. As a way to lead into my analysis of Starling’s *Wilhelm Noack oHG* (2006), I would first like to discuss a later work by Starling, titled, *D1-Z1 (22,686,575:1)* (2009).⁹²

Materially, Simon Starling’s filmic work *D1-Z1 (22,686,575:1)* consists of 35mm film and a D1 projector. The film features imagery of a filmic strip being conveyed through an intricate mechanism. Upon encountering the work, the viewer is presented with an analogue projector that has several looping feeders suspended from its base to the ground. The projector itself resembles the projected imagery, in the sense that the projector’s casing has a glass window exposing the internal workings of the machine. This permits the viewer to comprehend the logic of conveyance that is shared by the machine and subject of the film. The projected image size also shares similarities with the size of the projector; this formal equivalence sets up an understanding of the structural correlation between the projector and imagery. The projector and projected image are fused through overlapping sounds of the running projector and the simulated, repetitive mechanical sound of the film content.

The work explores the central mechanisms of German engineer and artist Konrad Zuse’s homemade computer, the Z1, which had occupied the space of an entire room of Zuse’s Berlin apartment. Designed in 1936, the Z1 machine is often said to have been the first programmable computer.⁹³ It had a meagre 172 bytes of memory, generated by programming or

⁹² Simon Starling, *D1-Z1 (22,686,575:1)*, 2009, 35mm film, D1 projector, black and white, sound.

⁹³ Raul Rojas, *The Z1: Architecture and Algorithms of Konrad Zuse’s First Computer* (Berlin: Freie Universität, June 2014); <http://arxiv-web3.library.cornell.edu/abs/1406.1886>. Accessed 10 December 2014.

punching holes into 35mm photographic film that was then fed into the D1 computing machine. *D1-Z1 (22,686,575:1)* illuminates the intersection between analogue and digital modes of moving image and as such presents a two-fold example of transformation. It presents a self-reflexive condition in its capacity to render an image of itself.

Projections into the Future

D1-Z1 (22,686,575:1) unfolds through a type of feed between the 35mm projector, the projected image content, and the narrative of the development of programmable computers (that would in turn lead to the digital age and the obsolescence of analogue filmic processes). The suggestion of the obsolescence of analogue film is accentuated—and enacted—by the Z1's literal obliteration of 35mm. By punching holes into the film, it renders the film useless for its original, intended purposes in order to facilitate the computing of bytes for digital image production. The work then traverses another conceptual and historical loop. Starling worked with a Berlin company that produces high-resolution digital animations to construct an animation consisting of 3,992,837,240 bytes of information. This digital animation consists of a thirty-second looped close-up detail of the main mechanism that feeds the film through Konrad Zuse's original mechanical Z1 machine. In the film, we see the transformation of a physically indexed (hole-punched) filmic material surface becoming digital information. The looping feature of this work is of significance in reference to my own project *Progress in Action*, discussed later in this chapter, where progress is suspended in a state of perpetual becoming, a state of continuous production.

D1-Z1 (22,686,575:1) produces a paradoxical state; it describes the accumulation of digital information, a type of progression, and yet it remains caught in its own continuous loop cycle. Unlike *Wilhelm Noack oHG*, which I will position as an example of a triangulation, in *D1-Z1 (22,686,575:1)* the projector and image operate through a type of duality.

Featuring the three elements that have been identified above to produce a ‘triangulation’—projector and other physical material forms and projected moving image—*Wilhelm Noack oHG* is not only relevant to this chapter, but is also important to my broader thesis. The filmic loop explores the process of production of the spiral loop structure for the very filmic material that the viewer sees physically conveyed and projected. But rather than an oscillation or binary relationship between a film projector and its reinscribed digital animation content, *Wilhelm Noack oHG* enfolds moving image, projector and sculpture to produce a triangulated system. This triangulation consists of a 35mm film projector, an elaborate purpose-built spiralled looping mechanism, and a continuous four-minute black and white film, which runs through this mechanism.

Figure 26. Digital still from Simon Starling’s animation *D1-Z1* (22,686,575:1), 35mm film, D1 projector, sound.

The projector itself is positioned within the looping mechanism. Here it functions as a projector, but also, when coupled with the spiralling mechanism, provides a formal correlation with the work’s subject matter, setting up an internal dialogue with its projected film content. The construction of the artwork’s elaborate spiral structure is featured in the film; the projection apparatus “sees” itself in the process of its own transformation or coming into being. Conveying its own material history in a cascading celluloid loop, which courses through the purpose-built spiral

machine, the form of the spiralling structure has further self-reflexive connotations, which perhaps echo Robert Smithson's observation that 'film is a spiral'.⁹⁴ The process of production—both the fabrication of the spiral structure at the factory and the production of the imagery—is inscribed by the camera onto the filmic loop.

In his 2013 artist talk at the National Gallery of Victoria, Starling spoke of his veneration for American artist Robert Morris's 1961 piece, *Box with the Sound of its Own Making*.⁹⁵ Starling has long been concerned with the nuts and bolts of things, paying attention to the contexts and situations surrounding the processes of becoming. But I would argue that the introduction of film and moving image into his work has opened new possibilities to explore and enact the material transformations that are his work's subjects.

Figure 27. Installation view of Simon Starling's *Wilhelm Noack oHG*, 53rd Venice Biennale 2009.

By creating a triangulation between the corresponding productive elements of this work, a tautology on the theme of material transformation is produced. This is most explicitly articulated through his overt

⁹⁴ Robert Smithson, 'The *Spiral Jetty*' [1972], in *Robert Smithson: The Collected Writings*, ed. Nancy Holt (New York: New York University Press, 1996), 151.

⁹⁵ Robert Morris, *Box with the Sound of its Own Making*, 1961, Walnut box, speaker, and three and one half hour recorded tapes, 9 1/2 x 9 1/2 x 9 1/2 inches.

explication of the processes of formation and modification of specific objects and raw materials that is continuously reiterated or echoed both on screen and in the looping apparatus. Although there remain in these works a direct relation to sculptural actions, these actions are augmented through the use of moving image, which elucidates the temporal nature of the processes of conversion. As such, the procedures and their resonance with situations in the wider world are integrated into these actions.

In her essay on Starling's *Wilhelm Noack oHG* (2006), Janet Harbord writes: 'Machines complete invention not by displacing human agency but in demonstrating the potential to make, to enter into an active relation with matter to transform it.'⁹⁶ Through Starling's *Wilhelm Noack oHG*, the projection and looping mechanism produces an initial double transformation. One exists in the projected content of the film and the other in the physical manifestation of the looping mechanism and its spiral structure. It is through the use of the filmic medium in conjunction with his looping mechanism as sculptural form that Starling constructs a mode of material storytelling that threads specific materials with their historical contexts.

Wilhelm Noack oHG tells a material-political history pertaining to the city of Berlin. Starling has spoken about how he came to this project through his desire to recreate a glass screen made by Lilly Reich, the twentieth-century German modernist designer, who was a long-time collaborator of Mies Van der Rohe, the last Director of Berlin's Bauhaus.⁹⁷ By chance, Starling discovered that the metalwork company he approached to recreate Lilly Reich's screen had in fact been the fabricator of the original screen. The film shows Starling's previous work made by the company (the reproduction of the Lilly Reich screen that led to this new work), within

⁹⁶ Janet Harbord, 'Wilhelm Noack, oHG', in *Simon Starling* (New York: Phaidon Press Inc. 2012), 90.

⁹⁷ *The Bauhaus: Masters & Students by Themselves*, ed. Frank Whitford (London: Conran Octopus, 1992).

the context of the archival material that Starling had discovered during his time at the factory, as well as the plans for his spiralling looping apparatus, manufactured by the company. Starling thereby places his own production within the history of that which he now portrays. The viewer watches still images of various exhibition stands, staircase plans, images of the company forefathers and employees working with steel. This parallel between Starling's construction and the constructions produced for industry also enables an understanding of how the processes of art production relate to processes of becoming beyond an art context.

Figure 28. Production photographs of camera set up, for *Wilhelm Noack oHG 2006*

Figure 29. Production photographs of camera set up, for *Wilhelm Noack oHG, 2006*

The film explores the factory's archive along with the factory. This archival material is enfolded in the acts of production, and shot on 35mm film with an outmoded, steel-cased Arriflex film camera. *Wilhelm Noack oHG* shows the chaotic artisanal workspace through the use of the camera. The camera itself experiences a haptic journey around the workshop through Starling's provisional use of the factory's beasts of burden as provisional moving

camera mounts. Akin to the methods employed in both Michael Snow's *La Région Centrale* and Robert Smithson's film *Spiral Jetty*, the camera is physically manoeuvred to produce an augmentation of both the visual and physical understanding of the subject matter and site. However rather than using a purpose-fabricated camera apparatus such as that utilised for Snow's *De La*, or filming from a moving vehicle such as a car or helicopter, as in Smithson's *Spiral Jetty*, Starling uses the very mechanical apparatus that belongs to the site of production itself; it is the actual machinery used to fashion steel products. In one such scene, the camera is clamped to the drill press upside down, spinning the camera eye at dizzying speeds as the camera's perspective spirals out from itself. In another scene, the camera is placed on a workshop trolley and dollied along the old wooden floor passing a well-worn anvil. The camera then abruptly surveys the ground surface of the workstation covered with metallic dust and the lower shelves and racks of yet-to-be-fashioned steel. The camera is positioned on a bench-mounted steel bender and captures the steel fabricated mechanism that permits its panning movement. A hammer knocks the camera, dislodging it and knocking it out of frame.

Starling's substitution of his camera for steel atop the workshop machinery places the camera into a site usually occupied by worked steel. In doing so, it produces an association between the construction and manipulation of the film and worked steel, and an analogy concerning the transformative processes of construction is produced. This association also plays out in relation to the editing process of film, where material is cut and reattached to new material like pieces of steel that are welded together, while also recalling Vertov's thesis on montage, which will be discussed at length in Chapter Four.

Devin Fore observes:

One of the most important units within Dziga Vertov's conceptual system is the lexeme that means to bond. It recurs throughout his writings, most often appearing as the noun *sviaz'* although sometimes it also surfaces as the verb *sviazat'* (to link). Occasionally it is alloyed with the second lexeme to forge strange and unprecedented compounds, as in Vertov's definition of "Kino-eye" as a film-bond.⁹⁸

In the case of Starling's *Wilhelm Noack oHG*, the overall structure or form of the film is worked in a fashion analogous to the forging of raw steel on an anvil, as it is worked to achieve a desired shape or form. Hammers smash, making connection with steel, images are montaged in time with these connections, the sounds signify the construction of the film, or 'the sound of its own making'.

As the filmic material runs the course of the spiralling loop structure, it is possible to glimpse the thousands of still frames (photograms) that make up the film's content, as they are illuminated by projected light onto the wall of the exhibition space. It is not until these still frames pass through the projector gate that their transformation from frozen moments into a continuous duration of movement occurs. This illustration as a live process of physical movement and visual transformation extends upon the observation made by Jean-Louis Baudry that '[t]he projector and the screen restore the light that is lost in the shooting process, and transform a succession of separate images into an unrolling which also restores, but according to another scansion, the movement seized from "Objective reality"'.⁹⁹ What Starling's *Wilhelm Noack oHG* presents is a complex assemblage, which resonates between filmic material and filmed content, the process of production and material transformation as it relates to the

⁹⁸ Fore Devin, 'The Metabolic State: Dziga Vertov's *The Eleventh Year*', *October*, No. 145 (Summer 2013), 3.

⁹⁹ Jean-Louis Baudry, 'Ideological Effects of the Basic Cinematographic Apparatus', in *Narrative, Apparatus, Ideology*, ed. Philip Rosen (New York: Columbia University Press, 1986), 287.

given forms and their site of production. The work sets up a series of correlations between the function and procedures of the factory and the medium of film.

