I Spy with my Military Eye: strategies of military vision and their use in fine art practice

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ABSTRACT

This research deals with specific aspects of the relationship between artistic and military practices through military vision and visioning technologies, and explores these both within and through a fine art practice. In particular, it examines their impact on subjectivity and objectivity, and how these can be analyzed and synthesized through fine art practice. The research indicates that art practice may be the most useful method of critiquing militarism, as a result of its acknowledgment and embrace of shifting positions.

The thesis comprises two sections running concurrently on recto and verso pages, in a layout that echoes the constant dialogue of theory and practice. The thesis is conceived as a 'serious game' in itself, and the methodology of game playing, shifting identities, provocations and interruptions (all of which constitute the foundation of field-craft, particularly the skills of camouflage) is visible throughout. The authorial voice slips from the academic to the conversational as the subjectivity of the researcher becomes evident in the text.

The verso section consists of three main chapters, all of which examine subjectivity and objectivity through their respective frameworks and through the prism of practice. It surveys weaponry, devices and strategies created for the purpose of looking. It traces the military intention at the heart of apparently unrelated technologies, and defines four interpretive regimes emerging from these correspondences.

Responding to theoretical work by Lacan, Jay, Crary, Kittler and Galison, the second chapter discusses vision research in physiological, psychological and metaphysical terms, in order to reflect on the characteristics, origins and consequences of 'military' vision.

The final chapter in this section develops my concept of field-craft as the space in which military and studio techniques and doctrines are paralleled and practiced.

The second section of the thesis consists of two larger chapters, both of which seek to apply the theoretical constructs of military vision and field-craft to artworks and contemporary processes of art making. The first chapter tests the frameworks specifically against the oeuvres of Suzanne Treister, Jordan Crandall, Jill Magid, Joanna Griffin, and Trevor Paglen, who work with military themes and materials. The penultimate chapter examines a range of my own artworks – digital works generated through the use of military visioning technologies; ephemeral works created through the practice of field-craft; and an installation constituting multiple possible scenarios – in relation to this theoretical edifice.

The concluding chapter summarizes this fresh understanding of the relationship between art and military practices, reflects on my solo exhibition *Requisite* and details future research in military intelligence and aeronautics.

ACKNOWLEDGMENTS

DEDICATION

This document is dedicated to **ELECTRA**, who I wanted to show that there's nothing that can't be done.

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INTRODUCTION

"If you can see it, you can expect to be able to kill it."[1]

Military vision, like the forensic, clinical gaze that is its metaphysical twin, seeks to lay us open, to bare all our secrets – emotional, physical, unconscious and spatial – to the machine that is state power. Military vision seeks to expose us to weaponry that is conflated with the look itself. It seeks to render us permanently visible, controllable, recordable, self-policing, trackable, to reduce us to data, and to deprive us of our subjective identities. Ultimately, it seeks to erase us entirely, relegating us to footnotes in its own history, leaving only the endless circling of machine desire.

"Resistance is useless," trumpet the end-of-time theorists, "nothing can escape, nothing can be understood! We are trapped in the panoptic machine. There is no exit, no re-calibration." What can we understand about our relationship with militarization? What might be the most reflexive approach to this understanding? Can we evade the traps of theory by subverting the tools of militarism itself to demarcate more meaningful reflections on the militarized aspects of society?

This body of research, which is primarily practice-based, demonstrates how contemporary artists can respond to the suggestion that the framework of human existence *is* the war machine, through engaging with notions of military vision and visioning technologies. It explores these ideas in relation to how their impact on subjectivity and objectivity can be analyzed and synthesized through fine art practice, and ultimately, it offers fresh understanding of the role art can play in identifying, exposing and critiquing militarization.

This is a practice-based research project. I use my practice as an artist to address and answer my questions, and this written exegesis is constructed in the same manner as that practice. This document does not seek to weave together a coherent literary backdrop for

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[1] quote attributed to W.J. Perry, Deputy-Secretary of State for Defense, US government 1993-4 in Virilio (1989:4)

the practice, nor does it seek to establish a traditional conclusion, but rather to present a trail of clues surrounding a rupture, to present the researcher as a 'point de capiton' (Evans, 1996:151). This is an experiment in exploring those spaces between practices into which *something else* emerges, in response to Benjamin's demand that the writing of history be fragmentary and dialectical (Buck-Morss, 1995). The reader is necessarily placed in the position of Bourriaud's semionaut (Bourriaud, 1998: 113), in which s/he invents trajectories between constellations of these fragments, with each trajectory creating its own fragment.

This document will soon split into two strands, in an echo of the processes and methods of my research practice. The verso section comprises three main chapters. The first chapter, *Device and Regime*, surveys the historical developments of tools, devices and strategies created for the purposes of looking, in tandem with a survey of the development of weaponry. It addresses the idea of propulsion as the basis of every weapon, drawing upon the concept of dromology (Virilio, 1977: 69) as the impetus and essence of 'seeing'. The chapter lays the foundation for tracing the military intent implicit in the invention of apparently unrelated tools, identifying four interpretive regimes – perspective, the aerial turn, camouflage and tracking – which are the key features in distinguishing the military gaze. The interpretive regimes are explored in parallel with artworks *My Plan To Rob The Getty* (2009-11)*, Illuminating Hadrian's Wall* (2010)*, The Old Razzle Dazzle* (2011-12)*,* and *The Anatomy of A Shot* (2009)*.*

Chapter two, *I/Eye*, discusses vision in physiological, psychological and metaphysical terms to reflect on the characteristics, origins and consequences of military vision. Musing on a matrix developed from Martin Jay's work on the theories and practices of visual culture studies (Jay, 1994) and Jonathan Crary's work on exploring the technologies of vision (Crary, 1992 & 2001) as a 'road map', I indicate a route to the more technological concerns of the 'post-hermeneutic' (Kittler, 1985: ix) theories of Friedrich Kittler. Kittler audaciously maps his three information channels of typewriter, film and gramophone directly onto Lacan's tripartite taxonomy of psychic registers (Kittler, 1986: 15). He examines and conflates the circuitry of human and machine, thereby raising key questions around the constitution of the subject. Kittler thus effectively divests humanity of its subjectivity, naming it as a mere function of media by identifying the autonomy of technology. This position, I suggest, can be equated with Virilio's ideas about the formation of

the war machine (Virilio, 1989). Building on this theoretical edifice, and in order to link the Lacanian concept of the gaze as the site of emergence of the subject (Lacan, 1973: 69) with Virilio's ideas relevant to the ontology of the enemy (Galison, 1994), I develop an argument for the constitution of the gaze as the primal site of militarism. This suggests that the emergence of human subjectivity *is* the war machine.

The third and final (eponymous) chapter in this section develops my concept *Field-craft* as the space in which military and fine art studio techniques are paralleled. Field-craft is the apparatus through which I have conducted my research, harnessing its responsiveness to navigate a range of assemblages. The chapter therefore discusses the practices of field-craft as both military and artistic methodology, and as a tool for traversing "the laboratory of the unknown" (Shell, 2012: 97). I argue that practice-based research is the most relevant way to answer questions about military vision and that working with the components of field-craft is the best way to engage in that practice.

The last two chapters of this report appear contiguously in the recto section, allowing for a fragmentation, an uneven flowing of information and ideas across the sections, and a reconstruction of the simultaneous reception and investigation of texts and materials characteristic of practice-based research. Both chapters seek to apply the theoretical constructs of military vision and the field-craft methodology to artworks and the contemporary processes of art making in order to further elucidate how art practice can reveal and critique latent militarism.

Chapter Four, The Unseen Museum, tests the frameworks specifically against the oeuvres of artists working post-2001; Suzanne Treister, Joanna Griffin, Jordan Crandall, Jill Magid and Trevor Paglen, who all work with military themes, materials and sites. The chapter contextualizes their works in terms of an imaginary exhibition. This project does not look at 'war artists', who I define as artists subsequently recruited as military personnel, or artists who are recruited by official schemes as non-combatant witnesses. The section rather examines the work of artists who engage with military practices that correspond approximately to Manuel de Landa's

four-tier structure of the war machine: hardware, tactics, strategy and logistics (de Landa, 1991: 23), and their work is discussed in those terms. I argue that these terms are echoed by the interpretive regimes of Chapter One: perspective, the aerial turn, camouflage and tracking, which are in themselves key features of field-craft. Chapter Four also presents a useful contextualization for my work, and parallels are drawn between the practices of all five artists.

The second chapter in this section, Chapter Five – *No Plan Survives First Contact With The Enemy²*, reports upon the original artworks created during my practice-based research. It explores five works in detail: *Dead Reckoning* (2009), a geo-caching game created with professional snipers; *Aeronaut* (2011), an illustrated performance lecture that asserts an unreliable history of aeronautics from Icarus to Aurora; *The Model* (2010-11), a sculptural assemblage constructed as a sandbox war-game and non-virtual (tangible) simulator; *Hawk & Dove* (2011-12), a 17-minute digital video work created with analogue and digital, past and present military technologies, and *Site Reports* (2008-12) a series of reports on sites of military interest and importance. This chapter presents the process of practice-based research in such a way as to allow a reader to experience thinking through an artwork, to place his/herself in the position of the artist. Within this chapter there are all the false starts, dead ends and red herrings of the detective novel, as the artist becomes the intelligence officer examining the material, collecting and deploying, interpreting and selecting, jettisoning and generating in turn. The chapter does not discuss the images, much less the contents of the images. It is a discussion of the apparatus of which the images are components. Given the nature of this project, it cannot be denied that I am an object in play, that this researcher is also a component within the apparatus, and hence the research is as much personal, reflective, and subjective as it is critical and analytic.

The document strands coalesce into the final chapter, *Observations.* Over the course of this project, I have devised a series of methodologies that manifest themselves as the field-craft apparatus. This practice has enabled me to understand the nature of military vision, and the way it impacts on subjectivity and objectivity, as well as proffering strategies for resistance. The chapter

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² quotation from text of *Dead Reckoning* (2009)

reports those findings, reflects on their deployment in my solo exhibition *Requisite*, and suggests further areas for research in military intelligence practices.

CHAPTER 1. DEVICE AND REGIME

This first chapter, *Device and Regime*, surveys the historical developments of tools, devices and strategies created for the purposes of looking, in tandem with a survey of the development of weaponry. The chapter traces possible relationships between ostensibly unrelated tools in order to identify four interpretive regimes emerging from these correspondences. Perspective, the aerial turn, camouflage and tracking are suggestive of the military gaze and are discussed through the lens of a practice-led approach.

1. A history of optical devices: My Plan To Rob The Getty (2011)

1.1a. A practice-led approach

Most histories of optical devices start in Classical Greece with stories of Aristophanes describing the reflection of the sun's rays or a conversation between Strepiades and Socrates in *The Clouds* (420 B.C.E) where they discuss melting wax with light directed through a crystal lens. This one, however, starts in Los Angeles in 2011, and presents a practice-led approach to investigating these mercurial devices.

An optical device creates, manipulates or measures electromagnetic radiation, and describes broad categories that include prisms, telescopes, lenses, cameras obscura, microscopes, surveying instruments, mirrors, collimators,

thermo-optical instruments and gyroscopes. A fairly cursory internet (a modern *wunderkammer*, according to Barbara M Stafford) search generates a list of two or three hundred separate such objects. Marina Warner sums up the range of scholarship in the field:

> ...from the profound investment in the objective truth of vision to an equally strong engagement with radical subjectivity. As we move nearer our era... artefacts and devices reveal two strong tendencies: first, the media of visual trickery, deception and illusion move away from the ever more intense techniques of scientific scrutiny towards entertainment, as instruments of knowledge become part of show business....Secondly...that deeply troubling spectre of visual ambiguity (Mannoni, Nekes, Warner, 2004:16-17)

Warner is ideally qualified to offer a précis. As curator of the Hayward Gallery's 1996 exhibition *The Inner Eye: Art Beyond The Visible,* she acted as curatorial advisor on the gallery's subsequent 2004 exhibition *Eyes, Lies and Illusions* which explored the art and artifice of optical invention from the Renaissance to the twenty-first century through the collection of experimental film-maker Werner Nekes. This exhibition was the first to feature the Nekes collection in the UK, though some of the exhibits had already formed part of a show at the Getty Museum in Los

fig 1.1 Isabella Streffen, *My Plan To Rob The Getty* (2011), electronic document, in this image a 19th century German Claude Glass from the Werner Nekes collection (1700-1996) series III is used to illicitly photograph CCTV cameras in the Special Collections Room.
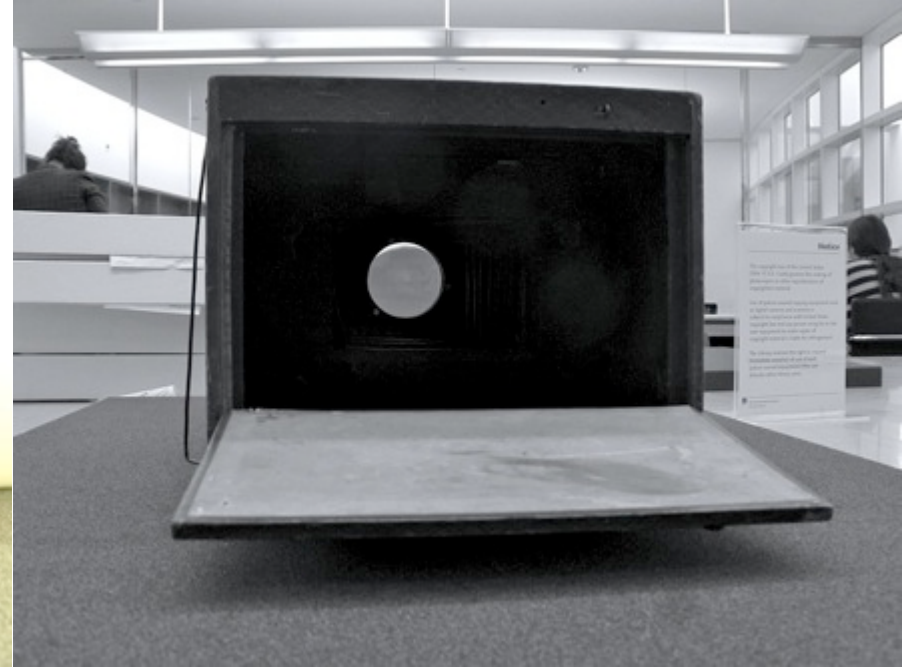
figs 1.2 & 1.3 Isabella Streffen, *My Plan To Rob The Getty* (2011) electronic document, in these images are a British moving panorama, and a French Polyrama Panoptique from the Werner Nekes collection (1700-1996) series III are used to try to photograph the sensors inside the Special Collections Room

Angeles in 1999[1]. That exhibition resulted in an accompanying eponymous publication *Devices of Wonder: From The World In A Box To Images On A Screen* (Stafford & Terpak, 2001). Terpak's contribution to this extraordinary text is thirty essays on different elements of viewing devices. Throughout this research I used this book as a key resource –

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[1] the two shows form part of a flurry of exhibitions around the turn of the Millennium relating to optical objects – I suggest that this was inspired by curators examining the centennial of the invention of film.
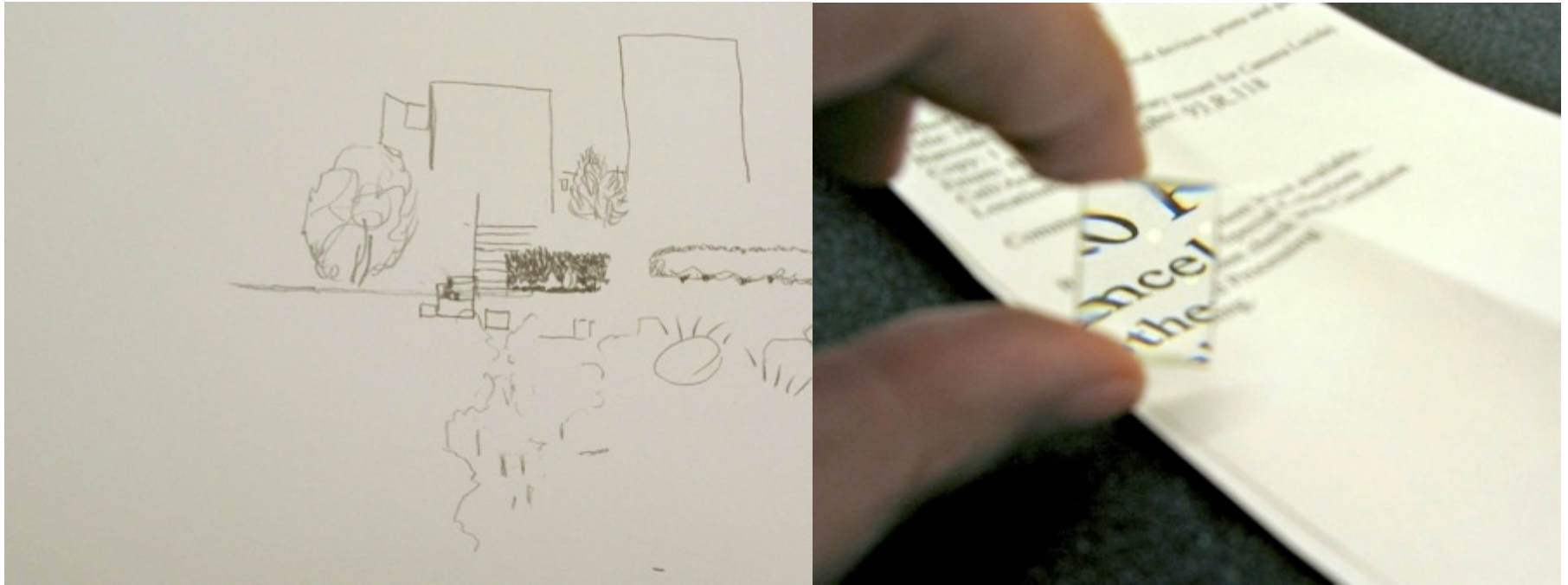
figs 1.4 & 1.5 Isabella Streffen, *My Plan To Rob The Getty* (2011) electronic document, a Berville camera lucida from the Werner Nekes collection (1700-1996) series III is demonstrated as I construct as possible escape plan

not only learning from its technical scholarship, but subjecting it to a number of post-structuralist experiments, such as collecting all of the words Stafford uses to describe light (and using those as beginnings for a series of writing experiments[2]). One particular essay was especially influential: Terpak's '*Experiments In The Home'*, illustrated by paintings from Joseph Wright of Derby and Chardin that reflect on contemporaneous ideas of teaching natural philosophy in a family setting. Whilst the Wright painting refers to lecture demonstrations by Scottish astronomer James Ferguson on matters of air pressure, the Chardin clearly responds to Newton's Opticks (1704) and his

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[2] Between 2009-2010 I undertook a number of experiments in attempting to articulate perceptual experiences in language. *Texts on Perception* (2010) were prints on paper made using laser-cut texts from these experiments.

observations on soap bubbles. But another matter emerges from this: discovery through practice, and it was in that spirit that I devised a project to test out some of the historical objects featured in the book. *My Plan To Rob The Getty* (2011), which exists as a proposal in an electronic file format, is both the result of that research, and the method of the research. The Getty Museum and Institute is in itself a viewing device: it contains a vast collection of objects and images which, like museums, galleries and research establishments the world over, it presents for viewing. It seemed apt, then, to turn its own viewing devices upon it, rather than to reiterate existing scholarship. I presented myself as a scholarly researcher (this tactic is discussed in more depth in chapter 5) for a meeting with a conservator of objects, who instructed me in the specific handling of the more complex devices, such as the camera lucida. It was necessary to conform to the rules of object handling that exist in the Getty's Special Collections room. The rules about photography are strict: objects may only be photographed from a specific viewpoint; only certain types of camera settings may be used; the room and its occupants are not to be photographed; each photograph must contain a label (issued by the duty staff member) with specific details of the object written on in pencil; all photographs must be checked before leaving. The appearance of a recording device is mirrored by the appearance of an equivalent regime of suppression, as though images are conceptualized as little sentient beings that sally forth into the world with the explicit intention of undermining the authentic object in the most unruly manner.

figs 1.6 & 1.7 Isabella Streffen, *My Plan To Rob The Getty* (2011) electronic document, the unraveling of New York City World Fair perspective box from the Werner Nekes collection (1700-1996) series III as a distraction device

Researching optical devices, panopticism and surveillance had already inspired me to engage with number of documentaries, films, novels and factual accounts of famous art robberies – including of the Isabella Stewart Gardner Museum – and although I had no experience of planning or executing crimes, I was confident that I could identify some of the security devices that I was looking out for (or that were looking out for me). I spent three days in the Special Collections section, looking for their security settings with their collection of optical devices, testing the edges of the rules. This method enabled me to consider the performative nature of research itself, shedding new light on what it might mean to go into an archive to look, and the project encapsulates my attempt to tease out the points at which

devices for viewing at the subjective edge of Warner's discourse meet those ostensibly showing objective truth (the CCTV, sensor-operated lasers of security systems) at the other end.

The eye and vision have been the subjects of conflicting interpretations from physicians and philosophers since antiquity. In the following section, I will outline the major developments in tools and devices created for the purposes of looking. The section does not propose to be exhaustive or to provide in-depth historical or scientific analysis, but to act as a summary guide and to suggest a time-line. Devices for looking can broadly be divided into nine main categories: the lens; the camera obscura; the microscope; the telescope; the stereoscope; photographic equipment; electro-magnetic; multi-spectral imaging; and remote sensing. At one time or another, I experimented with all of the devices in the production of artworks, with the exception of remote sensing.

1.1b. Lens

The earliest lens in existence is the Assyrian Nimrud lens (approximately three thousand years old), which was probably used either as a burning glass, or as a magnifier. 8th century B.C.E. Egyptian hieroglyphs depict the use of simple lenses for magnification and Sines and Sakellarakis (1987) argue that such lenses were used throughout antiquity. Aristophanes wrote about crystal burning glasses (an idea I investigated during my masters degree, culminating in my 2008 triptych *Shooting The Light Fantastic*), a hypothesis that is reiterated by Pliny (the Elder) in Roman times. Pliny also made the first written mention of a corrective lens in *Natural History* (book 37). His reference to the Emperor Nero using a concave emerald in an early 'monocle' to enable him to watch the gladiatorial games is deceptively vague: without a precise line reference, I certainly would have misunderstood/mislaid it. Pliny also noted

the magnification of objects when seen through water-filled transparent vessels (as did Seneca), a visual trick that is familiar to all, and which I still use in the studio today. Lenses came into wider use in Europe between the 11th and 13th centuries. Archaeological excavations in Sweden uncovered the Visby rock crystal lenses made in the 11th-12th century that have optical properties equivalent to modern lenses made in the 1950s.

1.1c. Camera obscura

The lens was not the only visioning device in use in antiquity: scholars have been acquainted with the camera obscura since the time of Aristotle, and the earliest surviving reference to the principles of the pinhole is found in the texts of Chinese philosopher Mo-Ti (470-390 B.C.E). The camera obscura was used almost exclusively for scientific experimentation from Aristotle and Euclid onwards, as they speculated about the nature of vision and light. The Persian physician Alhazen (al-Haythan), in the 11th century, gave the first correct analysis of the camera obscura, and was the first to successfully project a large image from an outdoor source, indoors. He was also the first to explain that vision was the result of light coming from an object into the eye.

The histories of these visioning tools conjoin in the figure of Roger Bacon in thirteenth-century England. The great champion of experimental science made the first recorded reference to the magnifying properties of lenses in the form of 'eyeglasses' in 1262, and around the same time, he described the use of a camera obscura for the safe observation of a solar eclipse. Eyeglasses appeared first in Florence around 1280, but despite their use spreading quickly, a correct explanation of their properties only appeared in 1604 with the publication of Keppler's work on the optics of the eye.

1.1d. Microscope

The microscope originated in Middelburg in the Netherlands in around 1590. Both Lippershey and Jannsen are credited with its initial discovery. The function of microscopy is to see things that are too small to be seen by the naked eye. The most famous developers are the English scientist, philosopher, architect and polymath Robert Hooke, whose 1665 *Micrographia* detailed his observations through the new lenses, and included detailed drawings of a louse, a fly and planetary bodies; and Antonie van Leeuwenhoek, the Dutch scientist widely considered as the 'father of microbiology' who created over 500 lenses and 25 microscopes, discovering bacteria and spermatozoa en route. It is speculated that van Leeuwenhoek, who was Vermeer's executor, might even have supplied Vermeer with a lens and camera obscura.[3] Over time, and with new discoveries in physics, other types of microscopes – including the electron microscope, the scanning probe microscope and the fluorescence microscope – have been devised to look at biological and inorganic materials such as microorganisms and crystals; nanotechnologies; and cellular structures in a post-genomic context. The connecting principle is that these differing types of microscopes can be used to see smaller and smaller things, on a cellular and even atomic level.

1.1e. Telescope

The discovery of the telescope in 1608 followed quickly on from that of the microscope, and Dutch spectacle-maker Lippershey is accredited (again) with its invention. He failed to gain a patent, as a number of other spectacle-makers

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[3] this might be a factor in the Hockney-Stork dispute (Hockney's controversial argument that some of the Old Masters might have used optical aids, which he developed with optical specialist Charles Falco, and which is keenly rebutted by Stork et al).

had also made applications, but he certainly offered it to the Dutch government for military use – an offer that was accepted on condition that he convert it to binoculars. Telescopes aid in the observation of remote objects by collecting electromagnetic radiation such as visible light. Galileo built his own telescope by 1609 and by 1610 had taken the first scientific look at the sky (subsequently publishing the Sidereal Messenger) and established the truth of the Copernican system. Keppler, Gregory and Cassegrain produced improved versions of refracting telescopes throughout the seventeenth century, before Isaac Newton invented the reflecting (using mirrors) telescope in the 1670s. Around 1790, William Herschel made a number of adjustments to that design to build what was the largest telescope in the world for over fifty years. Within a month of using this *Herschelian* telescope, he discovered the sixth and seventh moons of Saturn. The impracticalities of the reflecting telescope taxed scientists from the mid-eighteenth century onwards, until by 1856, large refractor telescopes were once again being built in new public observatories across the world. After World War II, in the aftermath of Jansky's discovery that astronomical objects emitted radio waves, a new era of observational astronomy began, followed by the swift invention of telescopes which used all parts of the spectrum, visible and invisible.

1.1f. Stereoscope

When Charles Wheatstone invented the stereoscope in 1838, it was the birth of 3D imaging. A technique for creating or enhancing the illusion of depth in an image by means of stereopsis for binocular vision, the display of an image in three full dimensions offers the observer enormously increased information about the objects on display. It was used extensively in the entertainment industry, and it is the precursor of complex CGI systems that conjure up scenes of such extraordinary realism that they are used in film, art, emergency management planning, and in the games

industry in military training. Stereoscopy was a crucial development in photogrammetry (the practice of determining the geometric properties of objects from photographic images) and was (and still is) frequently used for topographic mapping, and in architecture. Modern versions of this technique include LiDAR (an optical remote-sensing technology that measures by using pulses of light from a laser) often used within military contexts, in counter-mine warfare, drone technology, and bio-threat detection. Technologies deriving from the stereoscope have a role in areas as diverse as piloting and surgery.

1.1g. Photography

In 1822, Nicéphore Niépce produced the very first permanent 'photograph' using a non-lens contact print process known as heliography, and changed the world. The development of photographic machinery and substrates has its own exhaustive canon of scholarship, so here I am simply going to identify a few key devices and discoveries relevant to this specific enquiry. This list is highly subjective, and excludes a vast array of devices such as the phenikastiscope and the zoetrope, the autochrome and the thaumatrope, detailed accounts of which can be found elsewhere. William Fox-Talbot devised his own photographic method by 1839, and discovered the negative-positive process by which images could be permanently retained on a substrate. This was a paradigmatic moment in the history of images. By 1861, Maxwell had produced the first colour image, enabling viewers to see the world on paper more as they saw it with their own eyes. Between 1851 and 1887 discoveries that utilized new materials were made, including the collodion process, gelatin emulsion and celluloid film – all of which are related to developments in munitions, and build on the work of the Wedgwoods (Batchen, 1997). Following Plateau's discovery of stroboscopic movement, a study

of flicker began, with Muybridge using a zoopraxiscope to reveal animal locomotion in 1878, and the development of Marey's chronophotographic (also used to record animal locomotion) gun in 1882. Marey's "gun" is the clear antecedent of the technology that six years later in 1888 enabled Louis Le Prince to make the first moving film, the Roundhay Garden Scene. Within sixty years, technology had moved so fast that from being reliant on hand-generated drawing, painting and sculpture to record likenesses and events, humanity could suddenly mechanically capture images that moved, and were in colour, as they happened. In 1895, the Lumière's invented the cinematograph, a film camera that also operated as a projector and developer, and established a vast international cinema industry (not to mention its social and cultural implications). The two final devices in this category that radically impact on what could be seen and how it could be seen are the 135mm film cartridge, first introduced in 1934 (making film and cameras easier to use for documentary and entertainment purposes), and the production in 1957 of the first digital image on a computer by Russell Kirsch.

1.1h. Electromagnetics

Electromagnetic theory and optics blossomed with discoveries by Maxwell and Hertz (between 1873-1889), and electro-magnetic devices can be categorized into eight sections: radio wave, microwave, terahertz radiation, infra red, visible light, ultraviolet, x-rays and gamma rays. Electromagnetic vision permits us to see things that are usually invisible, though there are areas in the electromagnetic spectrum (EMS) that we do not use to see with, such microwave (best known for its thermal heating qualities), terahertz radiation (an emergent area with few applications as yet), and ultraviolet (the cause of sunburn). Radio waves (1867) are used for the transmission of data via modulation, and they also carry television broadcasts, which is vision of a type. Both X-rays (c1895) and gamma rays

(1900) have very specialist use in diagnostic medicine (in radiography and PET scans), and in high-energy physics and astronomy to look at black holes and neutron stars (revealing the x-rays that are emitted). The most widely used part of the spectrum though, is infrared, discovered in 1800 by Herschel using a prism when he refracted light from the sun and observed the increase in temperature recorded on a thermometer. Infrared is used in a range of visioning applications, for observing the core of active galaxies, to depicting the Gulf Stream and other meteorological phenomena. It is used in archaeology and forensics to detect certain types of objects and examine geological structures, and extensively for military applications such as target acquisition, surveillance, night vision and tracking. It is even used in art history in the form of infrared reflectography, which reveals underlying layers, structures and pentimenti in paintings.

1.1i. Multi-spectrum and Hyper-spectrum

Multi-spectral imaging captures light from beyond the visible spectrum, rendering the imperceptible manifest. Spectral bands are measured in wavelengths, but are often described in colours, which is helpful for non-mathematicians. 'Blue' bands are used to look at atmospheric and deep-water imaging. 'Green' bands are primarily used for looking at vegetation and some deep-water structures, whilst 'red' bands are used for looking at man-made objects and soil. Spectroscopy is used extensively in astrophysics to reveal the physical properties of objects, gases, stars and atoms. Hyper-spectral imaging collects images by sensors in bands, which are then generated into a three-dimensional cube for processing and analysis. It is used mainly in mining, geology, ecology, surveillance, and historical manuscript research.

