FOR WANT OF WONDER:
A practice based photographic investigation of posthuman enchantments in interstitial landscapes.

Martin Bence

PhD 2022

FOR WANT OF WONDER:

A practice based photographic investigation of posthuman enchantments in interstitial landscapes

MARTIN BENCE

A thesis submitted in partial fulfilment of the requirements of Manchester Metropolitan University for the degree of Doctor of Philosophy

School Of Digital Arts
Manchester Metropolitan University

2022

Acknowledgements

This research has been conducted part-time and for the latter part of it in the period of a global pandemic. The challenges presented by covid 19 to any researcher have been substantial, but I have been very lucky to have had a team of supervisors that through their efforts have mitigated many of the trials the pandemic presented. In this respect I would particularly like to thank Dr David Penny, Dr Andrew Warstat, and Sylvia Waltering who between them achieved near miraculous logistical support in the latter part of my project. As this PhD was part time over six years there has been an inevitable turnover of supervision staff, which I now regard as having privileged me with the opportunity to work with a number of remarkable academics and practitioners. I would like to thank all those who have supervised this research since its start, and these include: - Jaqueline Butler, David Brittain, Dr Rosemary Shirley, and Professor Gideon Koppel. Thanks also to the examination team – Dr Carole Baker and Professor Richard Brook.

Finally, I thank my wife Sally for bearing the brunt of my academic anxieties and the inevitable crises of confidence and for her unending support and encouragement without which I could not have completed this project.

Abstract

This photographic practice-based research is an outworking of my interest as a photographer in creating landscape imagery. The final output of the work takes the form of large-scale prints and a written thesis with the viewer's experience of the prints as the primary means by which the research aims are to be realised. My research employs scrutiny of the complex entanglements which occur in the landscape of my research through the qualities that come into being in the photographic print as an interpretation of the object world and as an object in it. This seeks to challenge a calculable and reductive interpretation of entities and, in doing so, inform a new or reoriented perception of familiar yet often unnoticed landscapes.

The photographic work engages with practice as research through a methodology which employs digital photographic process, and critical reflection upon the technical and aesthetic outcomes of the imagery to develop and respond to a research question. This project asks: how might photography invoke an understanding of interstitial, or transitional landscapes as places of enchantment? What I mean by enchantment in this context is a transformative engagement with an entity which reorients both the observed and the observer. The question sits within the context of a growing interest in forms of enchantment offered through new post-human theories of matter and the agency of non-human entities alongside an emerging attention to landscapes that occurs in the intersection between urban and rural space.

My research looks to contribute to the understanding of this landscape through advancing photographic imagery which identifies a novel examination of visual space using digital photographic techniques. The photographic methods I employ investigate visual space in a manner other than that of a conventional photographic exposure. Initially inspired by the

photographic methods employed in the Mars surface exploration vehicles designed by NASA, I use an on-site multiple image technique and digital manipulation in post-production to create an amplification of the photographed landscape through the detail and scale made possible by the process.

In working with spaces that characterise contemporary socioeconomic systems and the challenges they present, this photographic project looks to engage with landscape as a type of contemporary pastoral. The physical manifestations of infrastructure present within the peripheral spaces around urban centres demonstrates an ongoing negotiation between nature and culture in a manner akin to historical depictions of the pastoral.

The title *For want of wonder* is a provocation to seek out the extraordinary contained within material that is otherwise overlooked and to articulate, through photographic practice, a way of being in the world which can reorient awareness of unremarkable or unlikely settings as places redolent of awe and wonder. Or in other words, to be enchanted.

Even now there are places where a thought might grow —
Peruvian mines, worked out and abandoned
To a slow clock of condensation,
An echo trapped for ever, and a flutter
Of wildflowers in the lift-shaft,
Indian compounds where the wind dances
And a door bangs with diminished confidence,
Lime crevices behind rippling rain barrels,
Dog corners for bone burials;
And in a disused shed in Co. Wexford,

From *A Disused Shed in Co. Wexford* (Mahon, 1975)

Table of Contents

Table of Figures

Introduction

My practice-based research creates photographic landscape imagery as the product of a methodology which employs practical, theoretical, and autobiographical elements. These elements inform the development of the processes I use both in making images and in the critical reflection upon technical and aesthetic outcomes. The photographic practice and the creation of photographic prints is how the research interests are interrogated and how new knowledge is created and disseminated. This thesis acts alongside the practice to help articulate the process and outcomes within the artwork. This helps mitigate the difficulty in presenting an artifact (in the form of a photographic print) as a communicable language which can be objectively challenged and scrutinised[1]. The artifact is necessarily ambiguous, and its emergent qualities can only be accessed as a subjective encounter by the viewer. The practice is not simply illustrative of the text, rather it is the primary means by which new knowledge and understanding are to be realised and the text serves to expand upon and illuminate the photographic output. The emergent qualities within the image can be simultaneously regarded as a product of the method and methodology and of the photographic print as artifact. The image is evidence of practice as research which returns results which I can subsequently reflect upon.

[1] See L. Candy & E. Edmonds, (2018) Practice-based research in the creative arts: Foundations and futures from the front line. *Leonardo*, 51(1), 63-69.

My work sits within a field of landscape photographic practice using digital camera apparatus to make pictorial realist imagery as photographic prints[2]. I use on-site specific processes of digital image acquisition in association with computer manipulation in post-production to create a novel examination of landscape in response to a research question. My research question asks: how might photography invoke an understanding of interstitial, or transitional landscapes as places of enchantment? This prompts two further questions, what characterises the landscape I am looking at and what do I mean by the term enchantment? These questions I address in – *A Peripheral Vision* and *For Want of Wonder* - where I examine the notion of a landscape defined by a spectrum of characteristics, but which most notably occurs on the peripheries of built environments. The past decade has seen a growing interest in the interstitial and intersectional space that exists in the transition between urban and rural[3]. It is in this zone that economic aspirations and realities intertwine with nature and entropy to create rich new environments, as contested territories and a negotiation between the natural world and culture. My use of the term enchantment is developed in response to a reconsideration of materiality and of the relationship between human and non-human entities advanced in post-humanism. Post-humanism proposes we regard ourselves as enmeshed and immersed in an irreducibly complex network of actors. As such the human becomes a node in a broader assemblage of entities. Enchantment becomes a possibility through a challenge to scientific rationalism and reductive interpretation of phenomena in which human and non-human have a parity of agency and effect. The enchantment I am seeking is one which is accessed through a reorientation of how I position myself in the world. This process is to be realised through the research practice, the ambition of which is to draw me (and ultimately the viewer) into a novel engagement with landscape. The research looks to locate me within a flattened hierarchy of significance and to have parity with the entities around me. This relational status with the object world necessarily impacts upon my sense of 'self'. I can no longer

[2] I expand upon this on Pages 36-38

[3] I look at the precedents for this in the section - *A peripheral Vision*, pages 45-52

regard myself as a singular unalloyed individual divorced from the objects around me rather, I am a dispersed, interconnected being, part of, and inextricably entwined with both the natural and technological world.

Why is this important? Accessing the world and its potential for enchantments in this way attunes me to the complexity of the networks and assemblages that surround me. Lowering the bar at which significance becomes manifest has a concomitant effect to raise the level at which an ethical responsibility occurs for entities that would normally be overlooked. In other words, in a world in which all matter is considered vital and alive I must strive to give all things an equivalence of ethical consideration. This speaks to the growing concern for the environment and the role of seemingly insignificant entities when revealed as entangled parts of much larger networks which ultimately impact upon the wellbeing of ecosystems locally and at a planetary scale.

My technical process of landscape image making, in response to the research question, is driven by my experience of augmented and extended vision in the imagery of the NASA Mars landers - which is discussed in more detail in the *An Unearthly Curiosity* section of this thesis. The Mars surface lander projects were, for me important, as it marked the point at which both a conceptual and technical response to creating landscape imagery emerged. Conceptually, the effect of seeing the surface of Mars as a photograph acts as a primer for the amplification of landscape using technologically augmented practices of visual cognition. Technically, the process by which the Mars lander created images prompts an investigation into the role this plays, and the opportunity it creates, in presenting a novel interrogation of landscape.

In continuation of the autobiographical aspect of this research, my creative "voice' is in part informed by the specific rigor developed in my professional background as an architectural illustrator. Throughout the research, my reflective analysis of the imagery I create has recognised the role played by

my training and how it manners my approach to a visual representation of built forms and landscape. In fact, a recurring theme throughout this project has been the acknowledgement of autobiographical precedents and influences in the response to, and critical engagement with, the landscape of my research. It is the inevitable consequence of a methodology which employs intuitive as well as rational ways of informing creative decisions, that the innate aspects of the process are governed by both professional and uniquely personal learned behaviours. Practice as research brings with it a challenge to maintain systematic and rigorous processes of inquiry whist still highlighting and advancing the function of the imaginative understanding of the artist (Candy, & Edmonds, 2018:63-69). This understanding becomes manifest in creating artwork, critiquing the process and output, and in ultimately constructing new knowledge through visual art practice. These considerations have led to a particular approach in the way I have articulated my research in this thesis. Each section combines theory and personal reflection in an often conversational manner. This has been a deliberate strategy to maintain the position of the creative output as the primary driver in interrogating the research question. The tension between the intellectual and innate aspects of developing artwork is ultimately a desirable one in that it brings into being a response to a research question which could not otherwise be achieved. My practice-based research seeks to create new knowledge through the aggregation of a research methodology and photographic practice. The act of making the photograph is informed by research but is not illustrative of the theoretical coordinates used. Rather, it forms a new outcome which can then be reflected upon to further inform the research. The text of this thesis develops and documents the creation of the photographs to explain the way in which conceptual and intellectual coordinates are realised and transformed by practice to create new outcomes, not just to me as the artist but as communicable to a broader audience.

To do this the thesis is structured as follows: The *method and methodology* section sets out the basic principles involved in the production of the

photographic images, the theoretical coordinates which help to inform the practice, and how they address the research question. I also position my work in relation to other practitioners both in terms of subject matter and technical procedure. Following the methodology section are three parts, each of which will advance a specific area of discussion within the research. The first part *A Peripheral Vision* is concerned with the identification of the landscape of my research. It will build a definition of terms used such as landscape, space and place followed by an examination of how various writers have typologically defined the interstitial zone as – 'edgeland', 'terrain vague', 'the unofficial countryside' and so on, and give an overview of landscape traditions that align with my research interests[4]. I argue that the interstitial landscape is emblematic of a contemporary pastoral, evidenced by a tension and negotiation between nature and culture. I look at the historical artistic response to the rise of industrial and technological development within the landscape, most notably that of 17th century Dutch painting and later, 19th Century English landscape painting and its depiction of infrastructural entities. By repeated reference to my own photographic work throughout the text I advance ideas about the role the content has, both natural and manmade, in articulating ways of being in the world alongside a geographic specificity to the work. I also consider the effect of infrastructure in characterising the landscape of my research. What emerges in this section through an examination of my own and others artistic responses is the opportunity for the interstitial landscape to provide a variety of non-human objects and visual conditions which help in exploring how wonder may manifest through a photographic engagement. In summary: this section defines the terminology, typology, and historicity, of the landscape I am photographing. It develops the idea of a contemporary pastoral and of the interstitial landscape as an authentic and novel place for the examination of non-human entities as part of complex networked entanglements, using photographic practice.

[4] These terms and their authors are expanded upon in the section – *A Peripheral Vision*, Pages 45- 52

In the second part *An Unearthly Curiosity* I look at my personal interest in the imagery of the various Mars surface lander missions and go on to develop ideas which emerge as the result of examining both a technical and conceptual outworking of the Mars imagery. The *method and methodology* section covers much of the technical process used in this project but here I will explore how the technique aligns with visual perception in novel ways and begins to drive my interest in post-human systems of sight as mediated and extended through technology. The theme of post-human interaction with the world is developed further in relation to the infrastructural systems discussed in the previous section to investigate the enmeshed nature of human and non-human and how these entanglements change and augment our apprehension of the landscape[5]. In returning attention to the Martian surface, the images from Mars are important in understanding the role of detail and scale in the photograph as a remote means to engage with a landscape. The Mars imagery provides a model for an intense mediated gaze and in doing so prompts the possibility of an analogous amplification of my research landscapes through the development of similar processes. This section will also explore how the Mars imagery produces a convincing oscillation between the real and remote through an engagement with technological representations which are temporally as well as physically distant. In summary, this part of the thesis will outline how a childhood fascination with the surface images from Mars prompts both a technical process and a conceptual model for how my work can extend and amplify visual cognition of a landscape.

The title of the research is explained in the final section *For Want of Wonder* and introduces the challenge to ideas of enchantment posed by post enlightenment scientific rationalism. I will outline a brief historicity of modernist narratives of disenchantment and explore the current discourse surrounding forms of re-enchantment offered through new post-human theories of matter and the agency of non-human entities. I will also examine strategies of enchantment which occur within commercial concerns such as

[5] In the work of J. Bennet, R. Braidotti, M. Delanda, G. Harman, B. Latour, T. Morton and P.Virilio

retail and leisure through the building structures that exist within the interstitial landscape. Again, as in the previous sections, a constant referencing of the practical work is a key component in driving and structuring a dialogue which proposes that the photograph, both as a representation of place and as an art object, might invoke a sense of enchantment. In summary: this section will set out the historical challenge to enchantment from modernity, examine secular strategies of enchantment, and conclude with a discussion of the role of my photographic practice as a process of enchantment.

The *Conclusion* details how the research provides a contribution to knowledge through the fusion of novel photographic practice as a documentation of interstitial landscapes allied to an overarching concept of enchantment. This synthesis exists within a framework of multiple posthuman discourses which challenge anthropocentric and reductive, scientific rationalist models of how the world is. I reflect upon an exhibition of the work which I was able to mount at the end of the project and describe how the practice has developed and functioned as an instrument of research that has helped in the evolution of my artistic practice.

Method and Methodology

My research asks if photography (as a photographic print) can invoke a sense of enchantment, to deliver an engagement with the interstitial landscape as something which prompts an experience beyond conventional expectations. In doing so, the procedures I develop to create an image prompt an examination of the character of the landscape I am working in, the photographic image as a means of visual perception, and the nature of contemporary notions of enchantment. This method/methodology section is primarily concerned with the processual aspects of my photographic practice. The theoretical coordinates for the methodology are discussed and developed as part of the following three sections along with a reflective critical analysis of the practice. Therefore, in this section I will provide a limited outline of the theoretical coordinates whilst providing a detailed account of the technical procedures I use.

How I will investigate my research question through practice can be loosely broken down into three phases: acquisition, construction, and output. I shall develop upon these terms throughout this text, but I will start by summarising the three phases as follows:

Acquisition: describes the process of identifying and selecting a site for investigation and the techniques I then use to make photographs of it.

Construction: is the period of working with the images I have acquired on site, in the computer. This involves the processing of the image files from out of

the camera through to the final digital image that will then be prepared for print.

Output: refers to the preparation of the digital image for print, the choice of media, the scale, and the way in which the printed image is presented and exhibited.

Acquisition:

Before embarking on a description of my technical procedures for making a photograph I want to expand upon the role my background has in shaping my photographic practice. For much of my professional life I have worked as an architectural illustrator and as such have developed a specialised set of visual skills and responses to landscape. With my illustrator's hat on, landscapes become the stage within which new developments are to be realised as artists impressions. Many of those landscapes are on the peripheries of towns and can become out of town retail or leisure facilities, with my artistic renderings of them giving a foretaste of what is to come. When I first started work in this field the use of hand techniques such as drawing, and painting was the norm. However, the past few decades has seen the emergence of computer generated imagery as the primary means to provide visual representations of new building projects. The use of computer-generated imagery (CGI) changed the way in which my illustration work could be created and engaged with. It was now feasible to create images of photorealistic buildings set within actual photographs to provide illustrations of proposed developments with the veracity of photographic representation, rather than the more subjective qualities of hand drawn impressions. It is currently possible to create imagery which is indistinguishable from photographs of real buildings and in doing so provide verifiable viewpoints for the purposes of sightline studies and visual impact assessments. My involvement with CGI and integrating it into photographic imagery provided me with some of the techniques I employ in manipulating the images of my research, not in the use of CGI as such, but rather in the digital editing and manipulation of photographic images. There is also a quality I experienced in working with

CGI, particularly in its early development, which has influenced my practice. The computer renderings I produced as an illustrator had no film grain, no chromatic aberration, no limits of depth of field, no motion blur and so on. They were technically without flaws and thus lacking the failings or attributes which identified a "real" photograph. On the occasions I needed to combine a CGI rendering with a photograph it was necessary to mimic the film grain and dynamic range of the photograph to create a seamless and convincing photographic reality. As the 3D rendering software became more sophisticated it was possible to define the characteristics of the camera that was to be simulated. Aperture, shutter speed, film speed and lens specifications could all be simulated to create images identical to those made with a camera. Aligning the CGI with the qualities of photographic process always struck me as a diminution of the potential output of the computer, and one of the concerns within my current artistic practice is to produce photographic imagery which aspires to the characteristics of the unalloyed CGI. In other words, to have infinite depth of focus, no chromatic noise or grain, extended dynamic range and high levels of resolved detail. I will elaborate upon the broader conceptual basis for creating imagery with these qualities later in the thesis but working with computer simulation provided me with an early model for the technical ambition and visual appearance of my current work. My former profession has thus shaped both my awareness of and familiarity with the landscape of my research and the processes involved in the approach to making photographic landscape imagery.

The initial identification of potential areas to photograph involves several steps which often start with an experience of landscape through walking, cycling, and driving. As a result, some of the sites I photograph are initially discovered through casual or unsought encounters during everyday activities such as shopping or commuting. When I identify an area as likely to contain points of interest, I conduct a more considered investigation by returning and travelling through it in the manner of Guy Debord's dérive (2014). Debord developed the idea of walking through a space, usually urban, without a specific route or destination, instead chance and the response to unforeseen

encounters would dictate the progression of the walk and with it an opportunity to experience a place through unexpected interactions. Debord believed the act of walking in this way reoriented the perception of the space around the walker to allow new readings of their environment[6]. In 2002 Writer and psychogeographer Ian Sinclair set about walking the route of the M25 London orbital Motorway detailed in his book *London Orbital: A Walk Around the M25*. Sinclair follows in the footsteps of Debord and the Situationists of the 1950s and ascribed a defined yet arbitrary route in the form of the M25. The motorway may have defined the route but as a pedestrian Sinclair would have to employ a variety of tactics in negotiating the structures and landscapes he encountered along its course. What Sinclair was achieving in his dérive was the imposition of a route as defined by a geographical feature (the M25) which was hostile to his intended mode of travel and would therefore provide opportunities for unforeseen happenings and experiences as he attempted to navigate his way on foot along the path of a motorway. Spaces normally seen from a car could be examined with the changed vision and focus of someone on foot. Navigating an environment in this way prompts the walker to identify and exploit the gaps and routes which allow progress to be made and to subvert intentions to restrict access or shepherd the individual to follow routes defined by institutions of power. In an earlier intervention in the landscape sculptor and land artist Robert Smithson embarked on a walk through the terrain vague of Passaic, New Jersey. Smithson created a photo essay *Tour of the monuments of Passaic, New Jersey* (1967) in which he reflects upon the region through a lens of altered cognitive attention. In the landscape of construction, demolition and ruin, Passaic becomes a conduit to understanding the temporal in relation to the individual, to culture, and to geological timescales. By recalibrating his apprehension of the structures he finds in Passaic, Smithson is able to understand the concrete piers and waste water outflow pipes he encounters as monuments.

[6] The derive has spawned a broad church of practice particularly in its manifestation as psychogeography from contemporary practitioners such as Ian Sinclair, Peter Ackroyd, Nick Papadimitriou, and Patrick Keiller.

My research requires me to similarly re-tune my perception of the space I traverse so I engage with otherwise unnoticed entities. Taking with me a small snapshot camera, I travel through a peripheral landscape in the hope of happening upon a view which piques my interest. My investigations of the landscape require a combination of different modes of transport. Given the size and location of some of the places I visit, my dérive is often a combination of driving and walking. The two modes of movement can be viewed rather like examining an object through a looking glass with two different levels of magnification. The car has the weaker magnification but allows me a wider field of vision whereas walking is the stronger magnification allowing a detailed level of investigation after the initial overview provided by driving. The two ways of travelling, that of driving and walking, also present very different constraints on my movement. The car allows me to cover a lot of ground but I am restricted to where the roads go and by the need to follow the rules and regulations of road use. I cannot always stop or park wherever I please or change direction where I might want to, so I am ushered through a space in conformity with the highways design and intended use. This is where some detective work can help in identifying a strategy for returning to places which I have seen in my travels but am unable to access by car. Google maps often provides the means by which I can explore possible points of access to a location by revealing pedestrian/cycle routes, or places to park which are not immediately obvious[7]. The process of interrogating the location as a virtual realm provides a means, not only to find access points but also a way to initially consider how and from where to photograph the object of interest. Hence, finding a suitable location to photograph is a combination of researched enquiry and chance through mindful wanderings. Like searching for a particular species of animal, one can determine the likely environment it is to be found in but a glimpse of the quarry is often either by chance or through repeated exploration. And so it is with searching for my photographic subjects, and this has determined why, over the course of the research, the

[7] Google maps is a web-based application which allows the user to access satellite and aerial photography along with street view images and interactive 360-degree panoramas. google.com/maps

locations have remained reasonably local, often within 10 to 20 miles of my home. I have to be able to revisit potential sites, to have ample opportunity to explore the right environments repeatedly through different light, weather and season. It also enables me to develop a relationship with the sites over time through returning and rephotographing, each time having a greater and more intimate knowledge as a result of my earlier photographic investigation and scrutiny.

As I outlined at the start of this text my architectural working background has imbued a partiality in my approach and provided me with a set of skills which I have responded to in my photographic practice. As a function of my previous job my attention has become attuned over time to interstitial landscapes which have since become of interest to me as suitable spaces for photographic investigation. The way in which I see and comprehend built space is also inevitably shaped by my previous professional life and has dictated some of the approaches to depicting spaces I identify in my research. Being familiar with the visual language of architectural drawings and of using them in the construction of illustrations, has in turn left me with a compulsion to manner my artistic practice as being akin to the flat two-dimensional plans and elevations that describe buildings at their design stage. This impacts upon the position from which to make the photograph as ideally, I want to present the landscape in broadly rectilinear terms with a "face on" aspect and a balanced symmetrical layout[8]. Because the process I use does not allow me to frame the final image when on site, I set the camera rig (see figure 1) to record equal portions above and below the horizon line and equally side to side from a central point perpendicular to the structure I am making an image of. The combination of both a desire to render landscape as elevational and the constraints of the technical procedure in collecting the image data (see page 23-24), creates a formal, affected approach which is aligned with a visual aesthetic of architectural drawing conventions that accurately and objectively describe a space. I am not alone in using this formal approach in architectural photography, the photographer Thomas Struth described the

[8] A fuller explanation of this approach is detailed on page 31

symmetry in his work as anti-compositional (Prince, 2011), and part of a determination not to allow elements within the scene to ascribe formal compositional hierarchies. Where both sides of a streetscape are equal in size as they diminish toward a central vanishing point so too an equality of visual significance is suggested. Struth also regarded the symmetrical balanced composition as the least intrusive in terms of the photographer's intent (Prince, 2011). Dramatic perspectival viewpoints might suggest a significant degree of intervention and subjective decision making on the part of the photographer, whereas the half and half composition leaves the viewer with a more objective and repeatable presentation and one perhaps less emotionally charged. The control of the emotional response in my work is part of a strategy to use the photographic process as being in the service of the objects rather than that of the photographer. Or, to put it another way, that I am like a cartographer rather than a painter. This is not to say maps are entirely objective, they have institutional agendas and impose a stratum of data with differing levels of significance and emphasis (Harley, 1992). But the map analogy serves to demonstrate my use of the photographic medium to contemplate the structures and objects within the landscape using a predetermined process of visual data acquisition.

In addition to an analysis of my innate and intellectual tendencies, developing a relationship with landscape through chance and repeated encounters must also allow for the qualities and character of the non-human to permeate and impact upon my actions. How I navigate space and to what I am attracted within a landscape have components which can be understood as the agency of non-human entities. It is an important aspect of this research that I am receptive to the non-human interventions and influences which may steer my response as well as what I might consider my reasoned agency. Mistakes, wrong turns, changes in the weather and so on all serve to help drive strategies of mitigation, exploration and attention.