The subject of factory production connects *Wilhelm Noack oHG* to Serra's *Steelmill/Stalhwark*. Where Serra uses the camera to 'follow the [steel] product' and its passage and conversion through a large-scale industrial setting, for Starling it is the camera itself that is conveyed around the artisanal workshop. Moreover, given the presence of both a product and its producer, the subject of labour and progress in the workplace lies within what is an otherwise largely formal work.

In Starling's footage we see the labour conditions that may have been inherited by the Noack forefathers (indexed into the black and white archival photographs working and forging steel that reappear in Starling's filmic loop). In this way the work links to Walter Benjamin's assertion that for both German Social democratic theory and practice, '[p]rogress was regarded as irresistible, something that automatically pursued a straight or spiral course.'¹⁰⁰

Figure 30. installation detail of Simon Starling, *Wilhelm Noack oHG 2006*, purpose-built loop machine, film projector, 35 mm film

Figure 31. installation detail of Simon Starling, *Wilhelm Noack oHG 2006*, purpose-built loop machine, film projector, 35 mm film

¹⁰⁰ 'Nothing has corrupted the German working class so much as the notion that it was moving with the current, in the fall of the stream with which it thought it was moving.' Walter Benjamin, 'Theses on the Philosophy of History', in *Illuminations* (Pimlico, London: Random House, 1968), 255.

However, I would argue that Starling's loop mechanism presents a contradiction to progress. Through its conveyance of the various scenes and successive photograms, the viewer anticipates that the film will reach a conclusion, and we understand, perhaps even expect, narrative progression in films. Such expectation is ultimately thwarted by the circular or looped succession, which negates a final resting point for both matter and movement.¹⁰¹ Starling's assemblage loops continuously, thereby instilling a sense of perpetual becoming. This perpetual becoming is implied through the sequencing of events of material transformation, an assemblage of images in a continuous flood. The assemblage 'conveys' a visual history of the site of fabrication (the workshop); and the elements generated by Starling's own making, the filmic work that was produced in that very site, and the actual staircase that mimics the looping mechanism apparatus. As such, it pushes backwards and forwards, lodging itself into durational time through its capacity to occupy the spatial and temporal dimension of cinematic time. This observation extends Mary Ann Doane's claim that '[there] are at least always two temporalities at work in film. Accompanying the spectatorial experience of the present tense of the filmic flow is the recognition that the images were produced at a particular time, that they are inevitably stained with their own historicity'.¹⁰² In *Wilhelm Noack oHG*, these two layers of temporality are at play. First, the presence of tangible materiality in the physical, spiral structure itself, forming the site of Doane's 'spectatorial experience of the present', and secondly through the profilmic event, in which the inscribed or 'stained' notion of time is embodied.

¹⁰¹ As Bergson states, 'it is natural to our intellect, whose function is essentially practical, made to present to us things and states rather changes and acts. But things and states are only views taken by our mind, of becoming. There are no things, there are only actions'. Bergson, *Creative Evolution*, 248.

¹⁰² Doane, *The Emergence of Cinematic Time*, 143.

Michael Stevenson: *A Life of Crudity, Vulgarly, and Blindness*

I will now turn to Michael Stevenson's project, *A Life of Crudity, Vulgarly, and Blindness* (2013),¹⁰³ a work that comprises moving image, a custom-fabricated, in-situ projection apparatus, and a sculptural component, producing another kind of assemblage. I will argue that in the intersection of sculpture and image in this work, a unique transformation is produced that oscillates between the material (physical sculpture) and immaterial (projected image). However, unlike the previous work discussed, this work pushes the assemblage further by producing a 'triangulation' of parts, and I will be arguing for the importance of the apparatus as a crucial component in the transformation rather than something subsumed under the logic of the film itself, to be bracketed or ignored by the viewer. This alternation becomes the conceptual field of enquiry as a lived experience of transformation for the viewer.

A Life of Crudity, Vulgarly, and Blindness involved the installation of an 8:10 scale replica Cessna airplane within the attic of Portikus Kunsthalle, Frankfurt. In a doorway at the rear of the main gallery space, directly below the attic, an image of the plane was projected onto a screen. The architecture of Portikus operated as a conventional gallery space, in the sense that it acted as a container for the work, but it was also altered by the artist to function in a fashion akin to a camera obscura.¹⁰⁴ Thus, the work manifested in three parts to form a triangulation: 1) as a filmic apparatus (the building as a camera or projection apparatus); 2) as a sculpture (the physical form of the aeroplane installed in the attic); and, 3) the projected image of an aeroplane. In my analysis of Stevenson's project, I will refer to

¹⁰³ Michael Stevenson, *A life of Crudity, Vulgarly and Blindness*, 2012, site-specific installation, custom-built optical apparatus, and 1/5 model airplane.

¹⁰⁴ In drawing a distinction between his own projection apparatus and a camera obscura, Stevenson stated: 'the image, with a single lens, or a lens and a mirror, is always upside down, and if it's with a lens, it's upside down and back to front as well. So, this was very, very unusual in terms of that it was up the right way and it was corrected left to right. But it was an internal view, and if you were in the exhibition space, you could not tell where you were physically connected to. But if you were standing and looking at the image, the object was actually directly above you, so you were in relation to this thing but you couldn't tell, you really couldn't tell'. Michael Stevenson, interview with the author, Melbourne, Australia, 1 October 2013.

three main occurrences of transformation that operate in the work and that are contingent on the function of the projection apparatus and its relationship to the sculptural components and the projected image.

Figure 32. View of the Portikus attic. Michael Stevenson, *A life of crudity vulgarity and blindness* site specific installation, custom built optical apparatus and 1/5 model airplane 2013.

The following transcription is an excerpt from a conversation between myself and Stevenson in Melbourne on the 1st of October 2013, where we further discuss the image-producing apparatus employed in the *A Life of Crudity, Vulgarity, and Blindness*:

Standing in that attic, it's as if you're standing outside, that's how much luminosity there is, and that's why I was fascinated by it. I thought, if there's a way you could actually connect a space this light to the space below, and turn the building into a camera, so the view would be the view of the space, not the view outside... It's an internal view, from one room into another room, if you like, but one room is light; one room is dark. It's a classical understanding of what a camera is... I mean, the word camera means a darkened chamber...¹⁰⁵

The triangulation of this work is centred on, or framed by, the building's existing architecture. Stevenson produced an intervention into that space that capitalised on the way the building was designed to capture natural light through the attic space.

¹⁰⁵ Stevenson, interview with the author, Melbourne, Australia, 1 October 2013.

When we were working there, there was this really lovely guy. I was trying to explain this whole thing and how it goes through the building. He said, 'oh, so it's structuralist', and I thought, well, yes, and then that's right. Then it's the building that's responsible for the image, or how the image is... the scale, or how it's cropped, or how it fits on the screen... It's the building that's responsible, not me...

As well as considering the structural constraints of the building that defined the parameters of this work, it is important to understand Stevenson's definition of the apparatus that was responsible for producing the image. In her interview with Stevenson, Sarah Elsing refers to the apparatus of image projection as a camera obscura.¹⁰⁶ However, Stevenson states: 'it was significantly different than the classical understanding of a camera obscura in that there were two mirrors and it was back-projected. That meant that the object was up the right way and corrected left to right'.¹⁰⁷

I was forcing myself to think of this as a new medium. How do you work with this new medium? And I knew that this medium would not do very many things. It might do some things. It might do some things quite well, but there's other things you can't force it to do, it just won't do them. So, whatever it is that it does, irrespective of what I've laid out and said... just go with it, whatever it can do, let it do it.

The Portikus website release refers to the image that Stevenson has produced as 'a live photograph'.¹⁰⁸ I would further argue that Stevenson's 'new medium' produces an image that is akin to film as well as photography. The image oscillates between these two media without adhering to the strict definition of either. Although the image remains fixed

¹⁰⁶ Sarah Elsing, 'On Disappearance and Illumination, Michael Stevenson in the Portikus, Frankfurt', *DB Artmag*; <http://db-artmag.com/en/72/feature/on-disappearance-and-illumination-michael-stevenson-in-the-porti/>. Accessed 10 December 2014.

¹⁰⁷ Stevenson, interview with the author, Melbourne, Australia, 1 October 2013.

¹⁰⁸ 'Exhibition 177: Michael Stevenson', *Portikus*; http://www.portikus.de/exhibition_1660000000100.html?&L=1. Accessed 1 January 2014.

on the plane from one point of view only, much like a photograph, it is not a static transmission. The fluctuations of light and environmental conditions, the union of the architecture and the light that is conveyed and transformed though the apparatus lens's mirrors are brought together to produce an illumination that is akin to film. The very fact that the apparatus that produces the image projects light onto a screen in real time ties this image to the logic of film. However there are further contingences that complicate this understanding.

Figure 33. Installation view of Michael Stevenson *A Life of Crudity, Vulgarly, and Blindness* at Portikus, Frankfurt, am Maine 2012

The transcription below continues our conversation introduced above:

NM Both photography and film record light. They trap it and it becomes embedded in a material substance, but in a way, what's different about this is that it's a kind of constant live recording of light...

MS Duration is a very central thing to film or video or other time-based mediums but I think that the piece at Portikus did really complicate that. I mean, I became very obsessed with this piece in relation to the way people, students, generally make or deal or work with a time-based medium, which is usually video, and edited on this Final Cut pro, with this straight line across the bottom

that can be divided very simply in this way. I think that the Portikus piece really complicates that kind of understanding of time.

NM Well, yeah, also because it's not pre-recorded...

MS No, it's not captured... And the fact it's not captured...

NM But it is in a way. It's a contradiction, because it's captured in the sense that something reproduces its image. But it's not, even in what we've talked about in terms of history, in terms of the fact that once footage is captured it becomes history. This is not like that. It's this instantaneousness...

MS Yes, and you can't say that it is being updated at this certain rate, which is another way that film is described, 24 frames/second for example, or at a higher rate. You can't determine that in terms of this work...

NM The way it works with time is different because it's more about the way that the sun operates or circulates the earth, in a way that that calibrates its time. It's only visible once the sun comes up...

MS Well, that was another moot point about this system, in terms of duration. It was a long discussion that went on about it: what actually was the duration of the piece, of the show. Was the piece effectively working at night, as well? I mean, one interesting thing: it actually wasn't my call, it was in part, well it was kind of Portikus's call. It was a good idea and I think it was actually the designer who was involved in the decision as well, and that was that the exhibition was opened and closed according to the sunrise and sunset...

Stevenson's 'new medium' bears similarities to Anthony McCall's seminal work *Line Describing a Cone* of 1973, functioning in terms of both the contingencies of real-time and structural reflexivity concerning projected light. McCall's work directly addressed the function of film in respect to the operation of the projection apparatus. This work facilitated the audience's viewing position to stimulate a new understanding and experience of projected light. 'It deals with one irreducible, necessary conditions of film: projected light. It deals with this phenomenon directly... it is the first film

to exist in real-time, three-dimensional space.’¹⁰⁹ *Line Describing a Cone* positioned the viewer within the accustomed space between the 16mm projector and the screen. However, the viewer’s gaze was directed at the projector and the light beam that drew a hollow cone form of light in space, rather than the screen. McCall has written: ‘*Line Describing a Cone* is what I term a solid light film. It deals with the projected light beam itself, rather than treating the light beam as a mere carrier of coded information, which is decoded when it strikes a flat surface.’¹¹⁰

Figure 34. Detail of the lens feature of Michael Stevenson’s *A Life of Crudity, Vulgarly, and Blindness* apparatus at Portikus, Frankfurt am Main, Germany 2012

Figure 35. Detail of the lens feature of Michael Stevenson’s *A Life of Crudity, Vulgarly, and Blindness* apparatus at Portikus, Frankfurt am Main, Germany 2012

A Life of Crudity, Vulgarly, and Blindness operates by turning a solid object into a source of projected light that does ‘strike [the] flat surface’ of the projection screen. However, I would argue that through the apparatus that Stevenson has created the transformation that occurs from object into image is a result of a continuous process of dematerialisation, which

¹⁰⁹ Anthony McCall, ‘*Line Describing a Cone* and Related Films’, *October*, No. 103 (Winter 2003), 42.