<u>1.1j. Remote sensing</u>

The final type of visioning device outlined is that which comprises 'remote sensing'. This definition refers to the use of imaging sensor technologies (such as those found in aircraft and spacecraft, and in electrophysiology) and it is

distinct from fields such as medical imaging. In 'active' remote sensing, energy is emitted to scan an object, with the sensor then detecting and measuring the radiation reflected or backscattered by the object to produce a visual image. The most familiar example of this is radar, used to visualize and track objects as they move (such as aerial traffic, incoming missiles and speeding vehicles).

It is clear to see, as we progress through the categories of vision devices and through the centuries, how gradually the physical world and matter was brought to visibility, and how 'progress' can be evaluated by more things being seen more accurately and in more depth, and from previously invisible spectra. My summary of key devices attempts to outline what some of the less familiar visioning devices are used for, and in places it is easy to see where relationships start to emerge out of military research and requirements

1.2 The development of weaponry: Illuminating Hadrian's Wall (2010)

1.2a. A practice-led approach

Though my initial research into the development of weaponry was largely textual and archive-based, it included several visits to museum collections to record and examine artefacts. The division of the material into nine sections is not arbitrary, but is influenced by how military historians model these epochs. It was necessary for me to sketch diagrams of the interrelations – the division into epochs was very useful in helping me to characterize periods – to draw correspondences between the two narratives.

In 2010, I was invited to be artist-in-residence for the UNESCO World Heritage Site at Hadrian's Wall, in order to develop a number of projects to raise the profile of the Wall internationally. One of these projects concentrated on what I described as 'this statement of defensive integrity' in which ancient beacons were resurrected in a modern interpretation, to commemorate the 1600th anniversary of the end of Roman rule in Britain. *Illuminating Hadrian's Wall* (2010) was an epic project. The entire length of the Wall was lit – from Segedunum on the Tyne to Bowness-on-Solway – at 250m intervals by volunteers bearing fire-torches, specially designed burners, and flares. The piece was a huge collaborative effort with Hadrian's Wall Heritage assuming responsibility for the event production as well as the production of two large-scale public galas at either end of the Wall. The project was considered hugely successful in terms of raising the profile of the Wall, bringing in £3m to the local economy and achieving significant international media coverage, but the most useful part of it for me was the lived experience of the lighting. Standing in the cold, waiting for something to happen, (not unlike a Roman soldier, though perhaps better bundled up against the

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elements, and certainly not keeping warm by whipping myself with nettles) I was firmly situated within the artwork, and able to experience its unexpected transformative power:

> But then something happened which changed all my carefully thought-out intentions. Nothing had prepared me for the lived collective experience of the Illumination, the feeling of shared action with thousands of participants. The live event generated its own specific magic. This was the pivotal moment- the moment of authenticity- around which the reconstruction of the event could begin.
>
> In the following days I was inundated with images. As I began to sort the images- not only images but sound recordings, videos, texts - it was clear that the real story was not of the ways in which we could see differently to the Romans, but of the ways we could see and seem the same. Rather than a story of technology, it became a story of people who were willing to go out into the dark together and make a symbolic gesture saluting the past. (Streffen, Studio Diary, 2010)

Working on the Hadrian's Wall projects enabled me to have a different sort of insight into the development of weaponry – working directly with defensive weapons/structures – than during the rest of my research. For this reason it retains more 'life' for me than some of the other developments. The project encouraged me to modify my methods by re-establishing the importance of the experience of the physical artefact, and as a result I found a shift in my work towards the sculptural, culminating in my exhibition *Requisite* (2012).

fig 1.8 Isabella Streffen et al, *Illuminating Hadrian's Wall* (2010), event

figs 1.9 & 1.10 Isabella Streffen et al, *Illuminating Hadrian's Wall* (2010), event

1.2b. Pre-history

The weapons of the pre-historic period were initially stone and wood, wielded by infantry and cavalry (men on foot, and men on horses). Metal tools were slowly developed using copper and bronze, and by 2000 B.C.E, iron tools were in use. Sophisticated tactics were critical to conflict in this era, as the development of weapons was a slow and disproportionately expensive process. Strategic planning was paramount, as whole societies and logistical systems were mobilized in support of the war effort. This is the period prefiguring Deleuze and Guattari's concept of *nomadology* (Deleuze, 1987), in which only settled societies could afford metal weapons, and fortification became the key concept of defence.

1.2c. Classical period

In the classical period, the developments in weaponry concerned new technologies and the introduction of pioneering military and conceptual systems. New technologies included large-scale seaborne warfare, following the invention of Minoan warships and galleys, and Viking longships[4]; and weapons including onagers (a Roman catapult), sambucas (a wheeled siege ladder) and battering rams. Pioneering military systems of this period included the Greek *phalanx*, the Roman legion system, and the light cavalry of the fifth-century "barbarians". An interesting development at this point is the concept of border, something that is clearly illustrated by the Roman conception of the edge of empire during the construction of Hadrian's Wall from 122 C.E. When Hadrian's Wall was a functioning military installation it was lit

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[4] this is not to suggest that boats had not been used in warfare before, but relates to the scale of the use

by braziers placed at intervals along its ramparts. These braziers not only created welcome light and heat, but also acted as signals to show that the defensive positions had not been overrun.

<u>1.2d. Medieval period</u>

The main developments in weaponry during the medieval period relate to the discovery of Chinese "black powder" in c1060 C.E.: a mixture of potassium nitrate (saltpeter) charcoal and sulphur that was used to create loud and terrifying noises, in combat, ritual and entertainment. By 1161, it was certainly being used as explosives in conflicts between China and the Mongols, and was used in China and India in conjunction with bamboo mortars and rockets. Arriving in Europe by the 13th century, its use in firecrackers was recorded by Roger Bacon. It was eventually refined into modern gunpowder (though still unstable), with production starting in England by 1300, and it was produced in large enough quantities to be used in cannons at the Battle of Crècy in 1346.

<u>1.2e. 1500-1800 (approximately)</u>

The 16th to 18th centuries accommodated a number of paradigm shifts. Firstly, the invention of heavy siege guns and mobile cannons during the fourteenth and fifteenth centuries demanded a rethinking of the architecture of fortification, which led in its turn to the use of landmines from around 1800. Secondly, the development of handguns 'hand cannon' (in Arabia) and 'fire sticks' became the invention of matchlock weapons, with the 17th century seeing the first successful hunting rifles. By 1775, the Kentucky rifle was a vital element in the American Revolution, and the new weapons generated strategic changes to 'horse and musket' warfare, with the ring bayonet becoming fixed to

the gun barrel by the early 18th century. Thirdly, the late eighteenth century was also the time of the first airborne assault – from balloons. This was of very limited operational use and the French squadron was quickly disbanded, leaving ballooning to be used in the next century for observational purposes.

1.2f. Industrialized War (Victorian Era)

One of the main factors promoting changes during the nineteenth century was the development of mass production methods. Using these industrialized techniques methods equated to producing vast numbers of armaments, and similarly the weapons themselves were methods of producing vast numbers of dead. Chemist Alfred Nobel perfected high explosives, and his horror at their impact led him to establish an International Prize for Peace. Other important new developments in this period included long-range artillery; rapid-firing small arms such as the crank-operated Gatling gun, and the gas-operated Maxim gun; steamships and armoured "ironclads" such as the Royal Navy dreadnoughts; and underwater vessels, which were first used during the American Civil War. Aerial observation posts were also used in the 1860s, and were a harbinger of the logistical changes to come throughout the century in the shape of railroads, barbed wire, poison gas and early telecommunications, all of which were co-opted for military purposes. Strategic changes also occurred due to the new weapons, for example, during the US Civil War 1861-65, breach-load rifles meant that troops could no longer move 'in formation' and so trenches, bunkers, barbed wire and landmines – all things synonymous with a later conflict – became commonplace.

1.2g. World War I

There were five major developments in weaponry during the period that includes the First World War, some of which had already been used during the American Civil War, but which became more closely associated with WW1 in collective memory. The early part of the century had already seen the motorized aerial paradigm, so it was not surprising that aircraft were soon introduced to the arsenal. The early bi-planes played a role that was largely observational, their objective being to direct artillery. They did have a very direct function with the invention of poison gas grenades, which were thrown from aircraft in what Sloterdijk refers to as the opening shot of ecological warfare (Sloterdijk, 2002). Chlorine and mustard gas were the two major chemical weapons, and their use invoked a chain of inventions from the artillery shells needed to carry gas to the enemy, to protective equipment and early warning systems (at this stage, usually a canary, an early example of the hyper-spectral defensive). The third major development was the improvement in the early submarine craft to become the legendary U-Boat, designed for attacking military, civilian and logistical targets. The ubiquitous use of handguns and machine-guns also had a significant impact on strategy. It was now necessary to be concealed in trenches, so artillery barrages, an observer corps and functioning telecommunications became correspondingly important. The constant shelling of ground made it impossible to manoeuvre on and over, and this led to the use of tracked vehicles in the shape of 1916's F4 tank. This in turn was countered by the development of armour-piercing shells. Trench warfare also engendered the small German storm trooper units with their tactic of moving quickly and using hand grenades and flamethrowers.

1.2h. World War 2

Following so quickly after World War I, it is no surprise that generals and politicians of World War 2 did not want troops to get mired in trench warfare again. It is important to acknowledge the fundamental political changes that had taken place in many nations as a result of World War 1, though it is outside the scope of this enquiry to address them directly. The developments of World War 2, which brought warfare on a scale as yet unseen to many part of the globe, can be divided into three main areas. These are the consequences of full aerial warfare; the production of unguided missiles; and the new weapons of mass destruction. By 1942, the USA had developed plutonium and uranium enriched bombs capable of bringing mass destruction on a hitherto unimaginable scale. The atomic weapons of The Manhattan Project were not, however, the only WMDs (Weapons of Mass Destruction): new chemical weapons in the form of nerve gas, and biological weapons such as anthrax were created and tested. The defensive riposte to this was the production of protective clothing in the form of the NBC suit (providing a truly terrifying encounter for the uninitiated) and new types of bunker architecture, as governments and private individuals invested in a variety of proprietary and bespoke underground shelters. Alongside this raft of horrifying weaponry ran the consequences of aerial warfare. A war fought in the sky demanded new aircraft in the shape of fighters, bombers and transports; new detection systems in the form of RADAR; new transportation methods in the shape of gigantic and highly-symbolic aircraft carriers; and new strategies. Both blitzkrieg and long-distance bombardments can be seen as direct consequences of aerial war, as can the communications developments that enabled them – radio-communications and early cybernetics such as the building of Enigma machines for cryptography.

The paranoia of the Cold War era brought many innovations as enemies desperately tried to stay one step ahead of one another and to intimidate each other in the shadow of the Bomb. The automatic rifle, grenade launcher and anti-tank rocket were all created in this period, alongside helicopters with wire-guided missiles. Some of the more long-term developments, however, grew from new types of electro-magnetic information such as Global Positioning Systems (GPS), which spawned GPS-jammers; and, of course, the internet in the form of ARPANET, the first packet-switching network. Early warning systems had blossomed from the canaries of World War I to systems including SONAR (the detection of underwater objects by listening for echoes of sound pulses) in response to the threat from the new nuclear submarines such as Polaris and Typhoon. Perhaps the most symbolic example of new weaponry was the enhancement of the V2 missiles into the ICBMs (InterContinental Ballistic Missile) such as Trident II, which travelled via space. These long-range missiles became, in turn, space satellites such as Sputnik (1957) and eventually the Apollo programme for inter-planetary travel. The inclusion of space as a potential battlefield generated new strategies such as Non-Proliferation in Space and Mutual Assured Destruction, and instigated a new wave of responses in terms of spy satellites, bomber fleets, jet-powered tankers for mid-air refueling, and multiple-target warheads. The pinnacle of defensive systems of this era was the Reaganite 'Strategic Defense Initiative'. The SDI, often referred to as 'Star Wars', essentially created an informational web in space that would enable the USA to repel any possible ICBM attack. It aimed at full-spectrum monitoring, and as such, can be seen as the pinnacle of the concept of panopticism. It was never fully developed, though research is still ongoing.

1.2.j. The Revolution In Military Affairs

Depending on who is holding the conversation, the Revolution in Military Affairs may or may not have already taken place. Initial theoretical work on the concept was done in Russia during the 1980s and early 1990s, and the collapse of the Soviet empire was a pivotal factor. Following the decline of ideas of the nation state, and what the role of the military might be in such a state, together with the evolution in weapons and information technology demonstrated during the Kosovo War, the Revolution in Military Affairs sought to redefine military doctrine and the practice of 'network centric' war in an asymmetric[5] environment. The defining developments in this era (said to begin in 1991 after the dissolution of the Warsaw Pact) are armour; 'deep battle' strategies; the communications revolution; airwar; asymmetric warfare; and imaging systems. I will unpick each of these in turn. The political changes that followed the breakdown of communism and the First Gulf War meant that there was resurgence in the development of defensive technologies. Imaging systems were central to this, with the development of composite armour for tanks (steel and ceramic plate) and new types of shells for firing by tanks (tipped with depleted uranium) generating a response in laser-guided anti-tank missiles such as Hellfire and Javelin. The use of Kevlar personnel carriers enabled new infantry strategies to be developed (such as the four-person fire team), and new forms of camouflage based on digital patterns were evident. 'Deep battle' strategies resulted in the development of guided and rocket-boosted missiles and helicopters with 'fire and forget' systems. The new strategy for complete air control – "airwar" – required extensive developments in both attack and defence systems. Aircraft with long-range sights were developed alongside FISC Eagle, Mirage, Sukhoi SU77 and Tornado F3 fighters. EAGB Prowler was evolved as air defence suppression. Aircraft such as Spirit Stealth and Nighthawk (and the mythic Aurora of *Aeronaut*)– the so-called radar-

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[5] where belligerents have vastly different military capacities, for example, the US government and Al Qaeda

absorbers – responded to defensive developments, and were followed by new combat jets with the stealth design that also operated beyond the speed of sound, such as Raptor and the Eurofighter Typhoon (weapons designers have extraordinary imaginations, but not when it comes to naming their babies). This was echoed in the naval context with stealth ships that are invisible to radar. The concept of Future Combat System also delivered the development of observational and armed drones such as Predator, Global Hawk, Phoenix and Hunter. The communications revolution and digital exchange led to digital security systems being developed to smooth out vulnerabilities to jamming and viral attacks. The whole notion of cyberwar is linked with asymmetric warfare, where a large regular force is opposed by a small, transient, irregular one that is using all the weapons it has available.

A pattern akin to call-and-response emerges in weapons technology: one development calls for an opposing response, and the stakes are ever edged higher. Comparing the list of optical devices with the list of weapons development, it is clear that there are important correlations throughout history. A number of very particular relationships emerge from this wider group of adherences, and it is to those four very specific connections or 'interpretative regimes' that I will now turn. This section is based closely on my studio work, in the manner of presenting ideas, quotations, and images as a constellation. The proposed regimes certainly have their roots in connections between optical devices and weapon development as we have already seen, but the manner of their presentation here suggests, rather than insists; implies rather than defines. Each subsection is worked through in the manner of the studio work that it created: perspective asks us to have faith; we can't see the facts from the clouds in the aerial view; we lose ourselves in camouflage, and find ourselves frantically trying to make an encounter whilst tracking.

1.3 Perspective and the line of fire: Anatomy of A Shot (2009)

fig 1.11 Isabella Streffen, *Anatomy of A Shot* (2009), digital video

"Classical perspective presupposes an imperiously fixed vanishing point and an optimum distance. It reduces the depth of the real world to the illusion of a flat surface. It presupposes as well the fixed viewer. It is a monstrous, artificial, and finally, a mythic vision, with something of Cyclops and Medusa in its nature, flattening the world and turning it to stone."[6] (Clair, 1978:101)

Thus begins Jean Clair's 1978 text on Duchamp's appropriation and use of stereopsis during the period 1919-26. It sums up my personal response to perspective: as an artist I have always been terrified of perspective and the regime it represents. The idea of a fixed viewer, of a regimented scaffold for thinking, of a centred subject and a separate object, sits uneasily with my post-structuralist education. In his book *The Poetics of Perspective*[7], James Elkins demands that contemporary scholars use non-traditional approaches to the concept and origins of perspective, describing it as a metaphorical conception, and calling us to "detach perspective from customary meanings and experiment with methodology" (Elkins, 1994:265) in order to bring fresh insight to the questions that have been repeated by generations of enquirers.

The period that was distinguished by the perfecting of lenses in Europe and by the earliest projections in Persia also marked the discovery of "black powder" in China. As perspectival tools became further refined, and as pictorial and linear perspective developed in the Italian states in the fifteenth century, European weapons development was characterized by the new siege guns, and subsequently mobile cannons and the arquebus (first used in the Italian wars during Alberti's lifetime). Projectiles, both for killing, for capturing and recording information and for creating

[6] Clair, Jean (1978) 'Opticeries'. *October* vol 5, Summer 1978, pp 101-112
[7] Elkins, James (1994) *The Poetics of Perspective.* Ithaca NY: Cornell University Press

images, were profoundly en vogue. But can it be possible that the origins of perspective can as equally be detected in the triangulation of the line of aim (also known as the line of faith), as in the rationalization of space on a canvas? Virilio certainly thinks so (Virilio, 1984: 3). The idea that perspective is also a device for 'overcoming' the distortion of medieval art, also echoes that martial sensibility. Furthermore, reading perspective through Virilio's ideas about propulsion as the basis for every weapon places dromology as the very essence of seeing (Virilio, 1984: 104). The subject therefore irrupts into the field of vision (acknowledging Lacan, and his idea that the gaze *is* the subject in the field of vision [Lacan, 1973]), conflating the act of seeing with the condition of militarism: sight equals war.

I investigated some of these ideas through close frame-by-frame studies of aim being taken and shots being fired in my 2009 video work *Anatomy of A Shot*. This was one of the earliest works created in this project, and it derived from my personal realization – by way of Susan Sontag – that I take the same physical position to fire a handgun as I do to take a photograph.

1.4 The aerial turn

fig 1.12 illustration from Baldwin's *Aeropedia*, 1785, showing an engraving of his hand-drawn map

The optical device that can be most obviously equated with the first successful aeronautics is Herschel's reflecting telescope (built between 1785-9), and Richard Holmes expertly links the two in his 2008 text *The Age Of Wonder.* It is important to clarify that the telescope is the optical object, and the balloon is the weapon despite the fact that aerial objects were not successfully used directly as weaponry until 1915 (Sloterdijk, 2002).

Until the 1780s, the aerial view was one that was wholly imaginary, and largely constructed by perspective. The invention of the balloon changed that completely, uncoupling the eye of humanity from the ground and allowing us to look down (and up) at ourselves for the first time.

Architect Mark Dorrian has written on the subject of the aerial view, its constituencies and histories, but his main interest is things on the ground "I am concerned with representations that take the ground – or things on it – as their object" (Dorrian, 2007). He correlates the aerial view with the development of the microscope, citing the breathless Saint-Exupéry "Below are men – protozoa on a microscope slide" (Virilio, 1994 cited in Dorrian, 2007) and argues that the aerial view is "instrumental, disenchanted and technical…because of the specific historical conditions of its emergence in World War 1" (Dorrian, 2007).

Although Dorrian's analysis is both brilliant and beguiling, by concentrating on the static, it does not account for the connection between aeriality and tracking, of which it is the herald. Taking my cue from Holmes, I remain insistent on the role of the kinaesthetic, and note that the earliest images made from the sky were drawings from balloon trips. Thomas Baldwin's exquisite drawings (Baldwin, 1785) – figures 1.12 and 1.13, some of the earliest known aerial

images from his account of his balloon journey over Chester – show the attempt to rationalize something for the first time: to apply formal linear perspective when the eye view itself was moving.

The telescope, which stages vision quite differently to the microscope, by collecting the light emanating from the object of vision, provides a useful connection. In telescopy, measurements are generated between two different moving celestial bodies, in constantly reconfigured equations. Additionally, telescopy brings things that are far away, closer – a connection with the use of balloons as observation stations.

By the time of the American Civil War, balloons had been co-opted by opposing sides as observer posts, and, like Nadar (who took the first aerial photographs from a balloon over Paris in 1858), troops were soon pressed into service as aerial photographers. This was the beginning of the equation of the camera with military surveillance, a trope that I look to erode in my reassertion of human agency at the core of machinic power.

fig 1.13 illustration from Baldwin's *Aeropedia*, 1785, showing an engraving of his hand-drawn map

1.5 Camouflage: The Old Razzle Dazzle (2011-12)

fig 1.14 Isabella Streffen, *The Old Razzle Dazzle* (2011-12), three channel HD digital video

"With the advent of camouflage netting, the viewed had become active agents, operating to conceal themselves within regulated and serially photographed time, for the 'material' was a skin in a kinetic and enduring sense. The viewer, meanwhile, was in motion, as 'the machine' moved through the skies, on the one hand, and as the interpreter analysed a series of photographs, on the other. This movement on both side necessitated that agents on both sides (ground and air) continuously projected themselves into the imagined position of the other…. The *camoufleur* had to access a photographic point of view, even when physically based on the ground." (Shell, 2012, pp122-123)

The third interpretative regime that I propose is that of camouflage: not the apparently randomly printed colours of soldiers uniforms – although that too is camouflage – but as a technique of looking. As Shell reiterates, camouflage changes in response to technological developments in seeing, and it is this changing, this slippage which defines it.

Camouflage derived from painter Abbott Thayer's personal practice-based research into protective colouration in nature in the late nineteenth-century. This was the moment of mechanized vision and mechanized weapons: the critical optical development of the time was moving film which even shares a vocabulary with its killer counterpart, the Gatling Gun, and both technologies can be said to have been prefigured by Marey's chronophotographic gun. Control over time and capturing of space were the hallmarks of both technologies. Camouflage as a tactic developed as a response to being 'captured' or 'shot'.

The response of the subject to the *technological possibility* of a look is constituted by the refiguration of the subject: the subject disappears from view, to become – quite literally – another subject. It is the sort of philosophical riddle that can benefit from studio experimentation, and through the creation of The Old Razzle Dazzle, I was able to

investigate this 'unsubjectification' and 'resubjectification' as 'objects' in my assemblage shifted identity through a range of classic camouflaging tricks.

There is a connection to what camouflage means right at the heart of the constituency of the subject – a connection with Lacan's idea that one can never see oneself seeing oneself. I expand on this idea in both chapter two, when I discuss the ontology of the enemy, and chapter three, when I will discuss the development of my field-craft methodology in detail. Modern camouflage developed in response to a combination of the aerial view, advances in photogrammetry and regimes of analysis. It is essentially a practice of resistance, of reforming, dodging and weaving, of trompe l'oeil and all the optical tricks ever invented. In camouflage we fracture ourselves and reverse the Lacanian mirror. Our practice of resistance becomes a practice of embrace, as we learn to see as the Other in order to preserve ourselves.

1.6 Tracking

fig 1.15 image from live-feed of air-craft tracking, National Air and Space Museum, photo: I Streffen

"Tracking is not simply a technology or a modality of perception, but a cluster of discursive orientations. It is through such orientations that subjects, machines and institutions are linked. When, in a competitive consumer-security culture, machine-aided perception moves towards the strategic, the panoptic and the pre-emptive, then we no longer see but track." (Crandall, 2006)

Crandall sums up the new definition of tracking. Before the technological advances of the twentieth-century with its scientific discoveries of infrared, x-rays and the visible spectrum, tracking meant following behind. Deriving from the Dutch 'trek' meaning drawing, or pulling, tracking conjured images of hunting and is the language of navigation, and cartography, of reading the stars and spoors. The term is also used to map behaviours, results, assets, and to provide comparative data after the event.

The development of cybernetics in the 1940s presaged the development of weaponry with multi-spectral functions. Finally, we could see what was invisible, send data through radio waves, and create images from binary code. In the matrices of these technologies, rather than something we do, tracking became something that is done to us. It becomes predictive: a form of divination, a form of seeing that is ahead of itself, a form of future casting.

This chapter aimed to survey the historical development of tools, devices and strategies created for the purposes of looking in tandem with a survey of the development of weaponry. The written text has been subjected to studio procedures as part of my field-craft methodology, and towards the end the factual, analytic and comparative approach fractures to allow something new to emerge, as these techniques are demonstrably evident. This

experimental approach percolates this thesis, as I show how the field is impacted by research through and in art practice.

CHAPTER 2. I/EYE

In chapter two, *I/Eye*, I propose a discussion of vision in physiological, psychological and metaphysical terms to reflect on the characteristics, origins and consequences of military vision. Using a matrix developed from Martin Jay's work on the theories and practices of visual culture studies (Jay, 1994) and Jonathan Crary's work (Crary, 1992 & 2001) on exploring the technologies of vision as a 'road map', it is possible to outline a route to the more technological concerns of the 'post-hermeneutic' theories of Friedrich Kittler (Kittler, 1985: ix). Kittler audaciously maps his three information channels of typewriter, film and gramophone directly onto Lacan's tripartite taxonomy of psychic registers (Kittler, 1986: 15). He examines and conflates the circuitry of human and machine, raising key questions around the constitution of the subject. Kittler thus effectively divests humanity of its subjectivity, naming it as a mere function of media by identifying the autonomy of technology. This position, I suggest, equates to Virilio's ideas about the formation of the war machine (Virilio, 1989), and its consequences are commonly described in contemporary media theory as the 'non-human turn'. What this theory does is to declare the human to be machinic. It is possible, however, to counter this Kittlerian manoeuvre, and re-inscribe humanity at the heart of the machine.

If we build on this theoretical edifice, and link the Lacanian concept of the gaze as the site of emergence of the subject (Lacan, 1973: 69) with Virilio's ideas relevant to the ontology of the enemy (Galison, 1994), we can argue that the constitution of the gaze *is* the primal site of militarism. This suggests that the emergence of human subjectivity is the war machine, and implies that every action or thought of a human is a military act.

Although this argument is summarized here in words, and is the result of substantial reading around theories of vision, the arguments are best articulated through studio work, and my key investigation into these ideas was during the making of *Dissection (After Descartes).* In *Techniques Of The Observer*, Crary uses what are essentially media archaeological methods to examine the rupture of vision in the nineteenth century. Whereas Jay's methodology in *Downcast Eyes* is traditionally art historical, Crary articulates his ideas by turning to the objects themselves. This is not to imply that Crary attempts to reveal something new by experimenting with stereoscopes, rather that he effectively allows the objects to become players in the discourse. This approach, together with a detailed reading of Jay, Descartes and Newton, persuaded me that some Cartesian experiments would enhance my understanding.

Dissection (After Descartes) was the culmination of numerous studio experiments with lenses and viewing devices, including those enumerated in Crary's text. It was a significant work in that it charted a change in my approach to texts and ideas. Prior to the first iteration, I tended to respond to theoretical texts in an equally theoretical way. This was the first time that the creation of a work had a significant physical impact on me as a researcher, and this is relevant to my refusal to excise the subjective from theory.

In order to gain insight into some of the concepts in Descartes's writings that I was struggling with, I decided to re-enact some of his experiments, in the hope of gaining tacit understanding that I could then give form. Choosing to restage his dissection of an ox eye did not seem overly challenging. I researched dissections on YouTube as I had no formal training, and I took advice from the Ethics Committee. Once the project was approved, I acquired my sheep's eye from a local farm, and returned with it to my studio where I had set up video and lighting. I recorded the dissection mainly as evidence of my experiments, rather than with the intent of exhibiting the video. About ten minutes into the dissection, I suddenly felt incredibly strange, and vomited profusely. I continued and completed the dissection, but my disarray and discomfiture was captured on camera. My thoughts on Cartesian theory were largely superseded by reflections on the unexpected physical impact of experiments.

I decided that the video was unusable in a scholarly enquiry, and did not pursue the project. Several months later, I re-watched the video, and found it very interesting from the perspective of endurance performance work. As that is not something that is encompassed by my practice, I discarded the idea of exhibiting the video, though my reticence to jettison it entirely indicated that the matter was not yet resolved.

Six months later I dreamt of the eye-slitting scene in *Un Chien Andalou*. I started to suffer from a strange swelling on the surface of my eyes that made it look as though my eyeball was about to burst. Not reassured by medical assurances that it was simply an allergy, and horrified by the violence of my dreams, I started to think of it as a symptom. The eye bothered me, and my eyes were letting me know. During a morning spent processing images, I found myself muttering '*enjoy your symptom*' like a ventriloquized message from Lacan from beyond the grave. I refer back to my early experiments with ideas of Freud's dream-work as a process for making artwork. By chance I met with a scholar who was working with practices of mindfulness in palliative medicine, seeking better experiences of

care for terminally ill patients. She taught me some of the exercises that had been developed to train medical students, and I agreed that I would repeat the experiment, and use the exercises to counteract my physical responses.

I re-performed the experiment successfully in 2011, using the technique of 'remaining present in my body'. I dissected two cow's eyes, and subsequently used the lenses in additional experiments. The dreams never re-occurred. But there was one final outcome of my misadventures: I returned to Lacan to think through the visual.

Lacan's account of visuality marked a shift from the nineteenth century theories of vision dependent upon physiology and neurology, to an acknowledgment that the visual field is permeated by socially-constructed signs. His model is based on the traditional Euclidean optical diagram which he flips, superimposes on itself, and adjusts, so that the planes of projection coincide in a chiasmatic diagram that demonstrates how seeing is also being seen. Lacan works against Cartesian optics: from the Cartesian perspective, whatever a viewer sees is his or her property; it is owned in the sense that it is personally experienced in the realm of the interiority of the subject. Lacan inverts this triangle to show how the subject is dependent upon the outside for his sense of self.

In the inverted diagram, the subject becomes constituted as an image by way of being "illuminated by the light emitted by the object of its own look, and thereby...registered simultaneously as object of representation"(Lacan, 1973). This is the look. The subject is commandeered by the object of its own look, and exists only in as much as the world around him looks at him. What goes on inside the subject only exists if made visible to the look – i.e. externalized – thus Lacan inverts Cartesian interiority. The subject can only avoid being captured by the look by use

of the screen, which has two functions. Its first function is to allow us to manipulate the self that is seen by the look (remember that the look is not only of others, but of objects) – that is, the screen allows us to construct ourselves for the Other. Secondly, the screen helps us to see objects, though only partially.

It is possible to interpret Lacan's concept of The Gaze by using these two constructs. Lacan turns to Sartre (Lacan. 1973:84), this time peeping into a keyhole when he hears the approaching footsteps of anOther. The voyeur is caught without the ability to screen his desire. Not only that, he can never see himself from the point of view of the one who sees him- he is in the field of the Other. This means that all the sight and desire we have when seeing people or things, is only possible because sight is structured for us, like language. Lacan states unequivocally "the objet a in the field of the visible is the gaze" (Lacan, 1973:105). I interpret that to mean: the gaze is the manifestation of the split that causes subjectivity – the thing that causes desire – in the visual field.