The Gigapixel

The method I use to create photographic images is an evolution of several processes which have developed through the course of the current and previous projects. The process of creating the image involves making multiple digital photographs each covering a small section of the overall view, which will ultimately be brought together in the computer to form a complete picture. This process is often referred to as gigapixel photography, so named because of the possibility of producing images with effectively gigapixel or 1-billion-pixel resolution. My first introduction to working in this way stemmed from an interest in the imagery of the NASA Mars Lander program and the way in which high resolution landscape images could be created by joining together multiple photographs (I will discuss this at length in : *An Unearthly Curiosity*). The first chance for me to examine a landscape in this way presented itself whilst researching a project which looked at the landscape of a former nuclear weapons base at Greenham Common in Berkshire[9]. The base has now been returned to common land and much of what might have revealed its former life as an airbase, home to cruise missiles and site of long-term protest has been removed to leave an ostensibly flat and featureless panorama. Creating an image from multiple photographs taken using a digital camera with a telephoto lens enabled me to construct a single image with very high resolution which could be printed at a large scale without any loss of detail. In doing so I sought to engage the viewer in examining the minutiae of the landscape for evidence of its former use despite current activities having all but erased any trace of past events. When I showed the work the feedback from the public provided a number of points of consideration for future projects and the development of research using this technique[10]. Viewers commented on the images having a painterly quality, that the overall sharpness of the image, particularly with regards to the rendering of vegetation, produced imagery akin to the mark-making seen in a drawn picture. This drew attention to the surface of the photograph and, rather than

[9] This project formed the basis for my MA degree studies in 2014

[10] The images were shown as a public exhibition which took place in the Grosvenor Gallery at the Manchester School of Art as part of the MA show. Feedback was obtained in conversation with visiting members of the public along with tutors and supervisors.

giving a sense of it as a window through which one was looking, the surface became an important factor in reading the work. Because the detail allowed close examination of the images of Greenham Common the landscape could no longer be regarded as featureless, but as full of tiny features that would otherwise go unnoticed if not for being presented on the photographic surface.

To consistently map the scene with the necessary precision to later join the images together, I use a specially devised rig (figure 1) which allows me to incrementally move the camera through a predetermined arc of rotation. This incremental movement equates to the field of view given by the attached telephoto lens and allows me to seamlessly stitch the photographs together in post-production. Once a decision as to camera placement has been made, I follow a specific technical procedure to acquire sufficient photographic data from which to construct a final image. My initial attempts at making images this way failed to address the importance of moving the camera about the nodal point of the lens. This is a key part of eliminating parallax errors between images and allowing each photo to closely register with the next. My initial failure to realise this meant early images were plagued with registration errors resulting in time consuming correction by hand in the computer. Whist frustrating, the need to spend many hours examining composite images at high magnification proved valuable in establishing the virtue of developing an intimate pixel level relationship with the photographed landscape. Even after I had refined the on-site process to correct for errors, I still maintained a regime of lengthy pixel level examination, partly looking for errors (there are always plenty despite an exacting process) but also because it helped develop my connection with the landscape as expanded through practice.

Why work in this way? There are two aspects to this way of working which causally relate to what my research is trying to find out. One is technical, the other conceptual. The technical process of making a single image from multiple detail pictures allows me to produce a final composite image with high levels of resolved detail. As part of the intention motivating my research,

the detail is a means by which I can engage with the image as an augmented way of seeing.

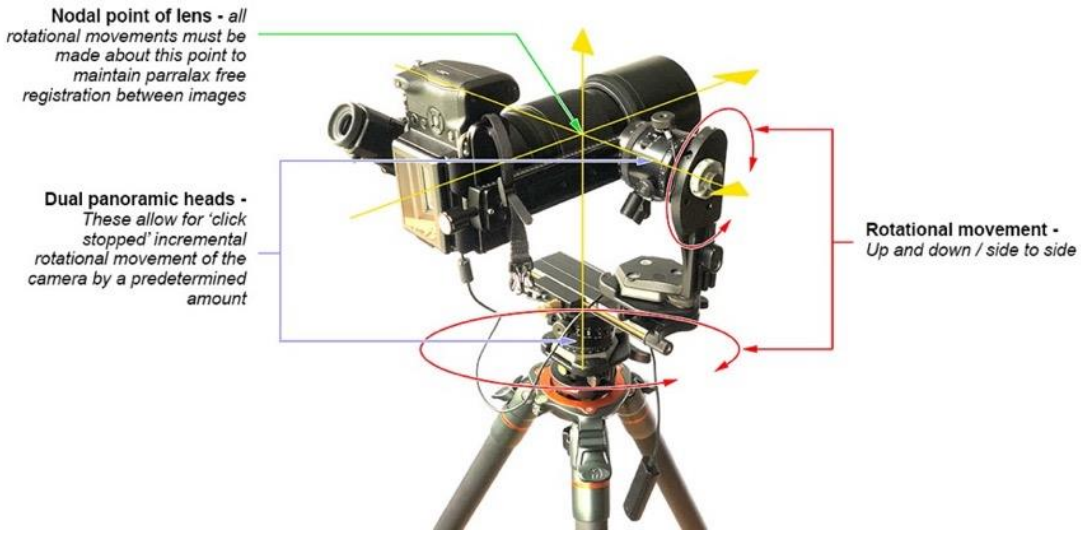

Figure 1. Camera rig that allows incremental camera movements

It is important I can interrogate the scene and all its minutiae to understand the space at a level beyond that of the unaided eye. More generally, the photograph, as a technologically augmented form of cognition, has allowed me to see things such as the surface of another planet, a bullet frozen as it passes through an apple, a foetus inside the womb and so on. My use of photography as a means to discover qualities in a landscape of seemingly unremarkable structures is the continued employment of a longstanding attribute of the medium, to reveal the otherwise unseeable[11]. Conceptually, the process helps me to engage with the act of making a photographic image outside of some of the normal expectations of conventional photograph practice. By conventional, I am referring to a single photographic exposure, one that is framed in the viewfinder and created in a single moment. A photograph made in the way I am working is not a singular temporal event; it is not, in the end, an indexical trace of the object photographed (because of the manipulation of both time and objects in digital post-production), or a

[11] Walter Benjamin posits the idea of optical unconscious in which photography allows us to experience phenomena beyond the scope of the naked eye. See S.M.Smith, & S. Sliwinski, (2017) *Photography and the Optical Unconscious.* USA. Durham: Duke University Press.

passive recording of what lay in front of the camera. The capacity to work on the image as a construction which can be manipulated, added to, and taken from, provides for me something closer to the condition of a painted image. It is an image in which I, the author, have control over content and composition, even after the initial on-site image acquisition. This becomes important as the image can evolve over time through further work in post-production and can be worked with for an extended period in response to an ongoing reflective engagement with the project. The control of content in the image enables me to specifically align the image to my research concerns and to interrogate the research question. I will give a more comprehensive account of how I propose this works in the section of this text subtitled *Construction* pages 26-32.

Always take the Weather with you

The process of image acquisition is, as a result of having a particular technical procedure, contingent upon specific conditions of light and weather. Again, this has both technical and conceptual drivers. Photographers Bernd and Hilla Becher, known for their black and white typological studies of industrial structures, found the flat light offered by spring and autumn conditions of overcast days to be preferable for making their photographs (Fried, 2012:305). Where a sunny day might present an undesirable dynamic range between shadow and highlight, the overcast light produces shadowless low contrast images which extend the amount of detail available to see in in both dark and light areas of the photograph. Similarly, I find the spring light to be the most useful, its overcast skies give a bright but even light which is suitable for making the type of analytical photographic image I am seeking. The light and weather play an important role, not only in the technical requirements of the work, but also, as I will discuss in the *A Peripheral Vision* section, visually significant in portraying the specific emotional and geographical aspects of the work. In addition to a flat even light, the technical demands of the process I use requires windless, still conditions. Because I am making multiple exposures within multiple exposures even the slightest movement in a tree branch or blade of grass can lead to postproduction difficulties in registration

between one image and the next. In developing a specific approach to the technical aspects of image capture, I have created a method which dictates what can be photographed. The process takes a little more time than a conventional digital photograph might take (from start to finish making all the required photographic exposures can take in excess of an hour) and this impacts upon the practical considerations of weather and lighting conditions. I need weather conditions that will provide an unchanging light in both quality and intensity for the entire period of the multiple exposure process. After the initial identification of a potential site of research interest I may return to the site a number of times to determine a suitable viewpoint and then wait for an overcast, windless day to make the necessary exposures for the final high-resolution image. The use of the term acquisition to describe this phase intentionally aligns the process with the idea of acquiring data or information. The on-site photographic imagery is gathered through a specific and repeatable process in order to begin the next phase in which the information acquired can be aggregated in the computer to create a novel examination of visual space using digital post-production techniques.

Construction:

Broadly speaking, construction describes the actions I take after I have acquired the photographic material and begin work in the computer. This post-production activity constitutes a significant part of the practice and is the point at which the image is both constructed and manipulated. The first stage of the construction phase is loading the images made on-site into cataloguing software (figure 2) in readiness for digital post-production[12]. This is my first opportunity to see the output of the shoot. I will check there are no problems with image quality, then adjust the images to recover as much shadow and highlight details as possible. The aim at this point in the process is to have images that contain the maximum amount of pixel information. As the images pass through various stages of processing, this information

[12] I use Adobe Lightroom software to catalogue the images – this application also allows me to batch process images for output to focus stacking (HeliconFocus) and image stitching (PTGui) software.

becomes less malleable and must therefore be revealed through software at the first opportunity after download. The result of processing the images for maximum pixel information is the images are low in contrast, but with lots of detail. The tonal values are compressed to create a photograph where the brightest and darkest areas still have pixel information, the dynamics of light and colour within the image are reduced, leaving no part as privileged above another. This is the first iteration of flatness which I impose upon the image, a technique to flatten the dynamic range of light and colour and, in doing so, to remove some of the intervention of the apparatus (or camera) in determining what constitutes a correct or desirable exposure.

Figure 2. Photos loaded into catalogue

At the beginning of this section I mention the ambition of the work to mimic the technical fidelity of the computer-generated images I produced as an illustrator. One of the qualities in CGI that I wanted to replicate is the infinite depth of focus. This means the content in the photograph should be in sharp focus whether it is close to the camera or on the horizon. To achieve a deep field of focus in which all the content of an image is in focus despite being at different distances from the camera it is usual to use a small aperture in the lens. The depth of focus that can be achieved is a combination of the aperture, the focal length of lens and the size of digital image sensor (this equates to film format in analogue cameras). The greater the magnification

of the lens (or longer focal length) the shallower the depth of focus for a given aperture. This is also the case with sensor size – the bigger the sensor, the shallower the depth of focus for an equivalent magnification and aperture used with a smaller sensor. Making images from an elevated position helps in mitigating the problem of achieving sufficient depth of focus as the nearest objects are relatively far away compared to working at ground level, but it does require a geographical feature such as an elevated road or building which allows such a vantage point therefore creating a significant limiting factor in my choice of landscape.

Half-way through this project I changed cameras from one with an APSC sized sensor (23.5mm x15.6mm) to one with a digital medium format sized sensor (43.8mm x 32.9mm). This was primarily to take advantage of greater dynamic range and noise performance of a larger sensor. But a significant downside would be a further reduction in depth of focus achievable using lens aperture settings alone when using a lens of equivalent magnification to that previously used on the APSC sensor equipped camera. In fact, using a very small aperture results in diffraction effects which soften the image thus negating any gains in depth of focus or image quality from the larger sensor. The change in camera therefore prompted the need to find a way of achieving depth of focus without the need for very small apertures. In direct response to the technical issues involved in achieving an infinite depth of focus, I have developed and used a differential focus technique during the on-site photography phase. To create a consistent sharpness or depth of focus across the entire scene, from the nearest to furthest object, each image that makes up the composite whole is in turn constructed from a series of exposures at different points of focus (figure 3). The resulting sequence of photographs must be exported to a piece of software which stacks the images and applies a mask to the out-of-focus areas in each one to then make a single image with sharp focus from front to back. This is a second iteration of flatness. By creating an image in which everything is in focus my aim is to be able to scrutinise all areas of the photograph with equal measure. Again, this is an intention to democratise the detail across the image, so no part has greater

sharpness than any other, and so flatten hierarchies of significance which might be associated with being either, in or out, of focus. The control of tonal values and now the flat field of focus, aligns my practice with ideas surrounding the modification of attention that process can bring in interrogating a landscape. The French writer George Perec (2008) used the written word to develop his means of apprehending the world around him by acknowledging every event and detail as a text. Perec's exhaustive listing of the elements within a scene before him allowed him to articulate an understanding of the ordinary and everyday by presenting all aspects of his world as having an equivalence of significance. His use of a set of rules - that of noting all things without recourse to an innate, or learned, hierarchic structures of importance - meant he could encounter the everyday objects around him as simultaneously strange and familiar. Similarly, it is my intention that my method might allow me to reveal new aspects of the material contained within the image, not through direct exploration or exposure, but by an oblique encounter. The surface of the photograph becomes a conduit for a more impartial interrogation because of the flattened dynamics of tone, focus and perspective.

Figure 3. Images to be focus stacked then joined together to make one image

Figure 4. Photo-stacking – creating layer masks from each of 15 images to show only the sharp regions before compressing into one image.

After the images have been stacked the resultant detailed pictures are brought together and processed in photo-stitching software. This allows me to join the photographs together to form a single image with a wide angle of view. This will be the first time I see the overall appearance of the composite image. It is distorted, as the software attempts to correct and join the images, particularly at the edges of the picture. After making preliminary adjustments I can output the single composite image as a file to begin to work on. The image file created by this process is large. It will require methodical examination of the whole image at 200% magnification on screen looking for any anomalies and registration errors. These I circle in red (on a separate layer) so I can return to them and make corrections to the image. I also look for (and mark) people, animals and moving objects in the image, as they will also be later removed. The process of repairing and removing unwanted parts of the image may take several days during which time I can familiarise myself with the multitude of details I could not have seen with the naked eye at the site.

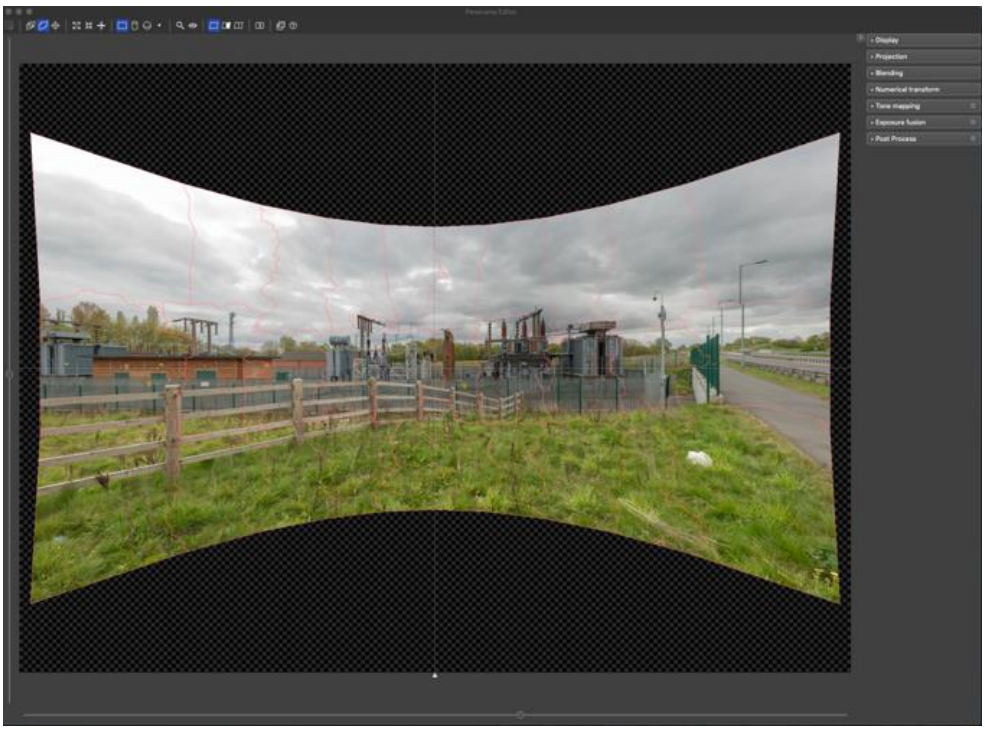

Figure 5. Images brought together in Photo-stitching software; red lines show where each image has been joined

The removal of people and objects - which might allude to a specific moment or narrative, due to their frozen appearance - is another pursuit of flatness. This flatness is, however, largely conceptual rather than technical. In editing out (using digital post-production techniques) people, animals, moving objects and so on, my intention is to control, or perhaps more positively, 'liberate', the attention of the viewer, so entities that might otherwise attract a disproportionate importance within the landscape image are removed, leaving only details which can have a broad parity of significance. When this stage of post-production is completed, I can move to manipulating the image in more general terms such as correcting distortion, moving, or deleting unwanted structures such as lamp posts, or road markings, which might also otherwise complicate or compromise my intended final composition. These decisions I can only make in response to the work as it evolves through the various stages of manipulation in the computer.

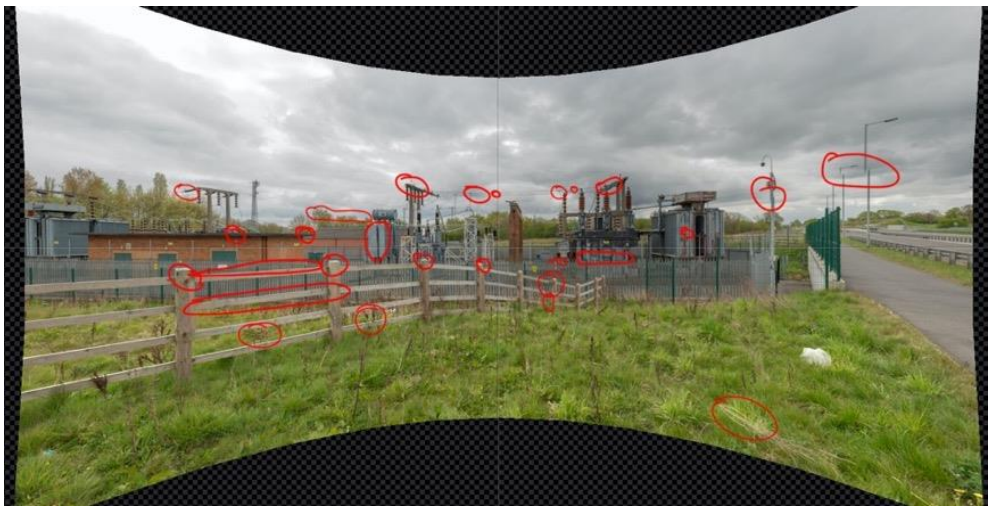

Figure 6. Image marked-up to show where corrections are required.

The manipulation of the image allows me to control the perspective, this is a key area in managing the appearance of the final image. The vertical and horizontal linear elements must, where possible, be at 90 degrees to one another. This returns to my earlier observation about how the visual language of the orthographic architectural or engineering drawing informs my decisions in the treatment of the image content. A dramatic and sweeping sense of perspective seems to be a condition of wide-angle photography and undesirable when trying to present an analytical depiction. Hence, my approach to manipulating content seeks to mitigate dramatic perspectival depth where possible. This can again be regarded as an aspect of flatness: one which employs geometrical simplification and rationalisation in pursuit of a more orthographic elevational feel. This approach can also be applied to the sky. I often experiment with different skies to see which gives the best result. The original sky can be worked with if there is relatively little sense of linear perspective in the layout of the clouds, otherwise I will replace it with a sky I have photographed at a different time which better suits my need for a perspective free effect.

The pixel information at this stage must exceed the anticipated print size as there will be an inevitable destructive element in the correction, trimming, and cropping required prior to preparation for print. Cropping and framing are techniques familiar to photographic practice, it occurs using the

viewfinder in framing the image. Choosing what to include or exclude in the image, moving location or direction of view, or changing the angle of vision with a zoom lens, all are acts of cropping and framing to satisfy practical or compositional criteria. The act of cropping imposes a cone of vision, a demarcation between what we are allowed to see and what must be excluded from our vision. I have found that much of my work naturally falls into a half and half balance between land and sky with the horizon at the midpoint of the image. This stems from the decision to capture images starting with the camera level for the first sweep of the horizon followed by subsequent passes above and below the midpoint. This results in a final post-production image with the horizon midway between the top and bottom of the photograph. The combination of a mid-point horizon and symmetrical composition leads to a stylistic decision to employ this compositional device when making cropping decisions during the final stages of post-production.

Throughout this section on construction I have detailed the controls and actions I make to create an image, but it is important to state the importance of chance and accident in the process also. This research is predicated upon the pursuit of phenomena within the landscape which exceeds a normative understanding of the object world. This is contingent upon a consideration of entities (myself included) as having agency and of being nodes in extended and entangled networks. Therefore, the negotiation between my intent and that of the apparatus such as the camera, computer, software, and ultimately the landscape itself, is important in generating my apprehension of the work as accessing new knowledge and novel outcomes. Failure, such as with my early attempts to 'stitch' together images or having to repeatedly visit sites because of obstructions or weather conditions, all helps shape my enquiry through events outside of my control. My response to these events stimulates new approaches to making images and new conceptual evaluation of the resulting work.

Much of my working method takes place within the computer, this would seem to be a controlled and calculable workflow, one that was consistent and

predictable. It was therefore always a consideration uppermost in my mind that I was in negotiation with the software and hardware, so it did not dictate a specific outcome or aesthetic over which I had no control. The best scenarios were those in which a sense of mystery and surprise could develop from the permutations of my actions and the software, an incantation in the computer to trigger an effect as a combination of my intent, that of the apparatus, and of the imagery itself. In the computer the non-human can act to subvert and infiltrate my decision-making and exact influence on the output of the construction phase, it becomes an actor in the workflow which excites possibilities rather than dictate calculable outcomes.

Output:

The high-resolution photographic process I employ seeks to draw attention to hidden complexity. My use of detailed photographic imagery is intended to allow the viewer to immerse themselves in the smaller elements of the scene. The photographic process seeks to render the scene in sufficient detail to invite the viewer to perform a rigorous examination of its minutiae and in doing so begin to understand the space at the level of its smallest (yet still visible) contingent parts. It is, intended to to give equal weight to a diversity of entities, in anticipation of discovering new realms of interest and enquiry, and explore objects and groups which might 'quicken our attention' (Roberts, & Farley, 2011:80) where we might have previously only seen the banal.

The Goldilocks print

Working with multiple images has allowed me to create images with resolution far in excess of single images shot on even the highest resolution digital cameras currently available or from scanned large format film negatives. Part of the outcome of working with gigapixel imagery is to create prints of otherwise featureless or prosaic scenes with a potential to engage the viewer through an excess of detail. The resolution affords the opportunity to overwhelm the viewer with the minutiae of the scene, to be able to pick out every blade of grass, every screw head in a fence panel. This allows the viewer to suspend interest in the scene as a whole and consider the smaller

aspects that might otherwise remain unnoticed or unseeable. In creating high resolution imagery, the sense of a heightened consciousness is a key constituent in the success of a print. As part of this augmented vision the resultant print must be free of any technological failings within the apparatus which might reveal the digital camera-based origins of the image. Such failings would include visible digital noise, chromatic aberration, and image softness[13]. Using multiple images negates many of these problems as they occur at a level too small to be identified in the final print, and this starts to dictate an optimum or desirable size for a print as one which precludes the possible exposure of technical errors whilst being large enough to allow detailed examination by the viewer. In addition to maintaining technical fidelity, the size of a print must also be informed by how it can best be encountered and inspected by the viewer. Given the importance of the viewer's ability to see the print at close hand the size of the print in conjunction with the height at which it is set on the wall are also related metrics. During an exhibition of work from this project in 2019 (figure 7) I experimented with different sizes of print to test the effect scale has in viewing the photographs. Whilst the exhibition space had an impact on the appearance of the work in relation to the size of wall space (the biggest of the prints I made looked most appropriate in the large space), the capacity of the viewer to interrogate the largest image was limited by the upper parts of the print being beyond the height and reach of the individual to examine closely.

[13] Digital noise is the unwanted random variation within otherwise continuous regions of colour or tone which manifests as granular chromatic patterning. This is most likely to occur when attempting to recover shadow detail as one is effectively amplifying the signal information within the image and with it the potential for noise. Chromatic aberration, or CA, occurs as a result of prismatic separation of the light spectrum within the camera lens resulting in red/green or yellow/purple fringing particularly visible in high contrast regions at the edges of the image. Image softness is the result of the limitations of a lens's resolving power, where the sensor resolution has exceeded the capacity of the lens's ability to resolve sharp detail.

Figure 7. Exhibition of the Author's work at Grosvenor Gallery, Manchester School of Art (2019).