¹¹⁰ McCall, ‘*Line Describing a Cone* and Related Films’, 42.

produces a recoding rather than a “decoding”. It takes the physical form of the plane and converts or recodes it into a source of light. I would further argue that akin to film, movement does occur, however this movement is distinct from the example of Starling’s successively flowing photograms that build for the viewer a sequence of intervals into an assembled event. Here movement occurs through a light source’s carriage of an image of the plane from the attic to the projection screen. Further to this, Stevenson’s medium, the physical aeroplane being captured as an image in real time and its resulting projected image, remain in constant connection; the apparatus of capture and re-translation function in continuous correlation. This unbroken connection between the process of inscription and the resulting artefact negates what is understood as the function of cinematic operations. As Baudry argues,

We must first establish the place of the instrumental base in the set of operations, which combine in the production of a film... Between “objective reality” and the camera, site of inscription, and between the inscription and the projection are situated certain operations, a *work* which has as its result a finished product. To the extent that it is cut off from the raw material (“objective reality”), this product does not allow us to see the transformation, which has taken place.¹¹¹

Stevenson’s medium and resulting work does, however, permit the viewer to be present during the manifestation of the transformation, a transformation that is taking place in lived time. The fact of its live and sustained continuum, operating in real time, also relates to McCall’s observation of his own work in which he states ‘[*Line Describing a Cone*] exists only in the present: the moment of projection. It refers to nothing beyond this real time. It contains no illusion. It is a primary experience, not secondary: i.e. the space is real, not referential the time is real not referential’.¹¹²

¹¹¹ Jean-Louis Baudry and Alan Williams, ‘Ideological Effects of the Basic Cinematographic Apparatus’, *Film Quarterly*, Vol. 28, No. 2 (1974–1975), 39.

¹¹² McCall, ‘*Line Describing a Cone* and Related Films’, 42.

It is important at this point to also touch on the histories and themes that Stevenson was exploring in *A Life of Crudity, Vulgarly, and Blindness*. Prior to this project, Stevenson had researched and produced a film that centred on José de Jesús Martínez (Chuchú), a personal bodyguard and consultant to Panama's dictator General Omar Torrijos Herrera (1968–1981). Chuchú was also a mathematician, Marxist philosopher, poet and aviation enthusiast, as Stevenson would learn as his research progressed. Stevenson threaded a story that involved Chuchu, General Omar Torrijos Herrera, the last Shah of Iran and his exile in Panama, and Patty Hearst, through the logic of probability. The resulting film, *Introducción a la Teoría de la Probabilidad* (Introduction to the Theory of Probability) (2008),¹¹³ consisted of an intricately narrated story and various props such as diagrams of probability and playing cards that were shuffled, arranged and played by a pair of anonymous hands, their owner's identity obscured by the edge of film frame.

A Life of Crudity, Vulgarly, and Blindness continues Stevenson's investigation into the protagonist of this film, Chuchú. In this subsequent trajectory of research, Stevenson discovered that Chuchú's interest in mathematics was tied to his theories of flight. Stevenson's exhibition at Portikus was accompanied by an English translation of Chuchú's theory of flight, which Stevenson had reprinted on the thinnest paper possible. The model plane Stevenson fabricated and installed into the attic of Portikus was a replica of Chuchú's aeroplane, which was given the name Aleph:

MS Through meeting these colleagues and former students of Chuchú's, lots of these stories about aviation started coming up. I knew that this was something that he'd been involved in but I'd never really looked into it, and I knew that there was this book, this theory of flight... Soon after that... I made this first site visit to Portikus, and I wanted to go through the whole building and they said, well, there's this attic, you can't use it ... I went up there and just fell in love with this

¹¹³ Michael Stevenson, *Introducción a la Teoría de la Probabilidad* (Introduction to the Theory of Probability), 2008, HD and 16mm transferred to DVD, 25:35 minutes, looped. Spanish language with English subtitles.

thing, walked in the space, this luminous space, and I just immediately wanted to put an aeroplane up there...

NM What's nice about this plane being trapped is that it's like it's trapped and it's freed at the same time... Because it's sort of trapped in everyday physics, it becomes emancipated through this other means... It's dematerialised, the way that it sort of becomes like the idea of like infinity... For you, what is the conduit between infinity and this light material—or should I say the immateriality of light?

MS Yes, of course. It reminds me of that whole thing we were discussing yesterday: Zeno's paradox of the arrow. Of course, that was in the thinking, but the connection, the formal connection with infinity, if you like, that's completely, you know, a paddock without any fences. More specifically, in terms of set theory, which was something that Chuchú had studied and wrote a book on, he wrote a book about the—I mean, it's quite a basic text, it's not ground breaking or anything—but it's about the infinitely enlarging series of infinite sets which was developed by Georg Cantor, the amazing German nineteenth-century mathematician... Chuchú's book is titled after this series of infinitely enlarging infinite sets that Cantor laid down as the groundwork for this field, and it's called the Aleph series.

In the case of *A Life of Crudity, Vulgarly, and Blindness* this historical narrative produces a conduit between the past and the present moment. It is imbued into the spectral presence of the plane's projection. This projection gives the viewer a continuous image in the present that is the presentation or suspension of a moment from the past. In this regard, it has affinities with the temporal logic of *Progress in Action* where the historical space of the projected footage and the continuous present of the stationary yet vibrating generator feed into one another.

A Life of Crudity, Vulgarly, and Blindness is a real time event of transformation, a kind of demonstration of tele-transportation—made possible through the phenomenon of light—of the plane's flight path from

the attic to the main gallery, before the very eyes of the viewer.¹¹⁴ This assemblage occupies time and duration both in terms of its own assembly but also in relation to a much larger mechanism, the conditional and contingent behaviour of the sun's rising and setting. This universal looping places the small-scale transformative event that occurs in the gallery space within a broader conception of time.

If Starling's filmic loop for *Wilhelm Noack oHG* can be counted by the first individual photogram of the filmstrip that runs over the projector head, then the durational loop of Stevenson's *A Life of Crudity, Vulgarly, and Blindness* could be said to have been calculated by the Sun's single rotation of earth. This cyclical occurrence brings the conversions of light and energy together in the assemblage. In doing so, an understanding of the lighting mechanisms of film and the processes at play in our solar system are foregrounded, to the extent that even the opening hour of *A Life of Crudity, Vulgarly, and Blindness* was contingent on the time of the year and fading daylight available. Stevenson notes:

[A]nother moot point about this system, in terms of duration, it was along the discussion that went on about it, is what actually was the duration of the piece, of the show. Was the piece effectively working at night, as well? I mean, one interesting thing, it actually wasn't my call, it was in part, well it was kind of Portikus's call, it was a good idea and I think it was actually the designer was involved in the decision as well...

¹¹⁴ Teletransportation is the theoretical transfer of matter or energy from one point to another without traversing the physical space between them. I am aware of the science fictional connotations of such a term and its propositions. However, given Stevenson's more recent projects such as *Strategic-Level Spiritual Warfare* (2014), which touched on themes that Stevenson calls 'the Pentecostal/Charismatic aesthetic', such concepts are not extraneous within the context of his practice. Stevenson states: 'If it is accepted that aesthetics exist in particular spatio-temporal settings then the Pentecostal/Charismatic variant presents a fascinating example: it occupies spaces beyond this planet and a temporality which is strikingly dis-continuous (it would seem then relevant to say here also that there is a connection with science fiction). It is therefore within the particularity of these spatio/temporal settings that I wish to present objects and, via these settings re-invent them anew for the viewer'. Michael Stevenson, email correspondence with the author, 14 August 2014.

Figure 36. View of Michael Stevenson, *A Life of Crudity, Vulgarly, and Blindness*, 2012, site-specific installation, custom built optical apparatus and 1/5 model airplane



Figure 37. Installation view of Nicholas Mangan, *Progress in Action*, 2013, Sutton Gallery Project Space, Melbourne, Australia

Progress in Action

I will now return to my own work *Progress in Action* and discuss how it behaves as triangulated assemblage by bringing together: 1) a filmic apparatus (the digital projector that transforms the data from a media player into projected light); 2) sculpture (the modified generator that converts biofuel matter into electricity); and, 3) the projected moving image that appears on the screen.

Progress in Action re-deployed the BRA's use of coconuts as an alternative source of fuel. This was undertaken through the construction of a provisional coconut oil refinery that was used to produce coconut bio-fuel that in turn powers a modified diesel generator. The electricity produced by the generator supplies power to a projector, which in turn screens a film about the events that took place on the island of Bougainville. This film features imagery of the very material that is at the core of the project: the Bougainville crisis.

In *Progress in Action*, the process of transformation of matter energy is twofold, real-time and profilmic. In its real-time manifestation, the work operates in the present as an installation comprising coconut oil–fuel energy used to power the generator. As a profilmic event, the work brings together montaged footage of the BRA in the process of producing and expending coconut oil.



Figure 38. Installation view Nicholas Mangan, *Progress in Action*, Sutton Projects, Melbourne, Australia 2013

A rapid oscillation between profilmic and live experience is amplified by the aural and olfactory elements of the installation. Rather than spoken narrative or recorded sound track, the projected imagery of *Progress in Action* is coupled with sound of the symbolically and physically aggressive reverberations of the converted diesel generator and the smell of burning coconut oil. The sound produced by the generator at once resembled the cyclical and unrelenting noise of a 35mm film projector, a helicopter and an automatic machine gun.¹¹⁵ The overloading effect of this live sound was further intensified by its obstructive, ear-piercing volume.

¹¹⁵ This sound corresponded to the onscreen footage—in the actual footage of flying helicopters and firing machine guns.

The rapid interchange of archival footage used in the film created a fast flowing current of visual information. The multi-sensorial aural, olfactory and visual stimulation produced an amplified sensory experience that was an exhausting experience for the viewer.

I would now like to address the relationship that occurs in the filmic imagery of Starling's *Wilhelm Noack oHG*, Stevenson's *A Life of Crudity, Vulgarly, and Blindness* and my own work in respect to their individual modes of elucidating energetic flows as underlying energy sources and as representations of energy in motion. In Starling's work, the filmic strip is conveyed through the spiral looping apparatus, enabling the filmic material to flow in a loop. In Stevenson's *A Life of Crudity, Vulgarly, and Blindness*, the flow of light is made possible by the apparatus's capture and redirection of daylight. Light is conveyed through the light shaft. 'Conveyance' has dual inference here, the first through the 'carrying' of light through the building via the light shaft. And secondly, it operates through the live demonstration of the transmission of this visual spectacle in real-time before the eyes of the viewer.

In my own project *Progress in Action*, it is the essence of coconut oil and copper that flows through both the projected subject matter and projection apparatus. Coconut oil physically flows through the generator enabling the manifestation of the projected images. Like Stevenson's conveyance of light, this physical oil flow is unseen by the work's viewer, yet it is perceived through the olfactory senses. What is seen and smelt is the residue of this flow. A transmutable entity is conveyed through the corresponding components, the generator, the projector and the projected imagery. A series of transformative events are assembled together; energy conversions, electricity, projected light, and as such the coconut oil acts as an intangible conduit between the physical installation and the subject matter of the projected moving imagery.