Here, subjectivity is pinioned to the visual. I suggest that when an Other exists to see back (to return the 'ray' of vision, in the same way that the cry of the infant is given meaning by its mother) then the paranoid qualities of the gaze become paramount, and the Other is immediately defined as an enemy, a challenge to sovereignty (to paraphrase Sartre's story of the watcher in the park in *Being and Nothingness*).

This idea of the identity of the enemy – of the ontology of the enemy in fact – was raised after reading historian Peter Galison's 1994 text on Norbert Wiener and the Cybernetic Vision. Galison refers to three categories of enemy: the 'racialized, monstrous, sub-human other' (Galison, 1994); the anonymous enemy, empty of psychological empathy; and thirdly, the 'cold-blooded mechanized Enemy Other' (Galison, 1994). But rather than his definitions, it

was his use of the term 'Other' that prompted my question: is the 'Other' the enemy? I drew a diagram of how I thought that might work. If the simple existence of another subject is enough to designate him as *enemy*, it could be implied that the look itself is an act of aggression. Could it be that the claiming of subjectivity is an act of war?
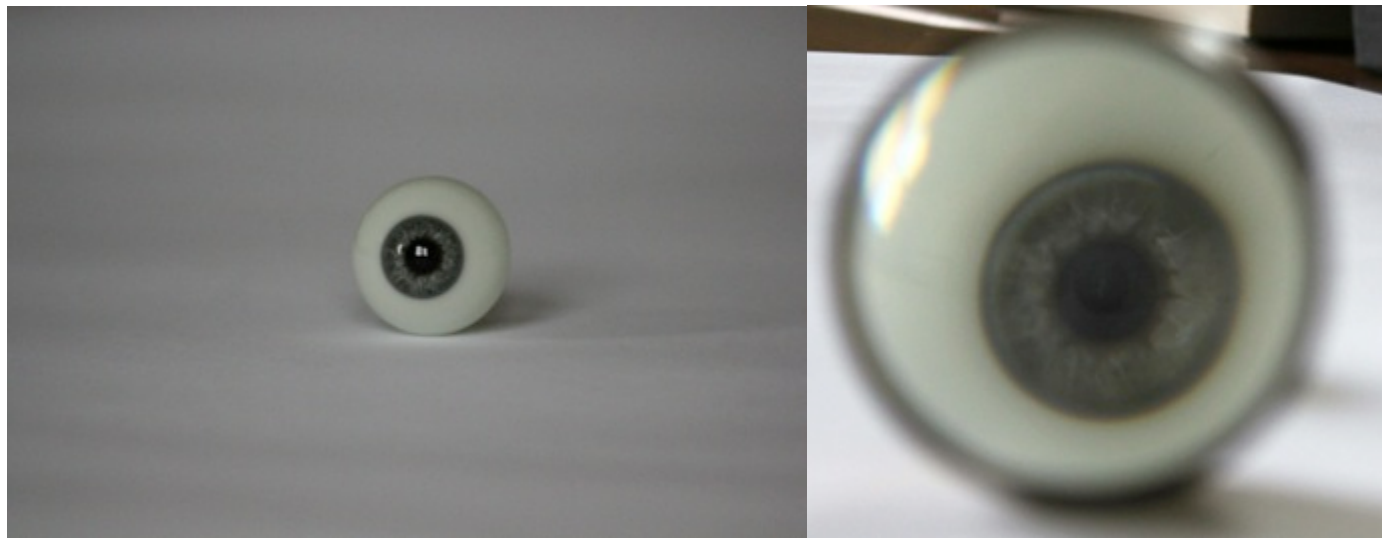
Figs 2.1 & 2.2 studio experiments with glass eyes and multiple lenses
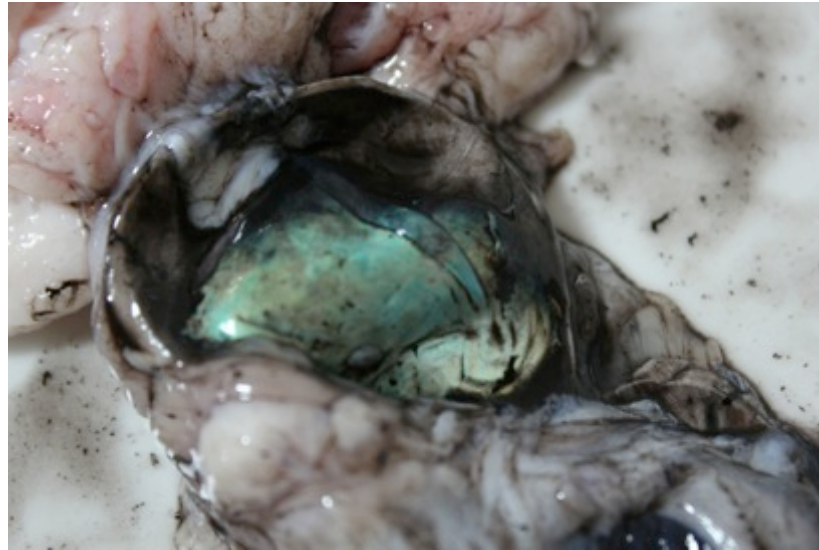
Fig 2.3 *Dissection (After Descartes),* (2011) still from digital video

Fig 2.4 *Dissection (After Descartes)*, (2011) still from digital video

Fig 2.5 *Dissection (After Descartes)*, (2011) still from digital video

Fig 2.6 'through the viewfinder' image with cow's lens, photo: I Streffen

Fig 2.7 *Impressionist Cow* (2011), digital print

CHAPTER 3. FIELD-CRAFT

Successful fieldcraft also required training the self to adapt constantly, materially, visually, and even psychologically, to its surroundings.

Hanna Rose Shell (2012: 139)

This chapter discusses the evolution of my concept of *field-craft* as the space in which military and studio techniques are paralleled. The chapter articulates the practices of field-craft as both military and artistic methodology, and as a tool for traversing "the laboratory of the unknown" (Shell, 2012: 97). Field-craft is the apparatus with which, and through which I have conducted my research, harnessing its responsiveness to navigate a range of assemblages and concepts.

Field-craft is the basic set of military skills that enables a person to work stealthily and to be useful in an operational capacity. As an infantry soldier, a sniper, a member of a reconnaissance team, your life depends on good field-craft. The skills include camouflage, observation, counter-surveillance, evasion and escape techniques, obstacle crossing, using the terrain to mask ground movement, navigation and many others. Efficiency in the various field-craft skills is only possible through spending time, effort and attention on memorizing extensive battlefield details, doctrines, equipment and topographical information. Field-craft is taught in lecture halls, through demonstrations, illustrations and the rehearsal of individual skills. And critically, field-craft is practiced in drills and field exercises.

Discussions in 2008 with service personnel about the fine details and teaching of field-craft revealed an interesting parallel with artistic studio practice. Field-craft develops a set of highly adaptable skills that can be deployed in almost any circumstance. Studio practice does the same. Like the military recruit on a "Basics" course, during formative training, the student artist is provided with a kit-list of versatile equipment (ubiquitously stored in a black plastic box) and such protective clothing as may be required. The list also specifies two basic texts: a reference manual for techniques and materials, and an introduction to the history and theory of art[1], perhaps an equivalent to publications on military doctrine or an orders book[2]. Typically, the student artist will then be taught basic techniques through workshops, lectures, demonstrations and practice. Reflecting on my own experiences of foundational training through sketchbooks and studio diary from 1996-8, I identified an equivalent to military basic training:

> These skills – of observation, connection and construction – were practiced repetitively until they became as natural to me as breathing. Drawing was the cornerstone of the instruction. The site at which observation became tangible, it was practiced in public; in private; in tangled woods, museums and churches; on the beach; with landscapes, objects, people (both clothed and naked); with things that are still; with things which move; with eyes open, and shut; in the dark; from a moving vehicle; in silence, and to music; with a pencil, with graphite powder applied straight to the body, with bleach…many differing techniques and experiments to cover the many different situations that I might face in the course of art-making. (Streffen, Studio Diary[3], 2008)

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[1] usually (and certainly in my personal experience) Mayer, Ralph (1991)The Artists Handbook of Materials and Techniques. 5th Edition. London: Faber & Faber (1951) and Gombrich, E. H (1995) The Story Of Art. 16th Edition. London: Phaidon

[2] example contents of an orders book might be: section OOM sheet including Rifle numbers; section kit inspection sheet; stag rota; section casualty/ammo card; range card; combat estimate (7 Q's); warning order template; deliberate attack orders template; patrol orders template (recce, standing/OP, fighting); ambush orders template; VCP orders template; sentries orders template; harbour area checklist/memoire; battle preparation checklist; patrol report; situation report template (signals); contact report template (signals); location report template (signals); patrol report template (signals)

[3] Studio Diary: I have kept an annual studio diary since the beginning of my art training in 1996. It comprises notes, reflection, quotations and accounts of exhibitions and other cultural engagements.

The blend of theory and practical work is strikingly similar to the experiences of a soldier learning the field-craft that will make him/her operationally useful. Furthermore, Shell's quotation on the demands of field-craft (with which I open this chapter) applies equally to the processes of art – and is, in fact, the hinge on which my own version of field-craft as an artistic methodology swings.

Having uncovered unexpected correlations and connections between military and photographic research, field-craft and studio work, I sought evidence of military appropriation of artistic theories and methods. I will turn now to texts by Eyal Weizman and Paul Gough, and the initial studio experiments that led me to produce my 2009 work *Dead Reckoning*, before outlining my ideas for an 'operational tool box' and the concept of the sandbox exercise. Subsequently, I will consider 1) the theme of shifting subjectivity and its relation to camouflage in Hanna Rose Shell's recent text *Hide and Seek* (2012); 2) my contemporaneous enquiry into camouflage; 3) the synthesis of these three 'blocks' of research into 'field-craft'. The concept of the sandbox exercise or 'serious game' underpins this document, which, it is important to recognize, is structured like a type of game in itself.

When I made my initial literature search on military vision and art practice at the beginning of this research project, a very limited amount of useful or directly relevant material could be identified. I subsequently found an essay by Eyal Weizman on the use of theory by the Israeli Defense Force and two essays by Paul Gough on the use of drawing in spaces of war, to be the most useful. Both of these authors maintain creative practices - that is, Weizman is an architect and Gough is an artist – and they write in a way that reflects the synthesis between theory and practice. These discussions of issues of practice and theory is of fundamental relevance to my use of their writings in this practice-based project, as my idea of an artistic field-craft methodology evolved by extrapolating and synthesizing

ideas from their respective texts *Lethal Theory* and *Dead Lines: Codified Drawing and Scopic Vision in a Hostile Space* through studio experimentation.

Both sets of texts reveal how – in different times and places – militaries call on practices and theories in common usage in the arts to change their thinking on how they conduct conflict. I was fascinated by Weizman's account of how military strategists have co-opted the theories of Deleuze, Guattari and Debord (as well as other contemporary writers/philosophers/theorists from a range of specialisms) into the development of contemporary urban warfare tactics. Weizman writes specifically about the Israeli context, but a connection can be made with the 'Revolution in Military Affairs' that took place in the closing stages of the Cold War, as new political contexts and technological advances saw a shift from the traditional *battle-field* to the ubiquitous world of the *battle-space* (Graham, 2011) with its 'network-centric' war. The evolution of systems, technologies, and information technology into the 'system of systems' that arguably characterizes the RMA, connects it with the focus on the urban domain driven by the shift towards asymmetric war[4] post-2001. The revolution then, is not simply in military technologies, but equally profoundly in military approaches to future conflicts.

Weizman focuses on the changes in how the Israeli Defense Force conceptualizes the urban domain – which it understands not simply to be the ground on which conflict takes place, but as an assemblage in conjunction with the forces that operate within it. He implies that this is a radical departure in how the military thinks about space and conflict:

> At stake are the underlying concepts, assumptions, and principles that determine military strategies
> and tactics (2006, p.54)

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[4] best defined as war between belligerents of significant relative difference, but used almost exclusively to describe guerilla warfare, or "insurgency"

When Weizman refers to 'concepts, assumptions and principles' he is describing military doctrine[5], which varies from country to country. Military doctrine links theory, history, experimentation and practice in a concise expression of how military forces contribute to achieving political aims: it is a guide to action, rather than dogma. It is the central idea of a military force. Unexpectedly, this definition of military doctrine resonated with my experiences and knowledge of art-making, echoing the connection between field-craft and studio work. Art production synthesizes theory, history, experimentation and practice into an artwork that operates more as a guide to engagement than as a set of prescriptions. This correspondence is surprising, because, as Weizman explains, education in the arts and humanities is often cited as the most powerful weapon against imperialism (Weizman, 2007, p.69). Weizman describes how the leftist critiques developed by Bataille, Tschumi and the Situationists – all cited by the IDF as inspiring new military tactics – are now deployed in order to project power, rather than to subvert it. This, perhaps, is where the radicality of the Israeli approach lies – as after all, military strategists have been using theory and philosophy since the days of Marcus Aurelius[6] – in the fact of the military using the tools often used to critique it, against itself:

> We employ critical theory primarily in order to critique the military institution itself – its fixed and heavy conceptual foundations. Theory is important for us in order to articulate the gap between the existing paradigm and where we want to go. (Weizman, Frieze, 2006)

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[5] military doctrine, strategy and tactics are easily confused. Doctrine is the fundamental principles by which military forces guide their actions in support of objectives; strategy is a set of ideas implemented in pursuit of strategic aims, and defines the goals to achieve in a campaign (which may not include military conflict); and tactics defines the methods to achieve these goals, and is narrower in perspective (in time as well as scale).

[6] Roman Emperor, general and author of *Meditations*, (161-180 C.E)

Weizman reveals how theory is used to generate new practices. Paul Gough, however, writes in fine detail about how artistic practices and techniques have been co-opted directly by the military, in a series of connected essays that consider drawing as a military practice over two centuries. Gough describes and reflects upon mobile reconnaissance drawings and formal panoramas, equating them with the functions of creating a tactical narrative and gaining scopic control, and hence spatial dominance (Gough, 2009). He writes extensively of the experiences of a number of trained artists deployed on military duties in both World War I and II, of how the 'artistic' was eviscerated from drawings[7] whose very purpose was to "neutralize the dangers of ... terrain and eventually assure mastery over it" (Gough, 1998). Gough, Shell and Peter Forbes have all recently made accounts of how artists were also employed as *camoufleurs* during both World Wars, and how the history of camouflage proliferated from the practice-based research[8] of American painter Abbott Thayer. It was clear that the military had been prepared historically to employ artistic practices if they achieved the desired outcome, even if they were quick to eliminate any affective or decorative elements from production. I wondered how artists might similarly use military practices to achieve their strategic objectives, and whether in fact, while military strategists are *mis*using the strategies of art and architecture for imperialism, can artists use military strategies to expose and critique militarism? My reading of the Weizman and Gough texts would indicate that as military doctrine can be said to operate in the same way as an artwork, that an artwork is the most effective tool with which to challenge it.

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[7] 'it is almost better that the artistic sense should be absent, and that instead if idealizing a landscape it should be looked at with a cold matter-of-fact military eye' (War Office 1912:75, cited in Gough, 2009)

[8] though Picasso declared that the nature of all camouflage is cubist

In the studio, my thoughts congealed around Geoffrey Batchen's work on the birth of photography, and his thesis that the development of early photographic emulsion was located in chemical experiments conducted into munitions by the Wedgwood brothers on behalf of the British army (Batchen, 1997). The question arose, 'would it be possible to trace a common element in devices that were produced for military purposes, and might a vestige of their original purpose remain'?

I had proposed, as part of my original research plan, to experiment with various military and non-military devices for 'vision' (designed for the act of seeing). Using hybrid analogue-digital models based on the historical camera obscura, I tested some improvised image-capture devices that created beautiful, romantic images, which begged to be turned towards landscapes and sky-scapes. My readings of detailed accounts of Galileo's telescopy and the Herschels' practices of recording the night sky, enhanced my own experiments into photographing the moon[9] – a task made tricky with perspectival pitfalls. Addressing the problems of perspectival distortion when recording the moon by testing 'open settings' (where movement can be traced within the image) and light levels enabled an initial break-through in the studio to occur. It was through working directly with the materials that the problems were solved. The earlier reading was thus 'worked through' the practice – and my discovery was to define the three strands to my research: the device used for looking, the intellectual framework of looking, and the system of mediation or interpretation. This parallels the structure of field-craft: tool, doctrine, and tactics.

This new insight structured my investigations from these three different angles, denominated as "Device, Regime, Interpretation", and encouraged categorization of my findings into the framework already discussed in chapters one

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[9] Isabella Streffen, Perfect Moon (2009), photographic print, 20 x 24 inches

and two. Considering this new structure in material terms, I developed a new piece of work with the three categories as a core: *Dead Reckoning* (2009) a multi-media enquiry into the study of landscape through artistic and military practices. It is important to note the pivotal role of this piece in the research at this point, though the work is discussed in more detail in chapter five.

Working with military professionals during the making of this work enabled me to examine in detail specific practices that had hitherto remained mysterious to me. 'Showing and telling' through drawing and photography, allowed me to relate the practices of the sniper more clearly to the practices of the artist, and to question the possible existence of additional relationships between military and artistic practices. Could parallels be drawn between these contrasting (even conflicting) practices through identifying the possible common constituents of the 'operational toolbox'?

An 'operational toolbox' consists of more than a set of equipment: it encompasses a set of practices and a set of theories that offer a framework for the deployment of equipment and practices (device, regime, interpretation). Weizman's text offers a clue to generating a response:

> The narrative of the battle plan is replaced by what the military, using a Foucauldian term, calls the 'toolbox approach', according to which units receive the tools they need to deal with several given situations and scenarios but cannot predict the order in which these events would actually occur (Weizman, Frieze, 2006)

Concomitantly, I took part in *Spectral Ecologies*, a workshop investigation into the theories and practical use of hyper-spectral technologies with artist Martin Howse, during which I developed a small studio "kit" of hand-made devices that enabled me to capture electro-magnetic data – essentially, receivers for the hyper-spectral. The 'kit'

devised for the initial training sessions consisted of items that could comprise a useful 'operational toolbox' for an artist to complete a specific form of investigation. Figures 3.1 and 3.2 are notes from my studio diary that show images of some of the devices in construction and use on location, together with some of the concepts and references that were also part of the toolbox. In this instance, although the Howse toolbox contained both practical and conceptual 'kit', the operations that it could be used for were really far too specific and limited for my purposes, and reconsideration was necessary.

whispering galleries   sound mirrors   physical wave transmissions waveguide antennae   cymatics   spark gap transmission   iron ore saturation   magnetic fields in pottery wave generation circuits   magnetometers   electrometers amateur radio telescopy   geophysical archaeology

fig 3.1 *Spectral Ecologies* workshop, 2009

EMF fields   RFID   The Crying of Lot 49 forensic perspective in landscape   mapping event intensity using GPS   unintentional emissions   TEMPEST cryptography   EM psychogeographics data sedimentation   data visualisation underground transmission networks

fig 3.2 *Spectral Ecologies* workshop, 2009

In order to decide what my particular toolbox might contain, it was necessary to consider how military scientists had reached their conclusions (through reflections on the lessons of warfare) about the form that a military 'operational

toolkit' might take. Understanding the development of military doctrine, strategy and tactics was key to deciding which tools might be required, and it was therefore necessary to look in detail at military exercises and simulations, war-gaming, and the long history of gaming in military training in order to inform studio experimentation.

There are two main types of military exercise (or war-game, as they are sometimes known), the field exercise and the simulation, though they both intend to explore the effects of tactics and strategies without actual combat. The field exercise – or in military parlance, *scheme* – is a full-scale rehearsal of military manoeuvres in a simulated battle, with opposing sides typically designated as 'blue' and 'orange'. Simulation exercises – the exquisitely titled TEWTS[10] and NEWDS[11] (also known as 'sand tables') enable commanders to manipulate models through a range of possible scenarios, and are now largely computer simulations.

Both types of exercises have their drawbacks, and further, de Landa argues that all war-gaming suffers from a systemic bias for conflict (de Landa, 1991), implying that the very existence of simulation exercises reveals the intrinsic preference of the State against co-operative behaviour (that is, the state is biased in favour of its own transformation into the war machine). Field exercises are costly, and cannot be used to test some theories (for example, attrition scenarios), and simulations are riddled with pitfalls from political misappropriation, through to weighting simulations in order to conform to a particular outcome (and perhaps sell specific weaponry as a result), to human input error.

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[10] Tactical Exercises Without Troops
[11] Night Exercises Without Darkness

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Having examined specific military practices through the creation of *Dead Reckoning*, and having experimented with the concept of the toolbox in *Spectral Ecologies*, I realized that I was being far too literal in trying to bring together a set of objects that were useful. What I required were objects or processes that were changeable and responsive, an assemblage of which I was a key part. So I resolved to conduct some 'games' of my own in the studio, first with *The Model*, extensively discussed in chapter five, and then subsequently with *The Old Razzle Dazzle* (2012)[12].

In chapter five, I describe my work *The Model* as a laboratory for scenario building. Setting the 'rules' for my 'games' according to military processes required an enquiry into scenario setting. My on-going project *Border Strategy*[13] (in which I undertake a CPX exercise with a group of Royal Air Force Regiment veterans) is the culmination of that enquiry, and is further discussed in chapter six. Scenario building is a method used for strategic planning by military intelligence and derives from the war games of the Prussian *Kriegspiel*. Its subjective and heuristic nature, and its status as a tool for collective learning, reframing perceptions, and, crucially, preserving uncertainty, make it a very useful method for art research. The heart of the process is the combination of known facts about the future with plausible alternatives (in military terms: social, technical, economic, environmental, educational, political and aesthetic (STEEEPA) trends). For the purposes of studio work, any of these alternatives (or others) could be included, and with *The Model* I focused on aesthetic alternatives. The primary challenge of scenario-building is considered by practitioners to be finding out the real needs of policy-makers when policy-makers either do not know what they need to know, or may not be able to describe the information that they really need. This is an excellent metaphor for studio work: I did not know what I needed to know, and I did not know how to describe what I wanted. It defines the

[12] Isabella Streffen, *The Old Razzle Dazzle* (2012), three-channel digital video
[13] Isabella Streffen, *Border Strategy* (work in progress) digital video, artists book

nature of 'the laboratory of the unknown' that I consider constitutes the core of artwork. The use of scenario setting in fine art practice was established by Guy Debord in his 1987 book *Le Jeu de la Guerre*[14], a project that he considered the only thing of his that would have future value, and it is occasionally employed by other artists re-negotiating Situationist practices through military practices (such as Liliane Lijn, or the Laboratory For Insurrectionary Activity). As well as the studio experimentation and an email discussion with the Station Commander at RAF Spadeadam, my research in this area was also informed by personal discussions on scenario building with Dr. Sharon Gharamari-Tabrizi[15], who has written extensively on Herman Kahn (developer of this technique of describing the future in stories as if written by people in the future, during his work at RAND).

The final element of the methodological jigsaw concerned the question of camouflage, already discussed in chapter one as an important element in both identifying the military gaze, and as key factor in developing a practice of critique. The theme of shifting subjectivity and its relation to camouflage is the core concern of Hanna Rose Shell's recent text *Hide and Seek*. Shell is a filmmaker and academic, who, like Weizman and Gough, operates in the interstices of theory and practice, and writes from an authoritative position about that relationship.

One of the most intriguing aspects of camouflage is the subjectivity that is at stake. There is a constant reconfiguring of self for the avoidance of notice by the Other, whether human or mechanical. This echoes my personal experience as artist-in-residence in a number of institutions – in fact, it is a critical factor in being able to move within and through the aims and procedures of those institutions. This is a theme picked up by Shell in her account of

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[14] Debord, Guy (1987) *Le Jeu de la Guerre*. Translated by Alice Ho. London: Atlas
[15] at the time a Kluge Fellow at the Library of Congress

reconnaissance practices, who describes it as "destabilizing the self, even as that self is shifted" (Shell, 2012:149) connecting it explicitly to the development of aerial surveillance technologies:

> Under the pressures exerted by the serial photography of aerial surveillance, the need to 'cover one's tracks' in the most literal sense produced new ways to disappear and, with them, new ways to locate the self so as to hide in plain sight.......'camouflage' is a critical subject of study taught in basic training. In this sense, camouflage cannot be preprinted or packaged; rather, it is meaningful as a way of seeing, being, moving, and working in the world. It is a form of cultivated subjectivity. As such, it is an individuated form of self-awareness that is also part of a network of institutional practices." (2012:19)

Shell claims that strategic concealment underlays cultural practice, with individuals practicing the art of disappearing from view. My empirical experience as artist moving within host institutions would appear to anecdotally confirm her theory, but it was important to investigate the possibility of an actual rather than a metaphorical disappearance. To test these ideas – in the manner of Jan Purkinje – I constructed a series of studio experiments. Reading texts including Poe's *The Purloin'd Letter*, and focusing on the idea of hiding in plain sight, I commenced by attempting to mirror a balloon. This led me to work by architect Dan Hisel, and further into questions of invisibility and the edges of visibility. The experiments were unsuccessful – (clue: try a cube, not a sphere) – and were abandoned. It was a failure. An alternative scenario needed to be constructed.

In 2011, I proposed (to the Terra Foundation for American Art) a test of some ideas about camouflage that I had extrapolated from my investigation into the Thayer papers (at the Library of Congress and the Smithsonian Institute)

in relation to impressionist techniques that smudged the demarcations between figure and ground[16]. The initial experiments took place on location in Monet's garden in Giverny. Pondering recent scientific journal reports about current research into the 'invisibility cloak', I wondered how Monet's ideas of vision could have impacted on such a development, and constructed a scenario to frame investigative trials. The experiment included dressing models in fabrics from the Monet gift shop that had been printed with facsimiles of his paintings of the garden, and then attempting to hide the models in the garden. I worked with both still and moving images, to focus on still and 'chameleonic'[17]modalities.

In the second set of experiments, the field-craft method was more refined, and used *bokeh* to exploit the inherent weaknesses in lenses and emulate the fractured vision of impressionism. This worked extremely well, and in *The Old Razzle Dazzle* (2011-12), I was able to construct a visually exquisite but critically acute response to this site where a million tourist fantasies about 'art', 'nature' and 'beauty' are played out.

Through studio work, it became clear that the shifting of the self that is engendered by camouflage is an intrinsic part of the production of artworks. Different artworks have differing requirements (as though they require different selves) – in the same way as the soldier practicing field-craft will have different techniques for use in the jungle, the city and the arctic – and they demand different things from the artist. I consequently developed a methodology for

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[16] "I will test my hunch that the resulting images will show me something about how Wilkinson decentres the body/eye, and how Monet might experience the body/eye now, and lead me directly to develop a strategy for in/visibility." (Isabella Streffen, Terra Foundation for American Art residency application, January 8th, 2011)

[17] I used this word retrospectively, as Shell's book was not printed until after my first visit to Giverny, and this is the term she very helpfully uses to describe moving camouflage

the creation of artworks combining the use of a tool-box, the development of a scenario and the assumption of the ultimate lesson of camouflage, the constant adaptation of the self to its surroundings. This apparatus is the framework of my research project, and is the apparatus with which I traverse the 'laboratory of the unknown'. The apparatus embodies my theory of artistic field-craft – the intersection of tools, theories, and tactics in pursuit of an artistic objective.

fig 3.3 Isabella Streffen, *The Old Razzle Dazzle* (2011-2012), three channel HD digital video

CHAPTER 4. THE UNSEEN EXHIBITION: Negotiated Visions

The concept of the unseen museum that we carry around within ourselves, and into which we – consciously or not – place all of the cultural works that we experience, described by Ralph Rugoff in his 1997 book 'The Scene of The Crime', is a foundation stone of my thinking about art.

One of my objectives on this project was to construct an exhibition that would perfectly contextualize, represent and embody the research. I wanted to lead a viewer into a labyrinth of crossed routes, destinies and connections, and allow them to make their own way home.

Sadly, the constraints of financial support, artist availability, space, and the difficulties of working with the gallery system mean this exhibition is yet to be realized outside of these pages. This chapter stages an imaginary exhibition of the work of five artists whose work can be analyzed in relation to de Landa's four-tier structure of the war machine, and with whom I share methods, approaches, themes and concerns.

A survey of artists working 'with military themes, practices and locations' (with the intention of contextualizing my own work) yielded hundreds of existing projects. Decisions were needed about what would and would *not* be included in the exhibition. To determine the inferences of the phrase 'with military themes', I formulated a taxonomy in the style of Sei Shonōgan: works of photo-journalism; paintings with war as a subject matter; work by artists who were at one time or another soldiers; work produced as part of an embedded process (such as through the UK's official war

artist programme); work in the context of the video-game, whether "serious", machinima or simulation; work that was conceptualized clearly as protest/activist work; artwork where the context was more important than the content; and work which was produced prior to 2001. This classification process permitted me to construct a "long list" of artists sharing a number of my concerns and approaches who were addressing similar topics, theories and materials. In that subsection, Jordan Crandall, Trevor Paglen, Suzanne Treister, Jill Magid and Joanna Griffin have a very specific relationship framed by their involvements in Crandall's 'Under Fire' project. They are not the only artists working within my criteria – other examples would be Louise K. Wilson, Gair Dunlop, Aleksandr Sokurov, Joy Garnett – but there is a synergy between their works, methods and histories that warrants examination in the form of an exhibition.

The "I" of this text will now assume the role of exhibition guide (emulating Rugoff) to steer the reader into the heart of this imaginary exhibition for a private view. As the reader proceeds through the exhibition, the tone of the guide will vary, in an echo of the many different expectations of a gallery show.

WORKS ON SHOW:

Joanna Griffin: Breaking The Surface (2005)
A Connection To A Remote Place (date unconfirmed)
Satellite Stories (2007-9)

Suzanne Treister: Time Travelling With Rosalind Brodsky (1995-2010)
NATO (2004-8)
MTB (2009)
HEXEN 2039 (2006)
HEXEN 2.0 (2009-11)

Trevor Paglen: Black Sites (2006)
Limit Telephotography (2007-ongoing)
They Watch The Moon (2010)
The Other Night Sky (2010-11)

Jill Magid: Article 12/The Spy Project (2005-8)
Evidence Locker (2004)
Becoming Tarden (2009)

Jordan Crandall: Drive
Heatseeking (2000-1)
Under Fire (ongoing)

4.1 Joanna Griffin

I first heard a rumour of Joanna Griffin's work in 2007, as I was preparing to write my research proposal for this project: there was a reference to a funding award made by the AHRC, a mention of doctoral research into submarines, a trace at the University of Southampton, a whisper of a performance at Bristol's Cube Cinema, a group exhibition in Belfast, a website that I was unable to access.

fig 4.1 Joanna Griffin performing *Satellite Stories* at Cube Cinema, Bristol in 2007

In 2011, I was invited to become part of the LABoral programme *Orbitando Satelites*, where participants had proposed the development of three lines of work: satellite listening and sighting; satellite politics and poetry; and the construction of a vehicle and suborbital laboratory. Joanna Griffin was named as a facilitator.