There is of course an argument that if the size is significantly enlarged then the smallest details can be observed from afar anyway, but this would create a different encounter for the viewer. Rather like enlarging a map to the size of a double decker bus would allow details to become apparent from a distance, it would also mean the viewer has no need to move or approach the surface of the print for details to be revealed. The A0 size prints I tested were too small as some of the detail in the original (onscreen) image was lost due to limitations of the print process to render the resolution on the paper surface. Therefore, a "Goldilocks" solution was sought, one that was neither too big nor too small. The horizontal width of a print was not an issue as the viewer could simply move along its length to examine it, but the height was of importance, therefore I found a height restricted to around 1m was most successful. The photographer Stephen Shore considered there to be an optimum size for the prints he made from his 10x8 inch negatives (Shore, 2014). This size was determined by Shore's desire to maintain the weight of information that exists in the negative without allowing the film grain to become visible. In consequence, Shore often printed his work at a size similar to that of the negative, thus creating a depth of tone and detail which

provided a sense of 'expanded consciousness' (Shore, 2014:10). For me, there is the ambition to create images with a level of technical exactitude comparable to that of a computer-generated image from my early involvement with architectural CGI modelling. And that the level of technical fidelity creates a sense of intensified seeing, rather like experiencing a place with the aid of binoculars or a telescope. It invites the viewer to consider the tiniest of things as having importance and in doing so flatten the dynamics of both interest and significance, subverting hierarchies of meaning and assumptions based upon a reading of the larger whole. In prompting an awareness of the fabric of a place as a collection of miniscule objects and textures, I am seeking to recall some of the wonder I found in the NASA imagery mentioned at the start of this text, but in familiar and prosaic landscapes.

The choice of print media is instrumental in the function of the print as a means to present the contained resolution of the image file as an engaging surface for the viewer to explore. There are several options, such as gloss, semi-gloss, matt, and matt art paper. After testing I chose a matt paper finish. Choosing a matt paper negates the possibilities of reflections across the print surface and of adding a layer which might otherwise complicate the interaction of the viewer with the print. A reflective surface has, for me, the quality of giving the impression something lies behind a surface, rather than on it. As if a reflective meniscus exists between the content of the image and the viewer, like the glass in a windowpane, and thus one step removed. I have found the matt surface to be more conducive to close inspection, rather like viewing the detail on a large map. I like the impression of the print as one dimensional, that the surface is where the information exists. As a viewer, I am not looking through a window, but examining an abstraction of three-dimensional space as a flat surface. The prints are mounted on board without glass or frame. This again is part of the intention to allow the viewer the closest and most direct access to the information in the print. How the print works as a way in which the aims of the research are realised as a function of

the contained detail and the actions of the viewer, will be elaborated upon in later sections of the thesis.

Artistic Precedents:

The technique of using multiple detail photographs combined into a single image is not without precedent in the photographic community and has gained popularity in recent years due to the availability of high-quality digital cameras and the software capable of automatically merging photographs together to create a seamless picture. The photographer Olaf Otto Becker produces large scale highly detailed Arctic landscape photographs. At a Q&A after his keynote talk at the *Northern Light* conference (Sheffield Hallam University, 2018) Becker commented on how in the past he has worked with large format film cameras to achieve a desired level of detail. However, he went on to explain how he now works with digital cameras and takes multiple photographs which are then stitched together to form a single image using computer software. This allows Becker to create very high-resolution photographs capable of being printed at large scale whilst retaining minute detail, using camera equipment that is considerably lighter and less bulky than large format film cameras. This is particularly advantageous when working in harsh environments such as the Arctic and allows the opportunity to fine tune the composition after the fact rather than in the camera in situ. Becker's use of multiple images is one of practical necessity as well as providing a high level of technical detail. In the case of Andreas Gursky, a photographer recognised for his large-scale work, the application of multiple image technique allows not only large scale works with enormous amounts of detail, but also the ability to manipulate and depict content in ways impossible with a single image. For example, in his photograph *Paris, Montparnasse* (Gursky, 1993 in *Andreas Gursky*, 2018:20). Gursky's work shows an apartment building in rectilinear elevation. There is no linear perspective, no vanishing point, only the repeating pattern of the windows to the dwellings, each rendered with equal precision across the entirety of the photographic surface. This is a photograph impossible to create using a single image and viewpoint, instead Gursky has brought together multiple images

taken along the face of the building to form one seamless original composition. In consequence, he has rendered a democratisation of the elements within the image, so no part has significance above any other. This metaphorically echoes the modernist architectural agenda of the identical living spaces whist at the same time inviting the viewer to examine, through the scale and detail of the image, how each apartment has been individualised through the occupant's choice of colours and décor. Gursky challenges some of the basic expectations of the photographic image. He subverts the temporal specificity of an image created through a single event along with the reliance upon a single spatial viewpoint. The effect is to bring together multiple points in time and space to create a paradoxically unified moment. What the use of this type of composite image presents is a series of challenges to both the expectations of the photograph and to the nature and attributes of visual cognition. German photographer Markus Brunetti uses the technique of montaging multiple images to create large and highly detailed images of church and cathedral facades (Campany, 2016). Brunetti assembles the images to produce photographs with some of the qualities of the architectural drawings from which the buildings would have been constructed. They have minimal perspective and have been cleansed of any contemporary additions such as the spikes and nets used to deter birds. What is left is the original elevation as a photograph, albeit now weathered and aged. In David Campany's 2016 essay on Brunetti, Campany describes the photographer's work as being distinct in its quality as an act of homage to the subject matter. The photograph becomes a document of another person's work, that of the architects and builders, and such painstaking attention to creating the photographic record suggests a joy both in the apprehension of the subject matter and in anticipation of what making an image will reveal when complete. Brunetti's work prompts a reflection upon my own interests in the structures depicted in my images. My passion and enthusiasm for the landscapes I photograph dictate a similar act of deference. The images are, in addition to presenting the viewer with a surfeit of information, born of a desire to re-present the subject matter as vehicles for my contemplation of a

significant slice of autobiographic history and to delight in the augmented visual acuity that the process aims to deliver.

To create an augmented visual acuity I use digital post-production methods which unavoidably weaken the indexical bond with the referent. My visual interrogation of a landscape often necessitates multiple site visits and the combination of imagery made at different times, and in the case of the skies, at different locations. Knowingly compromising the documentary fidelity of the photograph as a trace in both time and space whilst retaining an appearance of veracity offers opportunities to play with notions of truth and evidence. Artists such as Joan Fontcuberta use the qualities of digital manipulation to question the authenticity of the photographic image and draw attention to its failings as a reliable arbiter of truth. Fontcuberta demonstrates through the use of manipulated 'fake' imagery how the photograph can create entirely bogus material to substantiate misleading or false narratives. His work employs a covert use of digital manipulation where the real and fake are indistinguishable. By contrast, Finnish photographer Ilkka Halso in his Museum of Nature series, demonstrates a very different use of digital manipulation. Halso creates photographs in which he combines real world landscapes with digital constructions to draw attention to the fragility of the natural world. By proposing an outcome in which nature is subsumed by cultural constructions such as the museum or glasshouse he develops a chilling narrative of a world where technological intervention defines and appropriates the landscape. Unlike Fontcuberta, Halso's work uses an evident demonstration of digital manipulation to develop his agenda. My work uses a covert approach to digital manipulation, but one not intended to fool or deceive. To achieve the augmented acuity I mentioned earlier, the imagery I make cannot be a direct momentary trace of the object world in the manner of a conventional photograph. Rather, they are the aggregation of a multitude of actions on site (at different times) and in the computer. It is important to recognise the role of the changes and interventions I make in creating an image are primarily intended to intensify the forensic capacity of the photograph as a means to scrutinise the landscape rather than diminish

it. Combining images, removing objects (such as people) or changing skies is intended to allow an amplification and distillation of the photographic process to provide an enhanced visual insight.

The visual language of my work sits within a field of realist pictorial practice often referred to as 'deadpan' photography or of having a 'deadpan' aesthetic[14]. Primarily associated with landscape, this photographic genre, which came to prominence in the 1990s, presents a seemingly dispassionate depiction of place divorced from the emotional engagement or agenda of the photographer. The ambition to create an objective record without recourse to sentiment can, however, be traced much earlier in photography. The New Objectivity movement within German art in the 1920s reacted against the Expressionism of the time to create work which eschewed abstraction and romantic idealism to record the world with rigor and emotional detachment. German photographer Albert Renger Patzch is perhaps most closely associated with the movement and produced work which presented a sharply focused and technically precise document of the world. Renger Patzch's industrial landscapes provide an early model for the exacting and detailed approach later seen in the work of Bernd and Hilla Becher. The Becher's pushed the formal and conceptual basis of objective documentary photography with their black and white studies of industrial structures to create typological sets of photographs presented as framed pictures arranged in grids on the gallery wall. The work of Bernd and Hilla Becher helped re-establish photography as an art medium which could inform the viewer without recourse to dramatic effect or narrative. Their work and role as lecturers at the Kunstakademie Dusseldorf shaped the vision of what were to become some of the most influential figures in contemporary photography and a stylistic genre known as that of the Dusseldorf School. Candida Höfer, Thomas Struth, Axel Hütte, Thomas Ruff, and Andreas Gursky studied under the Bechers and have advanced the Becher's approach, by the use of colour, new technologies, and in addressing contemporary concerns. The Bechers

[14] Charlotte Cotton assigns a chapter to Deadpan photography in her book – C. Cotton, (2014) *The Photograph as Contemporary Art*, London, Thames & Hudson.

also featured in what was to become a seminal moment in the development of objective documentary photography as a cogent and conceptually rigorous artistic expression, that of the New Topographics – Photographs of man altered landscapes exhibition in 1975. This exhibition pulled together photographers (primarily Americans) working in an objective documentary manner to examine the fringe landscapes in which human development and activity had encroached upon nature. The New Topographics exhibition showcased the work of Robert Adams, Lewis Baltz, Nicholas Nixon, and Bernd and Hilla Becher, to give expression to a new type of landscape, one in which traditional notions of beauty and the picturesque are expunged to reveal a place that is characterised by a new relationship between human and landscape. This new relationship focuses attention on the point at which human agency infiltrates and alters the natural world through buildings, industrial structures and utilities.

The 'deadpan' aesthetic, established particularly in the work of the Dusseldorf School may sound at odds with the passion I have described earlier, but it is consistent with an approach that focuses attention on the subject matter rather than the photographer. My passion may inform my attention, but it does not dictate that I be directly associated with that attention in the photographic image. Or, in other words the technical and conceptual rigor I use in depicting the subject matter aligns with a necessarily enthusiastic engagement to it, but that my subjective photographer's "voice" is held silent so the content of the image can speak more loudly. My intention is for the technical fidelity of the image to align with the photograph as an objective trace, to convey the world beyond the limitation of a singular vision, 'a way of mapping the extent of the forces, invisible from a single human standpoint, that govern the man-made and natural world' (Cotton, 2014:81). Photographers such as Richard Misrach, Edward Burtynsky, and Thomas Struth[15] provide a model for the presentation of landscape as epic, despite

[15] R. Misrach, (2020) *Richard Misrach on landscape and Meaning*, [s.l.] Aperture. A. Gursky, et al. (2018) *Andreas Gursky*. London, Hayward Gallery Publishing. J. Schuster, (2013) Between Manufacturing and Landscapes: Edward Burtynsky and the Photography of Ecology. *Photography and Culture*, 6(2), 193-212.

its visual banality, by using exacting technical execution and large-scale prints. A recurring theme is the man-made or man-altered landscape in which a narrative of the negotiation between the human and natural world is played out across the surface of the enlarged print. The 'deadpan' photograph can draw attention to themes beyond the specific landscape being shown, as Richard Misrach states: 'the aim is not just to show people what it's like to be in a certain place; it's also about creating a visual construct that makes the viewer consider larger issues' (Misrach, 2020:66).

Theoretical coordinates:

The sense of 'being there', however, might also be part of the way in which other issues are to be encountered, and how the feeling of being present activates an engagement with the subject matter that invokes broader experiences and concerns. One of the attendant qualities I, and perhaps many others, experienced in the Mars imagery as a child, was the sense of 'being there', of in some way knowing what it is like to be on the surface of Mars and the wonder at seeing something seemingly impossible to witness[16]. I also felt a strange empathic association (through the imagery) with the non-human apparatus in-situ on the surface of Mars. How did this sense of presence occur when the images from Mars are just still images and an obviously technical representation mediated through complex apparatus and software? My interest in the NASA Mars imagery has prompted me to seek theoretical positions in explanation of my response to the imagery and more broadly, to the nature of contemporary ideas of perception. How I function in the world seems evermore entangled with technology both on an individual level and as part of a local, national and global assemblage. As I sit writing this on my computer, I feel I am at a tentacular tip (one of a multitude

[16] The landscape of my research is not impossible to encounter as in the case of the Mars surface and consequently images cannot invoke a sense of wonder based on it being outside of human experience other than as a photograph. The challenge is instead, to present a banal landscape in a manner that invites a reconsideration of what is being looked at and to similarly encounter perception that would otherwise be impossible outside of a photographic depiction.

of such tentacles), which connects me to micro, meso and macro scalar systems (Misa, Brey, & Feenberg, 2003:197). These systems allow me to power the computer, save files to the "cloud", have clean water with which to make the tea I'm drinking, and so on, ad infinitum. The extent to which this entanglement dictates my perception and the potential for new ways of experiencing the world around me forms a significant aspect of how I propose a photograph might establish an encounter with the experience of wonder. It is also necessary to examine the way enchantment can be experienced considering the challenge of a cultural position which regards the world through the lens of post enlightenment scientific rationalism and therefore post-theological, post-metaphysical and in some way disenchanted. This spectre of disenchantment has acted upon the collective psyche of western culture since the advent of the enlightenment - to be modern is to embrace the calculable and the rational as distinct from the mysterious and the transcendent (Weber & Owen, 2004). There is, however, a growing discourse, both philosophical and scientific (Coole & Frost, 2010), which challenges a reductive mechanistic model of matter and proposes radical reconsideration of an ontology of objects that allows for wonder in the world as a by-product of qualities unknowable through human rational enquiry alone. I will expand upon this area of investigation in the section titled: *For Want of Wonder* in which I look at how the landscape of my research and the properties of the photograph might converge to invoke enchantment.

As discussed throughout this section, the method for making work and advancing my researched enquiry through practical methods divides into acquisition, construction, and production. The intellectual and conceptual coordinates of the project also follow a division into three areas of enquiry which will be discussed and developed in the following three sections, but in outline the investigation will progress as follows:

- Identifying and interrogating the qualities and content of an interstitial landscape.

- The role of photography as a form of visual cognition.

- The impediments to enchantment through modernity, assessed alongside possibilities for re-enchantment through emerging post-human discourse and reoriented apprehension and acknowledgment of the object world.

The strands of my research, both practical and intellectual, necessarily intertwine to help form a personal vision of what a landscape photograph can be. It is, however, the practical outcomes of making photographic imagery which serves as the means by which the research question is ultimately addressed. My reflection upon the photographic output of my research is the primary driver in advancing and responding to new demands both technical and intellectual within the work. For me, the success of an image created as a constituent of practice-based research is perhaps no different to that of any other artistic pursuit, in that it should prompt more questions than it answers (Barrett & Bolt, 2019). To do otherwise, would be to create work illustrative of a conceptual position, and to provide a limiting and ultimately reductive response to the research question. The technical and conceptual methods I employ and have described in this section serve as a means to initiate the creation of work. Whilst I may exact a significant degree of control over the production of an image, there must be an emergent affect which is outside of my intentional control for me to consider the photograph successful, and for it to further the research. Therefore, reflection upon the photographic results is a significant part of the methodology and is detailed throughout the following sections. The process of imaginative creative practice, analytical reflection, and intellectual enquiry is ultimately intended to be apprehended as an exhibited photographic print. My aim is that the viewer's experience and engagement with the prints in a gallery space will be the means by which the research aims are to be realised and how new knowledge can be communicated. This will be knowledge articulated through a sensory event as an act of scrutinising the image which then seeks to stimulate a reconsideration of a landscape through an experiential encounter with a photographic artwork.

A Peripheral Vision

Terms and Conditions

In the early stages of this research project, I made a photograph from the causeway at Lindisfarne (figure 8). The elements within the image were: the road (or causeway), the grass, the plain of sand leading to the sea, the mainland in the distance, and the sky above. I chose to frame the vista in such a way as to create a strict horizontal delineation between each element of the scene and, in the positioning of the road marking and horizon, create a symmetrically balanced composition. I remember the place as a vast flat expanse, largely silent other than bird calls and with the unmistakable odour of dimethyl-sulphide, or the 'smell of the sea'. My intention in making the photograph was not to convey my direct experience of the location but instead, to create an abstraction which invoked a specific and limited vision, an authorial 'cut' if you like, which included what I considered the visual elements that characterised my interests in what lay before me. The causeway provides a land route to Lindisfarne which is closed by the tide twice a day. It creates a very particular change of character on Lindisfarne itself, depending on whether it is open or closed. The road determines if Lindisfarne is an island or a spit of land, whether it is bustling with tourists and coach parties or largely deserted, quiet and the preserve of the inhabitants only. Hence, my interest in the causeway, and its role in in the image was predicated upon the rhythmic binary pattern of access and isolation. I was doing what countless photographers, painters and artists had

done before me: I was creating a discrete, delineated visual organisation of the land in accord with my particular interest and agenda. I was making an image of a landscape.

Figure 8. ***Causeway****, Lindisfarne. Author's image (2016)*

My use of the term landscape throughout this thesis aligns with the idea of it as a visual construct[17], one that regards landscape as materialized through the act of visual cognition and which therefore privileges seeing as a conduit to the imagination[18]. As a photographer, I am creating a framed, cropped

[17] In the opening chapter of *Landscape and western art* the author Malcom Andrews asks, '…what constitutes landscape as distinct from land?' (Andrews, 1999:3). In doing so, he proposes landscape denotes the distinctions drawn within a field of vision, which systematises what surrounds us into distinct groups. Andrews argues that we consider land as visual tracts, organised, and edited by our imagination to form views, which conform to and sit within our culturally constructed hierarchy of aesthetic values. Therefore, we categorise our surroundings into segments which, to a greater or lesser extent, satisfy the criteria of beauty and/or interest through colour, composition, light, and tone, and so on. To be able to do this suggests a highly developed understanding of what constitutes the complex assemblage and interdependence of light and form necessary to visualise the condition of landscape. The fact that such appreciation is almost instantaneous proposes we have an intuitive or instinctive response to the land as landscape, but that this instinct is the product of culturally derived expectations. These expectations in turn allow us to measure and compare what we see, to previously learnt values, remembering, of course, the cultural plasticity of these values and how the qualities that constitute them are constantly evolving.

[18] This is, perhaps, an obvious position for a visual artist such as a photographer. I consider landscape as a location within which a conceptual and technical amplification can take place through the creation of a visual representation. I do, however, note that pictorial representation is only one type of experiential encounter with landscape, the processual

version of a larger view and carefully controlling the compositional relationship of the objects within the crop for the purpose of my research[19].

Throughout this thesis for brevity and clarity I will refer to the locations of my research as the interstitial landscape. This is a landscape found on the periphery of urban centres, the point where a transitional change occurs between the urban and the rural. As I will discuss later, many terms have been used to identify aspects of this landscape and are helpful in building a sense of what characterises an otherwise amorphous and often transient space. Most important to this research is the possibility such locations present for an experience outside of normative expectations. In a landscape where the visual and aesthetic bar is set low there is the opportunity to encounter scintillas of enchantment as a reoriented scrutiny of my surroundings is invoked through a photographic, technical augmentation. The choice of location allied to the photographic practice is intended to attenuate the noise of visual anticipation and subvert hierarchies of significance whilst amplifying the quieter entities, so they become visible. This amplification is often a corollary of the capacity to examine, and indeed imagine, objects both manmade and natural as an entangled, interactive, and interdependent accumulation. My intention through practice as research is to look for and provoke this perception of entanglement and assemblage.

---

characteristics of a landscape are rendered static by the photograph, and as such, proposes a landscape which demands the viewer create an internalised, imagined temporal aspect to the scene, to fill in the blanks, so to speak. I will return to this point later, as it informs some of the strategies I employ in looking to control narrative and temporal relationships within the image.

[19] My research looks at a peripheral landscape, one at the edge of urban centres, a sort of transitional zone that bridges culture and nature. However, I recognise from the outset how distinctions between the rural and urban gets ever more problematic or indeed futile as cities become increasingly decentred through work practices, increased mobility, and technological advance. Later in this section I will examine how various theorist have developed typologies of landscape through examining a commonality of qualities which, whilst mutable and evolving, help to identify, if not discrete geographical spaces, then conceptual ones with blurred edges and emergent attributes through intersectional encounters with other types of landscape. It is, why my work, whist typological in terms of the presentation of material (repeated compositional devices and layouts), is nevertheless, wide ranging in the types of structures and objects contained within the photographs.

The process of reflecting upon the practical output of the research means an inevitable use of the terms place and space. Therefore, it is useful at this point to examine what I understand to be meant by the terms place and space within the context of this research. Place and space, as used in this thesis, are related terms; there are, however, distinctions between the two in my understanding and usage. Place differs from space in the extent to which social connections and value (through meaning) can be attributed. Place is a product of human experiences, through the senses and indirectly through culture. Space, on the other hand, is more abstract and is not described by meaning through direct human experience (Levebvre, 1992). The interrelated nature of the space and place means the term place acts to imply meaning and awareness of a geographical space. Whilst space may not be understood in terms of direct human meaningfulness and experience, it is not without values which extend from human activity. The abstract and overarching notions of socioeconomic, institutional, or political structures often bring into being locations we may regard as space but not necessarily place. For example, Marc Augé in his book *Non-places, an introduction to supermodernity* (2008) provides some useful instances of the term to expand upon this idea; air space, leisure space, green space, advertising space and so on. It is often the case that an oscillation between place and space occurs in relation to the activities and interactions at a given location. At a shopping centre, I am aware of the geographic location as simultaneously a place in which to shop, and a retail space within which the activity of shopping occurs. As a place, it has a specificity through an aggregation of personal, public, social, and cultural meaning and symbols. As a space, it is a more generalised and abstract realm in which an activity is both facilitated and caused by the design and utility of the structures which give it form. Space then, lacks the social connections and human experience which constitute a place, but it affords a greater freedom in expressing an overarching conceptual framework for an activity within a location.

Typologies

Variously described as subtopia (Nairn, 1955), edgeland (Farley & Roberts 2011), unofficial countryside (Maybe, 2010), drosscape (Berger, 2006), and terrain vague (Mariani, & Barron, 2013), the past few decades has seen an increased awareness of otherwise unsought and unnoticed landscapes. Writers from a variety of disciplines have applied their specific interests as a lens through which to examine such spaces. What begins to emerge through an examination of interstitial landscape is a zone that presents qualities which allow a heuristic examination of societal imperatives, ecological concerns, and economic realities. In a special edition of *Architectural Review* called *Outrage* architecture critic Ian Nairn (1955), described the amorphous space between the urban and rural as a sprawl which emanates both from the city outwards and the rural inwards, a middle ground neither one thing nor the other and home to mediocre buildings and unconsidered and casual use or disuse of land. Nairn called this space 'subtopia'. It is a place without merit in Nairn's view and one which threatens what is left of a rural England. The nature of what we might consider to be rural England or its merits (given the degree to which it is now commodified and constructed as a place) is debatable, but Nairn's piece laments the loss of the countryside to development which lacks a consideration of, or sensitivity to, the environment which it overwrites. What Nairn identifies can be seen as a broader pessimism as the result of development. Building development is visual and results in a physical change to the landscape which whilst not of itself always damaging to the environment materially, does impact upon a cultural understanding of place. For example, the development of a farmer's field to become a logistics depot provides a site-specific occurrence which might be deemed indicative of a broader cultural malaise. The logistics depot is a source of employment and faster delivery times of products to customers, but its visual impact speaks to a perception of how a landscape is being compromised by the needs of building development and by extension technological advance (Williams 1993). Nairn's overwhelmingly negative appraisal of the interstitial landscape is not, of course, shared by all, and more recently the hinterland of the liminal landscape has become a focus for a

positive examination of the processual practices of culture and society. Paul Farley and Michael Symmons Roberts, both writers and poets, examine the interstitial landscape as an 'edgeland' (2011), a term they point out is borrowed from environmentalist and writer Marion Shoard. In their book *Edgelands, Journeys into England's true wilderness* (2011) they take a sympathetic look at the places in which structures such as car dealerships and logistics hubs compete for space with brownfield entropy and ruderal vegetation. In examining the spaces on the edges of towns and cities they encounter both a diversity of use and development as a consequence of human intent, but also of flora and fauna and the strategies and successes of nature in response to the creation of new environments. Where writers such as Robert Macfarlane[20] have searched for elusive wild places as locations unspoiled by human agency, Farley and Roberts lend traction to the idea that the last true wilderness exists close to home in the unintended wildlife habitats which occur on the peripheries of towns and cities. The plants and animals which infiltrate the spaces of the interstitial landscape provide an antidote to both artificially pristine structures and barren wastelands, finding every opportunity to gain footholds in otherwise sterile locations to repurpose them for their needs. Writer and naturalist Richard Maybe had established an awareness of the novel ecosystems of the interstitial landscape in his book *The Unofficial Countryside* (2010) in the 1970s. In it he describes the unpredictable character of habitats formed through the interaction of man altered spaces and the natural world. Wildernesses are created through alliances of unlikely partners, often demonstrating the opportunist character of the natural world to re-wild objects and spaces with vigorous intent. Temporary spaces, those in an ongoing state of development or those with tenacious regimes of repair and manicure, privilege the fast-growing varieties of plant, and animals with rapid lifecycles. If given a little more time, pioneer species will begin to encroach. The Silver Birch tree is considered a pioneer species as it is often the first tree to repopulate disturbed ground. In an earlier project of mine[21], where I was examining the

[20] See R. Macfarlane, (2009) *The Wild Places,* London, Granta Books

[21] This is a reference to my practice-based photography MA - completed in 2014

landscape of the disused Greenham common airbase in Berkshire, I noticed how the fenced off area of abandoned nuclear missile silos had become a forest of silver birch trees where, thirty years earlier, it would have been a thoroughfare for military vehicles and missile transporters. Places re-wild, firstly at micro, then meso and macro scales as time progresses. In Maybe's accounts (2010) of his wanderings through wastelands it becomes apparent how these seemingly hostile habitats are teeming with life when viewed with his trained and attentive gaze.