Akin to Stevenson's *A Life of Crudity, Vulgarly, and Blindness*, a continuous connection between the actual processes of transformations and subsequent translation of the 'coded' visual information is produced. The result is a conduit that is charged by the theme of energy, relaying between the real lived events and the profilmic events.

Notions of Progress Ensnared by Entropy

What also occurs in *Progress in Action* is the experience of progression as both a linear and 'spiral' or looped structure.¹¹⁶ The linear progression is enacted by the function of the generator in the installation. The generator functions according to the laws of energy in its conversion of coconut bio fuel and the necessary combustion time needed to convert liquid matter into a working force of energy.¹¹⁷ Here energy and time come together in a one-way trajectory as the generator itself is propelled forward to produce electricity. The generator produces energy, which in turn propels its internal alternator to rotate, but the generator, as an object is not propelled forward. This temporal organisation correlates with the general understanding of real lived time. The forward (linear) succession similarly has a correlation with cinematic time or the directional arrow of time.¹¹⁸

Doane observes:

It is striking that many discussions of thermodynamics resort to film or video in an attempt to explicate the second law [of thermodynamics] and to make the concept of entropy more accessible. Such a move indicates that film is in some sense popularly understood as *the* exemplar of temporal irreversibility, as the most effective means of clarifying the idea of the "arrow of time".¹¹⁹

¹¹⁶ Smithson, 'The Spiral Jetty', 151.

¹¹⁷ 'While work has been a technical concept within classical physics (dynamics) its contours begin to change as the focus is shifted to efficiency and loss in relation to the machine. Thermodynamics is about the inevitability of loss, of dissipation and hence the impossibility of the perfect machine'. Doane, *The Emergence of Cinematic Time*, 115.

¹¹⁸ Doane, *The Emergence of Cinematic Time*, 117.

¹¹⁹ Doane, *The Emergence of Cinematic Time*, 117.

Where the energy expelled from the generator offers an analogy of linear progression, the looped montage footage, which literally describes the conflict and conflicting temporal states, produces a condition where linear and looped time are forced against one another. The directional flow of both energy and the successive unfolding of images are brought into an incongruous state that evokes both stasis and movement. As such, the first state of progression becomes imbricated with the second. The notion of temporal irreversibility is further complicated by the use of a loop cycle (as a second notion of a progression exists in the actual looped video file, the montage assemblage of archival footage). This loop cycle functions similarly to Starling's work in that the assembled footage conveys the story of a montaged series of events, which, in the case of *Progress in Action*, involves actions that portray both the production and the expenditure of energy. This occurs both in the literal production of energy (described through the BRA's production of coconut biofuel) and also through the expended energy in events of material transformation that involve movement, friction and force. Moreover, the direction of these movements as a whole, as a montage, is negated through its entrapment within a video loop. Although there is a chronological understanding of cause and effect, these successions are reset or undone at the onset of each reoccurring loop cycle. The correlation and concurrence of the video loop (which finds its only release as projected light) to the linear direction of expended matter energy through the generator produces a conflict, or friction, that challenges the general understandings of how time itself, in relation to matter energy, should behave.

In reality life is a movement, materiality is the inverse of movement, and each of these two movements is simple, the matter which forms a world brings us an undivided flux, and undivided also the life that runs through it, cutting out in it living beings all along its track. Of these two currents the second runs counter to the first, but the first obtains, all the same, something from the second. ¹²⁰

¹²⁰ Bergson, *Creative Evolution*, 249.

An instance of linear time is further manifested through an incessant and deafening sound, a kind of inescapable field of noise that is paradoxically without sequences or variations and does not really progress. This conflict experienced at an aural level furthermore augments the underlying predominant theme of the work in regard to contradictions of progress where movement, energy and time operate in assembly.

Summary

The aim of this chapter was to observe events of transformation in artworks, where the transformation has been contingent on the tripartite assemblage of filmic apparatus (camera and projector), sculpture (physical material form), and the projected moving image content. I examined two main artworks, Simon Starling's *Wilhelm Noack oHG* and Michael Stevenson's *A Life of Crudity, Vulgarly, and Blindness*. My reading of these works allowed me to discern the significance of transformations occurring before the viewer as a self-reflexive physical 'conveyance', or as looped progression. I extended this consideration of the significance of 'progression' through my analysis of Stevenson's *A Life of Crudity, Vulgarly, and Blindness*. This analysis helped me to arrive at a definition, by way of a physical example, of the structuring of looped and directional progressions. This part of the chapter also attempted to further comprehend Stevenson's image-producing apparatus and to extend my own observations that Stevenson's 'new medium' inscribes a live image before the very eyes of the viewer to produce a situation where "the time is real not referential." This complicated its relation to the logic of cinematic time.

Such observations were significant to the formation my own project, *Progress in Action*, with regard to the corresponding events of transformation that were contingent on movement, energy and time in both the projected pro-filmic events and through the function of the converted diesel generator and video projector. This chapter focused on

building an understanding of how a triangulated assemblage produces a twofold situation of transformation; a condition that occupies both lived time and profilmic time and places the concept of 'progress' in a suspended state of perpetual becoming; a continuous state of production.

Chapter 4: Currents of Conversion and Cognition

In Chapter 3, my analysis of *Progress in Action* touched on two levels of material transformation: the transformation that occurs due to the assemblage of apparatuses in an artwork, and transformation that finds visual expression through filmic montage. This second condition of transformation, the actual subject that occurs in the triangulated assemblages, namely energy production, will be the main focus of this final chapter. The argument will arise out of a comparison between my own project, *Progress in Action*, and *Odinadtsatyi (The Eleventh Year)* (1928), produced in the early decades of the Soviet Revolution by The Council of Three, comprising director Dziga Vertov, editor Elizaveta Svilova and cameraman Mikhail Kaufman.¹²¹

Both works will be explored in relation to acts of harnessing energy, driven by a desire to produce social transformation. In relation to The Council of Three, I will explore how camera and editing techniques (in particular those of montage and superimposition) were employed to represent the aims of a revolutionary consciousness. Bougainville's small scale, but nonetheless successful indigenous resistance against international mining ventures, presented a series of events ripe with rupture and upheaval. Thus, my discussion centres on each film's respective socio-cultural context: Russia's Socialist Revolution of 1917, and the subject of my own film, the portrayal of what has been widely cited as the world's first successful eco-revolution.

It should be noted here that I have intentionally omitted an extensive description in the exegesis of the makeshift construction of the refinery that forms part of the first installation, since I have removed the refinery from the installation that will be exhibited as part of my candidature submission. While this refinery that I had constructed referenced the one

¹²¹ Dziga Vertov, *The Eleventh Year (odinnadtsatyy)*, 1928, silent, 52:48 minutes, camera Mikhail Kaufman, editing Elizaveta Svilova.

used by Bougainvillians to manufacture the coconut oil, the logic for its subsequent omission is a result of the work evolving through the studio production, initial exhibition, and consideration and reflection during the exegesis writing stage.

While the two films share revolutionary subject matter, they are fundamentally different in their structuring of temporal experience. Vertov's cinema was itself part of the process of social transformation and emancipation, and was inserted into (indeed was seen to be inseparable from) that same social space. My work, on the other hand, has been removed from its historical and geographical context, as well as from the social space of the events that took place in Bougainville, Papua New Guinea (PNG). Furthermore, while Vertov's film was intended for a direct cinematic experience, with viewers seated in a blackened theatre space, *Progress in Action* functions 'in the round' as a triangulated assemblage promoting an immersive experience, without having a prescribed viewing position, and without the time viewers spend with the work being dictated. It is important to state a further key difference in the works at the outset. Whereas *The Eleventh Year* sat squarely in the arena of propaganda and would, therefore, I suggest, have sought social transformation of one kind or another, I do not claim that the artwork *Progress in Action* is capable of, or principally concerned with producing social transformation.

The strategy of referencing Vertov was not purely a formal one, but indeed stemmed from the relationship between the revolutionary objectives of the two narratives, as outlined above, as well as the harnessing of energy that sits as a shared theme in the two works. John MacKay, in his essay 'Film Energy: Process and Metanarrative in Dziga Vertov's *The Eleventh Year*', makes explicit reference to film energy:

Within Vertov's mature work, the task of documentary moving photography becomes to a significant extent one of registering as vividly as possible the traces of energy; the job of montage, by extension, is to narrate the trajectory of energy, the conversions it undergoes, including the forms that the still latent energy

might adopt. And it is in *The Eleventh Year*—a film about energy, the harnessing of energy, and the forms energy takes, as registered across changing material surfaces—that an energeticist model or myth of cinematic signification finds fullest expression within Vertov's oeuvre.¹²²

My intention in *Progress in Action* is to also draw on the subject of physical transformation of a given material to produce energy and therefore effect social change. I capitalise on a historical situation that presented an interruption and redirection of a pre-established flow of matter's energy by one set of human intentions. In projecting this filmic montage within the wider triangulated assemblage of the installation, I aim to provide the viewer with a lived experience of transformation; a sensory conduit between the space of their own lived experience of transformation and the transformations that occur in montaged pro-filmic events.

The Eleventh Year

The Eleventh Year is perhaps one of the lesser-acknowledged films that the Council of Three produced under the *Kino-Eye Manifesto*. In 1928, Vertov's Council of Three, as outlined in my introduction, was employed by VUFKU (the all-Ukrainian Photo-film Directorate) to produce an anniversary film both in terms of their own objectives, in particular their opposition to what they saw as 'the electric narcotic of the movie theatres',¹²³ and in context of the memorandum to the broader socialist project of the government. This meant that their filmic experiments upon the transformation of matter into energy had its underpinnings in a socialist consciousness, which included

¹²² MacKay, 'Film Energy: Process and Metanarrative in Dziga Vertov's *The Eleventh Year*', p. 50.

¹²³ Dziga Vertov, 'Provisional Instructions to Kino-Eye Groups', in *Kino-Eye: The Writings of Dziga Vertov* (Berkeley: University of California Press, 1984), 67–68. Vertov states: '[the] camera experienced a misfortune. It was invented at a time when there was no single country in which capital was not in power. The bourgeoisie's hellish idea consisted of using the new toy to entertain the masses, or rather to divert the workers' attention from their basic aim: the struggle against the masses. Under the electric narcotic of the movie theaters, the more or less proletariat, the jobless, unclenched its iron fist and unwittingly submitted to the corrupting influence of the masters' cinema'.

disallowing the usual passivity of mainstream cinematic experience.¹²⁴ Vertov and the Council of Three transformed the potential for electricity to operate in concurrence with cinema (channelled through cinema) as a highly self-conscious act, in an attempt to mobilise or activate the social domain.

The Eleventh Year for all the complexity of its montage imparts a rather simple agitational message, as befits its fundamental purpose as propaganda for the Soviet state's drive toward industrialisation and electrification. Beginning with a nearly wordless account of humans and machines collectively overcoming nature's stony inertia to mobilise water and coal for human purposes in the form of electricity.¹²⁵

The primary subject of *The Eleventh Year* is the construction of a hydroelectric dam, which occurred at a momentous turn of events in the Russian Soviet revolution, as Stalin succeeded Lenin.¹²⁶ The film's visual expression, achieved through its approach to editing and montage, treated the filmic material as a doubling of the actual material transformations, which subsequently were going to affect the broader socialist environment. For example, as Jeremy Hicks writes, '[t]he dynamic flow of water is made emblematic of the Bolshevik's own unceasing application, and symbolic of the magical, transformative power of electricity itself'.¹²⁷ In another sequence, Lenin's famous quote—'Communism equals Soviet power plus electrification of the entire country'¹²⁸—is visualised in *The Eleventh Year* by the flowing water of the hydroelectric

¹²⁵ MacKay, 'Film Energy process and Metanarrative in Dziga Vertov's *The Eleventh Year*', 41–78.