I was particularly interested to meet Griffin, as there are a significant number of confluences in our work: a methodological one in which her ethnographic methodology and my development of field-craft share some practical similarities; an interest in spectacular and mythologized technologies; a specific approach to the *poetics* of technology which, perhaps because of our shared insistence on ideas of human agency despite utilizing digital technologies, *reads against the grain* of current digital media research. Additionally, I had just undertaken a period of extensive archival research into aspects of the Space Race[1], and was trying to work with this material in a way that was discursive (the project became my performance lecture *Aeronaut*), and I was curious about how Griffin's performances of the stories, figures and histories of satellites and the aesthetics of these performances would correlate.[2]

Griffin's elusiveness continues to fascinate me, as it seems connected with her own obsession with withheld information and accessibility to restricted technologies. During the detective work that comprises my case study, I have frequently wondered if she is consciously assuming the role of the invisible. It is in her interest to operate discreetly, but paradoxically, very much not in her interest to be without profile in the art world. That she interacts with arts organizations and situates her work within that art world is not in doubt – demonstrated by her inclusion into the Cornerhouse publication *As It Is* (Prior, Doherty & Kermode, 2000) and her exhibitions in Wolverhampton, Manchester, Birmingham, Cambridge, New York, Leipzig, and Santiago. The inaccessibility of her work raises some important questions of what might be at stake that she finds it necessary to fly so far under the radar.

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[1] I had been researching into the Apollo space programmes, the Strategic Defense Initiative and the development of Blue Streak missiles in the UK, at the Library of Congress.

[2] *Satellite Stories*, performance, references discovered 2007-2011, locations include Bristol, Dartington, Barcelona, no further details

The frustration of trying to access the works prompted me to characterize them in terms of a correspondence with de Landa's definition of the strategic, with its unified political goal, and dynamical systems of cooperation and negotiation. For the purposes of this exegesis, we should think of her works as things we are not supposed to see, forced to reveal themselves for reconstruction by dogged detection work.

Figs 4.2 & 4.3. These images appear on a flickr site attributed to 'Joanna Griffin'

It is hard to find images or accounts of her research, including *Satellite Stories*, *Moon Vehicle*, *Finding Meaning*, *The Satellite Investigators*, *Secret Satellites* and access to the artist's website remains mysteriously barred. There is the image at fig 4.1, showing a seated blonde woman gesticulating against a background of red stage curtains. I have also discovered snapshots of a workshop in India (undated). My conclusion, after extensive searching, is that the visual image is unimportant to Griffin in the dissemination of her practice, and that the locus of her work is elsewhere, in the relationships that it brings into play. These works might best be described as 'relational' as they produce the

inter-subjective encounters defined by Bourriaud in his 1998 text 'Relational Aesthetics', as Griffin explores the connections and experiences existing between people in order to

"draw out a set of nuanced, ongoing, provisional, localized and personal relations with the
Moon of the kind often lost in the grand narrative of institutionalized space technologies"
[Griffin, 2012:219]

The earliest traces of Griffin's practice that I located are works that track helicopters and submarines. *Breaking The Surface*[3] – a study of submarines and simultaneously a study of the processes of research – was exhibited as prints and a video installation in 2005 at Plymouth Arts Centre, and continues to have a presence in the form of a simple flash-based website and an extended illustrated essay. Given Griffin's emphasis on the experience of looking for information, the narrative of her research is largely hidden in this work.

Curator Claire Doherty reviewed the exhibition, detailed what some of the works actually were[4] beyond their titles, and described Griffin's practice as working with the substance of surveillance in a way that resists creating a theatre of spectacular narrative (Doherty, 2005). Griffin herself wrote an elegant article[5] for *Cultural Politics* journal (Griffin 2005), which evinces a narrative for her research, but gives no further details of the artworks (objects, processes) that she made. Even her biographical detail is obfuscatory, describing her as 'an artist from the UK...currently working outside the UK'.

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[3] Joanna Griffin, *Breaking The Surface* (2005), exhibition at Plymouth Arts Centre, Plymouth
[4] works by Joanna Griffin comprising part of the Breaking The Surface exhibition, (note that this may not be an exhaustive list): *MD902*, a video work with a helicopter (no further details); *An Earlier Mission*, super8 and digital video (nfd); *Field Work*, an installation of varied materials (nfd); *Chrysalidding*, digital print; *S173*, video installation (nfd); *Moby Dick* (nfd); *Airshow*, bookwork (nfd)
[5] Griffin, Joanna (2005), 'Field Report: Breaking The Surface*'. Cultural Politics, v1.2 pp233-242*

figs 4.4 & 4.5

I collected several articles written by Griffin, which gave insight into her methods and motives. Her investigation into submarines was inspired when a Sea King helicopter flew very low over her as she walked alone in the English countryside. She was more excited than frightened by the experience, which turned out to have a perfectly reasonable explanation, but the idea of the damselfly within the technology had drawn out an echo (surely, a sonar echo) with the idea and image of the sea beast within the submarine.

Griffin's investigation into submarines intrigued me, and her methodology allowed her to make direct testimony to their – supposedly secret[6] – departures and arrivals. She made site visits to military bases at Devonport in Plymouth and Clyde at Faslane, to the British Library and the Imperial War Museum, to Loch Striven and Holy Loch, and also visited a Peace Camp. She gained permission to film submarines at Faslane and to have a guided tour of a Hunter Killer model at Devonport, as well as talk to submariners.

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[6] she states that their timetables are published in the Western Morning News

Fig 4.6 this is the single visual trace of *Breaking The Surface* that I have been able to track[7].

The tactic of negotiation characterizes not only Griffin's practice, but also the practices of all the artists included in this exhibition. It forms the basis of the connection with my own work.

Griffin is attracted to transgression, which she perceives as a misunderstood but necessary path to new thinking (Griffin, 2010). She casts herself in the role of the trickster who negotiates the unstable edifice of post-modernism, as her subject matter moves from under the seas to above the atmosphere. She argues that she is pretending to make art to find out more about the operation of the State (Griffin, 2010). This statement sets up a complex set of relations and it is important to be aware of the 'hall of mirrors' effect that she deploys as, despite her bitter opposition to militarism, she finds herself using militarized techniques to conduct her enquiry. Griffin manipulates the desire for an immutable, static position that can be dissected, analyzed and defended. She is not remotely interested in that, preferring to make everything she touches unstable, preventing a position from being established, constantly fragmenting and reforming. These are the classic techniques of camouflage: the sniper's need to construct himself for the vision of another, by way of the Structuralist[8] claim 'I see myself seeing myself'. This technique epitomizes the recent changes in military approaches relating to warfare in the asymmetric environment[9], traced by Eyal Weizman[10] in his work on the IDF[11] and its use of Deleuzian theory to 'smooth out space'.

The relationship between *A Connection To A Remote Place*, *Satellite Stories*, the *Moon Vehicle* workshops and *Secret Satellites* remains unclear, with some of the works appearing under several dates. Following the exhibition of *Breaking The Surface* in 2005, Griffin stopped hunting submarines, and turned her attention to satellites. I was able to

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[8] Lacan (1973)

[9] asymmetric environment refers to a state of asymmetric warfare, best described as conflict between two parties with vastly differing military resources. the term is often used to indicate the strategies and tactics of unconventional warfare, and is virtually synonymous with 'insurgency'.

[10] Weizman (2006)

[11] Israeli Defense Force

reconstitute her progress as follows: work with several Space Labs in the UK, USA and Canada; various workshops included as part of the Arts Catalyst programme; various performances of *Satellite Stories*, including for Sputnik Day; an extended period of research in India, where she developed the *Moon Vehicle* workshops, including a published article in LEONARDO; a group exhibition at Belfast Exposed in February and March 2011, where she gave an artist's talk and delivered a workshop called *Secret Satellites* (Trevor Paglen exhibited his work *The Other Night Sky* on this occasion); her involvement with LABoral in Spain, and the subsequent exhibition in Santa Monica, Barcelona. The document titled *A Connection To A Remote Place* is dated 2003 and noted as an output of the University of Westminster. Griffin undertook an MA in Hypermedia Studies at the University of Westminster, suggesting that this document – the first evidence of her interest in satellites – is a record from that period.

A Connection To A Remote Place (document) outlines Griffin's interest in satellites and summarises the theoretical framework and concerns at the core of her study. The tone is very different to the direct, poetical address of *Breaking The Surface* (which appears to be subsequent), and is cool, distant and objective, reflecting her opinions of the technology itself.

Griffin's concerns about the accessibility of satellite technology, made clear in this piece, are symptomatic of her wider concern with access to information about technologies used for military purposes. She contrasts the withholding of these technologies with the ease of access to the Internet. On reflection, Griffin's championing of an Internet that "wholeheartedly become[s] a civilian technology, a medium for democracy"[12] seems a strange response when considered post-Wikileaks. It forces us to consider the utopian aims of the Internet pioneers and how (cyber) space has been colonized and haunted. The document was written at a time when the implications of the Internet in

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[12] Griffin, Joanna (2003) A Connection To A Remote Place. MA dissertation. University of Westminster.

the public sphere were not clear. In 2003, it was not evident that Google was censored and banned in China, that governments would interrupt access during the Arab Spring, that closed protocols[13] would be utilized to ferment civil unrest, or that social networking sites would provide users' personal data to secret State agencies.

Griffin apparent inconsistent reading of technologies may initially seem slightly discordant. She asks very directly, and seemingly without irony: "What can we really know of things that reach us only as images through technology, that we have no tangible experience of"[14], setting up a relationship in which certain technologies are privileged by an asserted distaste for them. Yet Griffin extensively uses other intangible technologies including the Internet, digital video and sound without comment, and this emphasizes the impression of the artist as changeable and variable, reinforcing the connection to humanity that is such an important part of her work.

Griffin makes the point that the detachment inscribed into satellite technology is not purely connected to constraints of access to technology, but to the dominating concept of the aerial view. Previously (in chapter one) I outlined how the Strategic Defense Initiative implied the most ambitious manifestation of panopticism possible. Extrapolating from this reasoning, the view from above is more than the preserve of privilege: it is the preserve of the gods, alien intelligence, and other physical systems of which we remain ignorant. The new connections made to space profoundly alter the assured perspective of a Renaissance that placed the vanishing point on the horizon, and not at the centre of the earth (as it appears from the air).

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[13] I specifically refer to the proprietary communication protocols used by Blackberry that can not be easily intercepted. A protocol is a system of digital message formats and rules for exchanging those messages in telecommunications, for instance, on a smartphone.
[14] Griffin, Joanna (2003) A Connection To A remote Place. MA dissertation. University of Westminster.

And yet. There is a sense of distance about satellites that is not connected to their orbits.

A Connection To A Remote Place operates as the theoretical underpinning of Griffin's 2007-9 work *Satellite Stories*. The title has been applied to both workshops and performances, and it seems that Griffin adapted the material content according to the context. She has acknowledged that some space organizations do not want to work with artists, preferring to involve them solely in designing spacesuits. She consequently developed her strategy of working in 'radical' education projects and workshops as a compromise method of 'deep cover'.

In *Satellite Stories*, Griffin mixed quotations from literary and philosophical texts by Heidegger, Verne and Blanchot with live data from the Internet, in order to have a satellite reveal its own narrative to an audience. In the piece, Griffin ranged through translating the position of celestial bodies, to images and poetics, and created a fascinating symbiosis of objective facts and subjective musings on the colonizing of space and the neglected semantics of satellite architecture. In its Internet iteration, the work touches on the issue of censorship as it presents a collection of various data from philosophical texts, to manifestations of the electro-magnetic interference of a storm as an image, to the audience/participants.

Art/science blogger and producer (and sky-diver) Nicola Triscott described Griffin's *Satellite Stories* at Mullard Space Science Laboratory (figs 4.9–4.11) in romantic, affective terms, emphasizing a 'radical departure from the usual', and focusing on the spell cast by Griffin's deployment of highly seductive aesthetics, all twilight and enchantment.[15] The

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[15] [arts catalyst blog, 3/11/08]

softness of these images is radical when considered in relation to the Kittler-inspired 'non-human turn' inherent in much contemporary thought in the humanities-led study of technology. This is where Griffin's reading against the grain is most evident. The images are so explicitly human, tangible, delicate – so much the opposite of the prevailing fashion in contemporary thinking on technology – as she focuses on reminding us that technology does, in fact, have humanity in its foundations.

fig 4.7.

figs 4.8 & 4.9

There is something essentially tactical about Griffins work, something in her constant fracturing of the self and audience expectation, that connects her work with de Landa's ideas on the friction inherent in military action. It seems that she constantly operates from a position of camouflage, reconfiguring herself, as she steadily tracks the machines that she cannot evade.

4.2 Suzanne Treister

Triester was born in London in the late 1950s and studied there before moving to Australia, New York and Berlin. Her earliest works garnered her recognition as a painter, but she moved into creating digital works in the early 1990s, and is considered to be a pioneer in the field. In 1995, she developed *Time Travelling With Rosalind Brodsky*[16], in which her avatar, the delusional Rosalind Brodsky – who believes herself to be working at the Institute of Militronics
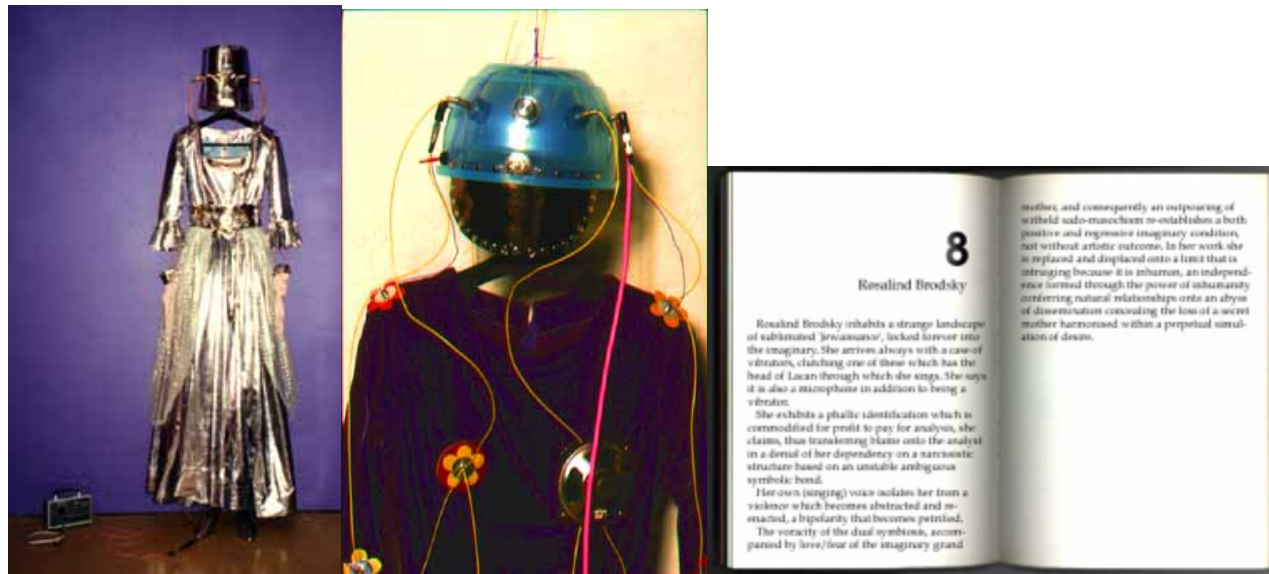
Fig, 4.10, 4.11 & 4.12 Suzanne Treister, artefacts from *Time Travelling with Rosalind Brodsky*, including the outfit worn by Brodsky to rescue her grandparents from the Holocaust, the outfit worn by Brodsky to go to London in the 1960s, and her psychoanalytical Case History notes from her analysis by Julia Kristeva.

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[16] Suzanne Treister, *The Brodsky projects*, 1995-2010, varied media

and Advanced Time Interventionality (IMATI) – is able to investigate the traumatic history of the twentieth century by travelling to its pivotal moments.

The Brodsky Projects comprise an extraordinary sustained fantasy about the edges of the possible, through which Treister is liberated as an artist. In interviews, she has spoken of the straight-jacket of 'high Post-modernism' and how many artists of this period felt discouraged from working outside a rigid framework of post-modern theoretical discourse which denied the possibility of subjectivity or narrative (Treister, 2005). Evidently for Treister, the use of appropriated images spoke more to issues of alternative histories, rather than asserting 'the Death of the Author' (Treister, 2005). Using Brodsky's adventures as a tool, Treister was at liberty to play with imagery and material from science fiction and religious sources, and to use autobiographical material to make sense of history, politics and war. One of Brodsky's key acts was the attempt to rescue Treister's grandparents who were murdered in the Holocaust.

The manifestation of the Brodsky projects is too various to discuss in depth here, but as well as artefacts that include costumes, drawings, and objects, there are videos of apparent 'sightings', the recordings of a rock band, accounts of her psychoanalyses with leading analysts, evidence of her lecturing on IMATI at the Guggenheim, bus-trips, an online estate agency, and other performances in public and gallery spaces.

figs 4.13 & 4.14 Bus trip with Rosalind Brodsky and evidence of the Brodsky lecture on IMATI at the Guggenheim

figs 4.15 & 4.16 Brodsky artefacts from *Operation Swanlake* installed at Annely Juda Fine Art in London in 2004

At first glance, the military setting for these works is not explicit – referenced lightly, humorously, in terms of IMATI – and an unwary viewer could easily miss the obvious referent. The entire structure, of course, is built upon a military edifice, an artistic equivalence of Virilio's society. Some of the Brodsky projects engage more openly with this than others (for example *HEXEN 2039*, which I will discuss shortly) but in many, the presence of the military as foundational is but a whisper.

Treister's work straddles disciplines, discourses and cultural hierarchies in its attempt to understand the trajectory of post-war history and the rise of the military-industrial complex. She deals with notions of identity, power and the imaginary (hallucinatory) by revealing aspects of the hidden, opening up to marginal and occult knowledge, in order to speak from outside the history of the victors[17]. Through her artistic research, she fuses the intellectual history of a radical enlightenment with a critique of contemporary control society, in order to reflect on modern subjectivity and governance.

She uses the tools of traditional surveillance (perhaps surveillance from the analogue age) – in-depth research, compilations of systematically cross-referenced information, reports, photographs and videos – alongside tools from hypothetical projects, and psychic and occult research programmes, to take an aerialised view of modern intellectual and scientific history. Many of her drawings appear cartographic (reminding me of the earliest aerial views from the Aeropaedia[18]).

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[17] attributed to Winston Churchill, but of unknown origin
[18] Baldwin, Thomas (1785) *Aeropaedia; containing the narrative of a balloon excursion from Chester.* London. Original document accessed at the Library of Congress, January 2012.

NATO (2004-8) comprises over two hundred watercolours that illustrate the NATO codification system- a taxonomy that classifies everything in the world numerically, for the purposes of military procurement. It is a work that relates strongly to de Landa's concept of the logistical (in which the planning for operations must exist before the apparatus of the operation exists), and to the interpretative regime of tracking that can be modeled onto this level of his structure, paralleling the contemporary civilian manufacturing economy which 'receives its catalytic stimulus from the original defense-related efforts of the State to create the group of strategic industries' (de Landa, 1991:111). Military and civilian commercial classification networks meet here once again, emerging enmeshed with Treister's personal history. Treister's father, a Polish exile, ran a defence-spare-parts business, and it was whilst helping him build a website for his products that she first encountered the NATO system. She identified it as being a code that would seem ordinary to its users, but delusional or alienating to outsiders. Both the military coding and the *NATO* drawings bear the marks of the obsessional mapping and drawing so frequently associated with 'outsider art' – a tactic that Treister deploys repeatedly throughout her works.

Treister offers up her work in a deadpan style – leaving a viewer unclear as to the level of irony in the interwoven pieces. A close perusal of the *NATO* watercolours, however, establishes that some very unusual objects are being classified: Diablo Canyon Nuclear Power Plant is followed by a copy of Penthouse, the Russian crown jewels with a classical Greek altar used by the Nazis. The viewer is left to wonder exactly what sort of operations NATO might be planning, and under what category s/he might be absorbed into this endless enumeration.

NATO Supply Classification (NSC) 9915 - Collectors' and/or Historical
Items (Includes: Antiques; Artifacts; Coins; Stamps; Rare Books;
Works of Art, Collectors and/or Historical Gems; Jewelry,
and Cut Precious Stones; Natural History Items.)

Great Imperial Crown of Russia
First used for the Empress Catherine II the Great's Coronation in 1762.
Last used to crown Tsar Nicholas II in 1894
The crown is based upon an ancient Byzantine design, two half spheres
representing the eastern and western empires of Rome.
Showcase 50, Hall 7, Kremlin Armoury Chamber, Moscow, Russia

fig 4.17 Suzanne Treister, NATO (2004-ongoing), watercolour on paper, 21cm x 29.7cm

NATO Supply Classification (NSC) 9925 - Ecclesiastical Equipment,
Furnishings, and Supplies (Includes: Vestments; Altars;
Communion Sets; Ecclesiastical Candelabra; Chalices; Patens;
Altar Cloths; Ecclesiastical Statuary; Sacramental Wine.)

Altar to Zeus
Built 2nd Century BC, Ancient Greek city of Pergamon, now Bergama in Turkey. Moved
and reconstructed 1910 at the Pergamonmuseum, Berlin. The altar's frieze depicts the
gigantomachy or struggle of the gods and the giants.
Used as a model for Albert Speer's Zeppelintribüne with the Führer's pulpit in the
center, situated in the Reichsparteitagsgelände, SE of Nuremberg 49.43° N 11.12° E.
where Nazi rallies were held 1933 - 1938.

fig 4.18 Suzanne Treister, NATO (2004-ongoing), watercolour on paper, 21cm x 29.7cm

fig 4.19 Suzanne Treister, *MTB* (2009), wall drawing, ink on paper 5 x 17 feet

MTB (2009), wall-drawing, 5'x17' was originally installed at Alma Enterprises in London, in the latter part of 2009. It consisted of designs for a military training base of the future, and was in many ways a 'futurological' work (Ronduda, Farquharson, Piwowarska, 2011), weaving together a web of histories and projections to suggest hypothetical scenarios for military training.

In *MTB*, Treister addresses important questions of what might be at stake in these 'trainings', sharing her own theory of potential futures and possible military objectives, and implying certain methods for delivering these objectives.

Triester draws our attention to the special status of military bases as not only 'extra-legal jurisdictions not subject to civil law'[19] but potentially as sovereign bases in separate territories (and consequently highly-contentious). This has a clear link with the work of Joanna Griffin, especially *Breaking The Surface,* and her research into submarines. Griffin alludes throughout her writing on the project to the double-identity of these types of base, and questions how and why one nation can be permitted to station weaponry within another. A great strength of Treister's work, however, is that she never takes up a specific political position, maintaining a conscious ambivalence, whilst not shying from highly politicized issues:

> In terms of the military material and focus, it's not really about ambivalence
> but more about ideas of complicity, since we are all complicit... I developed
> a love-hate relationship with things associated with the military, which is
> different to ambivalence... I certainly never wanted to make didactic,
> political work that's against war per se, it's unrealistic.[20]

Her subtle attention to a legal frame alludes to the more logistical structure of a work that might seem initially to be a play of materials most akin to de Landa's concept of 'hardware' (de Landa, 1991). Treister does not hold back from the fantastical, invoking though her drawings of varied structures, a vast and vivid potential playground. At the core of the work is the concept of the sandbox exercise, now most likely to be realized as a physical training base for

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[19] Suzanne Treister website http://ensemble.va.com.au/Treister/MilitaryTrainingBases/MTB.html accessed 1 August 2012
[20] Suzanne Treister interview with Roger Luckhurst, December 2009

operations (such as Fort Irwin, in California, often called 'Fake Iraq', illustrated below) or as a "serious" video game such as *Virtual Battle Space 2* or DARWARS *Game After Ambush*[21].

figs 4.20 & 4.21 Fake Iraq at Fort Irwin

Treister encourages us to conjure up exercises that might take place in a training facility that includes replications of Afghanistan, an art school (based on the Woodland Bunker at the former RAF Bentwaters in Suffolk), a cathedral of erotic misery, Dallas Arts District, East Berlin circa 1970, the Israeli West-Bank barrier, Manhattan, an occupied zone and the ruins of the palace of the Queen of Sheba. We understand (with a catch of terror in our hearts) that the MTB could in fact be anywhere, in any location where we think we know the rules and the status of law. We could be in it. We could be not subject to civil law, or subject to laws with which we are culturally unfamiliar. We could be being experimented on right this minute.

MTB briefly references the work of Jim Channon, a Vietnam veteran and military theorist working as an educational technologist in the US Army, made famous in popular culture by Jon Ronson's book *The Men Who Stare At Goats*[22].

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[21] simulation games developed and used by the military for battle-training

As the founder of the First Earth Battalion, his unconventional method of approaching military science can be equated with "psy-ops"[23], something stated explicitly in Ronson's book, and which is alluded to in *MTB.* Treister deals fully with psychical and occult practices in previous (and subsequent) works.

Treister engaged extensively with occult knowledge in the 2006 work *HEXEN 2039*, a Rosalind Brodsky research project described as 'new military-occult technologies for psychological warfare'[24], exhibited simultaneously at five venues in London: Chelsea Space, the Science Museum, the Warburg Institute, the Goëthe Insitute and Ognisko Polskie. Treister describes Brodsky's work as para-scientific and 'based on actual events', placing a great deal of faith in her audience's elastic understanding of that phrase. The work reveals the depth of her interest in the places where military and everyday life co-incide, the places that she describes as 'the blurry area between war and peace... where the warrior classes start encroaching on the rest of us'[25]. Although *HEXEN 2039* is a Brodsky project – and therefore sited at a slight remove from the artist, something which could be described as a strategic feint or a camouflaging move – Brodsky is invisible within the piece except by name.

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[22] Ronson, J (2004) *The Men Who Stare At Goats*. New York: Simon & Schuster
[23] psychological operations planned to convey selected information and indicators to influence emotions, motives, objective reasoning, and ultimately decision-making processes.
[24] Suzanne Treister website http://ensemble.va.com.au/tableau/suzy/TT_ResearchProjects/index.html [accessed 1 August 2012]
[25] Suzanne Treister interview with Roger Luckhurst, December 2009
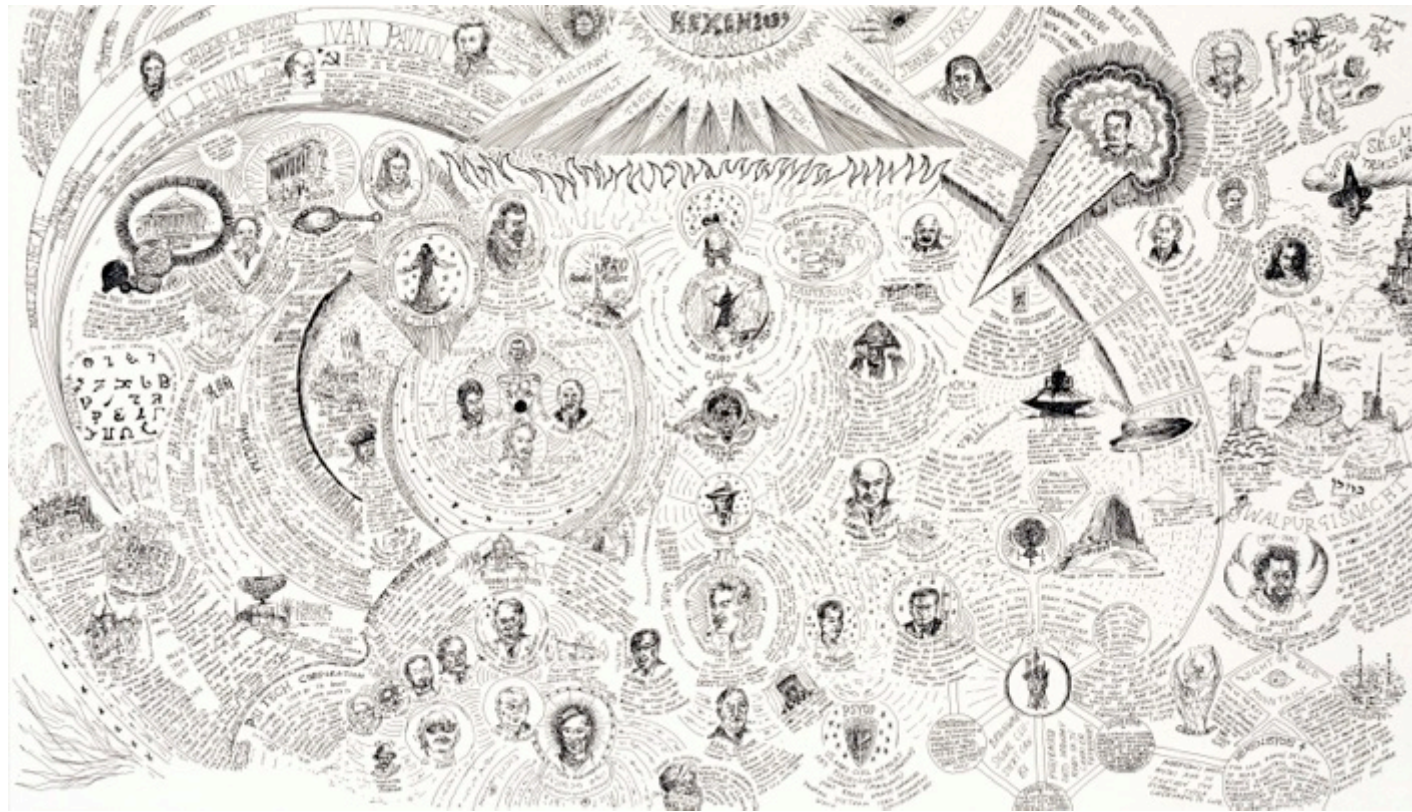
fig 4.22 Suzanne Treister, HEXEN 2039 poster

In *HEXEN 2039*, Treister uses old technologies to think about new technologies (a characteristic of my own work), sketching out networks in pencil to avoid deletion by an electronic binary switcher. Charting a frenzied web of connections in diagrams that reveal links between US rocket research in World War 2, the disconcerting reappearances of Nazi technicians, the mysterious dark arts of Aleister Crowley and his ilk, psy-ops, science fiction, and the Kabbalah, she enables us to glimpse history as though we are seeing it from a very great distance. Here, occult ritual is not merely the subject matter of the research, but also its method. Many of the drawings are 'remote drawings' of places, people and situations that the artist has not seen. Others are garnered through the process of

scrying, a method of divination that requires a reflective, translucent or luminescent substance to psychically see things. In *HEXEN 2039*'s case, this substance was the crystal globe of John Dee, Welsh scholar, polymath, advisor to Elizabeth 1, widely considered one of the most learned men of his age. Treister's intense research process enabled her to negotiate with the British Museum (which owns Dee's artefacts), who subsequently lent them to the artist for the purpose of conducting her research.
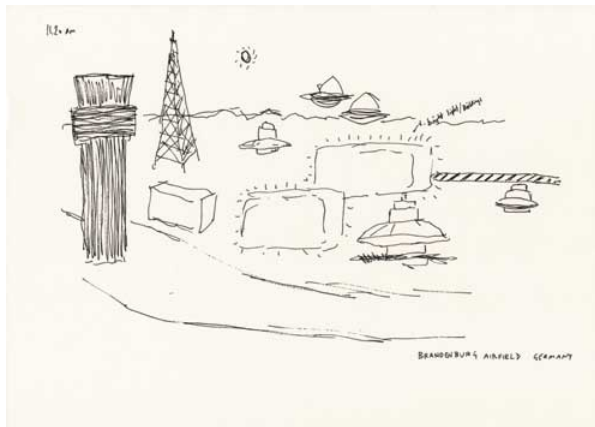
fig 4.23 HEXEN 2039 remote drawings of Brandenburg Airfield and fig 4.24 the Dee Crystal

According to Treister's statement about the project, the Dee Crystal was originally used in the 16th century to 'foretell and provide political and military intelligence'[26] and is an exemplar of the military-occult complex at work.