Figure 9. ***SelfStore*** *Author's image (2021)*

My awareness of pioneer species and ruderal plants as they encroach in the built spaces of the landscapes I photograph, is often heightened by the image detail that my process creates. The presence and effect of the plants might only become noticeable to me in the post-production stage of making the image. When I made the image *SelfStore* (figure 9) I was, as a result of circumstances beyond my control, forced to visit the site during the summer, a time of year I would not normally choose due to the light often being undesirable. However, a weather opportunity arose and so I made a visit. Upon assembling the image in post-production, I noticed the proliferation of yellow flowers, those of the common ragwort, which was growing in the cracks and seams between areas of concrete and asphalt in the disused land of the foreground. I would only see these in the summer, and the striking

visual aspect for me was how the yellow of the flowers matched the yellow details on the building behind. This unintended synchronicity of colour between the flowers and the yellow loading doors is particularly apt as the doors are, otherwise, the most noticeable colour accent in the image. I like to think of it as nature, not only gradually reclaiming the land, but also reclaiming the colour palette of the landscape. This image also neatly demonstrates how operating businesses sit alongside the archaeological remains of former ones and the way in which low rise development characterises the interstitial landscape.

The academic and urban designer Alan Berger[22] identifies an interstitial landscape, the result of urban development, which he refers to as drosscape (2006). This wasted region is a consequence of two principal effects; the legacy of former uses of land, no longer viable or made obsolete by changing structures of communication, logistics and economics, and the urban sprawl that results from accelerated growth or what he terms 'rapid horizontal urbanisation' (Berger, 2006:12). Berger's work is a response to an American outworking of these phenomena, but much the same thing can be observed in the UK although the scale may be different. Berger draws an interesting distinction between the verticality of urban centres and the horizontality of the periphery (2006). The horizontalization within the interstitial landscape is one of practical and economic expediency as well as the result of relationships of scale. The vast size of development possible on the peripheries of urban centres allows for the creation of structures whose footprint is enormous compared to its height. Be it ten or thirty meters high, it could be several hundred meters long. Retail parks and storage sheds are familiar examples of huge structures with predominantly horizontal visual impact. It is also a landscape in which land is a relatively plentiful commodity compared to that of the urban centre, hence large tracts of it can be given over to carparking and road infrastructure. The limiting factor in the scale of

[22] See A. Berger, (2006) *Drosscape,* New York, Princetown Architectural Press.

most retail parking is the distance a shopper is prepared to walk to and from their car, rather than the availability of land[23].

The concept of drosscape identifies and brings attention to the interstitial landscape as one in need of new models of planning and design which employ novel and creative strategies for long term sustainability and ongoing ecological sensitivity. Like Farley and Roberts, Berger does not condemn the interstitial landscape as intrinsically bad (or indeed good) but, in the face of its inevitable creation through the expansion and development of urban spaces he seeks to present an awareness of a landscape in need of planning strategies. Development which privileges 'a bottom-up advocacy process, suggesting a move away from the heroic, modernist, master-planner toward the designer who engenders inventiveness, entrepreneurialism, and long-term environmental recovery' (Berger, 2006:14)

The interstitial landscape can present a chaotic mix of new developments alongside previously built on but now disused tracts of land awaiting repurposing. Just as jetsam is deposited on the shore at the threshold of the tidal reach, so the sphere of influence from urban centres, as it ebbs and flows, expands and contracts in accord with socioeconomic cycles, leaves the land at its periphery in varying states of dereliction and disuse. The Spanish architect Ignasi de Solà-Morales adopted the term Terrain Vague in the 1990s to describe a destroyed landscape which is the result of human activity, a man-made space in which things struggle to grow anymore[24]. It is a place simultaneously ruined yet full of the expectation of future redevelopment. The terrain vague is largely infertile, its resources stripped away or consumed by prior use. The spaces represent vacuums to which we are resistant and ultimately want to repurpose. It is a space which might be constructed from

[23] The lateral, horizontalized nature of the interstitial landscape which results from a strategic and expedient approach to development which privileges flatness creates one of the recurring visual themes in my photographs. The uninterrupted sky and primarily horizontal banding formed by foreground (often a road or carpark), middle ground, and horizon forms a landscape visually characterised by flatness, horizontality, and an expansive sky.

[24] See: Ignasi de Solà-Morales essay titled 'Terrain Vague' reproduced in M. Mariani & P. Barron, (2013) Terrain vague, Interstices at the Edge of the Pale, London, Routledge.

the rubble of other projects, the result of another activity, often an outworking of development elsewhere. It is the project yet to be activated, a non-development or the absence of development, a temporary hiatus in a cycle of constant change. It exists as potential for new activities, they may come into being because of political, economic, or ecological agency, but it is also a place in a state of slow modification through the agency of nature whilst waiting for accelerated change through reprogramming and redevelopment. The materials found in the terrain vague often limit the response of the ground to return to nature. Plastic, asphalt, concrete, and steel produce an environment initially antagonistic to most forms of life and those that do return are the ruderal species of plant able to survive in the cracked expanses of tarmac and concrete. Nature will, ultimately reclaim these places but it takes much longer than normal. Living things can, and often must, mutate to accommodate the polluted or toxic nature of the land, they will evolve and create a sequence of events and processes to ultimately allow life of some form to return. Initially, the natural world can only form a veneer on top of the terrain vague and in doing so creates a new aesthetic of nature, one in which the relics of human activity are rarely totally concealed and persist either at a micro level as in the detritus woven into foliage or the macro level, whereby the physical topography of land has been changed such as with gravel pits or slag heaps. Consequently, the terrain vague is often a pointer to ecological and environmental challenges and sustainability becomes particularly focused in such places. It is a clear and present narrative for issues of sustainability and processes of production and consumption. Similarly, ruin is characteristic in the terrain vague and acts not only as an indicator of past events but of new relationships of things and matter that become altered by the novel associations and effects of decay. Ruin challenges the normative order of material things and presents opportunities for reinterpretation, re-evaluation, and a destabilisation of ontological expectations. A different set of aesthetic values emerge as decay transforms the materiality of the object, and matter rather than a learned identity of something becomes more visible as it diverges from its normative form. As objects are changed and stripped of their prior meaning by the action of

decay, the possibility of strange new relationships between entities develops[25]. The arbitrary nature of such assemblages means they are difficult to rationalise within normative cultural definitions and hold the potential for an oblique or momentary encounter with a precognitive perception, such as a fleeting glance which produces a visceral response. A rational enquiry might unpack the constituents of any alliance, but the unsettling nature of such assemblages calls upon a sensitivity and openness to experience a surreal aesthetic of chance and dereliction. Decay disturbs the hierarchic values of objects creating new layers of importance or significance, items once unnoticed or trivial might play a prominent role in the changed visual order of the terrain vague and items that were once of value become insignificant.

As I mention earlier in this section, the interstitial landscape has a multiplicity of terms and its characteristics are not always distinct, rather, the types of interstitial space are often intersectional and carry an assortment of qualities which intertwine and infiltrate one another. My work encounters a number of these qualities but perhaps the landscapes of my research are most often aligned with a type of drosscape, where the ebb and flow of economic fortunes and structural development and decline sees isolated budget chain brand hotels sitting within sight of substations and water treatment works.

[25] The visual and ontological ambiguity, borne of ruin and decay, affords the possibilities of new agency within human/non-human relationships and assemblages. For a structure to persist as familiar it must be resistant to changes that fall outside of normative cultural intention. A shop window display might change weekly or daily to attract the attention of passers-by, but this acts in accordance with cultural expectation. If the shop window were to be changed by being broken it becomes noticeable because its ontological status has become destabilised, the glass becomes a primary point of attention. Left unfixed, the action of people and nature begins an entropic descent into ruin, it suggests a further alienation from the systems which sustain a cultural norm, and its aesthetic may further oscillate between multiple ambiguous layers of meaning and symbol. In the absence of human vigilance and intervention to maintain an ordered space, ruin liberates the latent energies within matter. Decay will see changes in chemical composition through exposure to weather and being acted upon by non-human biological entities such as plants, animals, fungi, and microbes. Items in decay may topple or fall as their structural integrity fails, releasing potential energy imbued in their construction and employment within structures. Concrete may crack and fragment along, until now, unknowable lines of weakness as the ground around it moves through the activity of plant roots and changes in geological strata. Gradually manmade entities become hybridised with organic material and a landscape of ruderal plants, and modified structures emerges, see T. Edensor, (2005) *Industrial Ruins*. Oxford UK: Berg Publishers.
.

The term interstitial necessarily invokes the condition of being in between things or states and I have proposed my research landscape sits between the urban and the rural. It is however, important not to conflate urban and rural with culture and nature. The rural, whilst distinct in its character from the urban is not a natural landscape, it has within it natural entities but is not more broadly a naturally occurring space. It is instead, a manufactured place and space that has come into being as both a construct of culture and of farming and land management practice. As I outline earlier in this passage - the last true wildernesses, as Farley and Roberts propose, may exist in the 'edgeland' and not in the countryside where constant human, managed interventions curtail ecological sustainability and biodiversity. The agency of non-human actors may ultimately play out across all environments despite or in some cases as a direct consequence of their man-managed state (such as global climate change), but it is in the spaces where a greater assortment of interactions and unsought assemblages can occur, such as those of the interstitial landscape, that an experience of a unique contingent montage of objects might exert the power to enchant. This is the condition that ultimately defines the landscape of my research, and whilst it may be difficult to concretise a classification of the interstitial space I work in, it is the ambition of my research to identify it as a space in which a rupture of normative engagement with objects can occur.

Marginal interests

My research exploits an autobiographical predisposition towards an interest in the built landscape and the negotiation between natural and manmade environments. As an illustrator I created "artists impressions" of new buildings and built environments often depicting them within existing built or natural landscapes to show how the finished development will appear. This field of building development occurs in the belt of land at the edge of towns and cities. These areas can often accommodate large scale developments and the associated parking and transport needs can be incorporated into existing road and logistics systems. My work would often mean I was involved with projects set within brownfield sites (areas previously built on and now

disused), the provenance of which could be anything from healthcare, retail, or manufacturing. It is important to note that as a type of landscape it is varied and often intersectional in nature and to suggest a specific, objectively identifiable category is necessarily arbitrary. Therefore, what constitutes the criteria for this landscape is in part subject to my own set of intuitive responses based upon previously learned behaviours, hence the need to recognise the role played by my prior experiences in informing the decisions I make as to what I photograph. The landscape I am seeking to articulate an awareness of, through photographic practice, is interstitial and intersectional in manner. Distinguishing a zone between the rural and the urban is both characterised and complicated by the presence of multiple types of land usage encroaching upon and overlapping one another. This creates a blurring of boundaries and an ambiguity to its overarching identity. Often, there is not a distinct point at which the urban ends and the rural begins, hence an amorphous liminal region comes into being as one practice of use or neglect transmutes, through geographic space, into another. The transitions which occur are best described as fluid and changeable, both because of actual on the ground development, and by my individual ever-changing perceptual field as I move through the space. This perceptual field, by which I mean the delimited scope of sensual, conceptual, and emotional factors determining my awareness, may be modified by my mood, the weather, my mode of travel and so on. This is of course common to any experience of landscape, but my cognizance of a landscape which is not normally looked for, and that does not carry the preconceptions or expectations of say, a day out in the Peak District, will carry differing weights of emphasis within the gamut of experiential factors and triggers. In consequence, the interstitial landscape is receptive to, and conductive of, a broad range of responses, as a tabula rasa without an expectation of specific aesthetic values or conditions.

Substation

As a consequence of this research I am always looking for visual prompts to identify the interstitial landscape, things that might give substance and character to a space. One of the recurring sights on the peripheries of urban

centres is that of the apparatus which facilitates major utilities. Here, the interstitial landscape comes into being as a location for man-made structures which are part of broader networks essential to the continued operation of services such as water treatment, mobile communications, electrical power and so on. These entities are the localised physical manifestation of infrastructure[26]. Infrastructure, such as the electricity power grid, or water treatment and supply, occurs as the result of large, organised forces without regard for a philosophy of landscape or sensitivity to an existing visual vernacular. By their very nature, networked systems are characterised by connectivity, space is managed and utilised through the creation of connected pathways. The structures involved can be visible in their entirety such as road, rail and overground power lines, or largely in visible in the case of radio transmission, sewerage, and water systems, only becoming visible as transmitter masts, water treatment works, and reservoirs. Such systems are essential to the function of society and in the case of road systems, help define both the appearance and experience of a contemporary landscape, '[t]he outstanding feature of the modern cultural landscape is the dominance of pathways over settlements' (Williams 1993. p381). The connected systems, which allow the utility we take for granted, produce a visual and cultural language which is simultaneously emblematic of the triumphs of the modern world and the beleaguerment and pessimism surrounding the proliferation of technological development.

So, what does an experience of this networked landscape look like in the context of my research? Whilst driving to Manchester Airport I noticed to my right, at the junction between the A555 and the Styal Road, an electricity substation. The fact that I am now fully attuned to the visible, yet

[26] The Oxford English Dictionary defines the word infrastructure to mean - 'a collective term for the subordinate parts of an undertaking; substructure, foundation; *spec.* the permanent installations forming a basis for military operations, as airfields, naval bases, training establishments, etc.' The OED records the first use of the term in English (having been borrowed from French - first recorded in 1875) as being in the Chambers Journal of 1927, describing the ancillary structures and facilities for the Ax to Bourg-Madame railway line in France Its next recorded use occurs in the transcript of a commons debate of 1950 as a comment made by Winston Churchill, where it reveals its journey in common usage to that of a term of jargon and nonsensical generality and less specific to its original military roots.

unremarkable nodes of infrastructural networks make for regular outbursts of excitement when making unrelated journeys, such as this one to drop my wife at the airport. Why? Because it is this type of journey which often provides my first introduction to such objects and the space they sit in. That is to say, journeys through the landscapes of transition which sit between the urban and rural and which I find myself in as I navigate to out-of-town retail parks, tyre fitters or in this instance, the airport.

Figure 10. ***Substation,*** *Styal. Author's image (2020)*

A quick Google search later reveals the electricity substation in question is an intermediate type, which means it is receiving electricity from a national grid substation, stepping down the voltage and sending electricity to the final distribution substations. Final distribution substations are the ones you often see at the end of a residential road as a fenced off box with 'danger of death' signs, and which step down the voltage further to provide the 230volts domestic output. On my way back from the airport I look to find a place I can park nearby so I can investigate on foot. Unfortunately, there is nowhere to stop a car safely or legally near the substation. A bit more searching on google maps shows there is a cycle path running past the substation and as it is only around ten miles from my home, I decide to cycle to it to have a closer look.

Part of my investigative process often involves the use of Google maps[27] and Street View, it allows me to get a virtual overview of a potential site of interest and helps me plan the logistics of photographing a location, such as where to park, whether there is public access and so on. I plan my cycle ride and visit the substation for a close look. I take with me a snapshot digital camera to make visual notes to look at when I get home. My first consideration at the substation is from what position is it best to make a photograph? There are both rational and intuitive responses to this question. My inclination is to look for the orientation of the buildings and structures that make up the substation which best presents as an elevation, or straight on view. I know from looking at the Google satellite view of this site that it is laid out with objects at right angles to one another. This limits the possibilities, initially to four views and then, because of practical considerations (the site is diagonally bisected by a fence), to two. I regard the elevation - and by elevation I am referring to orthographic projection drawings such as architects or engineers use - as a familiar means (my former life was as an architectural illustrator) to convey a precise and reliable visual description of an object. Much of how I determine this first principle for making an image, stems from this intuitive response, one which is a result of accumulated knowledge from my previous discipline as an illustrator that sets up an underlying tendency towards a formal, rectilinear presentation of the subject. However, I will be making a photograph from a single view point and therefore it will be a perspectival view with receding lines to a single central point within the image. Not a true elevation by any means then, but it does present two cartesian coordinates

[27] I realised only a few years ago, the need to plan out my journey, and in a sense know exactly what I might encounter, is largely driven by a long held underlying anxiety about travel and being outside my familiar habitat. This is not entirely unusual, but when the sense of risk is elevated to a point where I am convinced some unknowable catastrophe is the inevitable outcome of being outside, then the associated debilitating terror becomes a phobia – in this case, a form of agoraphobia. Although, like millions of others, I now manage the condition with medication, there is still a sense of potential disaster that underpins any journey and especially those relating to my research, which often start with exploring an unknown place. My point in mentioning this seemingly tangential detail, is that I now believe it does affect my working process and in consequence must have a bearing on what and how I choose to photograph something. What I could have seen as a limiting factor I see as part of the behavioural characteristics that shape my engagement with the 'outdoors' and in turn determine some of the unconscious and intuitive decisions I make.

as controllably flat, or, where I can ultimately manipulate the image in digital post-production to show the X and Y coordinates of the structure as free of perspective.

What I love about objects like the substation, is how, on close inspection, an arcane knowledge is suggested in the aging apparatus with its discrete gauges and mysterious structures. I do not know what much of it does or how it does it, but I know this is part of the electricity grid and that the fencing and signage suggest it is a powerful and dangerous place only for the sanctioned electricity worker, and to remain off limits to the uninitiated. To that end, on the far right of the image there is a CCTV camera. I noticed this early in my visit to the site – the all-seeing presence of an unseen authority. The substation is a key structure in providing a localised network of electrical conduits and as such is surrounded by a heavy security fence to provide protection from and to the public. The CCTV camera in the picture is a further line of defence but seems somehow quaint in the 21st century, rather like a landline phone or an FM radio, it is an old-school technology which works by being a visible deterrent, perhaps it is also there to monitor the substation itself - to watch the machine. Because of the CCTV camera, my behaviour, as I set up to take photos, is as someone being watched, I am at pains not to seem furtive or suspicious in any way. I do, however, have my own strategy for avoiding the attention of others when working on making a photograph. I always wear work clothes and a high visibility jacket (the uniform of anyone doing something in an official capacity outdoors). It gives the impression I am just another employee at work for a larger organisation, and as such, of little interest to an observer. It's not that I'm doing anything inappropriate, but there is a general suspicion towards photographers which is best avoided if possible. There is, apparently, one CCTV camera to every thirteen people in Britain[28]. My demeanour, or self-consciousness, when out making images, assumes I am subject to a level of constant surveillance and of course

[28] A survey by IFSEC Global reported in politics.co.uk estimates there are 5.2 million CCTV cameras in the UK which equates to 1 camera for every 13 people – *Surveillance* [online] [accessed 18th November 2021] https://www.politics.co.uk/reference/cctv/

sousveillance too, through my phone, my car and countless other technologies[29]. The line between an awareness of systems of control and being paranoid is probably a fine one, but the everyday negotiation with institutional power structures reminds me of how a seemingly straightforward task, such as photographing a substation is shaped by complex and entangled constraints and mitigations[30].

Visually and physically, infrastructure often reveals itself only as the nodes in a larger system, such as the substation in my image. The substation of my image is a visible tip to a larger infrastructural iceberg, that of the national power grid. Power, water, sanitation, communication, and many more aspects of modernity are underpinned by infrastructure, the true extent of which is often unseen or unnoticed. Its functional continuity is both essential to the utility of a society and yet broadly taken for granted. So successful is the integration and reliability of these systems that many exist beyond our perception other than that of the functions they enable. This invisibility is in many ways the measure of good infrastructure design. This Substation is an unremarkable yet visible (if looked for) nodal point which gives little visual information as to the greater extent of the network to which it belongs[31]. However, the cultural invisibility of infrastructure, that is achieved through

[29] Social reformer Jeremy Bentham's panopticon, a structure in which a few guards could oversee many prisoners, functioned through the principal of the prisoners, knowing they can be seen at any time but unable to see the observer, must act as if under constant scrutiny. Much has been written on the panopticon as metaphor for structures of control and power through surveillance, most notably by Foucault, Lefebvre, and Deleuze, and I now find the experience of being observed, and my strategies for being inconspicuous, to be part of a commonplace mode of behaviour. See Lyon, D. (1991) "Bentham's Panopticon: From Moral Architecture to Electronic Surveillance," *Queen's Quarterly*, 99(3), pp. 596–617.

[30] Michel De Certeau describes how the individual develops tactics in response to their everyday engagement with structures of power, to form behaviours which help in negotiating, navigating, and subverting the systems intentions. For example, there are strategic constraints on where I can go and by what means I can travel, hence my need to cycle to the site rather than drive, which in itself is a dictate of the highways authority. But the way in which I know I can cycle to the site comes from being able to interrogate aerial imagery and maps freely available to me through the internet. See M.D. Certeau, (2011) The Practice of Everyday Life, California, University of California Press.

[31] The success of an infrastructural system may be gaged by the way in which it becomes every-day and banal, and the technology involved disassociated from its function. Ease of use and reliability is fundamental to a covert infrastructure; the easier it is to access and use a system the greater the capacity for its complexity to remain hidden and taken for granted. See S. Graham, (2010) *Disrupted Cities: When Infrastructure Fails.* New York, Routledge.

the gradual normalisation and societal acceptance of its function, is abruptly lost when it fails. Visibility in this context refers to the sudden realisation of a systems existence, complexity, and vulnerability in addition to the possibility of noticing it as a discrete physical entity. One of the defining characteristics of a system warranting the status of infrastructure is that it 'becomes visible upon breakdown' (Bowker, & Star, quoted in Graham, 2010:7). In Stephen Graham's book *Disrupted Cities: When Infrastructure Fails* (2010) he argues:

> 'infrastructural disruptions provide important…learning opportunities through which critical social science can excavate the politics of urban life, technology, or infrastructure in ways that are rarely possible when such systems are functioning normally' (Graham, 2010:3).

The hidden nature of infrastructure further impacts upon our capacity to understand such complex systems. Infrastructure takes on a ubiquitous presence in the collective imagination as a

> '...material and utterly fixed assemblage of hard technologies embedded stably in place, and which is characterised by perfect order, completeness, immanence, and internal homogeneity rather than leaky, partial, and heterogeneous entities' (Graham, 2010:8).

The imagined robustness of a system is compromised when it fails, but the covert nature of its working state is also potentially problematic. The invisibility of infrastructure is antagonistic to orientating public awareness of issues of sustainability and the environmental cost of its use. How can I be able to consider and mitigate the negative environmental impact of my electricity usage if I have little or no idea of the processes and structures involved in its delivery? The tracery of pipes, pumping stations and macerators on the way to the sewage processing plant is not uppermost in my mind when flushing the toilet, nor are the network of transformers, substations and electricity generating facilities necessarily occupying my thoughts when turning on a light switch. My expectation of the unimpeded function of such utilities without any necessary knowledge of their operational complexity lays me open to a self-imposed wilful mystification of such systems and an ignorance of the potential ecological impact and the environmental issues they may present. However, a cessation or interruption

of function may no longer be the only measure of failure which brings systems to our attention. The substation becomes ever more visible to me and others as the eco-crisis increasingly helps identify such entities. The user interface such as a toilet or a light switch, becomes visible as the local manifestation of a much larger structure and networked system with an attendant need to scrutinise its environmental impact. Ecological and environmental damage might be regarded as a function of system failure and with it a concomitant public awareness. My understanding of where something comes from, in the case of electricity, or where it goes to, in the case of human waste, is made apparent not only when a utility stops working properly but is now becoming visible through the ongoing consideration of sustainability in the face of global warming as an overarching anxiety. The substation may still be a mysterious structure, but it is evidence of a system which is under increasing scrutiny through the lens of ecological concern.