¹²⁶ Notably this was also the time when the range of avant-garde movements that had been at the centre of change was rejected in favor of Socialist Realism. This period also saw the end of the GOELRO plan—a plan to electrify the Soviet empire via the construction of a network of regional hydroelectric power stations.

¹²⁷ Jeremy Hicks, in *Dziga Vertov: Defining Documentary Film* (London: I.B. Tauris, 2007), 59.

¹²⁸ Vladimir Lenin, 'Our Foreign and Domestic Position and Party Tasks, Speech Delivered To The Moscow Gubernia Conference Of The R.C.P.(B.)', in *Lenin's Collected Works*, 4th English Edition, trans. Julius Katzer, Vol. 31 (Moscow: Progress Publishers, 195), 408–426; <https://www.marxists.org/archive/lenin/works/1920/nov/21.htm#fw01>. Accessed 10 December 2014.

dam being superimposed by Lenin's image in bust-form. The film presents a correlation between photograms in montage and longer footage montaged, which includes full-frame close-ups of the highly charged flowing water of the hydro-electric dam that is being harnessed for its potential energy. It shows transitions between filmed footage and the various exchanges and transformation that electricity moves through on its journey from flowing water to the projected images on the cinema screen. These tightly framed scenes visualise the currents of electricity in continuous flow and with charged fluidity. As MacKay observes:

[T]he sequence of the falling water seems detached from that of the proceeding section of the hydro station's construction—and within no spatial frame apart from that of the screen itself. What we get instead is a representation of the raw material process of energetic passage from latent to active, across the surface of a single element¹²⁹

Energy Conversion—Assemblages in motion

Figure 39. Film still from Dziga Vertov, *The Eleventh Year*, 1928, 35mm film

For the *Council of Three's* use of editing, John MacKay coined the phrase 'energetic montage' because it is so focused 'on representing the traces of energy in exchange.'¹³⁰ These 'traces of energy in exchange' are clearly

¹²⁹ MacKay, 'Film Energy process and Metanarrative in Dziga Vertov's *The Eleventh Year*', 70.

¹³⁰ McKay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 65.

demonstrated in one early sequence of *The Eleventh Year* where the interconnectivity and unity of labouring figures, working in tandem with picks and mallets, are expressed through rhythmic edits of footage. The men are superimposed over a large mound of hard-stoned earth, which they appear to have broken down. This sequencing of imagery, part of a complex assemblage of matter and machines, is highly suggestive and implies the labourers' unified agency to transform their natural material surroundings. With swinging picks, the figures break down the mountain, with trains at the base of the mountain working at the service of (or in concert with) this gesture to remove the debris from the site. Through montage and superimposition, the complexity of this sequence permits a form of assemblage in motion that contains extensive ideological inference.

What this film achieves is the breaking down of one form or material to unleash the energy of another. Footage of the flowing of water, subject to its own physical laws, is preceded by footage of water moving in a human-directed flow. The camera zooms in on water flowing rapidly over a precipice and, though its abstraction, this water becomes suggestive of electrical currents. 'We observe the conversion of river water into an organized river charged with electricity.'¹³¹ The disruption to the behaviour and redirection of a given material, in this instance, the manual degradation of geological material, permits the redirection and flow of water as energy.

131 McKay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 66.

Figure 40. film Stills from Dziga Vertov, *The Eleventh Year*, 1928, 35 mm film

For Leninist socialism what better symbolic form than mobilising the population through the flow of electricity? Though it cannot be seen, its effects ripple like a pulsing current out into the social domain, befitting the ideological impetus of the socialist revolution. Consequently, Mark Seltzer observes, 'the electric switch, ready at hand, promised to reconnect the interrupted links between conception and execution, agency and expression.'¹³² It is also therefore significant in the case of *The Eleventh Year* that the footage captures the harnessing of hydroelectricity, as well as the transformation and relaying of that energy along electricity poles through the various interchanges into the city where it reaches the cinema and facilitates the powering of the cinema projector itself. These same projectors illuminated images of flowing energy in motion, the material transmission of the ideological statement of The Council of Three. The power of hydro-electricity and new cinematic forms was inevitably linked through their assembly. Both had the potential to transform society: electricity through its facility to assist in physical movement of machines and transportation; and cinema in its capacity to operate as a tool for visual communication. A doubling of the actual material transformations

¹³² Mark Seltzer, *Bodies and Machines* (New York: Routledge, 1992), 11.

and the filmic material is most evident here as the energy release is two-fold. It occurs in the events recorded by the camera and in the montage structuring of these events, which brings shape to the transformation of matter's energy, for example, in shots of water flowing, machines pumping, chimneys billowing, and coal being mined. Such activity is edited too with footage of electricity poles relaying energy to rural towns and industrial factories. The structured editing sequences and symbolic use of the electricity poles is a visual elucidation (a making conscious) of the film's ideological intentions, realised most effectively through this cinematic form.

Figure 41. Film Still from Dziga Vertov, *The Eleventh Year* 1928 35 mm film

Although speaking of *Man with a Movie Camera*, Jonathan Beller's statement applies also to *The Eleventh Year* when he writes:

By depicting a day in the life of the city framed by the experience of cinema—made conscious by the experience of cinema—it announces the new role of cinema in society. Cinema is the becoming self-consciousness of social relations—literally the relations of production.¹³³

It is significant in relation to my own project that there exists a twofold occurrence of both physical matter and human movement, enabled by electricity. In both works, the profilmic events that capture the harnessing

¹³³ Jonathan Beller, 'Dziga Vertov and the Film of Money', *Boundary*, Vol. 2 (Fall 1999), 154.

and production of energy are directly linked to the subsequent social actions and events. This interlinked series of events builds a larger example of the triangulated assemblage that I discussed in Chapter Three.

The themes of energy, electricity and social change are also interwoven with the events that are the focus of *Progress in Action*. This features actual footage of a lesser-known revolution in Bougainville (PNG). The uprising was sparked by indigenous landowner claims for compensation over land damages that resulted from the Bougainville Copper Ltd operations at the Panguna copper mine. An escalating civil war broke out in 1989 and secessionist rebels, the Bougainville Revolutionary Army (BRA), began a campaign to halt all activity at the mine and to struggle for independence from mainland PNG.

This crisis in many ways was ignited by the initial action of Francis Ona, who would become the secessionist rebel leader of the BRA. In an act of sabotage towards the Panguna mine, Ona dynamited the electricity pylons that serviced the mining operations. This damage to the power supply and subsequent barricading of entry to the mine by the BRA provoked retaliation from the mainland PNG government, in collaboration with the Bougainville Copper Ltd (a subsidiary of Rio Tinto mining company). The PNG army was brought in to enforce an aggressive blockade patrolling the waters that separated mainland PNG from Bougainville, effectively stopping the transport of the essential fuel supply to the inhabitants of Bougainville. Without fuel to power their generators and vehicles, the mobility of the inhabitants of Bougainville Island was thwarted.

The inhabitants responded to the fuel blockade by utilising a small-scale system that harnessed the ignition potential of glucose fat found in coconuts, which were in abundant supply. Like producing energy by harnessing water through hydroelectric technology, as was highlighted in *The Eleventh Year*, this transformation of material enabled the production of coconut-oil fuel-powered electricity and also ignited social mobility.

This fuel became an active agent for the BRA in their struggle against the mainland PNG government.

In their belief that cinema had an obligation to 'truth', the Council of Three assembled visual imagery taken from real-life events, as a way to explore in greater depth how recorded events can act as agents of transformation, at both the level of cognitive experience and at the physical and social level.¹³⁴ *Progress in Action* draws on similar principles of transformation by using archival footage, predominately news footage, in an attempt to provide concrete examples of human actions, specifically the interactions between humans and their environments.

Various profilmic events of transformation, conversion and redirection of matter are amassed into a larger assemblage of actions. However, *Progress in Action* also includes company educational propaganda films that also used 'real life events' to convey a specific ideology—in this case a capitalist model. Through the subsequent assembly of these scenes into a new sequence, the aim was to repurpose such ideological drives, thus questioning their intended agenda. The message that *Progress in Action* presents is not as vehement in its ideological position as *The Eleventh Year* was as an exemplification of Vertov's Kino-Eye manifesto. Rather, *Progress in Action* presents various expressions of progress in the assemblage of the scenes and the installation itself.

What does link *Progress in Action* and *the Eleventh Year* is the use of montage as a way to fuse isolated actions and events into an assemblage, which in turn allows for transformation in diverse and normally disconnected situations.

134 Vertov argues 'film truth' is 'Not the Kino-Eye for its own sake, but the truth through Kino-Eye... to show people without masks, without make up, to catch them with the camera's eye in the moment of non acting. Not trick effects, but the Truth'. 'Kinopravda' [1934] in *Kino-Eye: The Writings of Dziga Vertov*, trans. Kevin O'Brian, ed. Annette Michelson (Berkeley: University of California Press, 1984), 123.

In reference to Vertov's use of montage, Gilles Deleuze observes:

Whether they were machines, landscapes, buildings or men was of little consequence: each... was presented as a material system in perpetual interaction. They were catalysts, converters, transformers, which received and re-emitted movements, whose speed direction, order they changed, making matter evolve towards less 'probable' states, bringing about changes out of all proportion to their own dimensions.¹³⁵

Progress in Action attempted a similar assemblage. However, unlike *The Eleventh Year*, which harnessed a single point of view and a one-way flow of energy from mine to screen, this film proposed a multi-directional view. *The Eleventh Year* represents a single, ideological representation (a propaganda film), whereas opposing ideological currents have been explicated in *Progress in Action*. The representation of these opposing currents is advanced through the use of montage, its subject matter being not only the uni-directional rupture of copper mining, its social upheaval, and the flow of energy and materials that are released in this action, but also the tension produced between the various stakeholders in the Bougainville story.

Tensions between opposing ideologies meant that a complex series of gestures could be shown from both sides of the capitalist argument. In other words, the range of issues, political, environmental and social that occurred at the physical site of the Panguna copper mine, as well as the archival material pertaining to it, served as a rich site of enquiry to be reframed as a multifaceted assemblage. The primary concern in developing *Progress in Action* was to test how this archival video footage could be manipulated through a process of editing, thus being reframed and redirected to describe and provide evidence for the physical, material dynamics at play, as well as their conversion into intangible forces of energy.

¹³⁵ Gilles Deleuze, *Cinema 1: The Movement Image* (London and New York: Continuum, 1986), 41.