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[26] Suzanne Treister website [accessed 1 August 2012]
http://ensemble.va.com.au/tableau/suzy/TT_ResearchProjects/Hexen2039/Diagrams&Drawings/remotedraw.html

figs 4.25 & 4.26 HEXEN 2039 installations at the Science Museum, London and Chelsea Space, 2006

The final piece of Treister's work included in this exhibition, is her 2009-11 work, *HEXEN 2.0,* shown throughout 2012 in London, Dortmund, Vienna, Leipzig, Berlin, Paris and New York in the form of alchemical diagrams, a Tarot deck, photo-text works, pencil drawings, a video and a website. This work takes up some of her favoured themes: the histories of scientific research behind government programmes; parallel histories of counter-cultures; the development of cybernetics; intelligence gathering; the framework of post-World War 2 military imperatives; and diverse philosophical, literary and political responses to advances in technology. These concerns align Treister's practice with the theoretical works of media archaeologists and philosophers such as MacLuhan, Kittler and Virilio, who have developed differing, but overlapping theories about advances in technology.

fig 4.27 HEXEN 2.0 installed at Hartware MedienKunstVerein, Dortmund, Germany, 21 April – 22 July 2012

HEXEN 2.0 operates as a space where the individual tools of the work (for example, the Tarot cards) can be used to envision (or predict) possible alternative futures. Danish art historian Lars Bang Larsen interprets the work in his essay 'The Secret Life of Control' (Treister, 2012) as 'not a quick-fix attempt at re-enchanting the world, but… a structuring device that mirrors and performs procedures of mass intelligence gathering in the service of a new epistemology. One can perhaps compare it with a Turing Machine: a virtual system capable of simulating the behavior of any other machine or apparatus of knowledge, including itself.' It is a perfect summation of Treister's practice.

4.3 Trevor Paglen

Trevor Paglen is variously described as an artist, an experimental geographer, and an amateur theologian, and his academic training is typical of the blurred boundaries now identified as a hallmark of new media contemporary art (Knight, 2010). His personal history as the child of a military doctor with an early life spent on military bases in West Germany, echoes my own. These histories bring additional weight and complexity to our respective observations. We have both been a part of the machine that we now analyze. This is the key factor in his selection for this exhibition. He is an interdisciplinary researcher interrogating the limits of democracy, secrecy, visibility and the knowable, revealing to us not Rumsfeld's 'known unknown' Black Swans[27], but rather Zizek's 'unknown unknowns'[28] –

> the disavowed beliefs, suppositions and obscene practices we pretend not to know about, even though they form the background of our public values (Zizek: 2004).

Paglen operates in the territory of the open secret, where invisibility is visible and manifests itself as an aesthetic phenomenon less concerned with revelation, than with declaring the concerns of those who wish to conceal (rather like an institutionally-critiquing confessional) (Lee, 2011). He is particularly interested in setting up relations of seeing from which the artwork then emerges, constructing a binary between the aesthetics of an image and visual rhetoric

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[27] attributed to former Secretary of Defense Donald Rumsfeld, February 12, 2002, DoD press transcript
http://www.defense.gov/transcripts/transcript.aspx?transcriptid=2636 [accessed 1 August 2012)
[28] Zizek links this back to Lacan's description of the Freudian unconscious "the knowledge which doesn't know itself"
http://www.lacan.com/zizekrumsfeld.htm originally published on the In These Times weblog at http://www.inthesetimes.com/

(where, for example, we would expect to encounter questions of spectatorship), and the relational politics of production (such as claiming and performing the right to photograph a secret military base).

Paglen's works that are collected here correspond in their content and context most obviously to de Landa's concept of the tactical with its fog of military friction, but they also connect strongly to his base level of hardware and the sub-division of ballistics. For de Landa, the concept of ballistics congeals around calculations and the constant correcting of missile trajectories. This is crucial to Paglen's work – the tracking[29] that predicts where satellite orbits will pass, is of fundamental importance due to the distances and margins for error in astrophotography being so narrow. Without this calculation of trajectories, Paglen would not know how to map where he should be looking. In fact, he would have no idea where to look at all. There is also the long echo of linear perspective in the repeated triangulations of his work, as can be seen in cartographic enterprises across the centuries.

The work is essentially cartographic. He maps the space between what the impressionistic images of shimmering light disclose as military information, and what they insinuate as part of an aesthetic tradition in terms of the sublime. Even as he reveals, his revelations fail as the elusiveness of the sublime speaks to the limits of ontology. With aesthetics as a tool for demarcating what can or cannot be perceived (and thus creating reality) (Lee 2011), Paglen's work is a tactical elision of fact and fiction.

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[29] defining tracking as a predicting a spot through which something will pass in the future, rather than simply following something – this definition makes clear the change in language in response to the development of new technologies

Truth, witnessing, testimony – all these concepts are invoked in Paglen's practice. He wants to reveal the hidden geographies of military secrets – not only in the present, but also in the nineteenth century. Underpinning all of his work is a reliance on the weight of truth in photography even in the post-photographic era. His well-respected work as an experimental geographer is an important part of this – bringing a resonance to his art practice, a weight and confidence in his word. It reveals a very specific relation to photographic evidence that seems to pose a challenge to Rancière's ideas about the modern fictionalization impulse[30].

For a viewer, Paglen's visual work takes significant effort to unpick. The icy mechanical eye of his long-exposures demands a certain level of interpretive text. The viewer can perhaps pick out some extra-bright track-lines, a speck of light on a dark ground, and some traces that seem to be flowing against the stream, but without the written contextual detail, we are unable to conjure up a viable explanation for these anomalies. His hazy, heat-drenched *Limit Telephotography* requires details to extract the fullest understanding – my experience of figure 4.33, the *Open Hanger at Cactus Flats* is given depth by knowing that this is part of Area 51, and it is useful have confirmation that we are looking at an airfield. *Black Sites* could easily be *Random Sites.* Paglen's work requires that we believe in truth, but also that we are suspicious of it. We must ask ourselves, are these things what he says they are? Or is he pandering to a nostalgic yearning for the conspiracy theories of twentieth-century televised Science Fiction?[31]

Over the next few pages, I seek to set out something of Paglen's technical process and content, with the aim of helping my viewer decide.

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[30] Rancière perceives of history as a function of a fictionalizing impulse that he considers to be central to modern cognition (Lee, 2011)

[31] I am thinking of the *X Files* here: airing from September 10 1993 to May 19 2002, Chris Carter's drama is seen as a defining series of its era, as it tapped into a public mistrust of governments and large institutions, and embraced conspiracy theories.

Black Sites

Black Sites is Paglen's enquiry into the US government's network of secret prisons around the world. Set up by the CIA under the Bush Administration, the sites are synonymous with human rights abuses, allegations of torture, extraordinary rendition and unpalatable truths about the conduct and nature of warfare. Paglen identified these particular sites by using a collection of commercial satellite imagery, a map drawn by a former prisoner Khaled al-Masri[32], testimony from other former prisoners, a compass, and his strong personal anger at the government's actions.[33] Paglen is alleged to have priced this single edition diptych at twenty thousand dollars, thereby raising a pointed question about the price of intelligence, and the status of the seller of intelligence.

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[32] Some further details about Mr Al-Masri and his complicated juridicial process can be found here http://www.bbc.co.uk/news/world-europe-18086766 [accessed 1 August 2012)
[33] quoted at the press conference for his solo exhibition at the Secession Gallery, Vienna, November 26 2010,

fig 4.28 *Black Site, Kabul, Afghanistan* (2006) C type print[34] 24 x 36 inches

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[34] C type print means a chromogenic colour print – wet process paper for making prints from negatives. Although trademarked by Eastman Kodak, it now generally means a wet process print made from a negative (however produced). The term is occasionally misused generically when referring to other colour print processes, such as inkjet or pigment transfer, polaroid, dye transfer etc.

fig 4.29 *The Salt Pit[35], Northeast of Kabul, Afghanistan* (2006) C type print 24 x 36 inches

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[35] article on the death of Gul Rahman in 2005 at the Salt Pit http://www.harpers.org/archive/2010/03/hbc-90006791 [accessed 1 August 2012]

Limit Telephotography series

Paglen's work on telephotography uses high-powered telescopes with lenses ranging from approximately 1300mm to 7000mm. This technique was designed by astronomers to photograph objects millions of miles away in space, and was adapted to pierce the thick Earth atmosphere between observer and site. Paglen pushes at the limits of representation in these images of classified military bases and installations. Most of these locations are buffered by many miles of restricted land – for example, he could not get any closer than 26 miles distant to Groom Lake in figure 4.34 – so unorthodox and elaborate shooting set-ups were necessary to achieve the images.

fig 4.30 *National Reconnaissance Office Ground Station (ADF-SW) Jornada del Muerto[36], New Mexico* (2012) C type print 38 x 48.6 inches

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[36] home to the Trinity Site

fig 4.31. *Open Hangar, Cactus Flats[37], NV, Distance – 18 miles, 10:04am* (2007), C type print 30 x 36 inches

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[37] home to the USAF's Foreign/Materiel [sic]Acquisition/Exploitation programme – details unavailable

fig 4.32. *Detachment 3, Air Force Flight Test Center #2, Groom Lake[38], NV, Distance – 26 miles (2008),* C type print 50 x 40 inches

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[38] commonly known as Area 51, whose existence was denied by the US government until 1995. (The Federal Register/ vol 60 No. 195/Tuesday, October 10, 1995/Presidential Documents- see Appendix)

fig 4.33. *N5177C[39] at Gold Coast terminal, Las Vegas[40], NV, Distance – 1 mile* (2008), C type print 50 x 40 inches

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[39] registered owner is the US Government

[40] since 1972, a small fleet of passenger aircraft known by their callsign 'JANET' have operated from this location in Las Vegas to Area 51, Edwards Airforce Base, China Lake, and Tonopah Test Range. Details of their schedules can be found at http://www.dreamlandresort.com/info/janet_schedule.html. A word of warning, however, dreamlandresort.com describes itself as 'the leading Area 51 research web site since 1999'. It is highly possible that information from this site will not meet standards of academic rigour and evidence.

They Watch The Moon

Use of long exposure is a common feature of Paglen's work, and this single image exploits the ambient moonlight to depict a classified listening station in West Virginia. The station – part of the ECHELON[41] system at the very centre of the 21,000 square mile National Radio Quiet Zone – is situated to maximize "moonbounce", a radio communications technique in which signals from around the world are reflected back to earth after escaping into space and 'bouncing' off the moon.[42]

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[41] you can find out more about ECHELON here http://www.nsawatch.org/echelonfaq.html though I can not guarantee its accuracy. Another link from this site leads to some details of TEMPEST, which I mention in chapter 5 [accessed 1 August 2012]

[42] In October 2009 visual artist Daniela de Paulis and the CAMRAS radio amateurs association based at Dwingeloo radio telescope developed a new application of Moonbounce, called *Visual Moonbounce*, which allows moonbouncing images to use the MMSSTV software. The technology was applied to a live performance called *OPTICKS* during which digital images were sent to the Moon and back in real time and projected live. Website here http://www.opticks.info/blog/ [accessed 1 August 2012]

fig 4.34. *They Watch The Moon* (2010) C type print 36 x 48 inches

The Other Night Sky

In his *The Other Night Sky* project, Paglen tracks and photographs classified American satellites, space objects and debris. Using information from a variety of amateur sources, he uses long exposure images to reveal the traces of our current militarized network in iconic western landscapes made famous by Gilded Age photographers Muybridge, Fiske, and O'Sullivan. For me, this is Paglen's most successful and brilliant work, as it is less experimental geography and more long-term meditation on the nature of photography as a tool of imperialism – a conceptual trick commenting on the ideologies concealed in the original works[43] (Smith, nd).

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[43] O'Sullivan was commissioned in the 1860s to document land recently taken from Mexico in order to attract Anglo settlers to the region
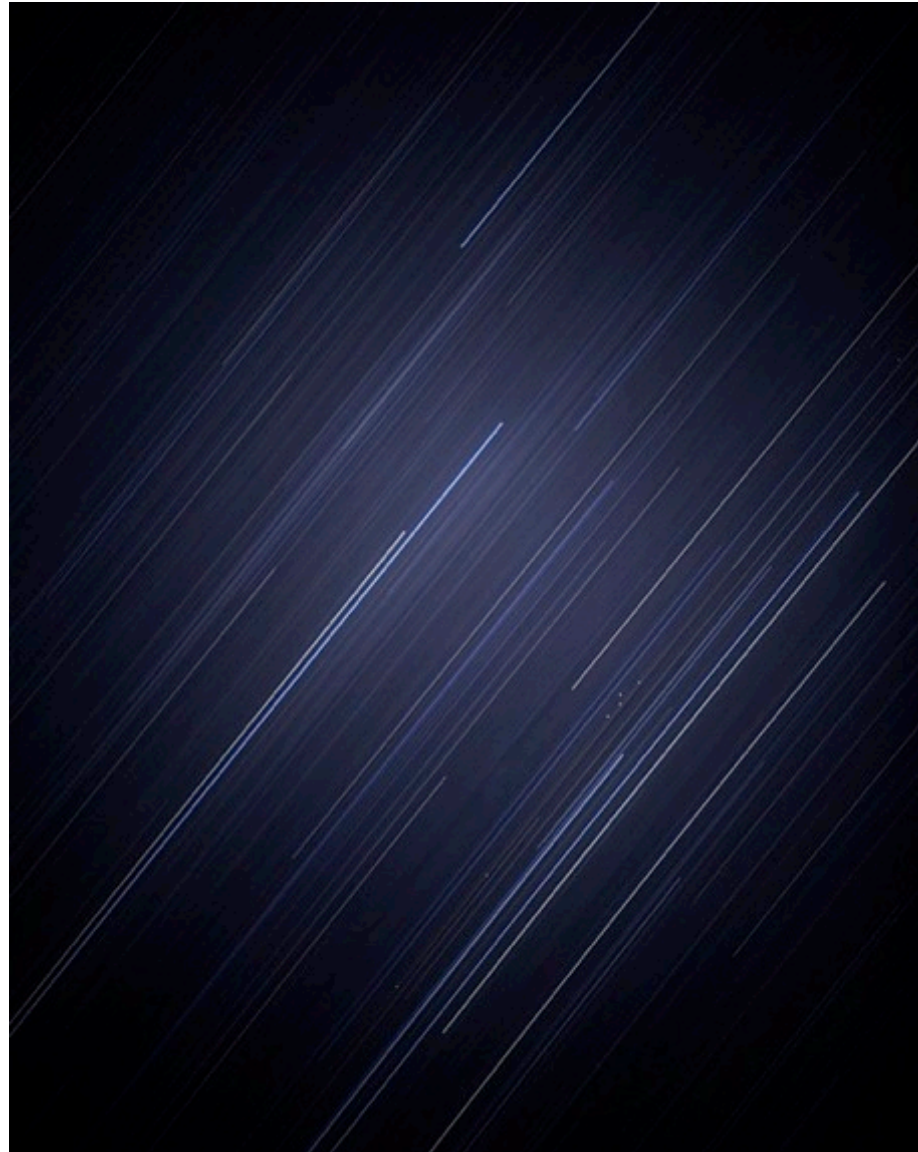
fig 4.35. *PAN[44] (Unknown; USA-207),* (2010-11) C type print 60 x 48 inches

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[44] PAN (USA-207) was launched in September of 2009. It is a highly classified military satellite. There's a good article in Spaceflight Now http://www.spaceflightnow.com/news/n0905/26milspace/ [accessed 1 August 2012]. As of June 2012 it is operating at 37.9° E according to Langbroek at http://sattrackcam.blogspot.nl/ [accessed 1 August 2012]
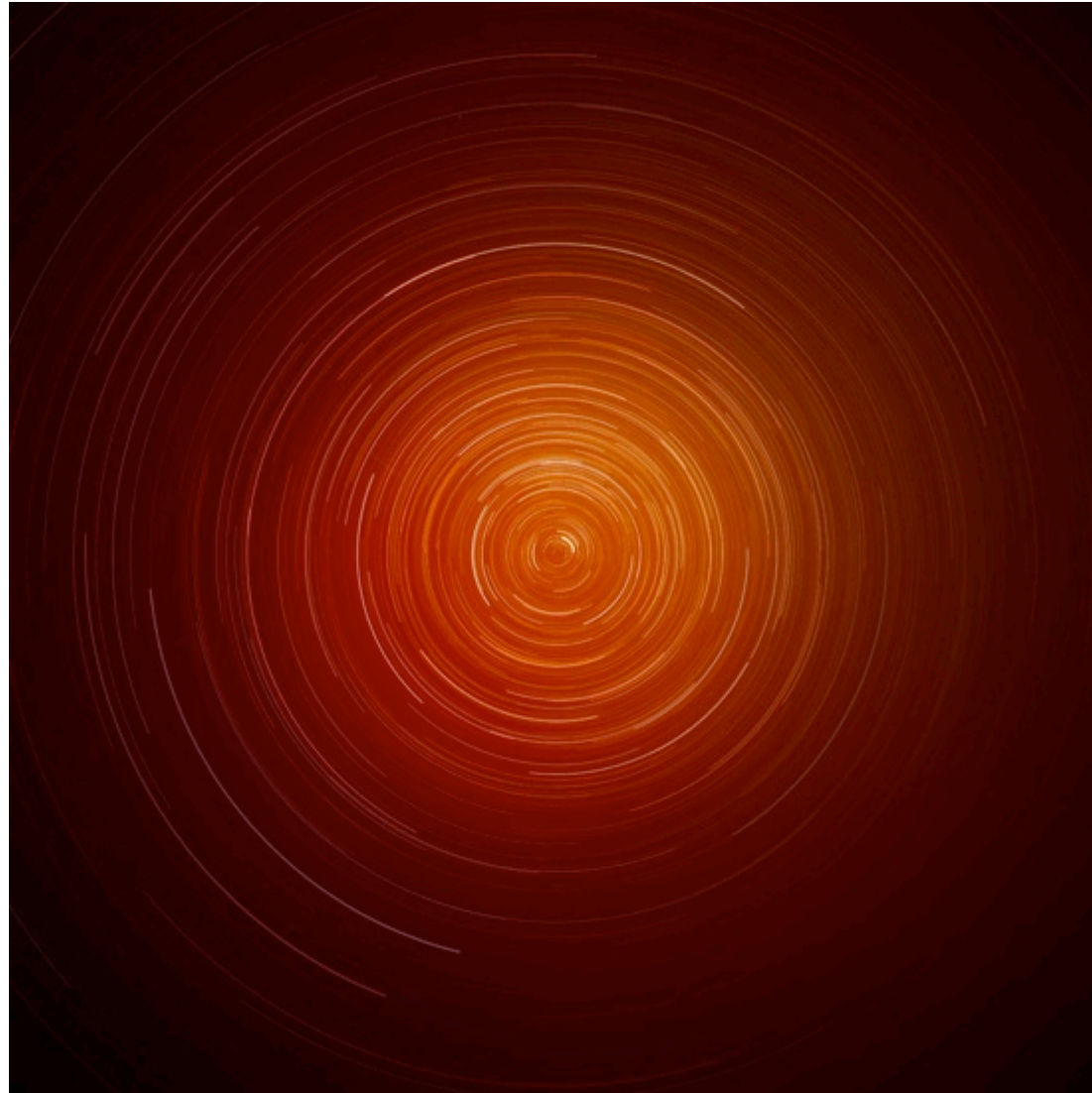
fig 4.36. *STSS-1[45] and Two Unidentified Spacecraft over Carson City (Space Tracking and Surveillance System; USA 205)* (2010), C type print, 48 x 48 inches

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[45] part of the SBIRS-Low system for detecting and tracking of ballistic missiles on a global scale. See Gunther's Space Page http://space.skyrocket.de/doc_sdat/stss-1.htm a site frequently used by investigators because of its anecdotal accuracy.

fig 4.37. *KEYHOLE IMPROVED CRYSTAL[46] from Glacier Point (Optical Reconnaissance Satellite; USA 224)* (2011), C type print, 30 x 43 inches

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[46] a type of reconnaissance satellite manufactured by Lockheed, the first to utilize electro-optical digital imaging to create a real-time optical observation capability. Four Keyhole Improved Crystal satellites were launched between November 1992 and October 2001.

fig 4.38. *KEYHOLE 12-3/IMPROVED CRYSTAL*[47] *Optical Reconnaissance Satellite Near Scorpio (USA 129)* (2007), C type print 48 x 60 inches

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[47] ibid.

fig 4.39. *Dead Military Satellite (DMSP 5D-F11)[48] Near The Disk of the Moon* (2010), C type print, 24 x 30 inches

[48] DMSP 5D-F11was launched in November 1991 as part of the Defense Meteorological Satellite Program developed in the 1960s. The program monitors meteorological, oceanographic and solar-terrestrial physics for the US Department of Defense. According to the long-established (1989) blog of Dr. Jonathan McDowell (PhD Cantab), astrophysicist at the Harvard-Smithsonian Center for Astrophysics:

"The USAF weather satellite DMSP Block 5D-2 F-11 (S-12), launched in 1991 and retired in 1995, has exploded in orbit with debris objects generated. It seems likely the fragmentation was due to either a battery explosion or to residual fuel in the attitude control system." Jonathan's Space report no 527, June 2 2004, Denver, Colorado http://www.planet4589.org/space/jsr/back/news.527 [accessed 1 August 2012]

4.4 Jill Magid

Jill Magid seduces institutions. How could I fail to be seduced by her work?

An American conceptual artist who uses video, text, email and performance to engage with some of the most alienating forces in contemporary urban life, and whose works describe desire, permission, observation and relationships (Magid, 2008), Magid describes her work as the process of becoming intimate with systems.

Unlike many artists who work in and on surveillance, she did not start with a political motivation, but with a feeling – that of subverting technology into sensuality. This examination of the human aspect of technology is something that I see echoed in the work of both Joanna Griffin and Suzanne Treister, and is something that operates in opposition to the current fashion for thinking about technology as it continues to be shaped by Virilio and Kittler. In Magid's work, the human is ever-present, the technology merely a function, frame or expeditor of human relationships.

Magid's work has commonly been bracketed together with that of Sophie Calle, whom she interviewed for Tokion Magazine in 2008. With her history of instigating intimate interactions with strangers (for example The Sleepers, 1980), her emphasis on the text and her willingness to place herself at the centre of the artwork (such as The Shadow, 1981 & 2001), Calle is an important antecedent for Magid. Although I have not included her works *Composite* and *Head* in this exhibition, the connection with Calle's inclination to have herself conjured and reconstructed by another is strongly apparent in both *Evidence Locker* and *Article 12/The Spy Project* (which brings

to mind Calle's *'Double Game'* with Paul Auster, in which she becomes part of his novel, and then persuades him to write a script for her life).

> They told me they did not work with artists. I realized that they could not hear me when I spoke as an artist: this had nothing to do with what I proposed, but with who I was. (Oddy, 2009: 61)

Unlike Calle, who predominantly operates alone, it is as though Magid cannot resist the lure of the institution. She has an extraordinary ability to analyze her quarry for weaknesses, before reconfiguring herself and realigning her language so that she can be heard, understood and admitted. She locates a chink in the armour of the power source, and finds a way inside through assuming the roles of woman, artist, professional, scholar, journalist, writer, subject. This is the specific site of connection with my own work – the deliberate assumption of a variable identity/role through which the research is solicited and assembled. This constant reconfiguration of the self as it corresponds to camouflage (previously described in the work of Griffin, Paglen and Treister) was the deciding factor to include Magid as part of my 'unseen museum', alongside her particular involvement with the intelligence communities.

The relationship between how we see and how we read is another key aspect of her work, with Magid positioning herself at the post-conceptual end of the spectrum – she is unafraid of distracting her viewer with narrative as she opts to draw explicitly on literary fictional modes. This stages a very specific connection to my 2011 work *Aeronaut*.

In her 2004 work, *Evidence Locker*, Magid engaged in a complex, close relationship with Liverpool Citywatch, the largest system of citywide video surveillance in Europe. The basis of the piece is the fact that in the UK, CCTV

footage is kept for 31 days. At this point, unless a Subject Access Request Form is submitted with a fee of (in 2004) £10, the footage is consigned to data-oblivion. If such a request is received, then the police are legally obliged to place the specified footage (which can only be footage of the person making the request) in an evidence locker for seven years. Having penetrated the Liverpool system as a researcher (always a cunning identity to use to infiltrate an institution), Magid turned her Subject Access Request Forms into love letters to the police. She donned her red coat and boots, and allowed herself to fall into her own story – the artist as subject of voyeurism rather than as voyeur. Magid was not satisfied just to let the police follow her and provide her with the footage, insinuating herself ever more deeply into the psyche of the organization, even teaching the police film theory in the evenings (in the hope of generating a more a more voluptuous video result). Eventually she wore an earpiece so that her followers could direct her, blind, through the city (in a 18 minute film called *Trust*).

Magid relished her monopolization of the surveillance grid – how it halted its function to follow her, and turned away from its civic duty in the pursuit of her (art). Watching her in her red coat, I cannot help but be reminded of *Don't Look Now*, *Schindler's List* and other popular films that have used the trope of the scarlet garment. There is a hint of iconic tragic heroine about her. I fear for her.
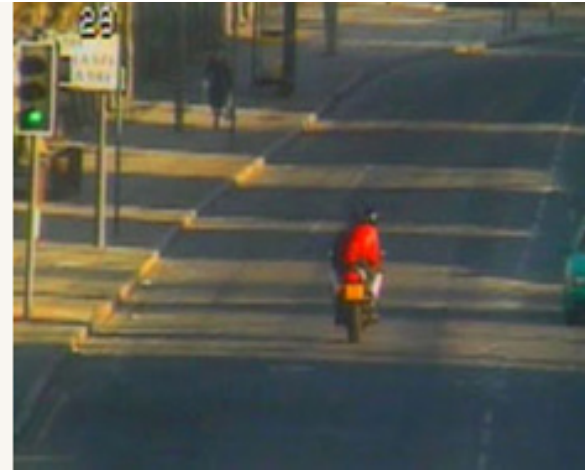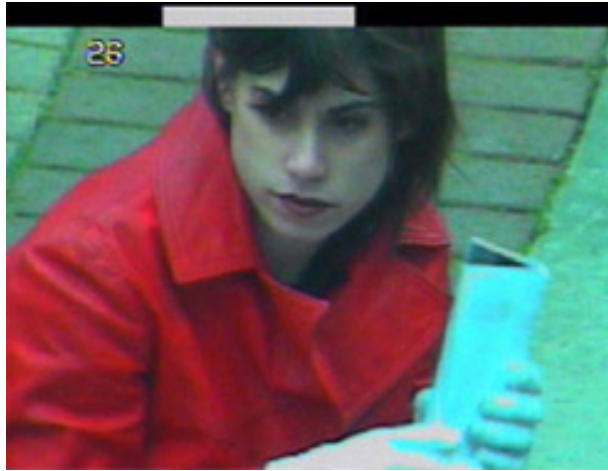
figs 4.40 & 4.41 stills from *Evidence Locker*, 2004

figs 4.42 & 4.43 *Evidence Locker*, 2004, installation

fig 4.44 still from *Evidence Locker*, 2004

Evidence Locker comprises eight separate pieces and although it currently belongs to the permanent collection of the Whitney Museum of American Art, a documentary website exists where a viewer can register to receive Magid's daily 'letters' and a CCTV clip over 31 subsequent days. We can still watch her living within the system of networked screens.

In 2005, the Dutch Secret Service (AIVD)[49] commissioned Magid as artist-in-residence as a consequence of a percent-for-art scheme in the Netherlands. Her brief from them was to reveal the human face of an institution (AIVD) whose reason for existence is secrecy. For four years, Magid embedded herself in the institution with the aim of understanding it from the inside out. She researched its policies and procedures, asked for and received specific training, and interviewed agents. What in another organization might amount to a standard work of institutional critique is complicated by the fact of the institution being an intelligence agency, with Magid's agency as artist rendered as a type of secret agency (Lee, 2010: p226).

Something literary at the heart of her work is revealed here, more than through previous works. As Magid was forbidden to use images, she had to reveal the 'face' of the institution through the written word and its use as an agent of control. This echoes a problem that I encountered in making *Dead Reckoning*, where secrecy had to be maintained.

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[49] Algemene Inlichtingen – en Veiligheidsdienst

Article 12/The Spy Project[50] is the record and interpretation of her residency, and although it is impossible to access those works physically following their sequestration under Article 12 of the Dutch Legal Code (which concerns the protection of personal data of those employed by AIVD), I have included three works from this sequence for exhibition.

The Directives is a series of seven drawings, and is addressed directly to AIVD. It constitutes Magid's desire for transformation from artist into agent. In this work she uses terms and phrases, particular slang, that she had noted in her interviews with existing agents. It makes for uncomfortable reading – I feel as though I have been overexposed to her desires – and I respond to the work by fearing that she ought to be very careful what she wishes for.