Given that we take the uninterrupted function of utilities such as electrical power for granted, it seems incongruous how the substation is so weathered and corroded in places. I say 'we' but I am, of course, only referring to the developed western economies within my sphere of personal experience, much of the world does not enjoy this expectation of reliability and instead contends with aging and failing infrastructure. Therefore, the patina of age that I notice in the image of the substation initially suggests frailty, not a quality you would want in a utility such as the power grid. But close inspection reveals evidence of maintenance and renewal. The gauge on the top of the transformer shows a heathy oil level in what I suspect is an oil reservoir – who knew electricity transformers needed oil? The peeling paint and surface rust must be a cosmetic concern only, and of no consequence in the functioning of the apparatus. It does, however, present a visual effect which alludes to ruin and with it the agency of the natural world to transform the transformer beyond its singular function in a substation. To me, this elevates the agentic status of the electricity transformer itself, from an inert man-made item to an entity with a character given by something other than its human creator. I find anthropomorphising the apparatus is useful in reorienting an

understanding of it as having agency beyond its intended function. The evolution of the apparatus through the effect of natural forces upon it helps in imagining the transformers as stoic entities, with age and longevity, and working in all conditions, transcending the vagaries of technological fashion. Like standing stones, they outlive their makers and impose their will on the landscape but are ultimately fenced into a marginalised no-man's land, and not intended for public examination. Normally I would only catch a glimpse of the substation as I passed it at speed in my car, perhaps a hold up on the road might offer an extended look, but whilst it continues to function there is no reason to consider it beyond broader ecological concerns about power generation. If the power supply failed in the area, causing blackouts and ruined Sunday roasts, it might become a suspect, a dodgy character in a narrative of disruption and inconvenience, but my photograph allows me to scrutinise the transformers, switchgear, busbars, and lightning arrestors at leisure. The detailed photographic image brings it into view for an extended examination.

The Dromoscape[32]

The substation, seen as a glance from a car window, demonstrates another factor in the invisibility of infrastructural entities and more broadly, the interstitial landscape, which is the material effect of another infrastructure, that of the road network and the physical speed that reorients a perception of the landscape. I am reminded of sitting in a major traffic jam on the M4 motorway during a summer holiday to Wales. As traffic ground to a halt and remained motionless engines were turned off and windows opened. A normally unknowable central reservation or median strip of the motorway was now static and only a few feet away. What was usually a blurred ribbon of tone and colour had now materialised as weeds, blades of grass, metal,

[32] Cultural theorist Paul Virilio describes the dromoscape as one aspect of a broader examination of the science of speed in which he posits our perception of the world is inextricably linked to the societal imperative for ever increasing technological speed and the impact this has had and is continuing to have on our capacity to see and experience our environment. He refers to this examination of societal speed as dromology. See P.Virilio (2006) Speed and Politics. London, Semiotext(e).

and plastic detritus. Various bits of litter and disintegrated car parts became visible, along with the technical detail of the Armco crash barrier as galvanised steel sheets, nuts and bolts, and metal cables attached to concrete piers. In this instance the infrastructure of the motorway system, as its smallest component parts, comes into view when its intended function, of allowing cars to move at speed, is interrupted by congestion or a traffic incident. Landscapes of accelerated movement, or what cultural theorist Paul Virilio terms the dromoscape, such as experienced in a car on a motorway, create an engagement with the landscape as the result of travelling at speed, which is substantially different to that of a stationery figure. In the case of the motorway network of the UK, the landscape near to the road is planted and populated with features which recognise the modifications of the sensory experience encountered due to the dynamics of travelling at speed. The nature of travelling at speed meant the broader brush strokes of shadow, form, mass, and void should be the primary concerns of the planting strategy. This acceptance of speed as having a necessary effect upon the design of features within the landscape is a recurring theme in the outworking of the physical impact of infrastructure[33]. The desire for speed within operations such as logistics and communications, creates the architecture of the online shopping fulfilment centre, the internet server plant and the out-of-town retail park. Many of these structures are situated on the outskirts of the urban centres they serve, creating a characteristic low-rise but expansive landscape. What begins to emerge is a landscape shaped by a different set of pressures to that of the city or rural space – and as such it is a visual reflection of the societal imperative for speed. Alan Berger posits how the interstitial landscape he calls drosscape (2006) is characterised by the horizontal emphasis of its architecture and structures, as it is a space in which things grow outwards rather than upwards. This horizontal signature is also

[33] Cultural and historical geographer Peter Merriman describes how at the inception of the M1 motorway (Britain's first motorway) the use of certain types of planting could be problematic in a landscape viewed from a moving car. The Landscape Advisory Committee 'blocked proposals for ornamental species of tree and shrub which they felt to be too detailed, small scale and distracting to be appreciated by the motorist travelling at high speed' P. Merriman, (2006) 'A new look at the English landscape': landscape architecture, movement and the aesthetics of motorways in early postwar Britain. *Cultural geographies*, 13(1), 81

actualised as a cognitive function of accessing the landscape through high-speed transport such as trains or cars. Our perceptual emphasis becomes delineated horizontally as we pass through a landscape at speed. Vertical details are lost or lateralised, particularly when our field of vision is perpendicular to our direction of travel. As I commented earlier with the substation my initial investigation of entities of interest within the interstitial landscape often start with a car journey, followed by slowing my pace as I walk or cycle through areas in preparation for making an image.

The M60 motorway is an orbital road which circumnavigates Manchester. I have used this road extensively in my travels to sites of interest and it is from this motorway I often get an early glimpse of a possible landscape for my research. This was how I came upon the 5 a side building, as a large shed viewed from the elevated section of the M60 which straddles the Manchester ship canal. The *5 a side* photograph was made after making several visits to the site, each one resulting in an abortive attempt to photograph it. The problems were weather related, and whilst frustrating, it is never a waste of time to visit a potential site. Each visit increases my awareness of the site and develops my sense of how I want to photograph it. The 5 a side building is a large shed type construction, a common style of development in the peripheral zone on the outskirts of towns.

Figure 11. ***5 A side,*** *Trafford. Author's image (2020)*

It is a design which allows for large areas of uninterrupted interior space, essentially a big box with a decorative façade, ideal for large scale retail outlets and in this case – football pitches. A full height glass wall marks the main entrance to the building which is also on the axis of the access road from where I've made the photograph. As is often the case in my work, I have removed and adjusted details to enable a balance within the image. The building is symmetrical in design but a large floodlight to the right of the entrance disrupted the composition and was removed. The vertical pole to the left of the image I left in, partly to balance with the trees to the right, but also because it is a detail which prompts a number of questions about the site, ones I had not considered before noticing it when examining the image. The pole is an exhaust vent, one of several in the car park. These structures are often used to vent the build-up of gases below the surface, this could be the result of buried debris from previous use, such as land fill, or some naturally occurring phenomenon. Either way, it suggests activity and agency in the ground beneath the site which has had to be accounted for through the use of these poles. I remember, many years ago, visiting a construction site of an underground carpark for a supermarket. The contractor was driving huge piles deep into the ground which would connect to the bed of the carpark. When I asked why this was needed, the answer surprised me. It was

not, as I had assumed, to stop the carpark sinking, but quite the opposite, to stop it rising. The water table in the area was above the level of the underground carpark, the carpark therefore had to be watertight to prevent it flooding, in effect making it a giant boat which would otherwise float if not pinned down. What lies beneath the surface of a site may well be something hidden but is in an ongoing mitigation with the manmade structure on top. The pole is a tiny detail but, perhaps one with significance to the entire construction and one which attests to a mysterious underlying actor.

The 5 a side facility is closed, unused and fenced off, it is a building awaiting repurposing or possibly demolition. It is currently in a phase of gentle dereliction as parts are removed, doors boarded up and plants left to grow unchecked. It is now a collection of clues, and new relationships between things. The missing signage panel to the left of the entrance reveals a clue to the original un-weathered colour of the cladding, the cycle shelter below shows the collection of abandoned bike locks, presumably belonging to 5 a side footballers that never returned to retrieve them after the business closed, and the security cameras are now presumed lifeless and unconnected. It has not yet reached the point of no return, where demolition is inevitable as the only economically viable response, but it is a visibly tired structure. I suspect its use as a collection of five-a-side football pitches was not its first purpose, it may have started as a retail outlet and later been reprogrammed as a leisure facility. This evolution of purpose is of course familiar not just as part of the interstitial landscape, but the scale of this building lends itself to radical reuse and repurposing and with it my imagining of its dramatic sensory change from the relative quiet of a retail shed to shouting footballers and shrieking trainers on polished floors. It is in a condition not uncommon in the interstitial landscape, a liminal state which expresses the stored potentiality of the site. This could become any number of things and may pass through processes of dereliction before the land is reclaimed and reused. It is then, a building which encapsulates a story of an edgeland (Farley, & Roberts, 2011) lifecycle. From new build, a retail destination for sports clothing perhaps, then with the changing fortunes of

its tenants it becomes a leisure facility and now in its final days it awaits maybe a few more years as a space for a low budget operation before finally being razed to the ground in readiness for re-development. It may then remain for many years as a terrain vague waiting upon the right economic conditions to prompt a re-evaluation of its worth as a plot of land. As its connection with culture changes and loosens so too its relationship to the natural world evolves and the balance of the intervention between the two is modified. Ruderal plants are beginning to find footholds in the carpark and the unchecked action of the weather alters the colours and textures of the building – shiny surfaces become matt and primary colours are rendered as pastel shades by the ultraviolet rays of the sun. These actions are seen by degree throughout the interstitial landscape necessitating a constant vigil of maintenance, repair and stylistic re-fresh, to maintain an illusion of constancy in the fabric of high-tech materials such as those used in car showrooms and business parks.

Reimagining the Pastoral

The negotiation between culture and nature which occurs in the interstitial landscape becomes an oscillation in agency between human and non-human. It is a cycle of activity that I see as a manifestation of a contemporary pastoral and which has art historical precedents in the representation of early technology and infrastructure as it begins to appear in the landscape and subsequently starts to shape it. Art historical reference plays an important role in my decision making when creating an image. In particular, the Dutch 17th century 'Golden Age' landscapes which depicted the contemporary industries and infrastructures of the prosperous Netherlands and demonstrated a new negotiation between culture and nature. The depiction of the interaction between the man-made and the natural world in Dutch 17th century painting contains evidence of the tensions and challenge new modes of production and consumption present in the landscape.

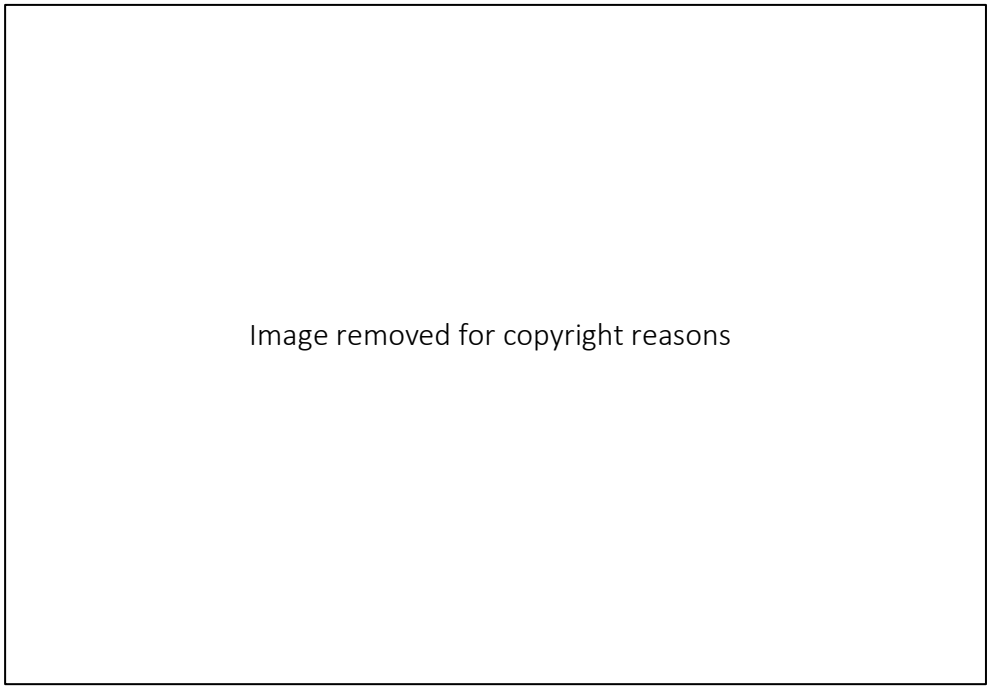

Figure 12. Detail from ***View of Haarlem with bleaching fields*** *– Jacob van Ruisdael (c1670-1675)*

I regard the interstitial landscape of my research as a contemporary evolution of the pastoral within art historical tradition. Whilst on the whole much of the landscape I photograph may not plausibly be considered beautiful or harmonious with nature in any traditional sense they do share some of the attributes which lend qualification to an artistic representation as pastoral. If we consider a broad interpretation of the term pastoral as describing a space in which human and non-human activities and interventions exist in a negotiated coexistence, then the interstitial landscape, in which such negotiations are primary signifiers of it as a distinct space, becomes a contemporary pastoral. Dutch 17th century painting is particularly relevant to my work as it represents the development of a visual language of the pastoral that included and celebrated emerging technological developments which were considered at the time to bring significant economic and societal benefits (Vickery, 2020).

Figure 13. **Sewage works**, *Stretford – Author's image (2019)*

The pastoral is perhaps best known as an idyllic, arcadian rural scene where shepherds look after their sheep in a verdant landscape, it exists in a zone between the civility and order of the town and the threatening wildness of the natural world. The pastoral exists as a zone of oppositional values, between the ecological order of the natural world and the order imposed by the world of culture. The Dutch artist Jacob van Ruisdael in his painting *View of Haarlem with Bleaching Grounds 1675* (figure 12), presents a scene which shows human intervention in the landscape beyond animal husbandry and farming practice alone. This early example of industrial process in the landscape shows the strips of bleaching linen laid out in the fields with Haarlem in the distance behind. The highlighted field is bathed in sunlight as if its production were sanctioned by nature as a partnership of equitable interdependence (sunlight was an essential element in the bleaching process). It is worth noting Dutch bleached linen at this time was considered the best in Europe and as such scenes of its production convey civic pride and the industriousness of the local communities. The compositional devices and visual effects employed in Ruisdael's depiction of the bleaching industry – the sun-drenched fields and miniscule workers toiling beneath the massive expanse of dramatically cloud broken sky – serve to resolve the conflicted

relationship between culture, with its industrial pretentions, and the natural world which facilitated such activities, and present it as meaningful negotiation of man and nature. The Dutch paintings of this period convey a new type of landscape visual language, one in which a quotidian vista is populated by contemporary figures alongside the latest innovations in science and industry[34]. It also realistically portrays the national characteristics of the people, weather, light, flora, and fauna. The geographic specificity of the Dutch scenes has resonance with some of the concerns within my own work. The familiarity of many of the objects as universal rather than local presents me with an issue when creating a photographic representation of a specific location. In the absence of any other knowledge, such as that provided by the journey to a location, a photograph presents a difficulty in identifying place when little in the landscape is unique to its location. Just as

[34] The development of Dutch commercial capitalism created an art market which no longer relied upon commissions from the Church or Royalty, instead it invited the interests of normal (albeit still wealthy) people for whom everyday scenes satisfied an appetite for a newly discovered national identity as one of the great trading nations of the period. In addition to the emergence of a commercial art market no longer dependent upon the commissioning power of the state and a powerful elite, the Reformation introduced a protestant wariness of idolatry and thus the traditional depictions of climactic or significant moments glorifying the great within a classical narrative were no longer considered appropriate. Instead, the subject matter turned to the direct visual experience of the artist and a realism drawn from the everyday world of normative experience. This celebration of ordinary everyday objects, people and landscapes served to demonstrate how Dutch culture significantly differed to that of the rest of Europe at the time and ultimately the power and wealth it commanded as a society with highly developed cultural and commercial capitalist structures. See P.J.Taylor (1996) What's Modern about the Modern World-System? Introducing Ordinary Modernity through World Hegemony. *Review of International Political Economy,* 3(2), 260-286.

The iconic windmill of Dutch landscape painting was a potent symbol of man's capacity to bend nature to his will. The reclamation of land in the late 16th and early 17th century, which accounted for a third of the Dutch landmass, was made possible by the pumping technology of the windmill. Its inclusion in paintings not only identified the location as uniquely Dutch but also as a landscape brought into being by the employment of ingenious technological processes to harness the power of the wind and reconfigure the world to suit the community's need. It demonstrates an emerging vision of the natural world as a resource which may be tamed and exploited through human creativity and inventiveness. Such overt representations of productive technologies in the landscape marked a change in the pastoral oeuvre from that of shepherds minding their flocks to the integration of human and non-human in a much more proactive relationship. This relationship now extended the influence of human activity from grazing sheep and growing corn to the reclamation from the sea of the landmass within which the artist sat. The relationship between man and nature is deemed to be harmonious and a source of significant associations with value, purpose, and patriotic pride. See M.B.Vickery (2020) *Landscape and Infrastructure: reimagining the pastoral paradigm for the twenty-first century*, London, Bloomsbury Visual Arts.

the Dutch 17th century landscape painters imbued their imagery with geographic specificity through the inclusion of symbols of national pride such as infrastructure, the meteorological signature of the location was also key to a new interpretation of representation of place. Thus, the weather takes on a considerable impact in my own practice to identify the character of the place in which I am working. The region of my research lies on the edge of the Cheshire plane and as such experiences a considerable amount of rainfall and is often characterised as predominantly overcast or wet. As I have discussed in the methodology section, I construct the images I make not only from a large number of photographs taken at the time but also from constructions of skies taken at different times in order to control the overall appearance of the image. Often the sky as captured at the time of the initial photograph may not best characterise the region and hence a sky recorded at a different time and captured as part of a specific project to photograph only skies, may be substituted to enhance the geographic uniqueness of the scene. This references the traditions in landscape painting which have moved the aesthetic treatment of landscape from depictions of local environments as Arcadian idylls to more realistic representations of the characteristics of the region[35]. My interventions in the content and composition of the image

[35] The allusion to national authenticity in Dutch landscape painting tradition created a precedent for the adoption of aesthetics which had cultural, temporal, and geographical specificity. See S. Alpers (1984) *The Art of Describing: Dutch Art in the Seventeenth Century,* Chicago, The University of Chicargo Press. This authentic representation of nation character can be seen latterly in the depiction of landscape in English 18th century painting. A sense of identity and unique Englishness was possible outside of the accepted picturesque ideals which had previously derived its aesthetic from Southern rather than Northern Europe. The work of earlier Dutch 17th century painters such as Peter Paul Rubens and Jacob van Ruisdael provided a more appropriate cultural idiom through which an English landscape aesthetic might be mediated, rather than the popular and widely accepted picturesque as employed in landscapes typical of Claude Lorrain and Salvator Rosa, to which no amount of picturesque manipulation could really find common ground. Rather than reimagine the English landscape as having the clear blue skies of Italy, painters could see the English weather as being positively advantageous to the artist by providing a complex variety of cloud, weather and light, a smorgasbord of evocative effects which were the natural outworking of the inclement predisposition of a northern European island-based meteorology. The big skies and foreground detail of the Dutch flatlands looked like the vistas of East Anglia, Northamptonshire, and Norfolk. English landscape painters such as John Crome (1768 - 1821), painted almost exclusively from the scenery of his home county Norfolk and was greatly influenced by Dutch 17th century landscape painting. As the industrial and scientific revolution continued to spread its influence through the 18th and 19th century so the presentation of the natural world changed and the emphasis in painting began to delve into new areas of scrutiny. Where the landscape had been a source of productive intent through farming, animal husbandry, and the management of land and forestry, the land increasingly

align with art historical precedents from the development of the picturesque and the desire to reconfigure the landscape when presented as a picture in accord with the artists agenda – or in the case of the picturesque – to a set of rules governing what could be considered aesthetically appropriate. The 18th century cleric and artist William Gilpin developed the idea of the picturesque which aligned with, and advanced an English sensibility to landscape, one which advocated the virtues of natural, irregular shapes and informally managed spaces. Gilpin saw the natural world as an unreliable provider of satisfactory compositional elements and could be improved through the judicious use of certain motifs, such as side-screen trees and foliage, darkened foreground, illuminated mid-ground, and a horizon that merges to sky through an atmospheric haze. My concerns are not with reimagining nature to conform to a historical cultural trope of what constitutes beauty, but it is a manipulation of the content in the image to address the failings in recording what is directly before me at the time of making a photograph. The visual language I am creating is driven by rules in the manner of, but categorically dissimilar to the interests of Gilpin's picturesque. The categorical distinction that informs my work is a formalist presentation of visual information which subverts and levels hierarchies of significance. This is not to say that I am intentionally rejecting ideas of beauty as I would still consider my work beautiful, in part because of my intention to make balanced, formal images. However, the picturesque provides a model for controlling the content and composition within an image to help inform and respond to the agenda of an aesthetic theory.

---

became a resource for the new technologies of production and industrialisation. The landscape as a conduit to the spiritual was not diminished by the developing scientific enquiry and empirical study, instead it changed the direction of visual investigation to one which demanded a close attention to detail and an accurate depiction of flora and fauna. Crome was one of the first painters to accurately portray native plants as identifiable species of tree and shrub rather than generic greenery. The divine could be glimpsed through the outworking of the minutiae of the created world and with it a closer understanding of life and God.

From quiet systems to the technological sublime and back

The Dutch painters of the 17th century portrayed technology which, whilst significant in affect, such as the windmills, were relatively benign in their visual and dynamic weight within the landscape. This is the case in my own work as there is both a technical and conceptual requirement for the spaces I make photographs in to be largely static, or to be made so through post production techniques. This is a product of an association with the technology I encounter in the interstitial landscape as often hidden or quiet. The representation of technology during the height of industrial revolution was significantly different to that of earlier Dutch works[36]. In Turner's painting: *Rain, Steam and Speed – The Great Western Railway 1844 (figure 14)*, a technological sublime presents itself as the railway engine materialises from a tumultuous natural and mechanically induced fog. This was a technology which forced a recalibration of geographic space time. It opened new opportunities for travel and redistribution of people and goods at speed and lower cost. The railway took on a totemic value as an indicator of the modern age, a potent symbol of the power of new technology in overcoming geographic space as an impediment to the logistical requirements of modern living. The railway engine was a very visible and noisy intervention in the landscape, it required no direct understanding of the technology to appreciate the raw dynamic power of a machine that came to exemplify the

[36] The industrial revolution of the 1800s presented a quite different visual interaction between technology and nature. The presence of new technology in art of this period often presented a tension of opposites, as a manifestation of Blake's dark satanic mills and an expression of the wondrous capacity of the new enlightenment thinking to create a utopian idyll and national success. The socio-economic positioning of an individual often dictated their response to the rise of mechanisation; a mill workers experience of industrialisation would be very different to that of the mill owner, and a nuanced and differentiated understanding of its merits and demerits could be felt at the various social strata in between. As industrial process became the primary driver in the prosperity of a nation, the importance of industrial modes of production gained traction as the preeminent expression of wealth and power. The farming landscape that had once been a balanced negotiation of man and nature to produce agricultural capital, was becoming a resource for exploitation, either as a recreational playground for leisure activities or as a potential storehouse of materials to feed the insatiable appetite of a mechanised industrial process. See L. Marx (1964) *The Machine in the Garden*. USA, Oxford University Press. See also M.B.Vickery (2020) *Landscape and Infrastructure: reimagining the pastoral paradigm for the twenty-first century*, London, Bloomsbury Visual Arts.

emergence of a new age of mechanisation radically different to a horse drawn past.