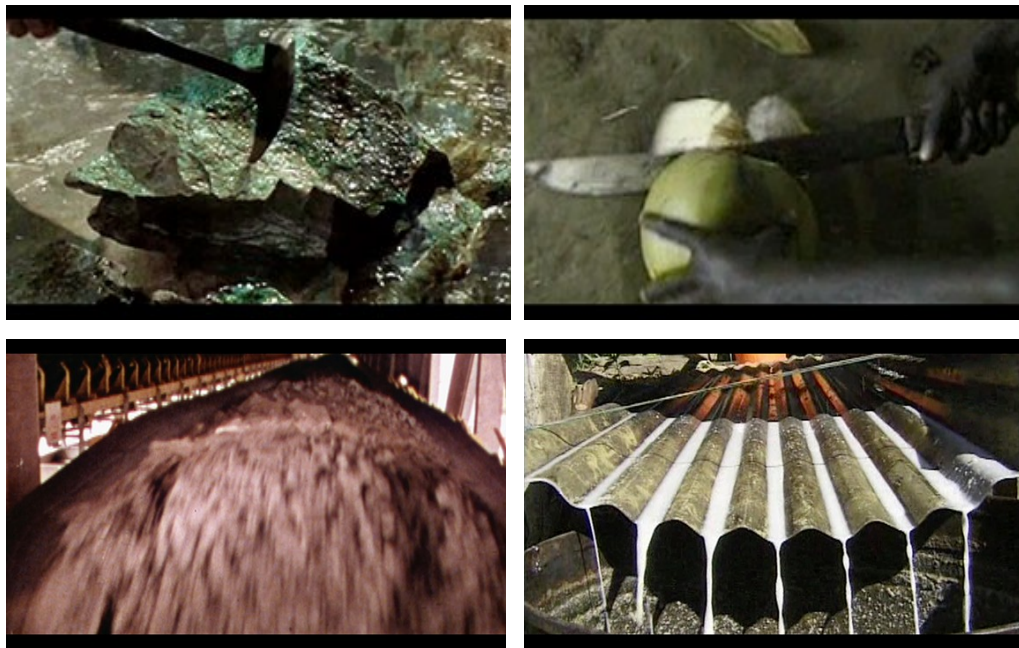


Figure 42. Stills from Nicholas Mangan *Progress in Action* 2013, HD digital file

As Mackay acknowledges, ‘the job of montage, by extension, is to narrate the trajectory of energy, the conversions it undergoes, including the forms that the still latent energy might adopt.’¹³⁶ I would suggest that this latent energy finds its multi-directional release in *Progress in Action*, not only in the film’s non-linear narrative, but also in the very act of editing one scene against another.

Before delving further into the relationships between Vertov’s films and my own, I would like to return briefly to Smithson’s *Hand Catching Lead*, and its relationship to *The Eleventh Year*. In each film, we are presented with moving image exposing the actions of human agency in its conveyance of matter’s energies. But in linking these films, the points of difference also become clear. *Hand Catching Lead* describes a hermetic situation in the studio or workshop that reflects upon the artist’s relationship to his materials. *The Eleventh Year* conversely, represents a situation in the world at large, where the flow of matter is redirected through a larger set of

¹³⁶ MacKay, ‘Film Energy: Process and Metanarrative in Dziga Vertov’s *The Eleventh Year*’, 50.

social conditions. This distinction is also of great importance to the argument of this thesis, as it makes clear how cinema or video permit a unique understanding of the processes and broader implications of material transformation where human intervention has been the catalyst.

In *Progress in Action*, these matter flows are reflected in the sequencing of short frames, an editing technique that is aimed to sustain the energy or vitality of the event itself. In other words, it hopes to keep the 'traces of energy in exchange' alive. Many symbolic gestures were enacted in the editing process with the aim to 're-purpose' the visual content so that it could be reassembled into a larger process of activity, as opposed to singular, fragmented events. This made clear the actuality of a complex assemblage. In a montage sequence, which explicitly referenced the rhythm of *The Eleventh Year*, there were a series of cuts: a close up of a mouth talking suggestively with intent; the aggressive de-husking of coconut on a sharpened spike; the discharge of bullet shells from a pump-action hand rifle; and a machete slicing through coconut. Compressed together, mouth, muscle and mechanics, this described an aggressive series of ruptures that work, as with an assembly line, to signify the potential for social transformation. This sequence overrides the preceding sequence that had expressed the transformation of ore into copper in a flowing liquid state, edited between footage of bulldozers and large earth excavators working the mine, where earth is moved, landowners are paid off, the wheels of western capitalist notions of progress turn as an illustration of ideological perpetuity.

Remembering that this was not a film to be screened on its own, but rather was conceived as an installation work, the subject of human actions in the archival footage was doubled by the activity of the generator powering the moving image apparatus. Both elements, the film and the apparatus, were thereby contingent upon each other in terms of the themes of energy and transformation. Whereas *Hand Catching Lead* and *The Eleventh Year* show footage of material transformation catalysed by human intervention,

Progress in Action actualises transformation in each process of the installation.

There is another consideration, of course, and that is the camera itself. The camera was as important to *The Council of Three* as was the technique of montage and editing. Vertov saw in the technology of the camera apparatus the possibility of extending perception beyond the limits of human biology and noted in an address to *The Council of Three* that where the eye reaches a certain limit, the camera, with technological development, will not.¹³⁷

The kino-eye lives and moves in time and space; it gathers and records impressions in a manner wholly different from that of the human eye... The mechanical eye, the camera, rejecting the human eye as crib sheet, gropes its way through the chaos of visual events, letting itself be drawn or repelled by movement, probing, as it goes, the path of its own movement. It experiments, distending time, dissecting movement, or in contrary fashion, absorbing time within itself, swallowing years, thus schematizing processes of long duration inaccessible to the normal eye.¹³⁸

Extending upon this standpoint, Deleuze writes:

This is not a human-eye—even an improved one. For, although the human eye can surmount some of its limitations with the help of contraptions and instruments, there is one that it cannot surmount, since it is its own condition of possibility. Its relative immobility as a receptive organ means that all images vary for a single one, in relation to a privileged image. And, if the camera is considered as apparatus for shooting film, it is subject to the same conditioning limitation. But the cinema is not simply the eye: it is montage. And if from the point of view of the human eye, montage is undoubtedly a construction, from the point of view of another eye, it ceases to be one; it is the pure vision of a non-human eye, of an eye that would be in things.¹³⁹

¹³⁷ Dziga Vertov, 'The Resolution of the Council of Three' [10 April 1923], in *Kino-Eye: The writings of Dziga Vertov*, 15.

¹³⁸ Dziga Vertov, 'The Resolution of the Council of Three', 19.

¹³⁹ Deleuze, *Cinema 1: The Movement Image*, 81 (my italics).

On one hand, Vertov's Kino-Eye is an active agent in producing 'a visual journey through the production and reproduction of social life [that] is above all a way of seeing through matter.'¹⁴⁰ And on the other, as Deleuze describes it, the objective of the Kino-eye is 'to carry perception *into* things, to put perception *into* matter.'¹⁴¹ Kino-eye activates the transformation of both matter and social life. Vertov discovered a way to enter into the process of material transformation, to record the events as well as structuring their resulting effects. In this respect, the camera is equivalent to the shovel that feeds coal into a furnace and the train that is propelled forward by the transformation of coal into steam.

Jonathon Beller observes, in reference to *A Man With A Movie Camera* that Vertov uses the cinematic machine 'to assemble the movement of matter in such a way that it becomes precisely the consciousness of material relations.'¹⁴² I would argue that the same could be said of *The Eleventh Year*, where Vertov first expressed the dynamism of the daily life cycle of the proletariat through the filmic medium and 'Kino Eye'. The Council of Three used the camera to engage directly with the world. Vertov proclaims:

I am kino-eye, I am a mechanical eye. I, a machine, show you the world as only I can see it... now I, a camera... manoeuvring in the chaos of movement, recording movement, starting with movements composed of the most complex combinations.¹⁴³

Since *Progress in Action* was constructed from found footage alone, the absence of a camera to record new footage is an important distinction between Vertov's works and my own. As none of the shots were captured by me, the Kino-Eye was tied to the existing profilmic events from which I harvested my footage, and to the 'world' of other camera operators. This

¹⁴⁰ Beller, 'Dziga Vertov and the Film of Money', 152.

¹⁴¹ Deleuze, *Cinema 1: The Movement Image*, 81.

¹⁴² Gilles Deleuze, *Cinema 2: The Time Image* (Minneapolis: University of Minnesota Press, 1989), 152.

¹⁴³ Vertov, 'The Resolution of The Council of Three', 17.

also means that a complex assemblage is achieved from an accumulation of various ideological positions. In other words, *Progress in Action* has captured the actions that took place at the site of mining and the subsequent civil war, as well as the events of recording these actions as profilmic events, and finally my own actions intervene to repurpose these recorded profilmic events into a new assemblage.

Currents of Conversion and Cognition

The flow of film and its spatiotemporal continuum might be viewed as analogous to the flow of an electrical current, akin to the pulses of the brain triggering the synapses and subsequent flow through the nervous system. This assertion could be linked to an observation made by Deleuze in respect to the transcendent effects for capturing movement developed by Antonin Artaud in the twentieth century:

Those who first made and thought about cinema began from a simple idea: cinema as industrial art achieves self movement, automatic movement... [and] it is only when movement becomes automatic that the artistic essence of the image is realized: producing a shock to thought, communicating vibration to the context, touching the nervous and cerebral system directly.¹⁴⁴

Under the direction of Vertov, the *Council of Three* produced a cinematic experience that was not a passive spectacle—an experience that numbs the senses—or, as said by Vertov in his condemnation of western cinema, ‘the electric narcotic of the movie theatres.’¹⁴⁵

¹⁴⁴Deleuze, *Cinema 2: The Time Image*, 156. In *Sorcery and the Cinema*, Artaud states: ‘There is a kind of physical intoxication which the rotation of the images communicates directly to the brain. The mind is thrilled irrespective of any representation. This virtual power in the images searches out in the depths of the mind possibilities as yet unused’. Artaud, Antonin. ‘Sorcery and the Cinema’ [1927]. In *The Avant Garde Film: A reader of theory and criticism*, ed. P. Adam Sitney. New York: Anthology of Film Archives, 1987: 49–50.

¹⁴⁵Vertov states: ‘upon observing the films that have arrived from America and the west and taking into account available information on work and artists at home and abroad, I arrive at the following conclusion. The death sentence passed by 1919 by the Kinoks on all films, with no exceptions holds for the present as well. The most scrupulous examination does not reveal a single film, a single artist experiment, properly dedicated to the emancipation of the camera, which is reduced to a pitiable slavery, of subordination to the

With the Council of Three, Vertov endeavoured to produce a vitally charged, conscious experience that requires full cognition on behalf of the viewer. Vertov proclaims: 'First of all *The Eleventh Year* is written in the purist film language, the language of the eye... *The Eleventh Year* presumes visual perception, "visual thinking".'¹⁴⁶ This visual thinking was stimulated through Vertov and *The Council of Three's* 'energetic montage', where the space between the interval is charged by both electricity and human perception. Here, movement, energy and thought react like the ignition charge of an electric current.

In *Progress in Action*, I deployed footage of a range of gestures and activities of industrial production to draw a comparison with cinema production. The hand signal of a geological land surveyor giving directions was spliced with the felling of a large tree, suggesting 'roll film': production is metaphorically underway. Similarly, a 'zoom in' on footage of a BRA member aggressively cutting a coconut was utilised as a symbolic and direct reference to the 'cut' in film editing, which then cut to the next scene of the Panguna open cut mine. These devices were an attempt to place the video medium and the transformative possibilities of editing (re-forming) in relation to the physical matter being transformed in the process of mining—another example of MacKay's 'latent energy' beginning to take form.¹⁴⁷

It is important to state here that mining expresses a particular attitude to matter. It is a particular *type* of transformation that is both exploitative and extractive. I do not argue that the transformative effects of film-making and mining are analogous, but that the processes in which, through human actions, filmic material and the earth's matter are engaged, shares equivalency, since both can be physically cut into and redirected. Similarly

imperfections and the short sightedness of the human eye.' Vertov, 'The Resolution of the Council of Three', 14.

¹⁴⁶ Dziga Vertov, 'On The Eleventh Year', in Vertov, *Kino-Eye: The Writings of Dziga Vertov*, 97.

¹⁴⁷ MacKay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

in the example of Vertov's, though its agenda is Socialist as opposed to Capitalist, it still posits the world as an interminable resource for human control. Humans re-direct matter for the production of energy and in this energy is directed towards human benefit.