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[50] Article 12/The Spy Project comprises:
The Directives, 2008-9, pen on paper, series of 7 drawings, 60 x 88.5 inches
The Shepherds, 2008, bronze and resin editions, 12 x 10 x 9 inches
I Can Burn Your Face, 2008-9, 19 7mm neons
18 Spies, 2008, series of 18 letter-press prints, 11 x 17 inches
Archive #2485536/01, 2005-8, official AIVD archive box with vetting number, all original notebooks, copy of Cockpit, DATA infomercial and resin gift version of The Shepherds.
The Kosinksi Quotes, 2007, series of 9 silkscreens, four colour print, 44 x 27.25 inches
DATA, 2005, DVD infomercial, 6 mins

fig 4.45 *The Directives* (2008-9), series of 7 drawings, pen on paper, 60 x 88.5 inches, installation view

The second piece is known both as *Vetting Box and Notebooks* and *Archive #2485536/01.* AIVD rules stipulate that all agents leaving the service must relinquish their original material to AIVD. At the end of her residency, Magid – who famously abides by the rules – handed over the three notebooks in which she collected her interviews with eighteen spies, and her copy of Jerzy Kosinski's *Cockpit.* These were placed into an official standard-issue cardboard box, labeled with her vetting number and a list of the contents. The material was then locked into a glass vitrine within the AIVD building. The only publicly accessible part of this work is the sequence of 1:1 photographs taken by Magid.

figs 4.46-4.48 *Vetting Box and Notebooks* (2008), 3 notebooks, 1 copy of *Cockpit*, cardboard box

The last of Magid's works that I would like to share and discuss is a piece that perfectly demonstrates her creation of dynamical systems of co-operation and negotiation. It also performs the function of the open secret – a secret that announces its clandestine quality by the spectacle of its public appearance:

> The secret is itself an ideological contrivance; its withholding – its *visible*
> withholding – is as critical to its power as whatever content we might
> imagine it conceals (Lee, 2010: 223).

This is nothing new to the reader of Poe, or Wilde, or Virilio. In an established literary trope, each in turn refers to the power of a secret or a weapon being in its keeping, not in its subject matter. Virilio extrapolates, arguing that the main power of a weapon lies not in its actual firepower, but in its rumoured firepower (Virilio, 1984). This is certainly true of *Becoming Tarden* – the power lies in the fact of the redaction, not in the redacted information.

After the protracted process of negotiation that ended with the censoring and confiscation of some of the works produced as part of her commission, Magid wrote about the experience of working with AIVD in her book *Becoming Tarden*. Using Jerzy Kosinski's 1975 spy novel *Cockpit* as a blueprint (guide, roadmap, manual), Magid refashioned herself into the principle character Tarden, who finds himself swallowed up by the fictions of lives he has chosen to enter in becoming 'the hummingbird'[51], a spy in such deep cover that his existence is not even known to the spymasters. The oscillation between fact and fiction, the slippage between artist and agent, enabled Magid to remain elusive, to constantly reconfigure her camouflage.

This book was also confiscated and forty percent of it was redacted, before Magid finally obtained consent for it to be exhibited in a single exhibition *Authority To Remove* at Tate Modern in 2010. As an open secret – that is uncensored – it was locked in a glass case and accessible to nobody. Magid incorporated the censorship into the works, and intelligence agents took possession of the book (and her other material) at the end of the *Authority To Remove* exhibition.

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[51] DARPA and AeroVironment Inc. have developed a life-sized hummingbird-like drone (unmanned aircraft) with a wingspan of 16.5 cm. So the idea of a spy as a hummingbird seems less far-fetched than ever. Image credit AeroVironment Inc./Associated Press
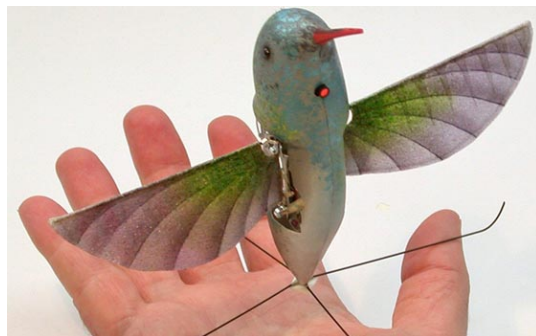
Becoming Tarden, conceived as a work of literature when a visual response was outlawed, is foreclosed, and consequently rendered as an artefact, and an auratic one at that.
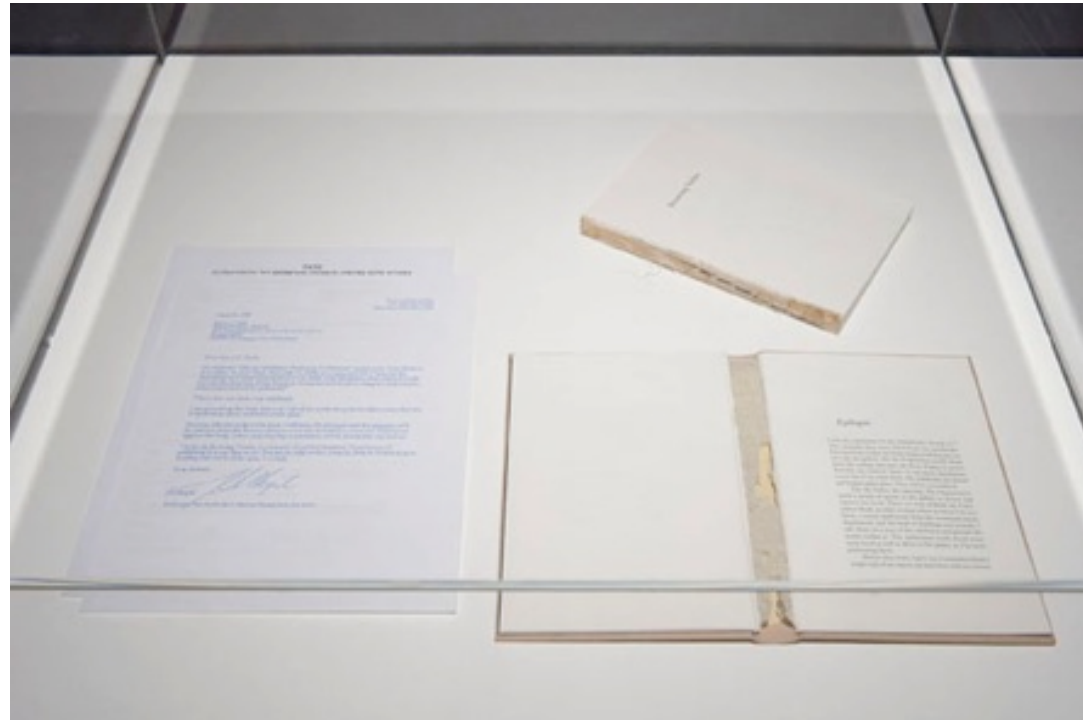
fig 4.49. *Becoming Tarden* (2009), installation view

fig 4.50 removal by AIVD personnel, Tate Modern 2010

4.5 Jordan Crandall

fig 4.51 Jordan Crandall, *Drive* (1998-2000), installation view

It would be hard to overstate the importance of Jordan Crandall's work to the discussion of military equipage and subjectivity. Over twenty years his work has made a major contribution to the understanding of media and communications technologies, and their impact on the visual arts.

A chance involvement in a project led by *Surveillance and Society* editor Dr. David Murakami Wood introduced me to Crandall's research. Subsequently, I had a discussion with Crandall that encouraged me to follow the line of enquiry that became this doctoral research project. Seeing *Drive* for the first time in 2006 was a pivotal moment for me,

though paradoxically, I felt that it revealed to me something which was not new, which was not intrinsic to the new technologies, but intrinsic to vision. That thing was the fundamental militarization inherent the act of looking, which I discussed in chapters one and two of this document. *Drive* stopped me in my tracks, rendered me silent, reminded me that desire was a key factor in both militarization and seeing, eliciting an explicitly physiological response. The relationship between Crandall's work and my own then, is based on desire and poetry. I have spent the whole of my research project desperately hanging onto desire and poetry as though they were life-jackets.

Drive (1998-2000) comprises seven film tracks that combine traditional cinematographic methods with military target-finding technology, tracking systems and pattern-recognition programmes. It aims to raise questions about how new methods of image generation impact on traditional tropes of seeing. First installed at Neue Galerie, Graz, Austria in 2000, the piece experimented with multiple presentation modes in a multi-space structure. The viewer found him/herself adrift in the spaces, acutely aware of his/her place as both subject and object. The imagery itself is highly variable, sometimes within a section, it changes from that produced by a hand-cranked camera, through Hi8, to night-video recordings; some of the footage was found (the demonstration films from arms manufacturers), some created by directed actors. The tracks themselves have differing contents and paces, different mechanisms for revealing vision embedded within warfare complexes, different methods of 'arming' vision. *Drive* exposes the erotic worlds that can begin to open up within the technics of control, with their new intimacies and invasive pleasures. Throughout, Crandall reveals his fascination with the body-machine assemblage, and his deep engagement with the thinking of Deleuze and Guattari[52].

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[52] Crandall has been developing a theory of absorptive assemblage (in which he acknowledges his implication rather than adopting a disembodied analytical view), building on de Landa's expansion of Deleuze's original concept from *A Thousand Plateaus*

Drive Track 1 (made using super-8 and 16mm film transferred to video) explores the moving image as grounded in the human body. A sequence of scenes focuses initially on a well-toned male body before moving on to footage of pedestrians on an urban street, where a night-time street fight and a strange choreographed dance in a sinister alley are interrupted by the flickering green lines and overlaid contours that we are familiar with from war news footage and videogames. The track references Muybridge's sequential photography, clearly linking the old to the new in a technologically hybrid space.

figs 4.52 & 4.53 Jordan Crandall, *Drive* (1998-2000), video stills
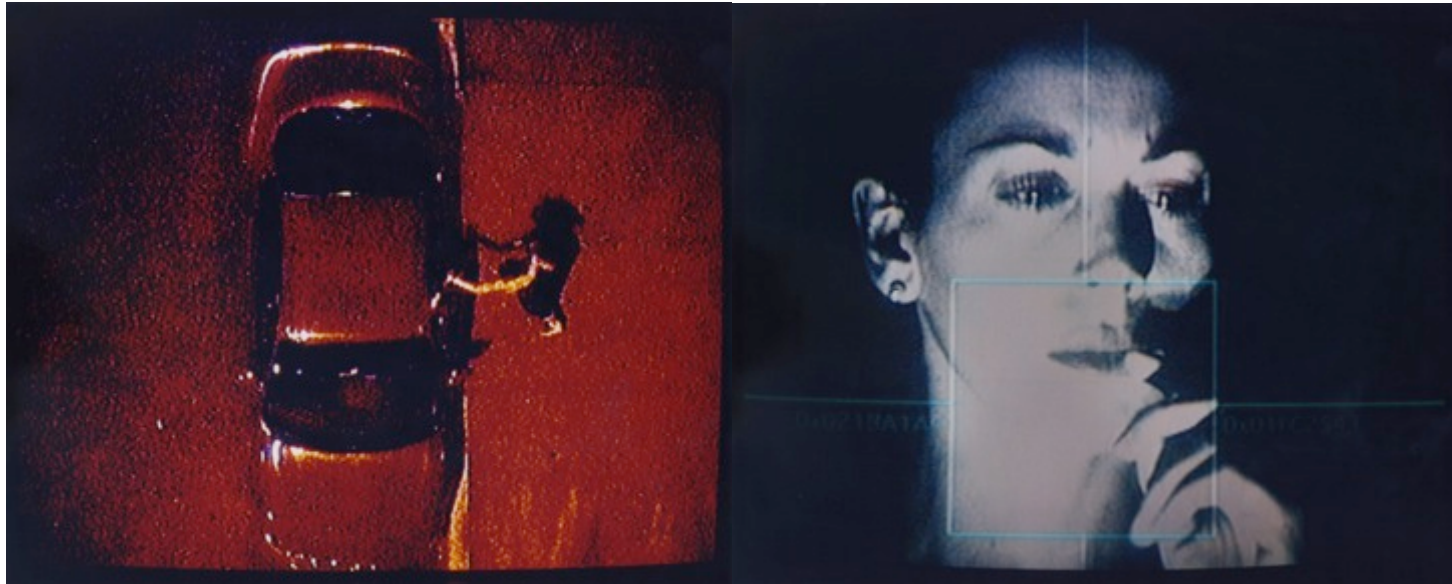
figs 4.54 & 4.55 Jordan Crandall, *Drive* (1998-2000), video stills

Other tracks draw out issues of desire more explicitly – one follows a woman through a number of sexualized scenarios as she encounters mirrors, telephones, and voluptuous cars, the camera constantly reconfiguring and making its agency obvious. Another track uses gunshots, explosions, pulses of light and the sound of slapped flesh to stage the phantasy of Freud's case study 'A Child Is Being Beaten'.

In Track 6, (Shaw & Weibel, 2003: p293) two projections contrast the human gaze with militarized visualization practices: we see a close-up of a man's eye, the eyelid slowly closing and reopening to break and renew contact with an observer; projected opposite is found footage of a plethora of military technologies – infra-red, lock-on systems, classification systems for machinery, radar – all of which have a tracking function. This all adds up to one thing – the human gaze itself is a ballistic (echoed exquisitely by Aleksandra Mir's *The Dream and The Promise* (2008) where an

icon has a missile firing from its eye). Unexpectedly, in the midst of the most modern technology conceivable, I can conjure up the spectre of Plato, writing in the fourth century B.C.E about the fire that emanated from the eye in the form of rays.[53] It is an elegant way to connect the history of vision and its concept of extromission with the current theoretical storm that rages around prosthetic vision.

My exposition of the regime of tracking in chapter one owes much to Crandall's work. He defines tracking as what happens when seeing is infused with the logics of tactic and manouevres, as calculating future intersections rather than just following closely, a method rooted in knowing where a missile *will be* spatially in sixty seconds time (Crandall, 2006).

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[53] extromission theory
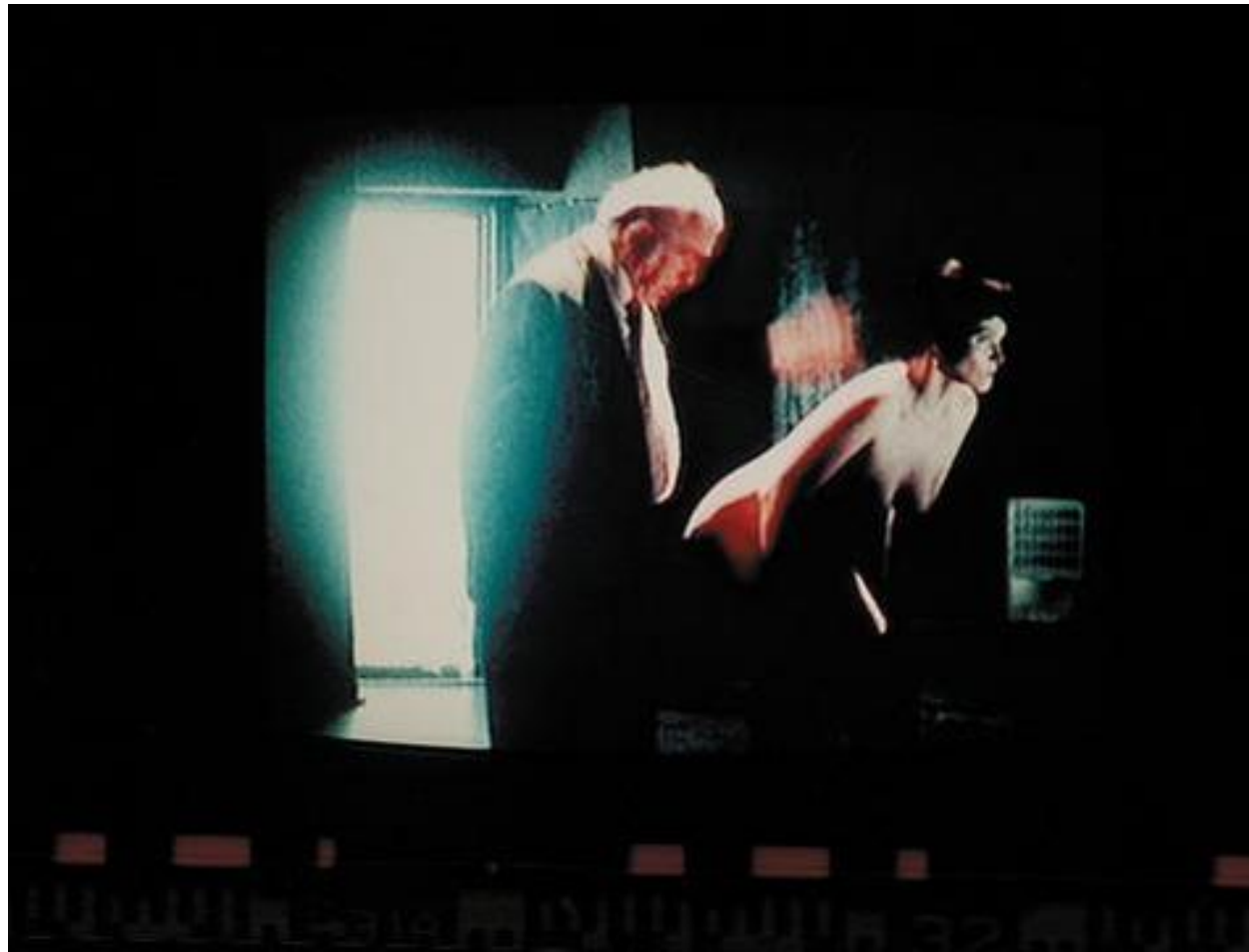
fig 4.56 Jordan Crandall, *Drive* (1998-2000), video still

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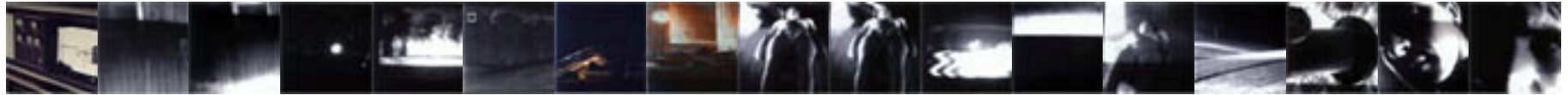
fig 4.57 Jordan Crandall, *Heatseeking* (1999-2000), video stills sequence

The next work that I would like to introduce is a second video installation in which Crandall responds to the new politics of observation, playing with the conflation of actors' bodies and weapons as he describes a society complicit in its own imprisonment (Vikram, 2005). *Heatseeking* (1999-2000) was commissioned by InSITE2000, a bi-national project – encompassing twenty-seven cultural institutions in the US and Mexico – and focused on issues around the border. Consisting of six separate film-track segments, *Heatseeking* was shot in the San Diego/Tijuana region, using an array of technologies including surveillance apparatuses used by the US Border Patrol units to search out illegal immigrants. Crandall used 16mm film, video from surveillance cameras, infra-red thermal imaging systems and miniature 'stealth' cameras to suggest increasing levels of sophistication and aggression. Originally presented as a multi-channel display on a collection of hand-held PDAs – at the time popular aspirational consumer items – the installation implies membership of an exclusive technophiliac club (Vikram, 2005).

The film-tracks themselves explore the new vectors of desire that have erupted as a consequence of the availability of new technologies. Men playing a bizarre nighttime game of golf are seen from shifting perspectives, (black and white video, green-tinged infra-red), their movements intermittently framed by motion-trackers. The scene explodes into violence, and one man is beaten senseless as the piece ends. Another track sees a wealthy, naked woman having water dripped into her mouth by a man whose identity is not clear. He treats her tenderly, but she is also exposed to

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our view via surveillance camera. Is she a prisoner? Is she a willing participant in a ritual? The final sequence sees a young woman driving on the freeway. She is tense and sweaty, aware of being followed by an unknown, simultaneously excited and threatened by it. The sequence looks like something from a video game. There is a sensation of oppressive but undeniably erotic fusion of wo/man and machine throughout the work. I look with my eye, but when it is superseded by a blatantly mechanized eye that sees things no human can, I barely notice the substitution.

fig 4.58 Jordan Crandall, *Heatseeking* (1999-2000), video stills sequence

The image on the next page (from Crandall's own website) illustrates the complexity of the visual field in both *Drive* and *Heatseeking* – something that it can be difficult to unpick. Despite the clear visual signs from the artist that there are a significant number of sources for the material, many viewers will be unaware of the vast range of enhanced visual apparatuses that abound, and therefore will simply not understand the range. The diagram in figure 4.62 starts to uncover this complexity in much the same way as the battlefield observational drawings in my discussion of my work *Dead Reckoning*, in chapter five.

The final piece of Crandall's work that I have elected to include demanded the convention of an established collective of researchers, artists, cultural theorists, writers, media analysts, architects, social scientists, educators and other

fig 4.59 Jordan Crandall, *Heatseeking* (1999-2000), diagram
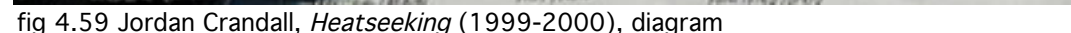
assorted scholars and practitioners who had interests in contemporary media culture, political violence, technology and social movements, for a fourth iteration of his research project *Under Fire*. I will discuss this further in my concluding chapter *Observations*.

Previous *Under Fire* forums and conferences were held in Rotterdam, Berlin and Seville between 2004 and 2007, resulting in three separate publications that set out its ambitious aims. The project explored structural (organizational), symbolic (representational) and affective (materialization) aspects of war. Manuel de Landa, whose thinking about the war machine underpins this chapter, contributed extensively to the project, in many ways offering an alternative model of analysis. Crandall's debt to both Kittler and Lacan is evident in his tripartite distinction, though unlike Kittler, his work explores the observer's ability to resist the impact of control technologies. It seems appropriate that my curatorial and contextual work should culminate with the reconvention of *Under Fire* in the space of this internal exhibition.

CHAPTER 5. (NO PLAN SURVIVES) FIRST CONTACT (WITH THE ENEMY)

The second chapter in this section, Chapter Five – *No Plan Survives First Contact With The Enemy*[1], reports upon the artworks created during my practice-based research. It explores five works in detail: *Dead Reckoning* (2009), a geo-caching game created with professional snipers; *The Model* (2010-11), a sculptural assemblage constructed as a sandbox war-game and non-virtual (tangible) simulator; *Aeronaut* (2011), an illustrated performance lecture that asserts an unreliable history of aeronautics from Icarus to Aurora; *Hawk & Dove* (2011-12), a 17-minute digital video work created with analogue and digital media, and past and present military technologies, and *Site Reports* (2010-12) a series of reports on places of military interest and importance. This chapter presents the process of practice-based research in such a way as to allow a reader to experience thinking through an artwork, to place his/herself in the position of the artist. Within this chapter there are all the false starts, dead ends and red herrings of cryptography, as the artist becomes an intelligence officer examining the material, collecting and deploying, interpreting and selecting, jettisoning and generating in turn. The chapter does not discuss the images, much less the contents of the images. It is a discussion of the apparatus of which the images are components. Given the nature of this project, it cannot be denied that I am an object in play, that this researcher is also a component within the apparatus, and hence the research is as much personal, reflective, and subjective as it is critical and analytic.

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[1] quotation from text of 'Dead Reckoning', 2009

5.1 Dead Reckoning, (2009): using the practices of the sniper

In early 2009, after a long period of reading, I began to make my first important work. *Dead Reckoning* constitutes a "speculative account of the relationship between the early 21st century military eye and the artistic eye" (Streffen, 2010) and there are several main threads which, drawn together, finally become the artwork. The first of these threads is the traditional historical relationship between the military and artists in the guise of military drawing. Other threads include the points of collision between art practice and military practice, and the "*becoming* of an artwork" (Streffen, 2010).

Drawing was long used by the military as a tool for navigation, exploration and documentation. From the 1740s until the 1960s, officers and then all ranks in each service, were taught analytic drawing as a tool for manifesting the imperial gaze. The first military academy was established at Woolwich in 1741, where a drawing master was appointed to teach cadets 'sketching ground, the taking of views, the drawing of civil architecture and the practice of perspective' (Gough, 2009). Woolwich, and subsequently Dartmouth, Sandhurst and Marlowe attracted high-calibre artists in the role of drawing masters, and John Constable was even offered a position as a master in 1802. But artists generally disdained the well-paid posts – Constable turned down the offer and Gainsborough dismissed the objectives of the instruction as 'tame delineations'. In his text on codified drawing (Gough, 1998), artist Paul Gough cites Alfrey and Daniels (1990) to sum up the requirements of military drawing

"Drawing for military purposes has two distinct fields of vision: information-drawings gathered during mobile reconnaissance (by peripatetic patrol) and drawings made from static, elevated positions - customarily the preserve of the artillery spotter. Where the patrol sketch is often a collage of hasty impressions later re-arranged to form a spatial narrative, the panorama is primarily concerned with scopic control and spatial dominance. The artillery panorama works on the same premise as military mapping; surveillance and graphic survey will eventually neutralise a dangerous terrain and assure mastery over it."

One might think that the invention of photography in the 1830s would radically change the role of drawing in fieldwork, but its limitations and static-ness made it much less flexible than drawing – despite the birth of aerial photography during the American Civil War. Even during the First World War, in which aerial photography was extensively used, drawing was still pre-eminent. It was not until the invention of flexible photographic film and its availability in the early 1930s that photography gained the ascendant. That mechanical eye paved the way for the complexities and hitherto unimaginable detail of the digital image, and the myriad of new technologies enabling perception of the previously imperceptible with which we are now so familiar. Yet drawing persists in the training and activities of snipers and artillery men alike, as it persists in an art academy equally transformed by the admission of new media and post-modernism. I refer to Gough's *Survey of Military Sketching* (1995) and research for his 1994 television documentary 'Drawing Fire[2]':

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[2] *'Drawing Fire: The Art of Military Sketching 1741 – 1995'*, HTV West, 1995

"In concealed positions far ahead of their guns, operating from a known grid, Forward Observation Officers, normally captains, observe the ground to the front of their battery, determine targets and order fire. An observation party can today call upon a dazzling array of technological gadgetry to reconnoître a battlefield – powerful binoculars, night sights and thermal imaging devices – but the skill of field sketching is still a valued part of their work, requiring little more than a pencil, paper and a keen eye." (Drawing Fire, 3.16).

In *War and Cinema*, Virilio argues that film and images constitute perceptual armaments, culminating in his claim that: "From the original watchtower through the anchored balloon to the reconnaissance aircraft and remote-sensing satellites, one and the same function has been indefinitely repeated, the eye's function being the function of a weapon" (1984: p 4). My reading of Virilio is the reason for my referral to the 'myth' of scopic control – Virilio argues that it does not matter whether a weaponry is 'real' or functional, what matters is the perception of it. The core function of the weapon of perception then, is to establish `a perception` of scopic control whether manifest, or obtainable, or not. Therefore what matters in the telling of the weaponry is the myth of the weapon – whether armaments like Stealth or Aurora, or subject, like the sniper with his dark arts of concealment. For all the advancements of technology (and perhaps because of the conception that once it is functional it is outdated – attributed to Lord Mountbatten), a simple drawing can be easily passed on to the person who replaces you. No words are necessary: the draughtsman has already interpreted the scene.

55.030511 N   1.750299 W

fig 5.1 *Dead Reckoning* (2009)

Dead Reckoning was made over a period of six months, and was initially shown at the Hatton Gallery in Newcastle upon Tyne in August of 2009 as a three-channel video installation. It was subsequently revised as a web-based work and orienteering game. I will describe its morphology in detail.

The work developed from a nugget of information unearthed during research into a previous piece of work *Shooting The Light Fantastic* (2008): in 1915, a military academy for the study of sniping was established at Béthune in France. One of the key instruments in the training of snipers at that time was the stereoscope, identified by art historian Jonathan Crary (Crary, 1992) as the key to the rupture in vision of the nineteenth century that enabled the development of the modern eye. By this he means that the techniques of viewing required by the stereoscope (and NOT the camera) were the paradigmatic shift that led to being able to conceptualize moving imagery, and potentially dromoscopic imagery (though Crary does not refer to this specifically). This small discovery (a nugget of information like a grain of grit stuck in the membrane of an oyster) was followed by extensive reading around Wheatstone's stereoscope; Crary's observational techniques and instruments; military training manuals from the twentieth century; the birth of photography; and studio experiments with stereoscopes. I want to be quite specific here about I mean when I refer to "studio experiments": I mean the production of images, ideas and objects generated by playing with stereoscopic viewers and stereoscopic cameras. This is not a type of playing that is innocent or unwitting – it is a speculative operation pitched somewhere between knowing and unknowing – a type of playing from which something new emerges. It is a space of play created by the practice and experience of play, the experience of being guided by intuition honed by practice. It is a space to which all things are admitted and in which all things are permitted. It is a space where different types of knowledge – including that which emerges from materials and that which permits

access of the life as lived by the researcher to the research process – are generated. And at the heart of these experiments was the idea of the sniper and the artist learning to see both the space and time of a landscape.

It was apparent from my studio work that I could bring a specific type of knowledge to the visual experiments: knowledge of aesthetic questions; practical ability with the technology; a technique of picking my way through (commanding) a landscape rooted in a tradition of rendering the landscape as an object for consumption. But I could not replicate the military eye, for I am not trained in this type of vision, which is simultaneously transformational and reductionist. As an artist, I can enable a series of readings of a landscape to emerge – a case of practice adding to what is already there. (I must state at this point that I am obviously not discussing abstract painting and some of its roots in the stripping back of landscape). I have already mentioned how military draughtsmanship requires the erasure of everything it perceives to be artistic from the image. So there are two things at work here: the removal of what is artistic from the image, and the act of imagining the site as though it were a site for another set of practices. A project was therefore coalescing around the idea of working directly with snipers. My initial thoughts about the work were predicated on the idea of using digital video. I intended to walk various sites with professional snipers, talking about how we both looked at landscape in an acquisitive way (connecting to Mitchell's description of the imperial gaze). The video interviews would then be edited together to make a documentary from the dialogue. This video would thus constitute the artwork.