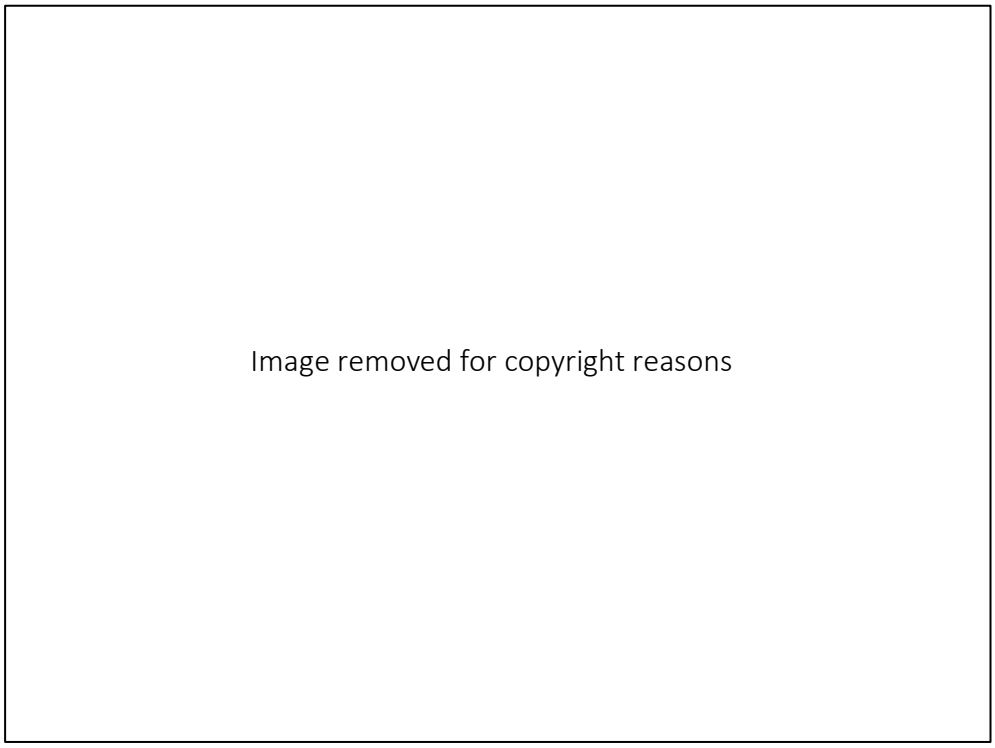

Figure 14. ***Rain, Steam and Speed – The Great Western Railway****, JMW Turner (1844)*

If the artistic representation of infrastructure has oscillated between a celebration of new technology and the lamenting of a lost innocence - a rupture of the relationship between culture and nature, it has also witnessed a slow cycle from a quiet reimagining of the pastoral to a sublime awe through overt power and dynamics, and back to a present day largely invisible form[37]. This current form of infrastructure and technology is, in some cases,

[37] For the Victorians, the visibility (initially at least) of infrastructure was important in creating a public perception of the power of infrastructure to transform not only the economic fortunes of the state but also the wellbeing of its citizens. In London 1858 warm weather and an inadequate aging sewer system famously led to the 'Great Stink'; an overwhelming smell from the untreated human waste and industrial effluent which flowed directly into the Thames and subsequently lined the banks of the river. It was believed at the time that the smell was responsible for the outbreaks of cholera and other diseases as it took the form of a miasma, or bad air which transmitted illness. The conditions resulted in the commission of a new sewerage system for London (whilst the miasma theory was incorrect the resultant effect of treating the causes of the smell would result in the eradication of disease associated with poor sanitation). This massive infrastructure project conveyed the technical mastery of the new scientific era and was widely reported in the papers with illustrations to show the epic dimensions and scope of the works. In addition to the ambition of the project as a utility its structural elements both seen, and unseen were designed with both functional and aesthetic merit. The attention to the appearance of pumping stations and tunnels was a mark

more pernicious in its effect upon the environment and more awe inspiring in its ambition than those depicted in the visual extremes of fiery steel mills and soot and steam spewing railways. The landscape paintings I have discussed offer a reflection of societal attitudes toward the environment as it is changed and developed by technological advance and the corollary of changing models of work, play, production, and consumption. The contemporary interstitial landscape acts as a kind of 'warts and all' exposition of human activity, rarely is enough money and effort spent within this space to expunge the clues as to how behaviours, both good and bad, shape it as a landscape. It provides an opportunity for an investigation of socioeconomic and ecological pressures within contemporary systems of societal activity. More usefully, within the scope of this research, it offers a platform for examining ways in which the photographic process I employ can invoke a reoriented engagement with the interstitial landscape as a potential realm of wonder and enchantment. In the next part of the thesis I examine how photography extends and amplifies a visual cognition of landscape as an augmented and mediated perceptual model which prompts new ways of being in the world.

of the civic pride with which the project was viewed, the infrastructure of the new sewers would identify the engineering mastery of the British Empire as both functional and beautiful. The public attitude to the sewers evolved alongside the incremental completion of the infrastructure project. The use of photographic documentation of the works and the reporting in the Illustrated London News was a calculated ploy to engage the public with the construction and to imbue a sublime response to a system of incalculable scale and given its subterranean character one which might excite both awe and terror. As the project progressed the staged photographic representations of the structures similarly evolved, and the sublime reaction would become replaced by one of an appreciation of the aesthetic value of the works and ultimately the beauty of its underground brick chambers to take on the quality of enchantment – '…the central evolution in the aesthetics of the underworld between 1700 and 1900 is from ugliness to sublimity to magical beauty' see B.L. Garrett (2016) Picturing Urban Subterranea: Embodied Aesthetics of London's Sewers. *Environment and Planning A: Economy and Space*, 48(10), 1948-1966.

An Unearthly Curiosity

A Loveliness of Ladybirds?

The summer of 1976 was one of the hottest ever recorded in the UK. For those old enough to remember it, it was a summer by which all others are measured. The unusually warm temperatures were part of an extended period of dry weather which resulted in a national drought being declared. Hose pipes were banned, bricks placed in toilet cisterns (to save water) and government advice on the maximum depth of a bath (five inches) was issued. In areas of the country where water shortages were most extreme, water supplies to houses had to be turned off and standpipes erected in the street. The long warm dry spell also had an odd effect on certain ecosystems and meant a glut of aphids (the food of Ladybirds) resulting in a plague of Ladybirds (the collective noun for Ladybirds is actually a loveliness). I was 12 years old on the 20th July 1976, and as I crunched across the loveliness of Ladybirds with my bucket to collect water from a standpipe, the Viking 1 lander touched down on Mars and started transmitting the first photograph ever taken from the surface of the planet[38]. I do not remember much of the

[38] The Soviet Union's Mars 3 lander predated the Viking mission and touched down on May 28th, 1971 but ceased transmission and stopped working 110 seconds after touchdown. It started transmitting an image, but the picture had little or no detail and was unrecognisable as a landscape. It is interesting to note, however, the first image from the surface of another planet was made by the Soviet Venera9 probe in 1975 after successfully landing on Venus. See M.D. Gunn & C.R. Cousins (2016) Mars surface context cameras past, present, and future. *Earth and Space Science*, 3(4), 144-162.

news coverage, I was 12, but I was certainly aware of the event, if only because I lived in what I now realise was a technophillic household with my father being the main advocate. The day after the Viking lander sent its first picture, the New York Times reported the somewhat stilted exchange between, then US president Gerald Ford and the NASA team, in which he asked how the camera on the spacecraft worked. The answer was – slowly, as it scanned the landscape through a vertical slit, one section at a time rotating a tiny amount between each scan. My early knowledge of the way in which the Viking lander and its cameras worked came through specialised television programmes such as the BBC's *Tomorrow's World*, these series presented science and technology in a way the public and an enthusiastic child could understand. So, I was aware, at the time, of the strange way in which the lander formed its vision of Mars. The level of public interest in the mission was not anticipated by NASA, they later admitted being taken by surprise at the eagerness of the press to see the first colour image. In consequence NASA rushed the colour correction in the first released version of the photograph and it showed a grey-blue sky, when in fact the sky should have been orange due to the presence of particulates in the atmosphere. There were no astronauts, no waving figures on a grainy video feed kicking up Martian dust. But the rock-strewn landscape and undulating geographic features proved to be more engaging with the public than anticipated, despite being more of a "boffin's" project, it was after all a technical, science-based mission, designed primarily to determine if there was microscopic life on Mars. I lived in a household disproportionately enthusiastic about the Mars mission as my father was a boffin. For example, he designed specialist ionising radiation detectors for the nuclear power industry, and as a man steeped in cutting edge technology his passion for the Viking project was noticeable and infectious, so I remember the Mars imagery and technical details of the landing craft as magical and extraordinary.

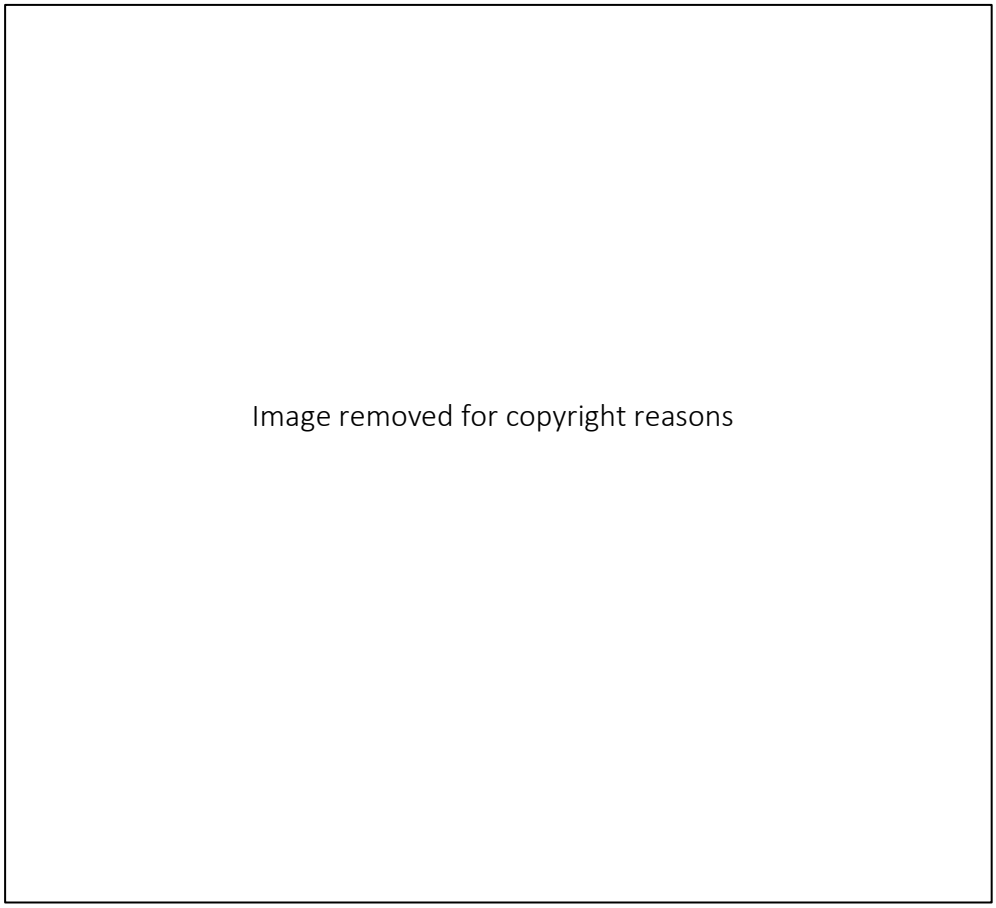

Figure 15. ***Viking 1. Surface of Mars*** *– First colour image - with correct colour calibration (1976)*

Much of what I now consider to be my regular mode of technical photographic practice has stemmed from this long-held fascination with the imagery produced by the NASA Mars lander missions, and the landscape photographs of the surface of Mars. The Mars imagery that engaged me as a child has since come to be important in developing my working methods, both as problem solving - in terms of technical needs, and in prompting an examination of some of the implications of working with multiple images, image reconstruction and the photograph as a remote means to engage with a landscape. In this section I will look at how the Mars landscape photography helps to inform the effect and importance of detail in landscape imagery, how embodied cognizance can be reimagined through seeing machines such as the Mars Rover, and how the embodied act of examining detail in an image creates motor-sensory actions which help to reconstruct a sense of agency in seeing despite a temporal and spatial detachment. My research looks to find wonder and enchantment in an otherwise visually unremarkable landscape

and asks if photography can meaningfully communicate these qualities. The nature of how I engage with photographic imagery is predicated upon personal and historic learned behaviours. Understanding a broader cultural effect of mediated vision is important in realising the aspirations of the research. The images of the Mars surface are etched in my memory as a first experience of a photograph as communicating a deep sense of wonder, and therefore prompt me to ask why, and if, those early photographs can inform my own approach to practice? Throughout this section I will keep returning to the Mars missions as my prima facie engagement with wonder through an imaginative reconstruction of my senses as part of a technological entity. Whilst not the first experience of mediating apparatus in my life, the Mars Viking mission does serve as a point in time where I first become aware of an extended reality which can invoke a sense of awe and wonder. In asking whether photography can invoke a sense of enchantment in the interstitial landscape I need to identify how photography might be considered a reoriented and extended reality in which a meaningful experience of enchantment can occur. What I mean by enchantment, I will develop in the next part of the thesis. The photos of Mars therefore serve as a recurring theme in my analysis of sensory simulation and virtuality, and help in developing an understanding of my relationship and entanglement with technology.

Curiosity

Since the first probe sent by the Soviets in 1969 there have been over 40 missions to Mars using unmanned craft producing more than 150,00 still photographs (Gunn, & Cousins, 2016). The photographs from the NASA Viking 1 and 2 landers in 1976 provided some of the most iconic imagery of Mars and formed my first memories of the planet's landscapes as a child. The way in which the Viking Lander produced images was particularly fascinating. The craft had two electronic serial scanning cameras (figure 16), these each had a fixed vertical field of view (a tall rectangular slit of vision) but could be rotated about a vertical axis to produce multiple electronic images that could be joined together to form a seamless panoramic landscape image. The

Viking 1 produced the first ever image of the Mars surface which we might consider a conventional photograph conforming to our expectations of what constitutes an image of a landscape.

Figure 16*. Viking landing craft camera (1976)*

Since the Viking landers mission in the mid nineteen seventies there have been a number of missions, with the first successful use of a mobile surface vehicle, the Pathfinder mission, in 1997. Subsequent mobile landers have landed in 2012 and most recently 2021. These mobile craft elevated the technical quality of the imagery, providing clearer and higher resolution photographs as well as allowing photographs to be taken from multiple points across the Martian surface. The imagery from NASA's 2012 Mars Science Laboratory (MSL) rover Curiosity had the greatest impact in shaping the way in which I now work. One of the common features of Mars exploration has been the inclusion of 'context' cameras on surface craft and rovers. These cameras are for purposes other than hazard avoidance, navigation, and macro or close-up imaging. In effect, they have allowed us to see the Martian surface as we might if we had arrived with a digital camera in hand. The mast camera or Mastcam on the Curiosity rover allowed multiple images to be captured and electronically sewn together back on Earth to create high resolution wide angle or panoramic photographs. Whist the resolution of Curiosity's camera was only a relatively modest 2 megapixels, the process of moving the camera position to create multiple detail shots which could be

stitched together later meant images with effectively much higher resolutions could be made, thus, overcoming both the deficiencies of the 2-megapixel resolution and the limitations of data bandwidth when transmitting images to earth. This is a particularly successful approach in a landscape where nothing is expected to move. The time it takes to create multiple images is unlikely to present problems with the scene changing from the start to finish of the process, although during the capture of particularly large numbers of images strategies must be employed to mitigate the movement of the sun during the extended amount of time between the first and last image[39].

In addition to the normal visible light images produced, the Mastcam can use multiple filters to allow it to analyse light absorption within differing areas of the electromagnetic spectrum. This multispectral capacity is for scientific analysis and enables the Rover to record images using wavelengths of light which can reveal qualities in the material of the landscape but that are outside of the human range of vision. However, the colour images captured within the visible spectrum of light represent an important concession to the importance of "seeing" the Martian landscape as we might if we were there. The capacity for remote vision continues to be developed as part of the Mars rover program. In the specification of the 2020 Rover, the NASA website describes how cameras and microphones are included as a "discretionary payload" to allow a dramatic video record of the craft's descent to the surface. This allows the scientific teams to examine the operation of the newly developed landing system, but it also serves a significant role for the

[39] A recent example of using a very large number of images from the Mars rover Curiosity occurred during the Thanksgiving break of 2019, when NASA used the downtime of the holiday to construct the highest resolution image of the Mars landscape ever captured. The 1.8-billion-pixel photograph was comprised of more than 1000 single images taken by the Curiosity rover during the period of the holiday. The huge number of images required meant the rover had to take the photographs over a period of 4 days using the same six-and-a-half-hour period within each day to ensure consistency in the light and shadow for the final composite panorama. The image was released on the NASA website for download at full resolution in March 2020. NASA. (2020) *NASA's Curiosity Mars Rover Snaps Its Highest-Resolution Panorama Yet.* [online][accessed 18th November 2021] https://www.nasa.gov/feature/jpl/nasas-curiosity-mars-rover-snaps-its-highest-resolution-panorama-yet

purpose of public engagement[40]. The Mars remote surface exploration has provided an essential test bed for the use and development of science cameras within robotic systems (Gunn, & Cousins, 2016). It has also pushed the boundaries of non-human photographic practice and the decoupled embodiment afforded by remote systems as extensions of our capacity to see. The Mars rovers can more accurately be described as tele-robots, rather than robots, as there is a difference between the two which is important in distinguishing the character of the remote vision they create. A robot is controlled by a computer and acts in accordance with its programming, whilst a tele-robot is controlled by a human operator from a distance. A robot can use its computer programming and logic to determine where it travels and what it sees. A tele-robot requires a person to operate it and therefore can be understood to directly extend human agency through its function.

Tele-robotic Embodiment

There are two strands I am interested in here which examine the idea of cognition through technological apparatus. The first, is concerned with sight as disconnected from the body through an extension of reality in the photographic image. The second, is with the broader role of technology as reorienting the relationship of the human and non-human. The first concern, that of projecting the condition of seeing using a machine, is demonstrated, as a somewhat extreme example, in the photographic imagery sent from the Mars surface. In reproducing sight at a remote location through the use of a tele-robot, an operator of the Mars rover is able to view and, more importantly, to proactively "see" as a direct consequence of their intervention and agency in choosing where to look and what to look at. The term telepresence was developed by cognitive scientist Marvin Minsky (1980) to describe how a person could experience a remote location as if they were corporeally present using a mediating technology. In Minsky's model

[40] A video depicting the descent of the previous Curiosity rover became an online hit despite being a computer-generated animation, hence, a significant public appetite could be identified for an actual video of the dramatic events of the landing. This could be said for much of the full colour surface imagery, it serves to excite the public imagination and interest as much if not more than any scientific value it might have.

the technological apparatus would need to provide enough real-time sensory stimuli to give the impression of being at a place other than the physical location of the user. Tele-robotic apparatus allows its user to experience telepresence and act with agency in environments where it would be otherwise hazardous or impossible for someone to be physically present. Originally developed for use in handling nuclear materials in the 1950s tele-robots are now used for many different purposes such as deep-water applications, bomb disposal and of course, space exploration such as in the case of the Mars Rovers.

Because of the distance between the Earth and Mars, the Mars Rover cannot communicate in real time with the operator, however, whilst the Mars Rover is unable to provide the instant sensory feedback needed to serve as an extension of the operator's body it does allow the agency of the operator to be remotely enacted on the Martian surface[41]. A recent study into the experience of scientists involved in the Mars Rover projects by researcher Erika Kerruish (2019) argues how a convincing oscillation between the real and remote is not necessarily contingent upon real time feedback but can instead be generated by the engagement with technological representations which are temporally as well as physically remote (Kerruish, 2019:345). The idea of telepresence without real-time interaction affords an understanding of human presence as something which can be projected despite an acute awareness of being mediated through the output of technological apparatus. Kerruish's reassessment of telepresence considers how Maurice Merleau-Ponty's model of cognition (Merleau-Ponty, 2013) presents perception as part of an open perceptual circuit, where perception is granted not only

[41] Real time interaction and feedback is technically impossible in the case of the Mars Rover and any telepresence experienced by the NASA scientists must occur in the absence of instantaneous action and reaction. The Rover is so distant from the operator that the data signals travelling between the Earth and Mars, even whilst travelling at close to the speed of light, still take between five and twenty minutes (each way) depending on the distance between the two planets. The operator is therefore interacting with still images taken many minutes before any analysis or response can be made. NASA. (2020) *Spacecraft-Rover-Communications.* [online][accessed 18th November 2021} https://mars.nasa.gov/mars2020/spacecraft/rover/communications/

through an embodied process but also via an extended network of entanglements with non-human actors and technologies, and how 'remote operation employs a decentred body that is in an open perceptual circuit with its environment, interrelated with representations, data and tools' (Kerruish, 2019:345). The representations that constitute the means to see the Mars surface are part of a broader understanding of presence which is the product of social and cultural constructs developed as a consequence of an accepted synthesis of embodied cognition with machine vision. The possibility of telepresence outside of real time feedback is important, Kerruish's assertion (2019) provides an essential ingredient which allows many other forms of technological representation to constitute telepresence, including the still photograph. The human scale of the Mars Rover, with its head height cameras and capacity to travel at walking speed across the Martian terrain, also presents the means to anthropomorphise the apparatus and with it an extension of human activity and agency.

This agentic intervention of the Mars Rover, along with the familiar visual language of landscape imagery, presents its human operators back on Earth, not only with a sense of telepresence[42] but also, as a consequence of seemingly "being there" it provides the means to constitute Mars as a place in the human psyche and with it a geographic extension of Earth-space (Dittmer, 2007). The orbiting probes and cameras which provided detailed photographic maps of the Mars surface from high above, could not invoke a sense of place with their "God's eye view", it required a surface mission with an anthropomorphically relatable size of craft to present Mars as a space in which human (virtual) experiences could occur and with it the creation of

[42] My interest in telepresence, is how it might afford an elevated condition of photography where it can transport the viewer to the source of the image, not just as a window on a past event captured in a fleeting moment, but as a meaningful engagement with, for example, a landscape, as an ongoing interrogation of a scene in stasis, with no before or after, just to be in the moment. What I seek, is perhaps, analogous to a map, where the temporal status is considered in much longer terms. Yes, it is a product within time and only useful if up to date, but it is a distillation of information gathered over a significant period with content that may remain constant for years or even decades without modification. See K. Goldberg, (2001) *The Robot in the Garden*. Cambridge, Massachusetts: MIT Press.

place. The appropriation of Mars to become an extended human territory is also helped by the photographic evidence of its surface as being similar to landscapes we have seen on earth. Its assimilation into the cultural lexicon of what constitutes place is in part contingent upon the familiarity of features in the landscape images such as rocky outcrops, mountains, and sky. It is arguable, that the initial mistake in the colour rendition of the sky as blue, in the first colour image from the Viking mission, betrays an Earth-centric desire to normalise Mars in accord with Earthly expectations. Therefore, the Mars Rovers create an externalised, technologically mediated projection of human presence on Mars, made possible due to the familiarity with the visual information the Rovers create as an entity in the landscape, with attributes of human scale and visual perception.

The capacity to invoke a sense of presence, through the photographic image requires an initial decoupling of sight from its association with the other senses. This must then be followed by its reintegration through an imaginative modification or metamorphosis of the body to graft a synthesis of machine vision onto corporeal cognitive function. I am speaking figuratively of course, there is no suggestion of a cybernetic entanglement here, only an imagined one. But, to get to this point, a number of states need to be invoked. Part of this process has already taken place, and the notion of human vision as an analogue of machine vision established through historic scientific enquiry. The psychophysical systems of sight in the human body can be understood as the acquisition of perception through photons of light landing upon the sensory structures of the retina. Subsequently, the impulses from the eye are processed by the brain to form a measure and understanding of the visible object world around us. This reductive analysis of how we perceive sight owes its development to the 18th century historical perception of sight, as a single point model based on the straight linear ray from object to eye (Zylinska 2017). Pre-dating the arrival of the photographic camera, the camera obscura helped consolidate an idea of linear vision. In the camera obscura, the action of projecting light on to a surface to create a recognizable image using a lens, helped demonstrate the mechanism of the

eye to be comparable to that of a scientific instrument. In her book *Nonhuman Photography* (2017), Joanna Zylinska reminds us how the photographic image historically negated the role of embodiment as a corollary of seeing. In doing so photography divorced vision from the necessity for the somatic and temporal specificity of direct physical experience, to 'remap and subsume the phenomenological and tactile within the optical' (Zylinska 2017 p.39). Whilst it may initially seem to diminish the nature of seeing by decoupling it from the body, a reimagined understanding of visual cognition as aligned with photographic representation effectively creates the conditions for reorienting perception as extendable and malleable. In doing so, it enables the development and integration of perception within the growing realm of technological prostheses which augment human cognition and agency. Since the Enlightenment of the 17th century human ocular cognition of the world has had to be redefined in relation to the apparatus of science and technology[43]. The telescope and microscope both predate photography and have reframed the world as knowable through the technologically mediated perception of augmented vision. Walter Benjamin proposed an unconscious perception which comes into being through the mediation of technological apparatus such as the camera[44]. What was previously inaccessible to our human mechanisms of cognition through sight is made visible by the non-human agency of the apparatus. The camera can expand or contract space and time, macro photography expands space, telescopic lenses contract or compress space, slow motion film lengthens time while stop motion film shortens it. In the case of the Mars Rover both time and space are compressed, delivering us at near light-speed across the solar system to examine the Mars surface through a familiar photographic language of colour landscape imagery. The photographic image provides the material to affect the perceptual subconscious and form an imagined reality for and about objects we cannot

[43] See J. Crary, (1990) *Techniques of the observer: on vision and modernity in the nineteenth century*. Cambridge, Mass.: MIT Press (October books).

[44] See S.M.Smith, & S. Sliwinski, (2017) *Photography and the Optical Unconscious*. USA. Durham: Duke University Press.

otherwise see. The photographic image has undoubtedly changed the way we understand the act of seeing. By accepting an equivalence between the camera and the eye as a means of seeing the world, photography challenges an understanding of sight as entangled with the other senses and proposes visual perception is not necessarily rooted in an embodied experience. The photographic image presents a model for visual cognizance which simultaneously expunges a complex, nuanced embodied practice whilst introducing the phenomenon of a fixed image, and of 'ways to hold things still, to calm the flux of a restless world' (Campany, 2020:8).