Such an illustration of the redirection of matter occurs in *Progress in Action*. In Chapter Two, I touched on a scene in the film showing the reversal of footage of a hand down-gearing an excavator: copper subsequently flows in reverse and is replaced by the production of coconut oil. In this reversal the human movement of ore and the flowing of copper are negated by the rupturing of coconuts and subsequent flowing coconut oil. Footage of military helicopters, rebel-fashioned weapons, and burning houses replace scenes of mining activity: mining activity is annulled at least until the onset of the video's subsequent loop cycle. Noted a little earlier, it is here that the title *Progress in Action* creates a dilemma, as the implied 'progress' is negated. The title of the work operates as a rhetorical device. This echoes the logic presented in Starling's *Wilhelm Noack oHG*, where progression and a final resting point for both matter and movement are negated by the circular or looped succession. In the case of *Progress in Action*, the two modalities or ideological currents are held in tension in a continuous supplanting of one another. It is also at this point in *Progress in Action* that an attempt to express the potential of social transformation through the redirection of natural materials is accentuated through moving imagery. A deeper level of energy transformation is expressed through the flowing footage of coconut oil and its refinement into an effective vital material.

Superimposed Ideologies

In the dual energies of harnessing electricity and socialism's becoming, filmic montage exemplifies the progressive and accumulative possibilities of the first law of thermodynamics. However, the unbridled flow of energy expands beyond that of harnessed electricity into a holistic entity and

moves towards what MacKay's observes as a 'monistic view of industrialization and the socialist project.'¹⁴⁸

[t]he problem of this model is that there is nothing inherently progressive or even particularly meaningful about energy flow. It simply happens and indeed, as Rabinbach indicates, the second law of thermodynamics, which adumbrates what we know about entropy might imply a slow spiralling and inevitable decline of the universe into "heat death" rather than its optimisticopposite"¹⁴⁹.

Vertov creates a visual analogy of this closed system through the use of image superimposition. In between the early scenes of the breaking down of the hard earth scenes, we see the half excavated skeleton of a two-thousand year-old Scythian warrior. The Scythian's skeleton was unearthed during the construction of the hydroelectric dam. Through the deliberate montaging of footage, Vertov infers that the energy of the Scythian's skeleton in following entropic laws by re-entering the earth, is in turn harnessed through its exhumation—the Scythian's vitality is exploited for the good of the socialist goal. Through film, Vertov describes the energy that is stored in matter being unleashed and set free to contribute to a greater cycle. Through montage and superimposition, Vertov creates what Devin Fore observes as:

an experiment in historical dialectics, *The Eleventh Year* brings together two seemingly unconnected and infinitely distant moments in time; on one hand, the construction of the world's largest hydroelectric station on the Dniepr River in the Ukraine, and, on the other, the excavation of a pair of two-thousand year-old Scythian skeletons recently discovered at the site of the industrial enterprise.¹⁵⁰

Here time and energy come together through the superimposition of a vast spatial-temporal period. Through this compression, the film presents a complex composition brimming with ideological inference. MacKay

¹⁴⁸ Mackay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

¹⁴⁹ Mackay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

¹⁵⁰ Fore, 'The Metabolic State: Dziga Vertov's *The Eleventh Year*', 3–37.

suggests Vertov's filmic energy proposes that this sort of ideological reasoning was perhaps inspired by his early encounters with transcendental materialism at the Vladimir Mikhailovich Bekhterev Psychoneurological Institute in Petrograd between 1914 and 1916.¹⁵¹ In a ceremonial speech by Mikhailovich Bekhterev, titled 'The Immortality of the Human Subject as a Scientific Problem', Bekhterev had announced that,

Everything in the world is in motion, everything is flowing; the world is an eternal movement the unceasing conversion of one form of energy into another; thus declares science. There is nothing constant...the human being is an actor and participant in the overall universal process.¹⁵²

Through Vertov's use of the filmic medium in *The Eleventh Year*, the human is not just an actor, but is more akin to a director, harnessing and choreographing the flow of matter and energy to reshape the social conditions of which they are a part.

In *Progress in Action*, through the use of superimposition, the transformative potential of coconut oil is expressed mostly in the final scenes of the video footage of mining bulldozers, shown as stagnant, rusted and buried under over-grown foliage. Superimposed over these scenes is footage of rapidly moving coconuts moving through the frame of the screen, embedded with grain noise from the leader-footage of one of the archival 16mm films used in the construction of the film.¹⁵³

¹⁵¹ Mackay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

¹⁵² V.M. Berkhterev, 'Bessmertie chelovecheskaya lichnosti kak nauchnaia problema' [February 1916], cited in Mackay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

¹⁵³ Filmmaker unknown, *Bougainville geological expedition*, 1964, 16mm, 12 minutes, colour, sound; collection: the National Film and Sound Archive, Australia. Even though all the original footage arrived to me as digital transfers, one particular piece of footage retained the original corruption of the tape VHS tape slippage over the VHS tape head.

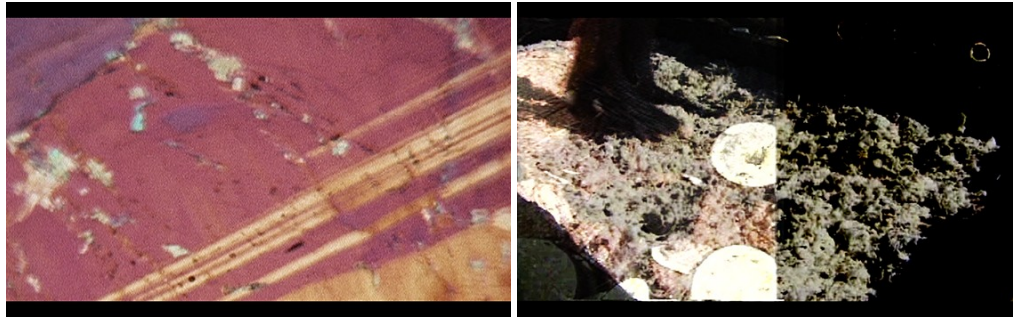


Figure 43. Film Stills from Dziga Vertov, *the Eleventh Year*, 1928 35 mm film, and digital Stills from Nicholas Mangan, *Progress in Action* 2013, HD digital file

This blank footage is of green colour, raising natural associations, which are enhanced by the natural grain of the film, while also resembling coconut husks and flowing coconut oil. These oppositions, the stagnant scenes and the flowing coconuts and flowing moving images, are channelled through the temporal forward flowing direction of time-based medium. When expressing the forces of energy, this may be linked to Mary Ann Doane's interpretation of a reading of energy proposed by Anson Rabenback who states:

both the idea of progress and the idea of degeneration and decline are intimately linked to each other and the second law of thermodynamics. As soon as the theory (of energy) is injected with temporal directionality, the ideas of both historical progress and historical decline become possible.¹⁵⁵

¹⁵⁵ Doane, *The Emergence of Cinematic Time* 115. Doane here is referring Rabinbach's book *The Human Motor: Energy, Fatigue and the Origins of Modernity* (Berkeley: University of California Press, 1990), 63.



Figure 44. Digital Still from Nicholas Mangan, *Progress in Action* 2013, HD digital File

In its use of predominantly factual information (archival footage) and the aforementioned re-purposed company propaganda footage, *Progress in Action* could be viewed as a vehicle for disseminating a successful resistance, an eco revolution case study. However, its intent is not to promulgate such a didactic approach. Without narration, it is the material, in both its tacit physical and visual forms, that delivers the address to the viewer. While copper flows in one direction, coconut oil flows in another—and both are turned into conductors of electricity.

In its conveyance of a story of industrial progress through copper mining, *Progress in Action* bears some likeness to Lucy Raven's *China Town*, discussed in Chapter Two. To recapitulate, Raven's film is a composition of seven-thousand still images into a forward moving filmic 'conveyor'. However, unlike *Raven's film*, which follows the production in copper in a single direction, *Progress in Action* focuses principally on events that occur at the actual site of extraction. Apart from one scene (eluding to the multi-national scale of Bougainville Copper Ltd by showing a sample of copper ore held in hand above a corporate boardroom table) the video operates at the site of the transformative events—mainly copper refinement, coconut oil production and the events of the Bougainville Civil War.

In the installation of *Progress in Action*, while the generator is fuelled by coconut oil, it is the reels of fine copper that are wound inside the generator's alternator that conduct the electricity to produce power. Such is the dilemma of physical progress, contingent on the expenditure of matter and energy that it ingests in order to progress endlessly. This tension is further played out materially in the installation of *Progress in Action* in the precariousness of the makeshift refinery and the converted generator's potential to seize up at any moment. Encountered through first-hand experience in the installation, this gives primacy to an event of tension, which simultaneously is paralleled in the tensions inserted into the footage and in its editing pace. Through such an assemblage, *Progress in Action* conveys the point that the struggle for resistance is never a clean break from its opposition and that such a transgression requires immense force and expenditure.

Beyond the direct setting in which the subject matter is transmitted—be it a gallery, warehouse or studio environment—*Progress in Action* speaks to a diverse audience and so permits a broad interpretation that invites analogies to be formed. Perhaps most directly, one could be reminded of other lived situations of rupture where disputed land use and natural resource redistribution for economic enrichment have impacted on social conditions, occasioning turmoil and division.

Summary

Building upon the notion of a triangulated assemblage, Chapter Four has centred on the actual subject matter that was presented in the filmic component of *Progress in Action*. My analysis began with a reading of *The Eleventh Year* in relation to my own video. In particular I made comparisons between the camera and editing techniques and revolutionary subject matter of the two films, while also drawing on John MacKay's term 'energetic montage' to demonstrate the traces of energy in exchange in a highly conscious cinema experience. Registering these traces

of energy was the main motivator and structural device of *Progress in Action*. And while I have argued that *The Eleventh Year* operates at the service of direct propaganda for the Soviet socialist project, the aim of *Progress in Action* was to assemble opposing ideological currents to produce a multi-faceted experience around the idea of ‘progress’.

This chapter has also explored processes of electrification played out through a direct engagement with the earth’s matter and the respective social transformations that followed this technological-economic situation. Specifically, I have discussed Vertov’s and my own work through a detailed analysis of the transformative potential—for better or worse—of energy production and social outcomes.

Postscript

As the world’s natural resources are becoming increasingly scarce and depleted beyond replenishment, tension intensifies over access to crucial resources. Possession and tenure of such reserves present power struggles and ever-increasing divisions between peoples. Ideological reasoning for use of environmentally detrimental substances for energy production and capital gains reveal short-term aims over long-term management. Such actions maintain the rift between the opposing sides of the debate on what constitutes progress.¹⁵⁶

¹⁵⁶ In 2014, the same year that the Australian prime minister Tony Abbott proclaimed that ‘Coal is good for humanity’ while opening a new coal mine in Queensland Australia The United Nations Intergovernmental Panel on Climate Change (IPCC) released a report stating that ‘Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems’. Jake Sturmer, ‘IPCC say greenhouse levels highest point in thousands of years’, ABC, 2014; <http://www.abc.net.au/news/2014-11-02/ipcc-say-greenhouse-levels-highest-point-in-thousands-of-years/5861314>. Accessed 10 December 2014.

Conclusion

In concluding, I shall re-cap the main themes and arguments that have been articulated throughout this exegesis. My intention has been to demonstrate how the research explored in my studio-based project, *Progress in Action*, was supported by theoretical analysis, reached through an analysis of the work of other artists.

Although the focus of each of the four chapters has addressed themes in isolation—such as camera operation, profilmic instances of material transformation, assemblage, and montage—the exegesis itself functions as a whole, or as I have argued, as an assemblage, with each element building towards an overall argument. I hope this is evident in the spillage of themes that occurs across the chapters. In the written component, each of the antecedents examined provided a key building block, upon which my argument was then built progressively to construct a larger understanding. As essential objective of the project is to open out meanings from the project's components, to retain and nourish the tensions between these components, and to avoid closing down or flattening the operations or meanings of these constituent parts.