This proposition was identified almost immediately as deeply problematic. It would be impossible to video servicemen whose identities had to remain private. I had initially conceived the work as a video piece, but this was not absolute, and I considered access to qualified personnel to be the most critical part of the project. My primary concern was to

work with people who had received specific training leading to a sniper's qualification. One of the interesting factors to emerge from the research is that for artists and snipers alike, qualification is something of a red herring – what really matters is practice, and time served. I recorded the works using a sound recorder, subsequently transcribing the sound files. I did not have a specific set of questions for the participants except for an opening question about the approach to defending or attacking the landscape we traversed. The conversation just flowed (or sometimes not) as we hesitantly negotiated our respective paths around our preconceptions. As we walked, we used digital cameras, binoculars and the naked eye to look at the terrain. I asked my participant to 'draw' me a map of the type they would draw for themselves, outlining the safe and dangerous spaces of dead and active ground.
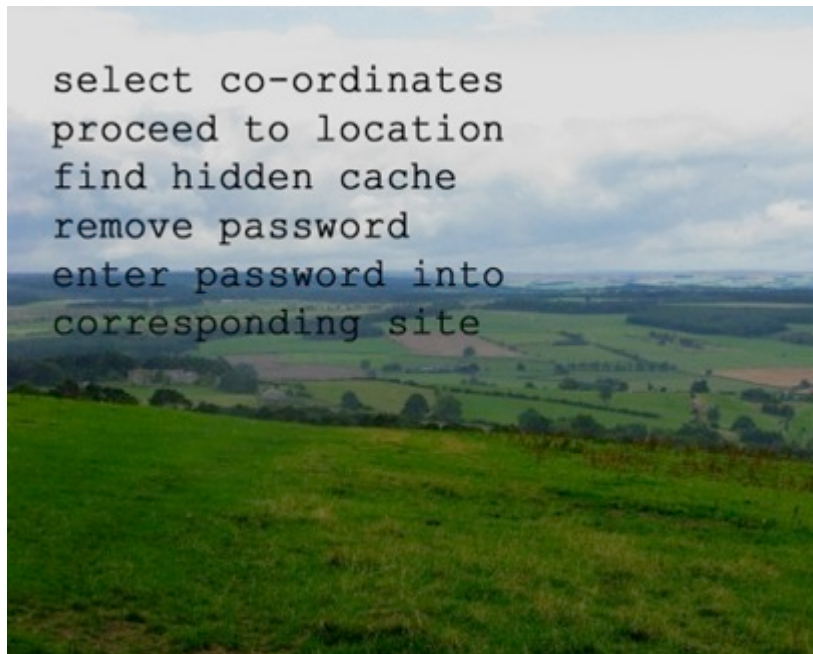
fig 5.2 *Dead Reckoning* (2009)

fig 5.3 *Dead Reckoning* (2009)

At the end of the walks, I had hours of useful, recorded data – interviews, photographs, drawings, and it was here that I needed to pause. For the information – the collection – needed to be put to work, to undergo the analysis and synthesis that constitutes art, to somehow pass from raw data to artwork. It was hard to pinpoint the exact moment when the transformation took place, from material to artwork, as artwork is slippery by nature, sliding between identities as it encounters its variety of viewers. Here, I am trying to reconstitute in words my exact process for you. I slip deliberately into the direct address, reminding you of a wider game. I considered a number of possible processes for my gathered data – a script, a reconstruction, and a series of etched texts – but all of these formats were in some way too heavy, too onerous. They lacked the lightness of the sniper's minimal sign in the landscape, his tactics of disappearance and dissemination (and it is nearly always a he, it is a very gendered profession) and reproduced what any other sort of research into a sniper's business could generate.

A studio visit from Parisian curator Vincent Honoré generated a lively discussion about the importance of 'lightness' and the conception of the work as a phenomenological engagement with a site. I decided that the key to resolving the work was the method used to generate the data – walking, looking, discovering – and that this structure should be replicated in the work itself. I proceeded thus: I devised a website with a number of password protected pages, chose passwords, printed cards with the various passwords and the web address on them. I went back to each location, and hid caches of the cards using a technique described to me by a participant. I recorded the precise co-ordinates of the caches on GPS. These co-ordinates were then logged on geo-caching websites, and the game commenced. It is possible to unearth the secrets of snipers, but only if you can use a sniper's eye in the landscape to discover what has been hidden. If you retrieve a cache, you can input the password to the website either using a smartphone on site, or at any later time. The protected website pages contain drawings, photographs, sound files,

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text and links to the data recorded during the initial walks. The existence of the piece was advertised on several high-profile geo-caching websites, on the website for an exhibition, and on my own website. The caches also act as publicity for the work – a viewer can randomly discover the work through accidentally unearthing the cache. Access to the information is strictly governed by the act of seeing. I never show the hidden parts of the site. If you wish to discover the work, then you must walk, and you must look, you must reconstitute yourself in response to the Other who is imagining you, you must walk the landscape positioned somewhere between artist and sniper, and then the secrets of both will become accessible to you.

The sniper writes the possibilities of engagement onto the landscape. He operates as information-gatherer as well as the hidden agent of death. He operates almost as an eye out-with the body. He constantly conjectures how he is seen by the Other, taking up the challenge of seeing himself seeing himself. For how else can he escape detection, other than by entering the perceptual field of the Other, by imagining the vision of the Other and reconstructing himself accordingly? It is in this place of imagining the impossible, that I posit that the collisions of military and artistic practice take place.

The strict mathematics of the situation will tell you that you are going to fire low. But unconsciously, for whatever reason it is, when you fire uphill, you tend to fire low. And when you fire downhill, you tend to fire high.

That's because you can't triangulate the perspective.

So no matter what your brain is telling you, what the laser range-finder might well tell you, the only thing you can actually do is trust the instrument, because the instrument can't be as confused as the eye with the light and the perspective.

Fig 5.4 *Dead Reckoning* (2009)

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5.2 The Model (2009-11): sandbox and toolbox

I worked in the studio on something that came to be called *The Model* throughout my Hadrian's Wall residency (August 2009–May 2010). It began after a site visit to Segedunum[3], when I found myself unable to decide whether an artefact was Roman or a modern reproduction. I recalled my numerous childhood visits to the archaeological park at Xanten[4], and the sense of not knowing whether the architecture was old or new. A series of questions subsequently formed around that might mean. I took these memories and tried to give them some initial form using architectural model-making materials and light. This comprised playing (that not-innocent playing again – call it experimenting if you like) with a variety of materials (foam, wood, polystyrene, figurines, lights, copper sheet, plain and printed paper, plastic, glass, ink, lead) to make a series of changeable sculptural scenarios. Then, I photographed the results, concentrating on the light and the idea of terrain.

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[3] Segedunum is a Roman fort at modern-day Wallsend in Tyne and Wear, forming the eastern –most part of Hadrian's Wall from approximately 125-400 C.E. It is the most thoroughly excavated fort on Hadrian's Wall.
[4] Xanten is an historic town in North Rhine-Westphalia in Germany (where I lived until I was ten). It is known for its archaeological open-air museum, which is a partial reconstruction of the Roman Colonia Ulpia Traiana and is built on the site of the Roman town. The buildings of the museum are reconstructions built on their original sites.
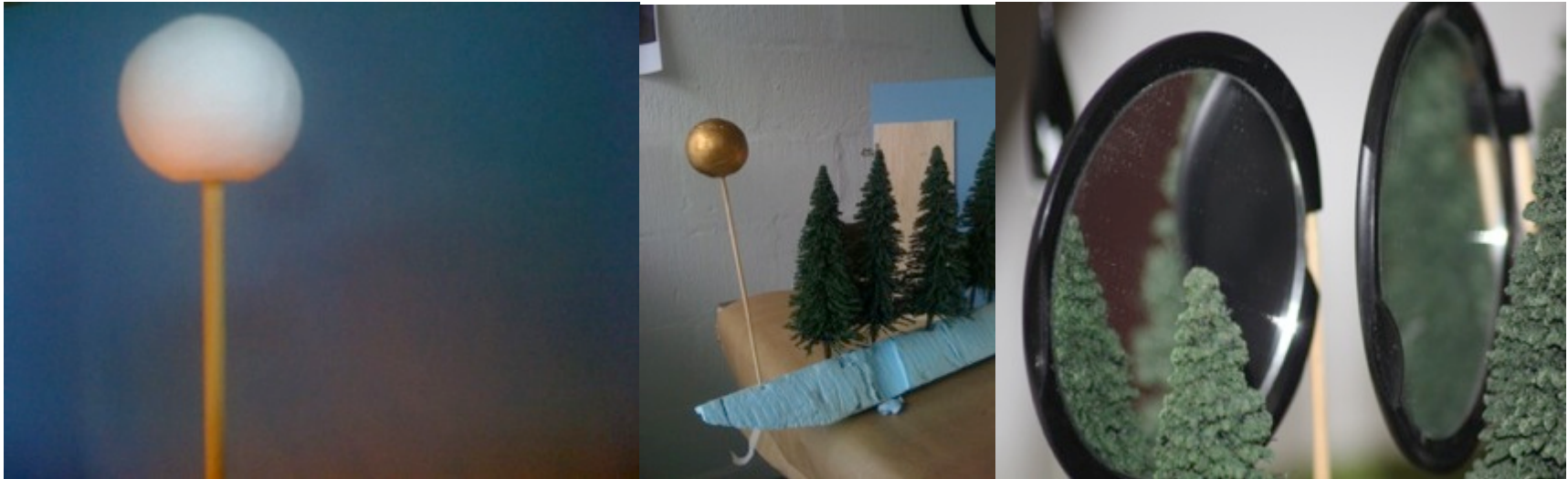
fig 5.5 details of *The Model* (2009-11)

The Model allowed me to respond to my ideas in a material way, and enabled the materials to *inhabit* my ideas. My working process was very simple: I began with a short piece of text – an idea, a quote that I seemed unable to forget – something that operated as a linguistic clue and allowed language to both govern and be admitted to the work as material. I collected things (including objects, and narratives, and correspondences) that were in some way contingent, and thus began to work between and around these "objects" to tease out both formal and conceptual associations and coincidences. The process can be described as: aim/toolkit/action. During this part of the process, it is as though the material-focused displacement activity permits me to 'look awry', to be distracted, so that the real substance of the work can emerge. *The Model* is the first time I have worked like this in a sculptural context, and because of its uniqueness in my practice, it was not immediately evident to me that it was a *generator* rather than an *outcome*.

During a studio visit, *The Model* was discussed as existing simply in order to be photographed, suggesting that *The Model* is nothing in itself: it is simply an occasion for viewing, an invitation to look. As a result, I spent significant time repositioning individual elements and photographing extensively. I was also reading Svetlana Alpers book *The Art of Describing* at that time, and was trying to turn her arguments about contemporaneous Dutch and Italian painting into something tangible. I began to make a lot of still life photographs, and to treat the surface of *The Model* like a still life, consciously taking up different modes of looking (an experiment I reiterated in Philadelphia in 2011). Some images from it in this first guise became *The Telescoped World of The Geisha* which features in my *Back Room Experiments and Other Experiments* book (Streffen, 2012), but it had little resonance beyond an engaging composition, and did not appear at that time to warrant further investigation. So I left it on a table for a substantial period of time whilst I thought of other things. If this seems unnecessarily prosaic, it is because it was, but it needs to be said – sometimes work has to sit and wait for thinking to catch up with it. The object had no definite identity, and despite its persistence, it did not seem to be directly connected with my research questions about military vision. So I abandoned it, in search of other evidence. At some point much later, I brushed some of the dust off it. Later still, I added some lead shot from the Somme battlefield. Gave it a reflective lid. Added some trees. Wait a minute! I added some trees? What was that about? Why was I still returning to modify it? It seemed that – relegated to the discard pile – the repudiated *Model* had finally developed an identity and a purpose. At this point it developed a slightly different function, surrendering its sculptural concerns, and moved towards being an engine for thinking.
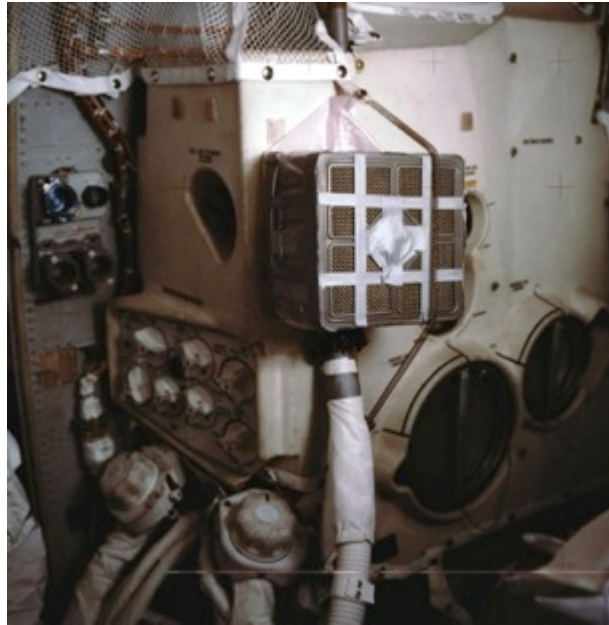
fig 5.6 Apollo carbon filter, photo: I Streffen (2011),
National Air and Space Museum, Washington DC

On reflection, it is clear that the lessons learned in experimenting with *The Model* had been applied to my later work *The Beak and The Bicycle* (constructed in 2010, though not exhibited until 2011), and the lessons I learnt from that project revivified the potential of *The Model*. During 2010 many of the projects that I was working on were large-scale partnership works[5], which were proceeding very slowly, and were very frustrating. I sought refuge in reading Umberto Eco's novels (whilst considering semiotics), thinking about Duchamp's appropriations, and playing with bits and pieces from my attic. I was intrigued by a scene in Ron Howard's 1995 film *Apollo 13*, in which NASA's Ground Control design and model a new carbon filter from very restricted materials.

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[5] *Illuminating Hadrian's Wall* (2010) event; *Scintilla* (2010) digital video; *The Enlistment* (2010), performance; *Border Strategy* (working title) (in progress since 2010)

Inspired in part by the model constructions I made during my residency on Hadrian's Wall, in part by my research into optical devices since the Renaissance, and in part by my childhood memories of sticky-backed plastic and castles made from household furniture, I have been working on three sculptural 'devices'.

(Streffen, Studio Diary, 2010)

The Beak and The Bicycle fused textual and archive-led research with studio research in three separate, interactive sculptural elements, each with a slightly different function: a device to measure longitude; a device to help you to see like a bird; and a device for turning the world into film. The piece was conceived as a whole, and hence has a formal visual cohesion, though the aesthetic clearly originates in the tradition of recycling and making-do. It was an immensely playful piece, and very popular during exhibition, where visitors repeatedly described their pleasure, delight and exhilaration in using the 'zoetrope'. The three separate pieces toy with some of Duchamp's favourite ingredients, willfully misreading the received ideas about his work, to enable me to engage in a deeply personal and particular discussion of appropriation.

fig 5.7 *The Beak and The Bicycle* (2010), detail

fig 5.8 *The Beak and The Bicycle* (2010), detail

fig 5.9 *The Beak and The Bicycle* (2010) installation view, Newcastle University, 2011

For a short time during 2011, I continued to add and subtract elements to *The Model* – some figurative, some allusive – for example the polystyrene balls that conjured a connection with the large geodesic domes (long-demolished) of RAF Fylingdales. It is clear from the photographic evidence that I was still thinking figuratively and sculpturally (some of these ideas went on to be explored in the context of the contested landscapes of northern France in 2011's *The Ghost Army*), and my ideas were still tightly connected to actual military sites and devices.

The construction experience of *The Beak and The Bicycle* prompted me to think of *The Model* less as a sculpture, and more as a set of conditions. I became convinced that this piece was the 'engine room' of my doctoral research. But there was still another step that I needed to take, another connection that needed to be made before I could finally fully understand its function and resolve the work into 2012's *The Requisite*.

The missing piece in this jigsaw dropped into place during a visit to Tynemouth Toy Museum in the autumn of 2011, and its emergence exemplifies the contingent nature of practice-based research. I was searching for samples of Cold War era toys to collect for a visual survey, specifically looking for those from 1950-1975, of which The Toy Museum holds a substantial collection. I was permitted to document them, and whilst photographing on location in the Museum, I noticed a display of doll furniture and very small dolls (less than 10cms) arranged in a framework against a wall. I stopped to look in detail, noticing that the randomness of the composition lent itself to photographing small but evocative scenarios and mysterious situations. The photographic series *These Strange Tableaux* (Streffen, 2012) is the result. There is far more at stake in the images than the documenting of toys and fashions. There is a gap for the imagination to suggest something strange, deliberate, and uncanny. As I edited my images, carefully cropping to alter an innocent display into something laced with menace, I remembered The Nutshells.

fig 5.10 *These Strange Tableaux* (2011)   fig 5.11 *These Strange Tableaux* (2011)

The Nutshell Studies of Unexplained Death are eighteen dioramas built by forensic scientist Frances Glessner Lee during the 1930s and 1940s, and are held in the Office of the Chief Medical Examiner in Baltimore, Maryland. They are detailed models of crime scenes, built by Glessner Lee to teach pathology students how to assess, approach and process a crime scene. The dioramas are not open to public view, and are not widely known outside their community of interest, but the work of two artists – photographer Corinne May Botz and film-maker Susan Marks – have raised their profile, as did the 2006 *The Miniatures Killer* episodes of CSI: New York[6], which were inspired by the models. Rachel Monroe[7] reported on them:

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[6] CSI: Crime Scene Investigation (2006-7) Series 7. Episodes 701, 702, 707, 710, 711, 716, 720, 724. CBS , 21/9/06, 28/9/06, 9/11/06, 7/12/06, 4/1/07, 15/2/07, 12/04/07, 17/05/07 [video]

[7] Monroe, Rachel (2010) 'The Art of Murder'. *Baltimore City Paper,* 5 May 2010 http://www2.citypaper.com/film/story.asp?id=20174 [accessed 15 September 2011]

The Nutshells, for all their precision, aren't puzzles to be solved; some don't even have a "right" answer. More than anything, they're occasions for observation, perceptual exercises. They're laboratories for looking and thinking...

The Model is not a formal diorama, as it is changeable in size, content and scale. It does not offer up a tableau for interpretation: it is a laboratory for scenario building. One of the key ideas to emerge from my investigations into military practices has been the concept of scenario building. My enquiry into war-gaming showed how defining and building a scenario is the foundation of everything that can be tested, analyzed, and assessed. The development of *The Model* embodied again how military and artistic practices can and do overlap, and how artistic practice can give insight into and promote understanding of military procedures and concepts.

fig 5.12 *The Model* (2009-11), detail
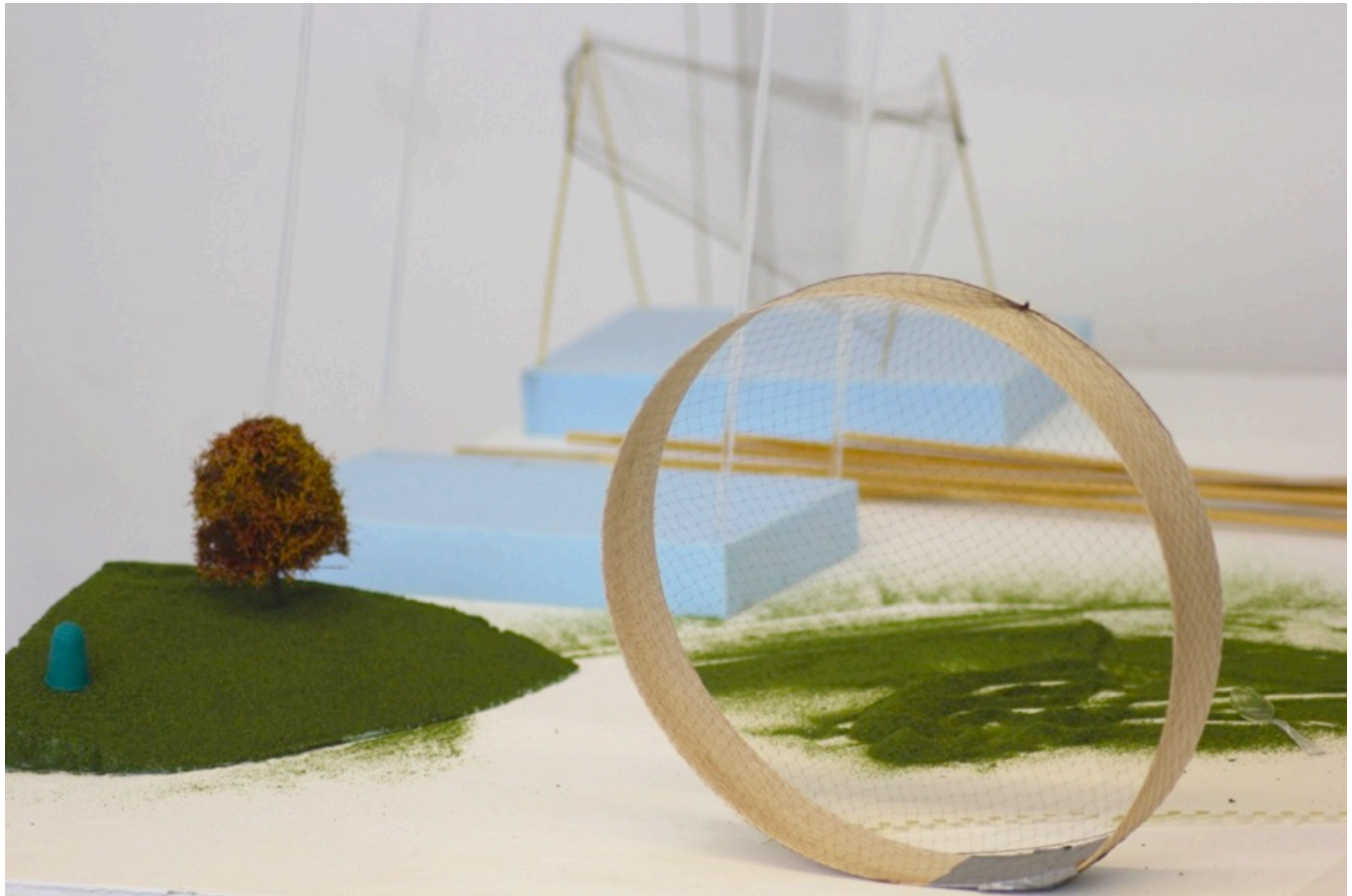
fig 5.13 *The Model* (2009-11), detail

5.3 Aeronaut (2011): the paradigm of aeriality

The first flight was a paradigmatic moment for humanity. Humankind was finally able to usurp the god's eye view. It would be a further one hundred and thirty years before our imaginations were to be fired by the Wright Brothers first mechanical flight and aeroplanes became synonymous with airborne death. I have attempted in this research to re-conceptualize the aerial view – 'the aerial turn' as I prefer to describe it – using texts from Peter Sloterdijk, Marina Warner and Mark Dorrian in order to help me interrogate the moment when vision changed forever. *Aeronaut* (2011) took the aerial view of chapter one as its subject matter, as I addressed how the question of taking to the skies has been culturally assimilated and processed, and how we reconfigure ourselves as subjects in response.

I was invited to take part in a mini-residency at 25SG artist-run space in Newcastle in May 2011, and I previewed the performance lecture *Aeronaut* there. The work is rooted in texts generated by the many flights I have taken over the period of my research, the story of the first cross-Channel flight, the British balloon post, and the poet Shelley's romantic gesture on a Dorset beach. But these are just a few of the narrative strands to be woven together – the underpinning is the radical expansion of possibility exposed by the shattering of perspective as the traditional scaffolding of post-Renaissance thought.

Aeronaut is a performance lecture – an unreliable, illustrated history of aeronautics from Icarus to Aurora, which adopts a number of different voices and narrators, using the language of World War II fighter pilots. Through its 'unreliability' it reminds us that the apparent certainties of history are highly unstable. The illustrations that

accompany the verbal narrative are all aerial digital photographs taken on my many flights across the US during 2010-11. The images are highly coloured, implying a very artificial (even Baroque) position, but are in fact completely unmediated, 'un-photoshopped', unedited (except for their size). They appear fake, almost ridiculous, and as such highlight the duplicitous nature of the accompanying text. And yet, they are not faked, and neither (entirely) is the text. In the midst of my own photographs, I inserted an image of Kill Devil Hills from Google Earth complete with a logo – it looks accidental, as though I have given my secret away. It is there, however, to invoke falsifiability as a concept, which it successfully does.

fig 5.13 *Aeronaut* (2011), detail   fig 5.14 *Aeronaut* (2011), detail
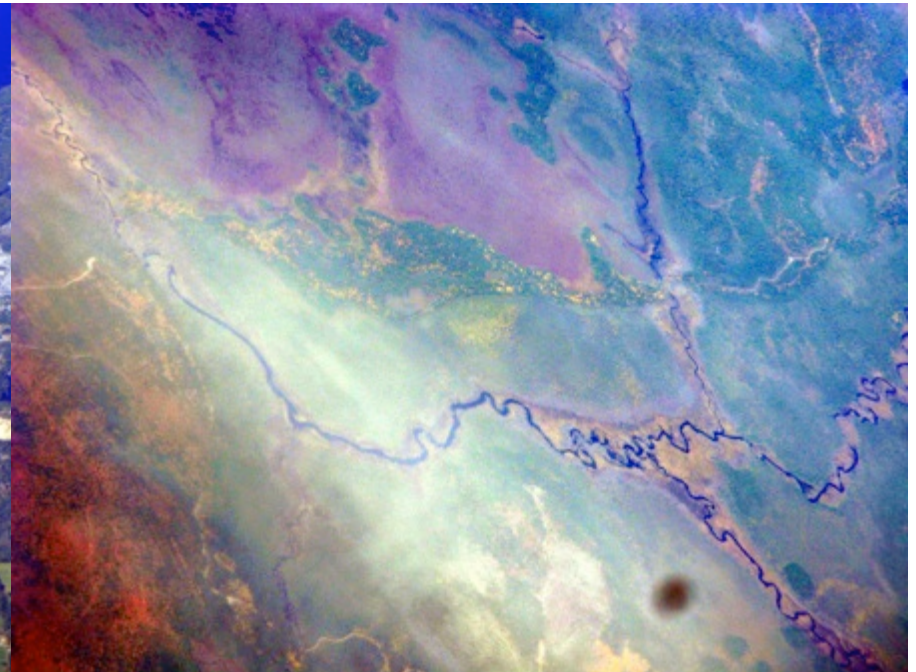
The piece originated in my archival research at the Library of Congress in Washington, as I flicked back and forth between accounts of aeronautical achievements, disasters, personalities, legends and myth through diaries, newspapers, letters and other primary materials. Lacan's aphorism "truth is structured like a fiction" (Evans, 1996) framed my approach to the material as I absorbed the differing views of events, and the proliferation of meanings. Throughout my fieldwork (invoking the shadow of the ethnographer) as a scholarly researcher, I have become increasingly aware of the identity of 'scholarly researcher' as a performance in itself, and wanted to make clear the impossibility of accessing a 'true' account, the impossibility of any fixed reality (Baudrillard, 1979: 35 and 151).

Aeronaut was not quite ready at this point and still unresolved, but required testing in a live audience context:

> 'trialling new work and moulding it into a form for this type of location, making it performative – less arm's length – has been a real development for me. Trying out the new piece of work let me know just how much needs still to be done with it to prepare it for exhibition, especially with the text. It's very hard to get that to sound natural, as it's very period' (Streffen, Studio Diary, 2011)

Following the preview, I considered making some profound structural alterations to the work. My reflections on the work as the performer left me questioning whether this was the appropriate medium and presentation for the work, or whether it would function better as a pre-recorded video piece, in the style of a training film. The discussion event that followed the performance enabled me to explore this in depth, and the audience's collective response was that it should remain a 'live' work. The intention of the piece had been to explore a civilian response to the 'militarization' of the aerial, and furthermore, how the existence of a military 'eye in the sky' affects perceptions of subjectivity.

Contemporary theory responds to technologies of surveillance with the conjuring of an horrific techno-sublime[8]. Virilio's accident theory, for example, can be summarized thus: each new technology holds within it an accidental means of destroying the universe. The endless repetition of variants and elaborations of this concept in the context of the ever-burgeoning wealth of writing and discussion that constitutes the contemporary information ecology (web 2.0), has the effect of making this seem actual rather than theoretical. I questioned whether aerial technologies had consistently been conceptualized in this way – hence my historical survey – and discovered that although there is a discourse of disaster that accompanies the development of aerial technology, this relates mainly to spiritual fears of man usurping the position of god. This emergence of the negative techno-sublime may be linked to left-wing post-Marxist thought critiquing post-Fordist late capitalism, and this change in the tone of the discourse is an area that is a potential future avenue for further research.

Subsequently, I thought about the *Aeronaut* performance quite differently, as I reached a fuller understanding of the potential of my field-craft methodology. I developed a deeper awareness of my performance as a scholar, and came to consider that the final form needed to be tied tightly to these issues. Therefore the piece is performed as a formal scholarly lecture, in order to properly synthesize and communicate the relationship between the method and the material.

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[8] the technological sublime can be summarized as where the primary source of the sublime experience articulated by Kant, Burke and Schopenhauer, is produced in relation to new digital technologies

fig. 5.15 *Aeronaut* (2011), detail

5.4 Hawk & Dove (2011-12): surveillance old and new

fig 5.16 *Hawk & Dove* (2011-12), installation view, Martin Luther King Jr Memorial Library, Washington DC

"The Zeppelin entered Washington from the southeast, passing close to the Capitol, to which it dipped in salute as hundreds emerged from the House and Senate office buildings to view the spectacle. Continuing straight through the heart of the city, the dirigible swung through the north-west section over the German Embassy on Massachusetts Avenue, down past the State, War and Navy Building towards the Washington Monument. By this time its altitude was estimated at about 1000 feet. It swung easily with a slight roll, the rip in its port fin plainly showing. It circled the Monument, passing almost over it and dipping in salute. She then turned her nose to the northeast and went directly over the White House, where she again dipped in formal salute and then straightened away toward Baltimore on her way to New York and Lakehurst." (Montréal Gazette, 16 October 1928)

Conceptually, *Hawk & Dove* had its basis in a critique of party politicization of sites of learning, and emerged during a residency at the Library of Congress. Two dirigibles, mounted with video transmitters and controlled by wi-fi (essentially prototype drones) engaged in a highly choreographed 'dogfight' in the ornate setting of the Library of Congress Great Hall. This permitted an arresting new look at an iconic site from American history, politics and learning, and spelled out the inherent performances and incipient dangers of two-party politics.

Dirigibles, zeppelins and balloons have a unique role in the development of military vision, as they are the methods used by humans to escape from the ground for the first time. Their origination implied new parameters for conflict. Yet they possess a particularly poetic (even romantic) identity and are technically understandable to non-specialists in the way that a drone is not. This fusion allows a more poetic and literary approach to emerge, as a conscious provocation to the contemporary preference for stripping expressive language from art writing.

fig 5.17 Graf Zeppelin over Washington DC 1928, photographic copy from a glass plate negative held by the Photographs and Prints Department at the Library of Congress

This *admission of poetry*, coupled with the direct address and informal idiom enables me to destabilize and critique the scholarly text by interposing the subjective.

In this research project, I have studied military vision and what that might mean in physiological, psychological and metaphysical terms. My enquiry led me deep into theories of the locus of the eye-view, and has ranged from Renaissance ideas of perspective to modern notions of surveillance. One of the critical junctures in developing a theory of military vision was the moment at which the eye became aerial. Humankind had long sought wings in order to usurp the viewpoint of god. Our histories are permeated with flight myths and metaphors from Icarus to the flying carpet, all allowing humans to look down upon the earth and read it like a map. A rumour persists that the ancient Nazcas perfected some sort of flying device as far back as 100BCE, though no trace of that has ever been found. Unmanned hot air balloons called Kongming lanterns that were used in Chinese military signalling from approximately 220 C.E., may even be the first drones. Since the earliest times, the history of viewing seems like a race to cartography.

There is undeniably something very different about looking down at the earth from a thing that moves, as opposed to seeing from static positions such as a tall building, or a treetop, or a cliff. Viewing from a height shares some of the characteristics of mobile aerial viewing, but it does not share the sense of supplanting the omnipotent eye, emphasizing instead a sense of being locked to the spot, imprisoned by a single view. Exploring some of the narratives, myths and science surrounding the aerial turn has enabled me to test questions of why the 'eye in the sky' in all its forms exerts such a powerful fascination (both positive and negative).