This model of perception is however, problematic, and not suitably analogous to any form of telepresence as such. The photograph as a fixed, past moment, distances both user and consumer from real time agency and establishes a form of cognition more aligned to that of visual memory than that of direct experience. Historically photography has been considered a passive activity, recording the world through a mechanistic process corresponding to a similarly passive mechanism of sight in the human eye. The physics of the image being focused on the back of the eye by the eye's lens are well understood and the camera employs a similar physical process diffracting light through the lens to create an image on the film plane or, in the case of digital cameras, a sensor. The photograph traces an instant in time which logic suggests is immediately a representation of a past moment. A living thing recorded in a photograph is at the point of exposure living, but a future viewer may be looking at something now dead. Roland Barthes considered there to be a natural association between photography and the past and by extension with death. The same is true of built environments where decay, dereliction and ultimately demolition will mark an end, or for images of the natural world, where time has erased the object from existence outside of its photographic representation. For Barthes the response to photographic representation, as one of past occasions, is to be made aware of one's own position in a timeline of events, and, like the death or future death of the human subjects in a photograph, of one's own mortality (Barthes, 2000). However, in place of a passive model of photography which records a specific

moment and with it a record of past events we might also see it as 'a zoetic life giving force' (Zylinska, 2017:43) which by its intervention allows us to consider the world liberated from the stream of optical information which constitutes our psychophysical means of visual perception. The developing knowledge of how the human brain acquires and processes visual information suggests photography might also need a re-evaluation to become changed in our understanding, to be reconsidered as something other than a record of past events and a reductive analogue of the human eye. It is therefore possible that photography is like human sight but for reasons that differ from previous understandings of passive mechanistic processes. The current knowledge of how we see, suggests the process by which we acquire the basic information concerning our visual surroundings involves the eye rapidly scanning in spasmodic movements, finding the edges of things, picking out details and points of interest to ultimately build a field of vision based upon interpolated data and selective 'cuts' from the material gathered. The act of mentally placing cuts in the otherwise endless torrent of visual information received from the eyes allows the brain to process and form meaningful imagery. Likewise, the photographic apparatus allows us to create a stabilised version of the world as a static examinable image. In doing so photography not only records and re/presents the world (as a technical trace of nature through the agency of light) it also creates images which are comparable to our human visual cognitive engagement with the world but for reasons other than historic similarities seen between the processes of the eye and of optical equipment. Where a singular photograph (a one-off event frozen in time), provides a concretised moment illustrative of a cut in the visual sensory flow provided by the human eye, a photograph which brings together multiple images to form a whole, such as those in the Mars Rover imagery, possesses an analogous relationship to the way in which human perception through sight comes into being. In amalgamating a multitude of temporal and spatial events to form a single visual projection, the composite photograph aligns with the body's need to accumulate optical data to form a cogent whole, and with it visual cognition. Artist David Hockney understood this in his 'joiners' photographs. In the 1980s Hockney worked with polaroid

prints and later enprints from high-street labs to produce photographic collages, or 'joiners' as he called them. Although not seamlessly stitched together the use of multiple details brought together to form a larger photograph engendered the resulting image with attributes which invited the viewer to examine the individual photographs as well as the total image. The technique allowed the viewer to scan across the scene picking out individual moments which go to make up a composite whole. Hockney's joiners seek to create the entirety of the author's vision within a two-dimensional visual representation. The individual images overlap and obscure one another, breaking out of a defined frame to build a cumulative depiction of "seeing" which Hockney likens to how he understood human vision to work. In an interview with Lawrence Weschler (Weschler, 1984 cited in Papgiannis, 2014), Hockney describes how he 'realized that this sort of picture came closer to how we actually see, which is to say, not all-at-once but rather in discrete, separate glimpses which we then build up into our continuous experience of the world' (Weschler, 1984:11, cited in Papagiannis, 2014:36).

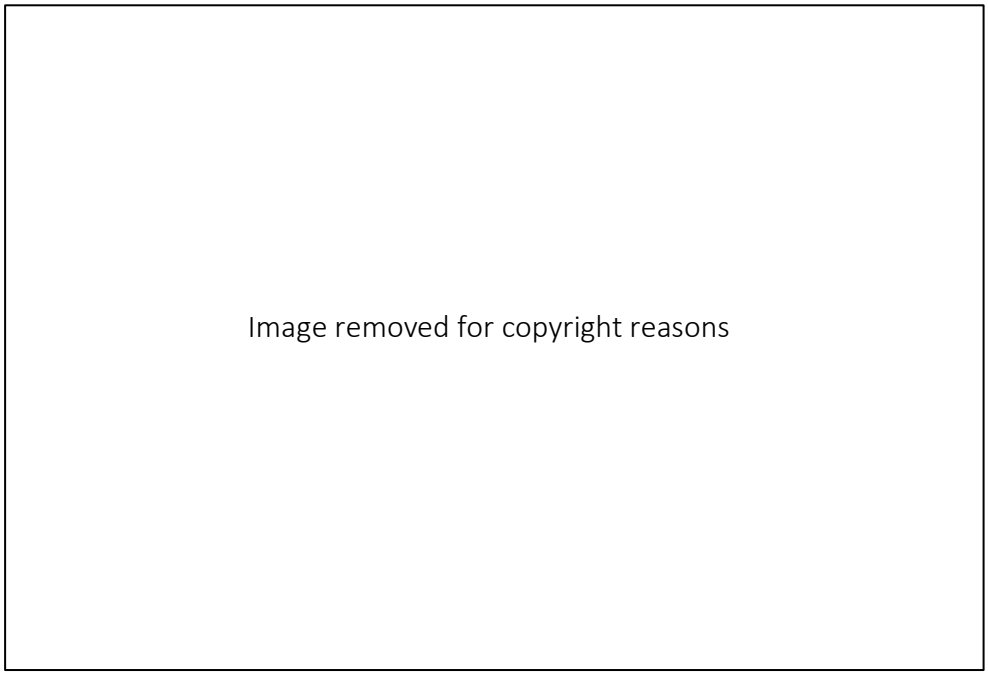

Figure 17. ***Pearblossom Hwy, No1.*** *David Hockney (1986)*

Hockney believed this way of working solved some of, what he regarded as, the fundamental failings of photography when compared to painting, namely

its inability to convey more than an instant in time and its single point of perspective. Whilst my work does not draw on the aesthetics of Hockney's work, his approach is, however, helpful in revealing some of the qualities inherent in producing an image through the aggregation of multiple photographs. In one photographic montage image, there are now multiple points in time. These points may be relatively close together but the overall image cannot be regarded as a singular temporal event, it is instead part of a broader embodied process mapped by the photographer on site and then reconstituted (in the case of my work - in the computer) at a later stage. If an image can be the result of an amalgam of events and possibly from a succession of differing physical viewpoints, can it reveal qualities within the subject beyond that of a conventional single photographed moment of the same scene? Hockney uses the process to examine multiple angles as well as multiple timelines, in this, his work takes on some of the qualities of cubist painting as we can see a face in profile as well as head on within the same frame. In my work, this is not the case, and much of the geometric and perspectival fidelity is maintained, but again, Hockney's work is useful in positing the potential of using multiple images in the construction of new photographic models of representation. Using multiple photographs allows me to create images which, behind the apparent normality of the final photograph, necessitate a complex series of pre- and post-production interventions to maintain an illusion of a conventional single exposure. In part, this serves to disrupt the medium's expectation of objective documentation and move the work towards an authorial simulation of the subject, albeit in a much more covert manner than Hockney's joiners.

Resistance is futile

I have so far discussed the way in which technologies of visual simulation can produce a materially different perception of the landscape to that of the unalloyed human figure. But there is also a broader evolution in the entanglement of human and technology which shapes our way of being in the world. I return here to my twin strands of interest in the role of technology upon human cognition, the second of which is the capacity to

modify and externalise ourselves through the use of technological projections of the human body, and which consequently impacts upon a lived experience of the world. This evolving relationship between the human and the technological has formed a basis for discourse within the framework of posthumanism as posited by theorist such as, Braidotti (2013), DeLanda (2016), Bennett (2009), Morton (2013), and Harman (2018). Posthumanism redefines what it is to be human and challenges the anthropocentric primacy of human agency and cognition. More broadly the posthuman debate contests the political and ethical constituents of anthropocentrism, but my concern within the scope of this research is with its ontological implications and the practical outworking of the human as an entity within a technological assemblage. The relationship between the human and the technological has, in recent theory (Virilio, 1994, Latour, 2007), been examined through the trope of the prosthesis. Being part of interconnected technological prostheses begins to shape human behaviours and agency. The use of the term prosthesis in this context refers to an externalised projection of ourselves or organs as opposed to the medical usage as direct replacements for human parts. A simple example of a prosthesis might be a tool such as a hammer, which allows me to use my hands with greater force and to act upon other materials such as metal sheeting or a nail. Another example could be clothing. Clothes when examined through the trope of the prosthesis are an externalised projection of my skin and enables me to act in environments which might otherwise be too cold or too hot[45]. The prosthesis trope also allows an examination of more complex relationships with technology. A recurring theme in the utility and experience of the interstitial landscape is

[45] These externalised prosthetic organs are not limited by the evolutionary time scales of natural selection and can evolve as need and technology advances. Other creatures have externalised prostheses such as the spiders web or the bird's nest, but they have no means to modify these structures, they are genetically hardwired to create them, and the evolution of the structure as allied to the evolution of the creature. Humans are not hardwired in the same way and the evolution of technical prostheses can occur over very short time scales. Our technological evolution shapes how we relate to the natural world, as technology has advance so too has our metaphor for the functioning of nature. Where once we saw the mechanics of nature as a watch, we now see it as a computer, we create nature in the image of our technology and this gives a clue as to the impact of technicity on our capacity to perceive the world around us.

that of car usage. The viability of developments in the interstitial landscape is contingent upon vehicular access, and roads and carparks often characterise the space. In Roland Barthes'er *Mythologies* (2009:101), he examines the nature of the car in culture as having a modern-day similarity with the historical response people would have had to cathedrals.

> 'I think that cars today are almost the exact equivalent of the great Gothic cathedrals: I mean the supreme creation of an era, conceived with passion by unknown artists, and consumed in image if not usage by a whole population which appropriates them as a purely magical object' (Barthes, 2009:101).

Like cathedrals they represent the pinnacle of design and ingenuity. They are an expression of culture which demonstrates its technology, its concerns and its fashions. The car is a ubiquitous (in western developed countries at least) presence and as such a useful example of a complex assemblage of human and non-human. A car, at its simplest, is a prosthesis which externalises the motive function of our legs. Paul Virilio's conception of the car enables it to be viewed as a prosthesis which allows a human to compress time and space through its dynamic performance, to form a relationship of metabolic (human) and technological (car) speed creating a complex assemblage or compound object which blurs an otherwise simple duality of human and machine, 'To drive a car is also to be driven by its properties' (Virilio, 1983:30). The relationship between person and machine continually redefines both the human and technological elements, each being modified as actions, intent, recalcitrance, and conflict compete within the socio-technological assemblage. In the case of the car, this assemblage extends beyond the driver and the car, it includes the road network, other road users, the extended political and economic apparatus of vehicular communications and so on. Driver and car combine to create a whole but not a totality - each is separable from the other. These are heterogeneous elements creating a whole through the emergence of properties which are only revealed when those elements act as an assemblage. The interaction of the parts reveals properties which are irreducible but analysable - you can distinguish the elements of the assemblage but its property of space time compression, for

example, is contingent upon the myriad entanglements of car, driver, road infrastructure, energy infrastructures ad infinitum. In Bruno Latour's notion of the actant – 'something that acts or to which activity is granted by others' (Latour, 1997:7) we see in the entanglement of human and machine the fluctuating modifications which occur as goals and actions oscillate between the elements of the assemblage. The person is modified by driving the car as the car is modified by being driven. The car and its properties also amalgamate with the driver and occupants to allow a new way of seeing our environment. As discussed in the previous section of the thesis – dromoscopy is a form of vision defined and informed by the technologies of speed (Virilio, 2006). As the car moves faster the distortion of reality from a state perceived when stationary becomes ever greater (Crawford, 1999:173).

Figure 18. ***Car Showroom, Stretford.*** *Author's image (2020).*

The transformational assemblage of human and car manifests not only as a projection of human motive function but increasingly as a space in which navigation, communication and risk management are externalised through

technology (Thrift 2004:49). Satellite navigation obviates the need for an internalised or cognizant understanding of a journey, and safety features such as anti-lock brakes, electronic stability control, hazard recognition, adaptive cruise control and so on, make decisions in place of the driver. These systems are designed to minimise risk of accident and impose control which protects both the occupants and, in the case of the latest technology, pedestrians and cyclists. In fact, the car sensor systems using RADAR, LIDAR, ultrasound, and cameras with the ability to see in wavelengths of light which allow them to work in darkness, present a new model of extended perception. The technology now has foresight, or the ability to act in advance of human cognition 'not because of our limited depth of focus, …but because of the limited *depth of time* of our physiological 'take' (Virilio, 1994:61). Unpacking an understanding of the realm within which perception can occur enables a greater insight into the ever-changing territories of visual acuity and the methods by which we see and experience the world. Virilio posits our perception of the world is inextricably linked to the societal imperative for ever increasing technological speed and the impact this has had and is continuing to have on our capacity to see and experience our environment. Speed shapes our means and experience of seeing (dromoscopy). Speed produces haves and have-nots, a hierarchy of those with and without speed (dromocracy). Economic and political factors play an important role in an individual's access to technology such as air-travel or the internet and how effective that technology is – for example, cost of air travel compared to income, and the data speed of internet infrastructure. Speed creates a land of speed, (dromosphere) where velocity changes our cognition of the world, and where the primacy of first-person seeing is complicated and appropriated by virtual or technologically mediated seeing.

The corporeal sense of presence that is extended through technology is part of a broader cultural shift in response to the virtual reality, augmented reality and the multitude of vicarious practices that have come into being through technological development[46]. Perception as experienced through

[46] Baudrillard asserts, that the condition of an imitated reality is so pervasive it is no longer

disembodied presence could also be understood as re-bodied or differently-bodied perception, where presence in a remote location is actualized through mediating technological apparatus and presents an opportunity for the development of new subjective ways of being in the world. Understanding the world through mediated representation is part of an imaginative reconstruction of ourselves as metamorphosed into new entities whereby we can invoke a sensory engagement beyond that of the physical attributes of the human body alone. The poet Alice Oswald (Metamorphoses, BBC 2021) considers how our imagination is constantly working to transform us into different beings and that we are predisposed to become changed. We are therefore open to processes which prompt us to do this and in doing so, allows us new ways of experiencing and of being in the world. The body is an essential element to the imaginative reconstruction which occurs in the relationship with technology – our sensory processes are the primers for new ways of transformation and entanglement. Instead of a constant challenge to maintain an unalloyed human embodiment in the face of technological prostheses, the imagination is released and enabled by the possibilities such interactions bring to form not only novel individual perceptions, but also new social and cultural representations based upon mediated forms of cognition. It is not that seeing is no longer an embodied experience, but that embodiment can become extended into other technological non-human entities through an imaginative metamorphosis of the body which is constantly evolving alongside the machines and representations with which we engage. I return here to the Mars missions, as the imaginative metamorphosis of human into machine can be seen in the operation of the Mars Rovers. As discussed earlier, the Mars Rover could not operate with real-time feedback due to the distances involved. This lack of real-time feedback in the operation of the craft meant there was no need for the usual

possible to extricate oneself from it and that a simulated or hyper-reality is an inevitable function of a ubiquitous, mediated structure of representation. See J. Baudrillard, (1994) *Simulacra and Simulation*. USA: University of Michigan Press. See also U. Eco, (1995) *Faith in Fakes*. London: Random House. This hyper-reality is also often preferable to actual reality as it can be accessed without the need to meet otherwise prohibitive conditions such as travel, or in the case of fantastical creations, of reality itself. I will develop this aspect of being in the world in the next section - *For Want of Wonder* where I investigate forms of enchantment.

user interfaces such as joysticks, steering wheels or throttles as used in more conventional robotic vehicles or drones. Instructions for the activities of the Rover would be coded and uploaded in response to the visual information received from the previous programmed bout of activity. Ethnologist Janet Vertesi (2012:393-414) carried out research into the activities and working methods of the NASA scientists involved with the operation of the Mars Rovers. Vertesi noted how in order to visualise and imagine the moves required by the Rover the scientists tasked with its operation would associate their own body with that of the Rover, imagining themselves as the robot with its particular physical attributes and qualities of movement. The study found that by imagining their own bodies as that of the Rover the operators were modifying their human model of movement to that of a machine to better understand how to plan and program the robot's activity. This in part is a result of the capacity to anthropomorphise the Mars Rover as having some of the attributes of the operator, such as a head, eyes, arm and body. Becoming the Rover allowed movement planning and problem solving to be enacted through embodied performance. Vertesi further noted that a consequence of the performative actions of the scientists was to stimulate a greater sense of engagement on the part of the operator, not just as a remote technician but, to regard themselves as an explorer in the field (Vertesi, 2012:393-414). For me, there is a vestigial trace of telepresence in the imagery produced by the Mars Rovers. To have seen the Martian landscape as high-resolution photographs is to have witnessed it with my eyes becoming part of a greater perceptual field, one expanded and augmented by remote vision. The attribution offered by a vicarious awareness of telepresence (that of the operators of the Rover) further enhances my sense of a corporeal presence or of having been there. Photographic representation reorients seeing as no longer necessitating an embodied being in the world and the electromechanically mediated experience of the Mars landscape via the Curiosity Rover, illustrates how a decentred presence can be created as a technological and cultural conception made possible by a photographically mediated and simulated understanding of vision.

The Bigger Picture

The Martian landscape the Rover presents to me is essentially barren, there are no signs of life, no features to provide an obvious point of interest (to the non-scientist) and a rather monochrome colour palette consisting mainly of oranges, browns and reds. But I find myself examining every rock and stone, every grain of material, because this is an alien landscape, its every detail made apparent by the apparatus of the Rover. The capacity to examine a single rock within the scene and interrogate the minutiae of the Mars surface produces a sense of wonder at odds with the apparently mundane and featureless realm the photograph portrays. A blurry photograph of an alien world would be remarkable enough, but a pin sharp, high resolution image elevates the experience of looking to something which exceeds the expectation of a conventional photograph where we might anticipate encountering limitations of detail when viewed up close. When examining the NASA images of the Mars surface, the overall image, or the image in its entirety, is for me, somewhat secondary to the possibility of zooming in to see the tiniest detail, to be able to scroll through the image, traversing the Martian terrain with the drag of a finger on a touch pad. It is this ability to zoom and scroll which allows an element of interaction and agency, it enables me as the viewer to choose where to look and how closely to look. The facility to enter into a deliberate and self-motivated investigation of the image and by extension the Mars surface, allows an experience beyond the normative expectation of interaction with a photograph, and to engage in a form of telepresent practice.

I have played slightly fast and loose with the term telepresence in this text and it is perhaps important to clarify some of the reasons for employing the term in relation to representations of reality which are not immediately recognisable as invoking telepresence, namely: the photograph. What is of interest to my research is how a photograph could be considered to invoke telepresence despite representing something which is seemingly temporally and agentically isolated from the viewer. To consider a photograph as having any of the qualities of telepresence several conditions need to be actuated,

both in the photographic representation and the viewer. One of these conditions is that of stillness, or more precisely, to act upon the viewer as being outside of a transitory instant or dynamic temporal event. The aggregation of visual cuts and moments in time, required to create the composite image has both a sense of temporal stasis yet sufficient detail to warrant extended viewing. Temporal stasis can be considered different to a frozen moment. It is a stillness which comes from a lack of entities or conditions which might otherwise allude to a captured moment, such as a jumping figure frozen in mid-air. It suggests a scene outside of time, one in which we are presented with all that can or will happen as opposed to a fleeting moment in an unfolding narrative to which we are not, and cannot be, fully aware. Detail within the image invites an act of viewing which can involve zooming in and out and scanning across its field of vision. This is the viewer acting with agency in forming a meaningful apprehension of the landscape. Choosing where to look, and for how long. It is also the image engaging the viewer to enact embodied behaviours (albeit virtually in the case of viewing on a computer screen) to create the means of conceptualizing and processing the information within the photograph. It is for this reason my work must exist as an actual print at a given scale, to induce a physical expression of the viewer's examination of the photograph. The size of the photographic print suggests a new relationship between image and viewer, one in which the audience is enveloped, and a narrative can unfold slowly across the photograph's enlarged surface. The visceral impact and encircling engagement offered by large scale photographic imagery echoes 19th century romantic landscape painting, but, with the evidential, descriptive force of the photographic medium. The banal takes on a level of fascination, and manmade structures can invoke the grandeur of natural wonders with attendant awe and majesty. Integral to the idea of embodied cognition is the role of the body in stimulating mental operations of perception. This may seem to be obvious, one cannot see without opening one's eyes, but what is meant here is how activities of movement and gesture create the motor-neural feedback necessary to simplify and complete cognitive tasks, such as counting on one's fingers to represent mathematical concepts (Foglia, &

Wilson, 2013:321). Therefore, an image which requires, or invites, the viewer to physically move about to fully comprehend its content, begins to connect the embodied practice of its construction with an embodied practice of cognition. In other words, the condition of telepresence develops as an emergent property of the relationship between the photograph and the viewer, and that the relationship is dependent upon specific qualities within the photograph such as detail, stillness and scale.

The purpose of this section in the thesis has been to articulate a personal examination of the effect that technological apparatus, in this case the various Mars landing craft, has in creating an opportunity for novel subjective ways of being in the world. Arguably, the provenance of the Mars imagery is part of what gives it its power to enchant as it is a first glimpse of another world. But I believe there are other qualities at work here too, which demonstrate a framework for the photograph to act as an extended function of corporeal being when integrated into an understanding of human cognition as entangled with machine vision. This is important to my research as my work looks to the photograph as a means to invoke an experience of wonder in a landscape which would not normally carry an expectation of such. Examining the complex entanglements of human and non-human in the technical process of creating an image is an important aspect in my understanding how a convincing oscillation between the represented and the real might be realised when creating a photographic landscape. In this way, the photograph becomes an entity which is contingent upon the manner of its acquisition and construction. That is to say, the control of time, detail, depth of field, dynamic range and colour within the image, as well as the print media and scale of the final photograph. Whilst this could be said of any photograph (and forms the basis for algorithms in computational photography where smartphones can ape the visual language of specific styles of photography at the touch of a button), my concern in the technical controls I exert is to replicate the conditions in which a photograph becomes a super-real means to examine a landscape. To return to the start of this section, the visual language I employ is informed by Mars photographs

because the augmented vision, which allows me to see a grain of sand in a landscape 34 million miles away, for me, presents a possible means to create an analogous amplification of our own world when photographed with the same heightened sense of scrutiny.

For Want of Wonder

Enchantment

"Enchantment" can be a provocative and problematic word. It has associations with fairytales, charms and spells, with fantastical scenarios involving magical powers and supernatural forces[47]. As such, it suggests an ancient or pre-modern era, one in which the world is shaped in our understanding through myth, metaphor and mystical vision. In modern usage, it is a term that can be used to describe allure, fascination or a captivating quality of something. But within the context of this research enchantment describes a state in which a rational, intelligible experience of something is acted upon to become disrupted in our understanding. How something is reoriented in this way is the function of both a reconsideration of cognition and of unexpected agency in familiar entities which then become redolent of awe, delight, or wonder. I will look at contemporary strategies for constituting enchantments through the emerging discourse of new materialism and post-humanism (as an emerging metamorphosis of human and machine/technology in an ongoing negotiation), in which enchantment can be understood through a reconsideration of, and connection to, the material around us. My interest, as a photographer, is in creating landscape imagery. This project identifies a type of contemporary landscape which

[47] The Oxford English dictionary definition of enchantment begins as: the action or process of enchanting, or of employing magic or sorcery. The second entry sees it as: alluring or overpowering charm; enrapturing condition; (delusive) appearance of beauty.

exists on the peripheries of the urban and rural. In this landscape I look to engage with technology, infrastructure, and non-human entities, through photographic practice to re-present such spaces as exemplars of phenomena beyond the normative encounters of the everyday or in other words, as enchanted. It is important to state that I do not regard enchantment as intrinsically positive or negative, only that it is significantly different to a conventional understanding of an entity or event.

For Want of Wonder

The title of this thesis and section - "For want of wonder" - is a provocation to seek out the extraordinary contained within material that is otherwise overlooked. The phrase comes from a short story by the writer and philosopher G K Chesterton. Chesterton wrote a collection of short stories originally published in the *Daily News* (1909) which extolled the virtues of considering the extraordinary in seemingly everyday experience through a combination of allegory and personal narrative. In the first of these short columns, titled *Tremendous Trifles* (2007) Chesterton tells the story of two boys: Paul and Peter. The boys live in modest circumstances and are playing in their tiny front garden when a passing milkman, who just happens to be a magical being, stops and grants them each a wish. Paul wishes to be a giant, able to stride across continents and visit the great vistas of the world, whilst Peter wishes to be tiny and only half an inch tall. Both wishes are granted and Paul, now a giant, is disappointed to find his great size means the world seems somewhat lessened and insubstantial. Peter, on the other hand in his new guise as a tiny half inch boy experiences his modest garden as a vast new world. Peter can spend a lifetime exploring his immediate environment and never tire of it. Chesterton's fairytale is in part a critique of a mind-set which advocates the search for spectacle through travel and exploration. He proposes there are attendant diminishing returns to such pursuits as the world becomes ever smaller and prosaic in comparison to our growing ambition and expectation. *Tremendous Trifles* was first published in 1909 a year in which Ernest Shackleton has made his way to the South Pole, Peary and Henson are at the North Pole and Bleriot is the first man to cross the

English Channel in an aeroplane[48]. In the midst of such epic endeavour Chesterton, who aligns himself with the diminutive Peter of the story, makes the case for the extraordinary that exists immediately around us if we choose to see it. At the end of *Tremendous Trifles,* he writes:

> 'Everything is in an attitude of mind; and at this moment I am in a comfortable attitude. I will sit and let the marvels and the adventures settle on me like flies. There are plenty of them, I assure you. The world will never starve for want of wonders; but only for want of wonder' (Chesterton, 2007:5).