At the core of the research has been an attempt to understand the function and behaviour of the moving image in correlation with processes of material transformation, beginning with my discovery of archival footage that told the story of the Panguna Mine blockade and the subsequent civil war. This specific historical account presented a unique situation, whereby a capitalist venture of industrial-scale mining was entangled with localised, alterative biofuel production. I utilised this lived history as a way to explore how specific materials—in this case land resources, being copper and coconuts—are bound up with physical, political and social transformations in complex ways.

My aim has been to give resonance to these transformations, and draw out tension between them, by identifying the moments when the forces of matter energy were both produced and expended in material, visual, cognitive and social situations. The research explicated in this exegesis has served to build a greater understanding of how to proceed with the studio-based research (an experimentation in merging moving image and sculptural material), and how to draw out the vital forms (material and conceptual) that were relevant to the Bougainville crisis. My enquiry began with the question, 'How can the convergence of film and sculpture produce a series of transformations that are contingent upon their union?' The question was slightly modified through the research process to recognise that neither 'convergence' nor 'union' fully encompass the complex range of effects realised in the project. Nonetheless, the general thrust of the question remained, with the term 'intersection' later utilised to better describe the effects of an assemblage. The research that underpinned the four chapters has been an attempt to comprehend how transformations occurred in the work due to the assemblage of its parts: the content, the sculptural elements, and the visual apparatuses that formed the work. The argument that ran through the exegesis, therefore, has aimed to flesh out the twofold situation of the assemblage and transformation (existing both in the installation and also pro-filmic content). Furthermore, I hoped to substantiate the proposition that the assemblage of both sculptural and filmic elements stimulate and vitalise each other, enabling a charged experience and deeper comprehension—indeed the embodiment or enactment—of the presented subject matter.

In the introduction to this exegesis, I critically appraised an earlier work of mine, *Nauru notes from a cretaceous world* (2010), which I perceived had never reached a satisfactory level of resonance. Neither the physical material, nor the associated video footage 'came together' adequately, limiting the viewer's capacity to comprehend and experience the broader historical and temporal dimensions of the subject. In order to resolve this, I needed to add narration, a solution that worked against my initial

intention for the visual and material elements to intersect without text or word. *Progress in Action* has been my attempt to overcome the limitations of this earlier work, through a greater focus on montage and its capacity 'to narrate the trajectory of energy.'¹⁵⁷ It has been, as Deleuze observed of Vertov, an attempt to 'put perception into matter'.

The central question underpinning this thesis—'how can the intersection of film and sculpture produce a series of transformations that are contingent upon their assemblage?'—was broken into sub-questions, which I then tested through a close analysis of key works, or what I have called 'antecedents', tied to specific chapters. In Chapter One, I looked at Michael Snow's *La Région Centrale*, and Robert Smithson's *Spiral Jetty* and asked, 'How can film or video, in their engagement with the material world, participate in the transformations of that material world?' In Chapter Two, I critically examined Richard Serra's *Hand Catching Lead*, Robert Bresson's *Pick Pocket*, and Lucy Raven's *Chinatown* to ask, 'how might the physical intervention of the human hand and its industrialised extensions, as captured on film or video, help articulate certain material social and economic transformations?' In Chapter Three I looked at Simon Starling's *Wilhelm Noack oHG* and Michael Stevenson's *A Life of Crudity, Vulgarly and Blindness* to ask how moving image, the image projector and the sculptural components work together to produce an assemblage, or a triangulation, that in turn intensifies the overall material and conceptual dimension of the work? At the end of Chapter Three and then substantially in Chapter four, my own work, *Progress in Action*, and Dziga Vertov's *The Eleventh Year* were used to look more closely at the actual subject matter that occurs between the elements of the triangulated assemblage.

In the first chapter, I studied the camera's capacity to participate in the transformation of materials as experienced through moving image, not just as a means of documenting the transformation but as a fundamental part

¹⁵⁷ McKay, 'Film Energy: Process and Meta-narrative in Dziga Vertov's *The Eleventh Year*', 41–78.

of the transformation itself. I concentrated principally on the function of the camera during the pro-filmic event of material transformation. My analysis served to build a deeper understanding of how the camera functions in relation to its recording of these events. What this meant for my own work was a greater consideration about how I selected camera shots and footage from the archival footage I had collected for my own studio-based work, *Progress in Action*.

My investigation into Snow's film *La Région Centrale* focussed on how the camera movements of this work were controlled to produce transformations of spatial perception. Specifically, I was interested in the way the world was transformed as a material form, via the intervention of the camera. In the case of the film Smithson produced as part of his *Spiral Jetty* project, I explored the way Smithson manoeuvred the camera in relation to the physical Earthwork to produce a complex series of transformations. This provided the viewer with an augmented understanding of the physicality of the material Earthwork. By observing the processes of transformation, recorded as profilmic events, I proposed that the camera's recorded and edited material operated to both conflate and expand the contours of what could be framed as a durational event.

In Chapter Two, moving away from a focus on the camera apparatus itself, I explored the recorded actions of the camera and their resulting transformations. My objective was to assert that certain artworks have consciously deployed a self-reflexive relationship to the medium of film and moving image, which is useful in understanding how the structuring of the camera apparatus and its recorded material interacts with its subject matter. This was explicated through the action of the human hand and/or related industrial processes, and the operation of the camera working together to capture the event. Bresson's film *Pickpocket* was important in showing how the camera's operation not only enables an understanding of transformation itself, but also the comprehension of a larger assemblage that enfolds both social and material transformation. A series of gestures

and actions were assembled into an expanded operation of conveyance. It is here that my use of the verb 'to convey' became important, for I argue that it is not just the human hand that is the agent in this transformation; the act of transformation is also conveyed through the filmic medium.

Whereas in Chapters One and Two I observed and analysed the camera and profilmic transformation, in Chapter Three I studied the visual and material transformations that also occur as an event in the real-time space of the installation. Here I argued that a twofold situation of transformation occurs in the assemblage of lived time and filmic time. I focused on examples in which there was a three-way assemblage of filmic apparatus (camera and projector), sculptural elements (physical material form or forms) and the projected moving image itself. For example, what I began to discern in my analysis of Starling's works was the way transformation is possible as a lived situation for the viewer as well as the profilmic events. Given the sculptural apparatus the work itself flows through, this lived experience functions as a continuum, a looped progression.

The focus of Chapter Four was my own project, *Progress in Action*, approached via an analysis of Vertov's *The Eleventh Year*. The significance of material transformation and the production of energy for ideological purposes was significant in how I have structured my own work, consciously avoiding overt ideological messages, but utilising Vertov's theory of the interval. I built upon John Mackay's phrase for Vertov, 'energetic montage', to argue that filmic montage operates to stimulate a highly conscious experience. In particular, I observed how Vertov's Kino Eye technique, comprising camera, montage and superimposition, was engaged in an attempt to realise and enact a socialist consciousness. I argued that the visual stimulus provided by Vertov's Kino-Eye cinema produces transformation at the level of the individual. Such assertions were useful to build on the propositions of Artaud who claimed cinema as

an industrial art: '[Produced] a shock to thought, communicating vibration to the context, touching the nervous and cerebral system directly.'¹⁵⁸

Outcomes

The research carried through this exegesis has been developed in relation to the project-based component of my research, *Progress in Action*, which was exhibited in 2013, first at Sutton Gallery, Melbourne, Australia, and later in *Weather Permitting*, Mecroscul International Biennial, Porto Alegre, Brazil. These two initial exhibitions informed how the work functioned on a conceptual and material level, and have therefore set the path for how the contiguous research has been structured in this exegesis. The exhibition and installation of the studio-based research has presented two distinct manifestations upon which I will now reflect.

In its first iteration, the installation at Sutton Gallery occupied two separate sites: the conventional gallery and an industrial warehouse (within walking distance) that the gallery has been operating as a project space in recent years. The elements that make up the refinery were installed in the Gallery, with provisional workshop lights hanging unplugged in the same space. In this formation, the elements served a sculptural rather than functional purpose; they were disconnected from the generator's power supply and the workshop lighting was non-operational. The main gallery lights were used instead to illuminate the work and gallery space.

Due to the extreme volume levels and the dangers of potentially dangerous toxic gases, the generator, projector, montaged video and screen were installed in the Sutton project space. In this first iteration of the project, the generator ran and powered the projector, media player and work shop

¹⁵⁸ Antonin Artaud, 'Sorcery and the Cinema' [1927], in *The Avant Garde Film: A reader of theory and criticism*, ed. P. Adam Sitney (New York: Anthology of Film Archives, 1987), 49–50.

lights for three hours a day, twice weekly for four weeks. These limited running times enabled me to produce enough coconut oil from the refinery prior to the exhibition opening and during the exhibition hours. In this instance, the refinery in the main gallery space could be interpreted as an artefact. I recognised that this installation of the project produced a disconnection between the elements of the work, and therefore obstructed comprehension of the successive processes of the transformations that are crucial to the work. The staged presentation of the refinery was reduced to an illustrative artifice and something I felt was in need of reconsideration.

In the second iteration of the project in Porto Alegre, Brazil, I endeavoured to resolve this sense of disconnection by installing the entire project in one space. This meant that the refinery components, generator, projector, montaged video and screen existed in direct visual and functional correspondence. Distinct from the first iteration at Sutton Gallery, the provisional workshop lights functioned, with power provided from the converted generator. In turn the lights illuminated the components of the refinery in an otherwise dark space. The functioning generator also produced sound and vibration that together saturated the space. Experienced alongside the projected image and provisional lighting, these elements brought together the precariousness of the installation and the original themes of the work, as I observed them in the initial Bougainville research.

While this assemblage of the work produced a reading that suited my intent, there were technical setbacks. The quantity of coconut oil that I was able to produce from the refinery to run the generator for twelve hours, seven days a week for the three-month duration of the exhibition was compromised by the short time I had to undertake the task. This meant that the generator required industrially produced coconut oil to run continuously. I felt that this substitution of outsourced coconut oil was a failure in regards to the initial conceptual rationale in the work. Once again the elements of the refinery became artefacts. Along with the residual coconut meat, shells and oil, the parts served as relics of past

actions rather than evidencing processes of '*progress in action*'. In correspondence with the montaged footage, this undermined the work's intention to convey progress as an unceasing set of actions.

For the presentation of *Progress In Action* for the doctoral exhibition accompanying this exegesis, I have omitted the refinery component of the assemblage altogether. This decision has arisen through my analysis of the two initial installations mentioned here, but also through the consideration of the various features of the work and arguments explored throughout this exegesis. Such considerations have provided a stronger understanding and reflection on how this assemblage functions in terms of 'conveying' the transformations that are vital to its function. I am not suggesting that this third iteration of the work is of a higher resolution than the previous two incarnations. Rather, my objective is to test the thesis of the ideas of 'conveyance' and the 'triangulated assemblage' without the encumbrance of the refinery, which I have come to perceive as a set of sculptural artefacts, lacking in transformative effect due to their function-less operation in the gallery.

This third form of the project, presented for my doctoral exhibition, responds both to the earlier two iterations and to the knowledge I have developed through this exegesis. The slightly reduced form of this third iteration attempts to intensify the way the components animate one another, and in this way generate a set of transformations within the experience of the work. This attempt draws back upon my own work, and specifically the sense of dissatisfaction I felt about *Nauru—Notes from a cretaceous world*, which I described at the outset of this exegesis. It also draws outwards towards the world, to the implicit wider context of this work. In attempting to articulate how we regard matter, its transformations and their time, I hope the project describes something about art, but also a way of regarding the world of transformations beyond art.

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