The trajectory of aerial development offered me an immense repository of narratives to explore. I considered unmanned drones flown over Iraq by pilots in California; the spy planes of the Cold War; Armstrong, Aldrin, The Eagle and the photographs of Earth from space; the rumours of Aurora and Area 51, and more. I returned again and again to the Wright Brothers, on their desolate strip of land between North Carolina and the sea, where they lived in a modest hut for months at a time in extremely challenging conditions, whilst following their aeronautical dreams. Delving into Orville and Wilbur Wright's notebooks at the Library of Congress and the National Air and Space Museum, I was fascinated by their account of their scientific method. Like Orville, I dreamed of flying (and like Orville, I have always found the dream of flying much more exciting than the reality). I examined glass plate negatives of their testing ground, and when I finally found myself in Kill Devil Hills, I understood why they had picked this remote, inhospitable – and above all, windy – spot*. I traced the line of the flights, all four. I watched a dozen small children, arms outstretched, coats hoisted around their shoulders, race along the flight lines, shouting with joy and whirling like spinning tops. I saw the possibilities that flight etched on their imaginations. I also saw the exhibit where a tiny part of Kitty Hawk's wing was taken to the surface of the moon, drawing a clear symbolic line between one incredible moment and another. (* I arrived in Kill Devil Hills, North Carolina early on a rainy, sultry April evening. My dinner of scallops was rudely interrupted by a tornado.)

In the Wright Brothers collection, I found references to ballooning, and fully realized for the first time, that the first flight took place in a silk paper sphere over Paris. The importance of the physicality of these experiments had become clear to me in North Carolina. I immersed myself in the Gaston and Albert Tissandier archive, hunting for the clues that led up to the first human flight. There I found myriad long-forgotten wonders: the zeppelins of the inter-war

years; the extraordinary inventions of the Victorian-era aeronauts; a Confederacy balloon made from ladies' silk dresses, used for spotting enemy troop manoeuvres; the utopian dreams of *La Minerve*, a model city inside a balloon; the fantastic account of America's first flight in Philadelphia and its promise of an unsung slave prisoner guinea-pig; the thrilling Channel crossing in which the heroes were saved from certain disaster by stripping naked and emptying their bowels over the waves, casting enough weight to avert a crash; and still further back, balloons made of silk paper and animal bladders, pursued by the farmers of Gonesse who feared that they were devils. I read of the moment that the Montgolfiers were inspired to build their contraption, after Joseph observed his wife's silk bloomers rising when filled with hot air during laundering. It was a rather more intimate beginning that the official, polite version of him attempting to solve the problem of an airborne assault upon Gibraltar. The tension between the intimate and the military is one that beleaguers this project.

I discovered the story of the Graf Zeppelin on its round-the-world voyage, and was intrigued by the image of it over the Capitol, which, with the assistance of Library of Congress staff, I calculated must have been taken from (what is now) the Poet Laureate's private office inside the Jefferson building.

In January of 2011, a Cooper's hawk took up residency in the Main Reading Room of the Library of Congress, and for a few days the airwaves were full of witty references to the Hawks and Doves of Congress, and to the ideas of a bird's eye view of political machinations. Familiar with the use of pigeons fitted with miniature cameras during both World Wars 1 and 11, I wove together some ideas about aerial photography, political divisions, spaces of national symbolism, and the use of that famous terminology. I investigated federal power structures within the city, their architecture, how their architecture expressed their ideals, and how, as a non-American and symbol of former

imperialist power, I might be able to respond to them. I started with the space that my residency had inscribed me in, the Library of Congress, a formal symbol of American knowledge, created specifically to collect and protect that knowledge on behalf of the American people. This vast Library with its many specialists was created to be able to provide authoritative advice on any subject to America's decision-makers, and had emerged from the ashes of the original Congress burnt by the British.

The remaining two key elements of this matrix of questions, inspirations and connections were literary. CP Snow's *Strangers and Brothers* series was published between 1940 and 1975. The 1964 installment *Corridors of Power* dealt with questions of political and personal integrity and the mechanism of the exercise of power. Concerned with the attempts of an English MP to influence national policy on nuclear weapons in the 1960s, Snow analyzed the professional world, scrutinizing microscopic shifts of power in an enclosed setting. The title phrase has long since passed into common use as shorthand for the heart of government. The concept of corridors of power is right at the heart of *Hawk & Dove*, as is my awareness of the use of *hawk* and *dove* terminology. The term does not merely describe modern positions on the political spectrum, but grew from game theory and strategy developed by the Pentagon, ultimately having its roots in the 12th Congress that advocated war with the British in 1812. I posit that in a city whose existence owes everything to the exercise of political power, the terms *hawk* and *dove* operate site-specifically, and act as an invocation of the city and its federal function. The bird's eye view clearly connected with my doctoral research, allowing me to turn the pervasive eye of government on government itself. It seemed especially relevant that the research was taking place in such close physical proximity to where some of the most important decisions about aerial technologies are taken, on Washington DC's Capitol Hill.

At this point in the development of the work – the point of submitting a proposal for an artwork to the Library – I elected to use small dirigibles of the kind often seen at sporting events, fitted with tiny cameras, to investigate some of these spaces in a way which had never before been possible. Using both old and new technologies in practice and research enables me to tease out hidden connections between dead and future mediums, and to suggest alternate narratives for both. With these agents, actors and ideas in place, and prospecting corridors of power in my mind, the project began to expand.

I will now give an account of some of the key issues and technical problems of producing the artwork.

Due to the sensitive nature of the site, it was extremely difficult to gain the backing of the institution. My position as a Kluge fellow was of critical importance, as I had already established my academic credentials and could be identified as a serious scholar using fine art practice to reveal new insights into archives and collections. It took me six months of hard work to establish this trust, though there was still significant resistance to supporting what was considered to be a very avant-garde enquiry. The field-craft technique of camouflage was a critical factor in fashioning this character of "scholarly researcher", as I analyzed my relationship with the institution to answer the question "how can I be what the institution wants"?

At the close of my original fellowship, it was agreed that I could attempt to procure the necessary funding for the project: if the support could be found, the request would receive serious consideration. I returned to the UK and

fig 5.18 *Hawk & Dove* (2011-12) video still from the Popular section at MLK Library

raised £5,000 towards the cost of the project from Arts Council England. I was then invited to submit my project proposal to be one of five new commissions for *5x5* [9], Washington DC's inaugural public art festival. The submission was successful, and enabled me to access a further £15,000, in addition to public relations and project management support from the curator. I met representatives of the Library of Congress in Edinburgh in December 2011, following the successful *5x5* proposal with its government support, and I gained approval to set a date for my return to film. I established contact with the Martin Luther King Jr Memorial Library, as it was conceptually important to include that Library's specific remit. It was clear that this Mies van der Rohe-designed building would be the perfect location for an architectural installation of the work.

The *5x5* project was delivered to a very tight timeframe, and I had to progress much faster than I would have liked through pre-production to production stage. Pre-production was beset by equipment problems. In the first instance, the suppliers delivered equipment late. Then the equipment was faulty and required extensive reworking in the studio. The problems of preparing an artwork from 4000 miles distant, with differing electrical requirements were abundantly manifest, echoing the cultural frictions of working between the US and the UK. I returned to the US in January 2012, anticipating filming immediately, only to discover that the permissions initially granted by the Library had been withdrawn. The reasons for this were three-fold: the Architect of the Capitol had health and safety concerns; the Public Affairs office felt that more senior permissions were needed because of the profile of the Cherry Blossom Festival; and the Capitol Police pointed out that it was a felony to bring helium onto Capitol Hill. The 'story' and the

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[9] 5x5: the 5x5 exhibition was a temporary public art project established by the DC Commission on the Arts & Humanities for the Centennial National Cherry Blossom Festival. Five curators each worked with five artists to develop 'ground-breaking' installations for public spaces in the District. I was selected by curator Dr Richard Hollinshead as one of his five artists, and exhibited *Hawk & Dove* (2011-12) in Washington DC from March-May 2012

institutional machinations around the work are, for me as the artist, so much a part of the work that it is almost unthinkable to discuss one without the other. They are important because they reveal the 'back room' of an artwork in the same way as sketches and pentimenti; they reveal structures that cannot be contained by the artwork; in some ways they can be a bridge between the artwork and the conditions of its generation – and that is certainly the case here. In 'storytelling' the work, I use the same techniques as the detective and the intelligence analyst, combing detail for patterns, building a narrative from possibly unrelated events. This is how intelligence analysis works: the examination and assessment of details whose importance is unverifiable. Who knows what might be hidden in an account of making an artwork? Who knows what hidden agenda might be revealed by matter-of-fact reportage?

A month later, following some complex negotiations (and many anxious tears), I was granted a license to film inside the Library of Congress, for two hours, between 6 and 8am on a Saturday morning. The whole of the previous day would be taken up with getting the inflated dirigibles through the security measures and into the Library so that the shoot could take place. The measures precluded the use of a hire vehicle, and required that a driver be sealed into a van in Virginia with a timeframe in which he would be permitted to arrive at a specific loading dock. This is the reality of working with important institutions.

Filming was scheduled at MLK Library to take place in the four days prior to the LoC shoot. There were no special protocols, no extensive security clearances, and the helium canister was stored in a locked cupboard without any attendant drama.

I found the film shoot itself was awkward, due to using complicated technology (most of which did not work very well), and working for the first time with a film crew. I faced a range of technological problems with transmitters that had been working perfectly in the UK (a military source later revealed this to be far from unusual – transmitters frequently malfunction due to changes in humidity and air pressure). Additionally, problems with the remote control mechanisms materialized and jeopardized the entire project.

Initially, I struggled to communicate my requirements to the crew, a consequence of the absence of a shot list, as (despite trials in Culture Lab) I remained uncertain about how the footage would look. This improved daily as I grew more accustomed to the movement and manouevring of the machinery and with reviewing the daily rushes. Although by the time of the LOC shoot the machinery was barely functioning, the crew was were working well as a team, and I found myself able to give clear instruction and ensure that we had all of the shots required.

For exhibition as part of the *5x5* project, I created two large silver vinyl prints that were applied to two separate window sections on the ground floor of the MLK Library. These prints and their specific installation, which can be seen at figure 5.20, collapse the space of the Library as they visually extend the architecture out into the street. They remained in situ for the five weeks of the exhibition.

fig 5.19 *Hawk & Dove* (2011-12) video still from the Great Hall of the Library of Congress

The editing of the final film took six weeks in total. During the editing process, I learned everything that I had not yet learned on location. I learned what I liked and did not like visually on video, what type of shots I needed, and exactly how to direct my crew on my next shoot. The malfunctioning machinery was evidently problematic when I analyzed the footage, but after cutting out unusable footage (usually due to a visible aerial or head), a significant amount of clean material remained.

I classified the footage according to type of sources and location: transmitters mounted directly onto the two dirigibles and the 'external eye' of the HDV cameras; spaces at MLK library and the spaces at the LoC. The contrast between the two types of footage needed to be strong, to over-emphasize the apparent difference between the mechanical gaze of the transmission and the paradoxically more human-seeming eye of the HDV. After experimenting with various 'cuts', I opted for a simple narrative structure. This allowed the strangeness and distortions of the imagery to be pre-eminent. I slowed down the footage to emphasize the balletic quality of the dirigibles interactions, and to mitigate any discomfort to the viewer's body. The work is contemplative and graceful, belying the extensive trickery of the edit suite with its reversals and inversions, its shavings away of barely-detectible hundredths of seconds, and its thousand other tiny alterations of rebalancing, rescaling and continuity.

The video was finally exhibited as in figure 5.16, as a rather melancholy intervention into the architecture of the MLK Library and the surrounding street scene.

fig 5.20 *Hawk & Dove* (2012), silver vinyl print, MLK Library, Washington DC

Hawk & Dove was pivotal in my artistic practice. This was not only because of the difficulties surmounted in securing permissions, creating and exhibiting such an ambitious piece of work, but because for the first time I had deployed a distinctive pseudo-ethnographic methodology that proliferated meaning. By using what I now described as field-craft, I had directly addressed questions of looking with devices generated for military vision, through art practice.

5.5 Site Reports (2008- ongoing): intelligence practices

fig 5.21 *Site Report: Gold Beach* (2012) photo: I Streffen

I wonder what my grandfather was thinking as he landed on this beach, sometime between 0725 and midnight on 6th June 1944. His ghost haunts this project, and I sometimes ask myself if all my questioning is a convoluted attempt to get to know someone who has long been lost to me. I took this image with my feet in the sea, approximately in the position he would have come ashore.

Site Reports is a series of single-page documents deriving from the military term 'sit-rep', a report on a current situation. My *Site Report* from Gold Beach consists of several photographs, a rubbing of the plaque on the small shelter (tucked behind the white van) where a Victoria Cross was won, a textual account of what I saw and what I felt, and some computer printouts of photographs. It is the most recent in an extensive collection of reports that began during the earliest days of this research. The varied nature of the sites meant that for a long time it was just an activity without clear intention, something that I did, a thing that was unexplained. I did not fully understand what I was doing and I came to believe that it was a false trail, like so much upon my way. I connected it with WG Sebald's accounts of walks through Norfolk and Suffolk (Sebald, 1998), a trail of homesickness and nostalgia. I detected in them an attempt to recover a history of East Anglia's involvement as part of 'air-carrier Britain' whose traces were once very clearly written on the landscape. Many of the site visits took place in East Anglia, whilst attempting to uncover the hundreds of small airfields that had existed during World War II.

Early in my project, I experimented with using Freud's technique of the dream-work as a method for sifting information and making decisions in my practice. After extensive experiments, I knew that this technique was not sufficient – it constrained me too much to only have a discussion in one particular register. I decided that the practice

of *bricolage* that worked so well with objects might equally be applied to ideas - and (as Derrida argues) to discourse – and opted to try it as a strategy for thinking and researching.

I visited more military locations, tracking down cold war sites, reading Virilio's '*Bunker Archaeology*' and familiarizing myself with work by Cyprien Gaillard[10]. I expanded the visits to include specific objects – for example the Lunar Surface Module[11] – museum collections (such as the Royal Armouries[12]), exhibitions (Great Glen Artist's Airshow[13]) and meetings with relevant specialists where a site visit took place (for example, with Steve Rowell of the Centre for

fig 5.22 *Site Report: Otterburn Military Ranges* (2010) photos: I Streffen

[10] b. 1980, Paris. I am particularly referring to his work *Dunepark* (2009) in Scheveningen
http://www.afterall.org/online/cyprien.gaillard.beton.belvedere.and.dunepark [accessed 1 August 2012]
[11] Apollo Lunar Module, LM-2 used for ground testing prior to the successful Apollo 11 mission in 1969
[12] the Royal Armouries in Leeds, Surrey & London is the National Museum of Arms and Armour
[13] The Great Glen Artist's Airshow was held at Loch Ruthven in Inverness-shire, Scotland on 18 & 19 September 2010. It was the the 3rd Arts Catalyst Airshow, with previous events taking place in 2004 & 2007 http://www.artscatalyst.org/projects/detail/great_glen_airshow/ [accessed 1 August 2012]

Land Use Interpretation[14] in Los Angeles, and with Dr Tom Crouch[15] of the National Air and Space Museum), all of which connected to reveal a background narrative to my research.

I became obsessed with a range of websites such as www.28dayslater.co.uk, which bill themselves as urban exploration forums ('urbex' – Bradley Garrett's work on this is interesting[16]): sites where anyone can post images of what the general public may not really be allowed to see, although the cited example does differentiate between 'permission' and 'gonzo' visits. Though the aims of and approaches common to site documentation on these websites are not ones that I share, there is a formal element that I found useful as I wanted my own images to have the prevailing sense of being a dispatch from an artistic 'front-line'.

Following my Terra Foundation residency[17], where a series of studio visits from art historians encouraged me to explore the anthropological and ethnographic themes within my practice, I began to understand these small, unconsidered documents, and the constant drive to document and 'collect' these locations and experiences. I had used the term 'sit-rep' in connection with these pieces, but when I saw them physically printed out (rather than as computer files) I understood their connection/function and started calling them *Site Reports*.

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[14] The Center for Land Use Interpretation was established in California in 1994 in order to increase knowledge and dissemination of how the US national lands are apportioned, utilized and perceived. Its website is http://clui.org/ [accessed 1 August 2012]
[15] Dr Tom Crouch is senior curator in aeronautics at the National Air and Space Museum in Washington DC. He has published extensively on early aeronautics and lighter-than-air flight
[16] http://www.bradleygarrett.com/blog/ Garrett is a researcher at the University of Oxford and tweets as @goblinmerchant
[17] I was a Summer Resident at the Terra Foundation for American Art in Paris from June-August 2011

The *Site Reports* differ significantly in content, though my first-hand experience and knowledge of the site is a binding factor. Some, like the report on Gold Beach, are closely connected to my personal history. Others represent voyages of discovery, such as the report on Walnut Tree Prison Yard in Philadelphia, where I tracked down relevant sites using an eighteenth-century map, and found the landing-site of the first American flight in an unmarked plot next to a Wal-Mart. Each of the reports charts and records a process of detection work.

To describe this project in military terms, Site Reports would be the intelligence work, the place where unrelated things are all assessed for patterns (one Site Report includes Bletchley Park, also documented by Gair Dunlop[18]). From them, I have learnt aspects of intelligence collection, and how those techniques might be echoed and mirrored in studio art practice. There is a clear difference between the 'innocence' of the early reports, and the deliberation of the more recent reports. It is hard to resist returning to those earlier documents to 'correct' them, but to do so would be to destroy them as evidence of learning.

In *Site Reports*, I see the impact of military vision most strongly. They employ military techniques for purposes that are frequently associated with military practices, engaging with the conditions of a particular world-view and throwing light on its origins and consequences.

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[18] Gair Dunlop and I share many thematic interests, though we seem to have completely different methods and theoretical bases

Fig 5.23 *Site Report: Black Beck* (2008) photo: I Streffen

Fig 5.24 *Site Report: Tyneham* (2011) photo: I Streffen

CHAPTER 6. OBSERVATIONS

"There's a glow of light reflected on tarmac that only slightly lifts the blanket of the dark. I'm very definitely not supposed to be looking at it. It's not supposed to be here. An awful lot of effort has gone into pretending it isn't. This is not like the strange black 'plane I watch take off every morning as I wait for the early bus, which is an open secret. This is a secret where military law is invoked, where we are chased from the streets, ordered not to see, blinded, silenced.

I spent a summer, once, in another part of the world, watching planes which weren't there disgorge men who weren't there, before taking off again to drop the same and different secret, dangerous men into dangerous places to do unspeakable things. Armed with my tiny night scope, I braved insects and other demons to bear witness."

(Isabella Streffen, Studio Diary, 2012)

6.1 It's complicated

I started this project in part because of my interest in early photography, and in part to try to reconcile my understanding of militarism and the military as seen through critical theory, with my lived experience as a 'service brat'. I was born into a military family, and lived within that context until adulthood. My father served in live conflicts in Northern Ireland, Cyprus, Aden, Singapore and Belize, as well as being part of the "thin blue line" resident in Germany, and I was unusually aware of what was at stake in his job. My experience of militarism bore no resemblance to the militarism I read about in newspapers and later in critical theory. I wanted to understand why I instinctively responded to questions of my philosophical position by saying "it's complicated". So it was essentially that which was was at stake in my job as an artist that prompted this enquiry.

My 2012 solo exhibition *Requisite* manifested my research. The Alderman Fenwick's House site was chosen because of its historical identity as the earliest and most important merchant's house in the city; its situation within the militarized vallum of Hadrian's Wall; its past function as the home of powerful political clubs; and its board table, which had served as the board table for the Bank of England. The exhibition was conceived as a *requisitioning* of the site, a hijack of its complex political and economic narrative. The sunny, elegant, duck-egg-blue Georgian boardroom, with its fine ceiling and elegant furniture, was closed down, and swathed in dustsheets like the country houses appropriated by the military during World War II. The scene was set.

The exhibition is the final reconstruction of *The Model*, using many of the original components (from chapter 5). Also included was documentation from other works, referencing the re-working of technologies and re-purposing of objects/theories that I identified in chapters one and three. The exhibition played with the interstices between optical objects and weapons. It referenced both the past and the future of objects by generating projections (which specifically summoned up space imagery and the history of astronomy), and by using food-products to suggest biological experiments, demonstrated by *Fylingdales in Winter* and *Rocket (The Object and Its Shadow)*, both of which were inspired by amateur drawings of satellites from the Rhoda Bubendey Métraux archive in the Library of Congress. *Rocket* in particular, with its obvious phallic joke, invokes desire and contamination, whilst *Fylingdales* tips a knowing wink to Bataille.

Fig 6.1 *Requisite* (2012), Alderman Fenwick's House, Newcastle upon Tyne
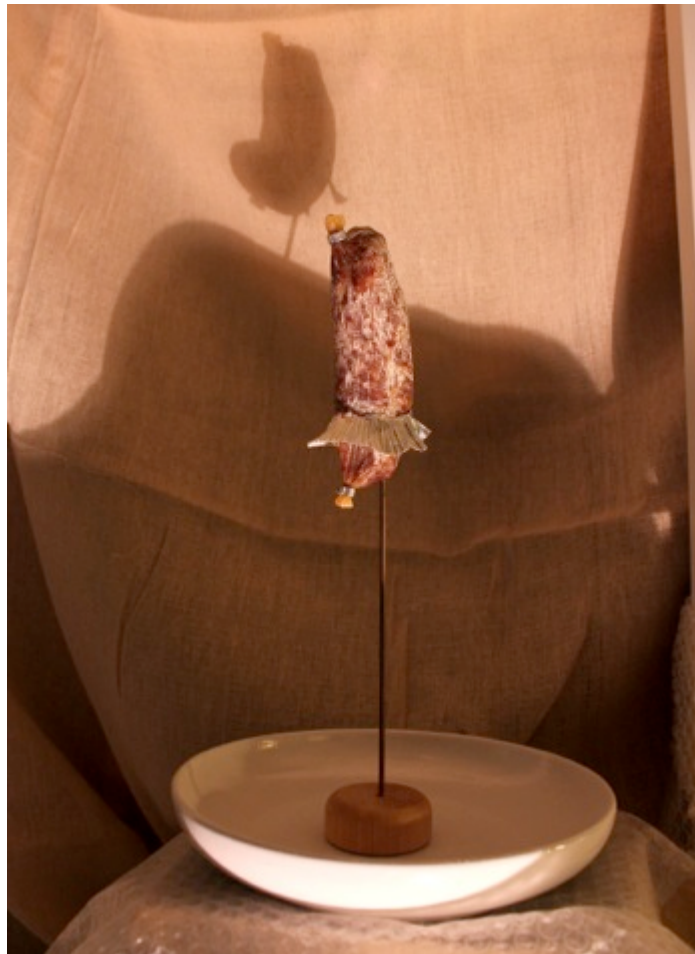
fig 6.2 *The Model* (2012)

fig 6.3 *Rocket (The Object and Its Shadow)* (2012)

fig 6.4 *Fylingdales in Winter* (2012)

The intention of the exhibition was to remove the research from an academic context, to test whether it still operated as 'art'.

fig 6.5 *The Model* (2012), detail

6.3 Contribution to knowledge

The research strands coalesce into this final chapter, *Observations,* which functions in a similar way to a conclusion. I have experimented with the form of the thesis as I have experimented with textual and linguistic works throughout my project. I have played with language, punctuating more formal academic tones with a casual idiom to remind us of the subject concealed within the researcher. I have engaged in a series of ploys with the reader, in which I have attempted to operate as a 'moving target' in order to safeguard agency. I have used the flexibility of art practice to generate connections and give form to the imperceptible. When seeing is multispectral, it is very difficult to be unseen. Over the course of this project, I have devised a series of methodologies that have manifested themselves through the *field-craft* apparatus. Practicing thus has led me to understand that the nature of military vision is not necessarily oppositional, not something which is exclusively done to us, but is a symptom of our own claim to agency, and that to counteract it, we have to acknowledge our implicit position within it. It reveals a collision of subject and object, a Simondon-esque permeability or porosity between subject-hood and object-hood. The relationship between artistic and military vision can be articulated by the concept of "*seeing ourselves seeing ourselves*" (to paraphrase): it is impossible, but both military vision and artistic vision encourage us to embrace impossibility. It demonstrates the specific value of using art practice to interrogate military sites, practices and objects. Its contribution to knowledge is in exposing similarities between military doctrine and the development of an artwork that allow us to redefine the relationship between art and the military, and find a more useful method to critique the latent military presence in civil society whilst accommodating our ambiguous foundational relationship with it.

This is what art does: it reveals the unexpected and acknowledges the ambivalence that is largely rejected by other types of scholarship.

6.4 Post-doctoral research

The scope of the project is such that further research is possible in a number of areas, though two main strands emerge as specifically timely and critical: the aerial and intelligence methodologies. These themes collide in the figure of the drone, the Unmanned Aerial Vehicle that exerts such a powerful spectre over contemporary culture. My work in mapping the field of research on drones can be seen at www.dronology.com, a site that gathers together work on drones across numerous disciplines. My forthcoming film *Volo* (meaning both 'I fly' and 'I desire') follows *Hawk & Dove* to address the poetics of drones and examine our ambiguous response. Several exhibitions during 2012 featuring extensive images of the aerial indicate that there is still a significant interest and lure in things that fly, and contemporary visual arts certainly has a future role to play in researching this. I would go as far to argue that we are embarking on a new chapter of *aerial culture*, and it is imperative to investigate its language, belief systems, ethics, cultural memes and its potential. My immediate post-doctoral project will be to establish the parameters of the enquiry, and identify key methodologies and partners.

It is also timely to reconsider Jordan Crandall's work *Underfire* in the light of drone warfare and PRISM and I have devised a project in collaboration with the University of Sunderland to review this extensive email conversation in June and July of 2014.

One of the projects that I developed during my research is still ongoing, although I expect to complete it in late 2013. *Border Strategy (*work in progress) investigates defensive strategies for a military site in the event of a complex decentralization of state power. In 2014, Scotland will go to the polls to vote on devolution. Border Strategy

is a film documenting a command post exercise (CPX- once known as a war game). Ten veteran soldiers have been divided into two teams (nominally Orange and Blue). Each team has been given the objective of holding control of Hadrian's Wall, the ancient border between Scotland and England. The two teams will direct simulated forces in the development of a new battle plan for the border region. One team will win. I do not yet know who will be the victor. All of the soldiers have stories and all trained in the Northumberland/Scotland training area at Otterburn. The focus of the film is on these soldiers as individuals, and how they (and by implication, we) find themselves dealing with challenging situations. We find our allegiances fluctuate as first one gains the upper hand, and then the other. We find ourselves questioning complex identities, histories and loyalties as they respond to orders and changes to the scenario. All of the soldiers once served together when responding to a terrorist incident in Cyprus in the 1980s, they know each other well, and the relationships between them are profound. The style of the CPX is based on procedures and documentation styles from the mid 80s, and the terrain is recorded using traditional video, and video from a DIY drone to reflect on the changing nature of technology and security planning. The work is an opportunity to reflect on the process of political rhetoric and personal decision-making, on where we stand in the face of challenging ethical questions, and on how we understand our relationship with the forces that both protect lives and destroy them.

Fig 6.6 Isabella Streffen, *Border Strategy* (indicative images, work in progress)

APPENDIX

List of artworks 2008-2012

Aeronaut (2011), performance lecture

Anatomy of A Shot (2009) digital video*

Back Room Experiments and Other Experiments (2008-12) artists book

Bright One (2011) single channel HD digital video (loop)

Cow (2011), digital print*

Dark on the Rock (2011) gilded print

Dead Reckoning (2009) geo-caching game

Dissection (After Descartes) (2010-11), single channel HD digital video

Eagle Eye (2012), 15m audio for radio broadcast

Ghost Army (2011), interactive assemblage*

Hawk & Dove (2011-12), 17 min digital video, edition of prints, architectural installation, silver vinyl prints

Illuminating Hadrian's Wall (2010), public event (with collborators)

Iron Curtain (2010) billboard

Manifesto for Hospitality (2011), installation (with Carole Luby)*

Miss Eris (2011), sculpture*

My Plan To Rob The Getty (2011) electronic document

New Battle Plan (2010-13), two-channel HD digital video, artists book

Not In Kansas Anymore (2011), digital print*

Saying What I Mean For Once (2011) wall-drawing

Scintilla (2010), 33 min digital video

Site Reports (2008-ongoing) collaged digital prints

Space Cadet (2011), digital print*

Texts on Perception (2009) laser-cut prints (with Denyse Beaulieu)*

The Beak and The Bicycle (2010-11), interactive sculpture

The Enlistment (2010) durational performance

The Lady Vanishes (2010) film script

The Metraux Archive Project (2011-ongoing), three digital prints

The Model (2010-11) assemblage

The Old Razzle Dazzle (2011-12), three-channel HD digital video (loop), edition of prints

The Telescoped World Of The Geisha (2009) digital prints*

These Strange Tableaux (2011) digital prints*

works marked * feature in the *Back Room Experiments* book

Presidential admission of existence of Area 51

Presidential Documents

Presidential Determination No. 95–45 of September 29, 1995

Presidential Determination on Classified Information Concerning the Air Force's Operating Location Near Groom Lake, Nevada

Memorandum for the Administrator of the Environmental Protection Agency [and] the Secretary of the Air Force

I find that it is in the paramount interest of the United States to exempt the United States Air Force's operating location near Groom Lake, Nevada (the subject of litigation in *Kasza v. Browner* (D. Nev. CV–S–94–795–PMP) and *Frost v. Perry* (D. Nev. CV–S–94–714–PMP)) from any applicable requirement for the disclosure to unauthorized persons of classified information concerning that operating location. Therefore, pursuant to 42 U.S.C. § 6961(a), I hereby exempt the Air Force's operating location near Groom Lake, Nevada from any Federal, State, interstate or local provision respecting control and abatement of solid waste or hazardous waste disposal that would require the disclosure of classified information concerning that operating location to any unauthorized person. This exemption shall be effective for the full one-year statutory period.

Nothing herein is intended to: (a) imply that in the absence of such a Presidential exemption, the Resource Conservation and Recovery Act (RCRA) or any other provision of law permits or requires disclosure of classified information to unauthorized persons; or (b) limit the applicability or enforcement of any requirement of law applicable to the Air Force's operating location near Groom Lake, Nevada, except those provisions, if any, that would require the disclosure of classified information.

The Secretary of the Air Force is authorized and directed to publish this Determination in the **Federal Register**.

THE WHITE HOUSE,
Washington, September 29, 1995.

List of documentation on DVD

The Telescoped World of the Geisha

Dissection (After Descartes)

Anatomy of A Shot

Site Reports

Border Strategy

Illuminating Hadrian's Wall

The Model

Iron Curtain

Dead Reckoning

Scintilla

The Enlistment

The Beak & The Bicycle

Cow

Dark On The Rock

Miss Eris

Saying What I Mean For Once (Love Me Or Die)

Ghost Army

Requisite

Back Room Experiments and Other Experiments

Space Cadet

The Old Razzle Dazzle

Aeronaut

Metraux Archive

Manifesto for Hospitality

Not In Kansas Anymore

These Strange Tableaux

Hawk & Dove

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