The use of the term 'wonder(s)' by Chesterton refers to the extraordinary phenomena which we might encounter in the everyday as well as the capacity within an individual to distinguish or categorize them as something outside of normal experience. There is no shortage of astonishing things in the world, only of a proclivity to see them. The 19th century sociologist Max Weber (2004:30) argued that one of the attendant aspects of modernity[49] is its negation, through the rise of Enlightenment rationalism, of an overarching spiritual intent and order within the natural world and with it a sense of enchantment. In his lecture *Science as a Vocation* delivered in 1917, Weber wrote:

> 'Our age is characterised by rationalism and intellectualization, and above all, by the disenchantment of the world. Its resulting fate is that precisely the ultimate and most sublime values have withdrawn from public life' (Weber, & Owen, 2004:30)

---

[48] January 9th, 1909 Earnest Shackleton reaches magnetic South Pole (approximate location). April 6th, 1909 Americans Robert Peary and Matthew Henson reach the North Pole (to within a few miles). July 25th, 1909 Louis Bleriot crosses the English Channel in an aircraft (first heavier-than-air craft crossing).

[49] Modernity as an idea must assume the existence of an archaic or ancient world that preceded it, this doesn't have to be a necessarily accurate one, only the belief that a pre-modern world existed. It can thus contrast with an ancient world and its people. The implication is that there is a rupture in history which has a modern era and one that preceded it. This rupture can be characterised as the break between the social world and the material world of nature, this introduces a disenchanted material nature divorced from human constructs and understandings. It is an object world outside of us; there is a human and a non-human and a clear boundary between them. Modernity is considered as a clear differentiation between the natural and the social worlds, the natural world contains objects that do not have anything inherently to do with humans, its laws and processes are discoverable by humans, but we do not create them. It is a calculable material world that is separate from our social and political institutions, which are contingent upon human activity.

We no longer get a glimpse of divine purpose revealed through the materiality of the world and the myriad actions of its fauna and flora (Landy, & Saler, 2009). Weber posited that modernity challenged the presupposition of a metaphysical, meaningful cosmos and with it the capacity to make sense of seemingly unfathomable occurrences through a religio-cosmological understanding of the world. Put simply; science provides the means to understand the world without the need for magical or mysterious interventions, and in the gaps where there is no scientific explanation, then it is because a rationalisation has yet to be discovered or calculated. In addition to the broad strokes of disenchantment visited upon the previous public religious meta-narratives of culture, the practice of everyday living is left bereft of transcendent meaning. It is now informed only by the private utilitarian needs of the individual or of close relationships, with the wider community shaped by secular bureaucratic institutions of the state. Faced with the empty rituals of everyday life and 'unable to look the fate of the age full in the face' (Weber, 2004:24) the individual must resort to "experiences" to provide significant distractions from the quotidian routine in a quest to rekindle meaning.

Enlightenment rationalism sees the emergence of a new faith commitment that asserts science can ultimately provide a compelling description of everything one might encounter in the world (Landy & Saler 2009). Even for those without scientific expertise, scientific enquiry takes on a categorical status as an endeavour which creates meaningful and truthful revelations. Hence, I use the term faith commitment because it is not necessary to have a comprehensive understanding of how the world may be calculated, rather, only to hold the conviction that it would be possible to understand if so desired. An ambition of modernity is that all things are calculable, and through such calculation the world can be mastered and knowable, instead of mysterious and the result of indeterminable forces (Saler, 2006). Early modern science saw the natural world as governed by mechanistic process, acting without divine intent and forming predictable, if sophisticated,

systems which served to maintain an environmental equilibrium (Coole, & Frost, 2010). This cultural turn can be described as a disenchantment narrative (Saler, 2006) where the possibility of the extraordinary is mitigated by the possibility of scientific analysis to reveal a rational and measurable event and a distinction between that which can be known through the rigor of intellectual study and that which comes to us as mystical insight. This sets the stage for a series of associated outcomes and the compartmentalisation and subsequent withdrawal of the transcendental, mystical world, into the private lives of individuals and separate from the public realm and institutions of political and legal power. However, as theologian Patrick Sherry (2009) points out, science is not inherently irreligious, God's intervention in the world can be seen as primarily through secondary causes, that nature's mechanisms are the product of a creator; Francis Bacon, Newton, and Einstein all regarded 'that the scientist's task is to follow in the creator's footsteps and to trace out the signs of His wisdom in the laws of Nature' (Sherry, 2009:371). Instead of demystifying the world, scientific study reveals the 'magical' qualities of matter, which, whilst not necessarily indicative of divine intervention, does create an opportunity for a sense of wonder in the mechanisms of which we would otherwise be unaware. Science also determines the limits of the knowledge it can reveal, and in doing so creates an awareness of what we do not or cannot know. This has the potential to create fascination and wonder at the function of the natural world where no explanation exists, not as a backdoor to an encounter with the divine, but as a new, seemingly paradoxical engagement with enchantment in the voids created by scientific enquiry (Landy, & Saler, 2009). Whilst the disenchantment narrative may have been gathering traction since the early eighteenth century it is now beginning to be questioned by historians as to its validity considering evidence of continuing enchantment and alternative ways of apprehending the world (Saler, 2010). The political theorist and philosopher Jane Bennett (2001) questions whether enchantment ever disappeared from our perception of the world, perhaps enchantment was not reliant upon the presence of the divine in the first place. The philosopher Bruno Latour (1991) questions whether we have ever really been modern as

a society and suggests some of the fundamental tenets of the disenchantment narrative are arguably overstated as a cultural condition. Perhaps, the experience of enchantment reinvented itself as a manifestation of new technological ways of perceiving the world. In effect, a number of surrogates for enchantment have formed to satisfy an appetite for an appropriation of the world outside of Enlightenment rationalism alone, ones that extend beyond the individual to become larger narratives of awe and wonder.

Stranger Things

It is in this argued space, where enchantments still exist as an intrinsic aspect of human engagement with the world, that I position my research project through the creation of photographic imagery. My work looks to engage with some of the contemporary ideas in which enchantment as a secular, material condition can occur as part of a reoriented relationship with the world around us. The discourse of New Materialism (Bennett 2004, DeLanda 2016) and Object Oriented Ontology or OOO (Harman, 2018) posits, as part of its broader implications, enchantment can be a result of experiencing phenomena that allude to a purposive agency of matter, which is independent of both human thought and action. Further to this project's examination of matter and the irreducible complexity of networked entanglements is Bruno Latour's (2007) development of actor network theory (ANT) and Timothy Morton's (2013) notion of the hyper-object. Both are important to my critical reflection upon the visual investigation of structures typically found within the landscapes I photograph as a localised expression of extended networks.

Turning first to new materialism, principally in the discourse advanced by Jane Bennett, Bennett defines enchantment as 'to participate in a momentarily immobilising encounter; it is to be transfixed, spellbound' (Bennett, 2001:5). The experience of enchantment requires a shift in the perceived states of both the agency and ontological stability of the entities involved, 'enchantment stems from the feeling of wonder that arises when

we cannot fully explain an occurrence' (Schneider, cited in Saler, 2010:715). Seeking enchantment in the everyday calls on me to engage with the world in positive and novel ways to reveal a reoriented understanding, one that allows wonder and marvel to be encountered. Enchantment 'is transformative in nature; experiencing it not only transforms the very perception of reality, but also the experiencer' (Halloy, & Servais, 2014:479). A defining characteristic of the reorientation required to encounter enchantment is a dissolution of the primacy given to human action and intent over that of non-human entities and requires a reconsideration of the duality between nature and culture. This division, where people create culture from free will and arbitrary sets of rules and nature is governed by measurable mechanistic processes and laws, necessitates an adjustment which invokes a parity between the two. In *We have never been modern* (1993) Latour sees no taxonomical distinction between human and non-human. The binary division between culture and nature is challenged by Latour[50], where he starts from a point of treating both human and non-human entities as the same (flat ontology). Bennett enacts the challenge to the duality of human and non-human entities, through proposing an equivalence in agency, which presents a potential to experience a sense of the "uncanny" in association with commonplace objects[51]. Things begin to take on agency and the nature

[50] Latour suggests the challenge to modernity and its concomitant disenchantment narrative reached its apotheosis in the late 1980s as a pivotal moment in modern history was marked with the collapse of the Soviet Union, the end of the cold war, and with it an end to the division of east and west. Latour says the triumph of liberalism was short lived as what then emerges are global crises of a different type; climate change, population growth, pandemics, etc. What these have in common is they are crises that are bound up in the relationship between society and nature. They are neither specifically issues of nature or society but of the interaction between the two. Having ended one overarching threat only for more to appear, the failure of the promise of socialism and the re-emergence of calamitous global predicaments, prompted a degree of societal scepticism. See B. Latour, (1993) *We Have Never Been Modern*. Cambridge, Massachusetts: Harvard University Press.

[51] Sigmund Freud regards the uncanny as an aspect of fear or terror. It is a category of fear which he believes stems from a subconscious primordial response which overrides our rational cognition. The uncanny, like many aspects of psychological phenomena, is difficult to attribute a specific, measured nature. The experience of it may differ from person to person and may be dictated by the uniquely acquired behavioural traits and subsequent responses of an individual. But the uncanny can be said to have some basic characteristics which distinguish it from other forms of fear or unsettling experience. Freud states "the uncanny is that species of frightening that goes back to what was once well known and had long been familiar" (Freud 2003, p.124), in doing so he categorises the uncanny as a type of fear with specific qualities: namely, its association with the familiar rather than the unknown.

of entities becomes fluid as objects form contingent assemblages and constantly evolving networks of association. An object may take on an ontological ambiguity through its association with other things or perhaps simply become anthropomorphised through visual or circumstantial re-contextualisation. This could be characterised by an unsettling of cognitive interpretation, where what we know, or think we know, is challenged by a direct, albeit fleeting experience. Matter in this context begins to demonstrate agency and the capacity to affect a change in its ontological status through complex networked entanglements. Bennett describes this agency of matter as thing-power, 'the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle' (Bennett 2010:6). For Bennett all matter is alive, and that the life inferred by Bennett's claim is contingent upon a complexity of interrelationships and entanglements. These interconnections and interdependencies are both dynamic and resistant. An important measure of the action of matter is as much its recalcitrance and conflict as its cooperation and alliances within the numerous interactions which form a system of events and outcomes. But "thing power" can only be glimpsed, revealing itself through unsettling encounters and resisting systematic analysis which would otherwise diminish the phenomenon to that of a reducible sequence of events. It is also important to recognize the significance of "thing power" often being

---

Encounters with the unknown may prompt fear as a natural consequence of the unpredictability of the circumstance. Until the boundaries and parameters of new environments can be determined fear and anxiety (alongside enquiry and the acquisition of new knowledge) would be part of a common-sense and cautious investigation of a situation prior to it becoming familiar and assimilated into the lexicon of recognisable experience.

The uncanny sees the re-emergence of anxiety and fear, and perhaps also wonder, in response to circumstances that are seemingly familiar and predictable, in things that are known rather than mysterious. It occurs where the familiar is somehow rendered unfamiliar. A recurring trope within investigations of the uncanny is that of the waxwork figure and automata. In these the human figure is rendered with such accuracy it might under the right conditions be initially mistaken for a real person. Such entities are somehow unsettling to our habituated notions of the familiar and even after our rational mind has identified something as not what it appears Freud considers our primitive subconscious mind continues to interpret such otherness as a threat which ultimately exhibits itself in our conscious perception as the uncanny. See S. Freud, D. Mclintock, and A. Houghton, (2003) *The uncanny*. New York: Penguin Books.

dependent upon interrelationships of multiple objects. Bennett describes how an assemblage of debris (a glove, some oak pollen, a dead rat, a bottle top, and a stick of wood) she comes across in a grate over a storm drain unexpectedly exhibits this "thing power":

> 'as I encountered these items, they shimmered back and forth between debris and thing – between, on the one hand, stuff to ignore, except insofar as it betokened human activity (the workman's efforts, the litterer's toss, the rat poisoner's success), and, on the other hand, stuff that commanded attention in its own right, as existents in excess of their association with human meanings, habits, or projects. - A nameless awareness of the impossible singularity of that rat, that configuration of pollen, that otherwise utterly banal, mass-produced plastic water bottle cap' (Bennett, 2010:4).

Thing-power exhibits itself here as the objects reveal themselves as not just passive and intractable but as being able to create effects through the unique 'contingent tableau' (Bennett, 2010:5) formed by each other and the conditions within which they lie. The 'assemblage' forms a significant theme in Bennett's work, from a series of objects happened upon whilst buying a cup of coffee to an unexplained blackout caused by the failure of a national power grid.

Whilst Bennett might regard all matter as agentic and "alive", it is the agency of technological networks and assemblages that is of interest to me. In the previous section *An Unearthly Curiosity* I considered how technology has augmented the human to provide projections of the body's function through space and time in the form of the Mars Rover. The assemblage of human and non-human to create extended manifestations of the body and its agency also affords the opportunity for the material and entities within the resultant composite object to act with agency. In other words, the aggregation of people and objects/technology in a network helps to create a greater sense of parity in agency and intent between human and non-human actors. Hence, the often disparate yet symbiotic alliances of human and inert matter in the technological structures which surround us, and which enable society to function effectively, provide a potential for enchantment where networked allegiances arise and are examined from a less anthropocentric position. This

presents me with a way to consider the content within my photographic images as fundamentally different in character to my conventional understanding, as things within the controlled purview of culture and human action. Rather, these are entities which also act in ways outside of my anthropocentrically conditioned perception, as agentic matter and networked assemblages with unforeseen agency and purpose. Intellectually accessing an object as an entity outside of culture is of course difficult, as any reductive analysis ultimately serves only to constitute it as part of larger cultural entity rather than identifying an emergent or agentic effect of the object. Hence, Bennett's assertion that the object world as agentic and purposive is largely inaccessible to human cognition and only understood in the brief and unsolicited encounters as an enchantment. As an artist practitioner this means I must approach the subject obliquely, and that the invocation to an idea of enchantment in the landscape of my research may be an emergent effect in an image informed by a set of theoretical coordinates but cannot be a prescribed or expected outworking of those theories.

A Third Table

New materialism posits a world that exists independent of our minds and of human thought. A world that is autonomous, although not independent of our actions, it is independent of our minds. There exists an identity beyond human perception, as incalculable phenomena that cannot be understood in terms of human concepts or language. Furthermore, there is a challenge from science itself as the mechanistic understandings of matter through the legacy of Cartesian/Newtonian physics is disputed by contemporary theoretical physics and the behaviours of particles at a sub-atomic or quantum level. The conglomeration of atoms which form the structures we perceive in the everyday world are behaving at a subatomic level in a constant tumult of shifting states at odds with the apparent stability of the macrostructures they form. This is not to suggest the objective world is as a consequence illusory, but that in light of such revelations as to the nature of materiality the 'empirical realm we stumble around in does not capture the truth or essence

of matter in any ultimate sense and that matter is thus amenable to some new conceptions that differ from those upon which we habitually rely' (Coole, & Frost, 2010:11). In 1927 the astrophysicist and philosopher Sir Arthur Stanley Eddington (Eddington in Callaway, 2014) speculated that the table at which he was writing could be described in two ways, in fact he posited there were duplicates of everything around him; two pens, two chairs and so on. The developments in physics at the time presented radically new ways of understanding the world through the theory of relativity and quantum physics. This meant Edington's table could be understood in a uniquely new way through science as charges and forces acting upon sub-atomic particles:

> 'My scientific table is mostly emptiness. Sparsely scattered in that emptiness are numerous electric charges rushing about with great speed; but their combined bulk amounts to less than a billionth of the bulk of the table itself. Notwithstanding its strange construction it turns out to be an entirely efficient table' (Eddington in Callaway 2014:2).

Eddington's other table was better known to him as the familiar experiential object he could see and touch, the table as a construct of conventional human thought, language, and concepts, and of how it interacts with humans and our projected understanding of it. The table of culture is, to Eddington, a derivative of the table of science. Based on this, the ability to apprehend things can be understood in two ways; the disciplined and the intuitive. Science, as a disciplined approach, reveals things as increasingly abstract ideas often expressed through metaphor and as unseen (with the naked eye) underlying states. The table of science is juxtaposed with the table as an intuitive, subjective, cultural vision, to oscillate back and forth as if the world we see is just a surface beneath which a quantum reality we cannot suitably conceive is the truth. We are unable to properly imagine the world which science implies, yet it impacts on our process of perception. In effect science has taught us to look through everything; the object is complicated by the knowledge it is not what it seems. As a lay person, outside of science, I have a partial, abstract comprehension of how matter is, based upon a faith commitment to a necessarily (I am not a physicist) incomplete awareness of the scientific enquiry which describes it. Just as a premodern serf could

believe in God without an in-depth theological understanding, I can accept the metaphors which seek to articulate complex scientific ideas with similar unquestioning trust. The objects around me can only become concretised through the application of symbolic meaning. Language, concepts, and ideas afford the object opacity in a world in which objects are otherwise rendered metaphorically transparent through reductive scientific inquiry.

Philosopher and leading exponent of object oriented ontology (OOO) Graham Harman, uses Eddington's description to illustrate a problem in how we regard matter and how, in response to this difficulty, he suggests there is a third table (Harman, 2012). Harman regards the table of normative experience and that of science as both being equally unreliable as a depiction of reality. Both are the product of types of reductionism; in the case of the table understood through science, it is the result of "Undermining", and in the case of the experiential table "Overmining", 'just as we cannot reduce (Undermined) the table downwards to electric charges rushing through empty space, we also cannot reduce it upward (Overmined) to the theoretical, practical, or causal effects on humans or anything else' (Harman, 2010:10). The dual reductive approach of Eddington's table (Overmining/Undermining) delivers a model of cognition where one approach acts to support the other in describing an object as both a quantum assemblage of atoms and forces, and an entity which can be known by its effects within human culture. Harman advances the idea there must be a third table which exists somewhere between Eddington's two tables, one that is truly real. For Harman, the third table is withdrawn from our ability to perceive it and resides in an autonomous zone beyond human knowledge. We can only interact with aspects of the table within our sensual realm, the third table exists in a state outside of human access whether by "Overmining" or "Undermining". Therefore, the unknowable reality of the third table resists any attempt to convert it into an object known only by the conditions in which it can be verified by human inquiry. It is then something which is irreducible to both its pieces and its effects. The "real" object exists between the Undermined and Overmined reductive analysis. Harman sees another

problem with the reductive approach in that it fails to explain emergent qualities in objects. Emergence arises as the larger entity exhibits qualities other than those of its constituent parts and that these qualities are not contingent upon the stability of the smaller parts. Harman uses the example of a city such as Paris, whose constituent parts are constantly changing and renewing, expanding and contracting on micro and macro scales but which is constant in its emergent identity as the city of Paris. The object therefore exists beyond its constituent parts as well as within the scope of power, language, and events, and is part of an ongoing process.

What these developing ideas provide is a framework for understanding some of the new relationships that occur as human and non-human interact. The nature of things may not be as I have previously understood and can create an encounter with enchantment outside of both reductive, and transcendent, readings. My photographic practice in 'For Want of Wonder' follows a conceptual position of interrogating a variety of enchantments to understand the landscape as conveying new ways of interpreting material. It is, however, important to state at this point that my photographic practice does not seek to act as a pseudo-scientific investigation which uses photography to reveal a hidden truth through technical process alone. It is not the electron microscope revealing the miniscule Tardigrade as an extraordinary creature, or the Mars Rover showing sunsets on the surface of another planet. Rather, it is an artistic intervention in the landscape shaped and informed by the technological and theoretical coordinates I have detailed, to define both a physical process of production and presentation using a conceptual framework. It is by creating photographic imagery and subsequently the viewer's and my own response to the work, that the research question might be answered. In the following section I examine some of the images I have created and discuss encounters with both strategic, and unexpected enchantment in the interstitial landscape.

Xanadu

My motorway journeys around the periphery of Manchester are often characterised by encounters with landmark building and structures many of which are the sites of strategic commercial enchantment. One of the largest of these is the Trafford Shopping Centre and It is difficult to investigate the outskirts of Manchester without happening upon its domes and campanili which are clearly visible from the M60 motorway. Writer and broadcaster Michael Symmons Roberts, in a BBC radio 4 program, (The Stately Pleasure Dome, 2017) compared the Trafford Centre to Kubla Khan's pleasure dome, where he uses Coleridge's famous poem Xanadu to reflect upon the nature of the shopping centre as a wonderous place. Symmons Roberts is engaging in a sophisticated reimagining of a contemporary building, aligning with some of the ideas surrounding hyper-reality and simulacra[52] to demonstrate the effectiveness of such places as a repository of cultural representations intensified and choreographed to create a realm of enchantment. The image of the Great Hall (figure 19) at the Trafford Centre is one of a number I made within the Trafford Shopping Centre. I made the images early in the morning at around 6am, before the shopping centre was open to the public and only teams of cleaners and maintenance workers moved in the otherwise empty space. My intention was to photograph the space in the absence of shoppers and the bustle of activity which normally accompanies the operation of the centre. In doing this, the building and its details are available to see without distraction or obscuration.

[52] The simulated realities which occur in the Trafford centre are not necessarily based on ones that exist and may have no true referent – instead, they are simulations based upon an imagined idea of something which is repurposed through cultural and commercial consideration. This creates a hyper-reality in which simulation can exceed an expectation of reality and creates its own field of existence and experience not as a copy of something but as having 'no relation to any reality whatsoever: it is its own pure simulacrum' J. Baudrillard, (1994) *Simulacra and Simulation*. USA: University of Michigan Press.

Figure 19. ***The Great Hall*** *– Trafford Shopping Centre, Author's image (2018)*

Consumer culture provides a rich source of reality engineering, commodity fetishism and brand attraction. In the 'cathedrals of consumption' (Ritzer, 2010), I encounter a commercial intent to engender and then satisfy, albeit perhaps only temporarily, my need as a consumer for an enchantment experience. In this instance, enchantment can be understood as a quality which introduces spectacle and delight to entice me to spend time and money at a specific venue. Shopping centres and retail parks provide a highly specialised environment in which to conduct the activity, not only of shopping, but of eating, entertainment, and social interaction. Such venues provide a smorgasbord of business operations allied to architectural design which fuses hyper-reality (Eco, 1998) with rigorous commercial intent to provide an enchanted setting (Goss, 1993). Upon entering the Trafford Centre I am greeted by a large atrium lined with eateries and at its centre a huge staircase made of Italian marble with polished brass handrails. Suspended above the staircase is a massive chandelier/lantern dripping with cut glass jewels and golden metal. The scale and complexity of the entrance design overwhelms me to immediately establish a sense of awe and the promise of treasures beyond. Moving through the atrium I am guided straight into the main food hall. This enormous space is designed around the concept of an ocean liner complete with a ship's bridge, lifeboats, swimming pool, and nautical furnishings. Around the edges of the hall food outlets provide the

global cuisines of the cruise liner's imagined journey. Writing about Disneyland, Umberto Eco (1998) describes how the constructed experience of such places presents us with a version of reality which in many ways exceeds the reality itself. The fake is compliant with our desire for convenience and provides a controlled, choreographed representation which provides a guarantee of spectacle unsullied by the logistics of travel or the vagaries of nature. The use of the cruise liner as a vehicle for the theme of the food court is a sophisticated simulacrum in which the simulated cruise which provides the logic for the food offers is drawn from a form of transport (as an actual cruise liner) which similarly creates a self-contained bubble of localised culture that can present and access other cultures from a constant and familiar setting. A cruise ship can deposit its passengers into foreign lands with minimal logistics, briefly and efficiently, before scooping them back up into the safe space of the ship.

At the Trafford centre, shopping, eating, and entertainment are brought together softening the boundaries between previously separate activities. Theming affords the shopper a chance to escape the confines of the ordinary and traverse a reality-engineered world, dining on Italian, Chinese, or Mexican food augmented by the music and architectural settings of their respective geographical locations (Lego, Wodo, et al 2002). These themed environments are not necessarily authentic, instead, they conform to idealised depictions derived from cultural stereotypes and mass media representations. The shopping centre reproduces and satisfies a desire for a nostalgic vision of a civic social space which is both effortless and secure. It is readily accessible to the public and provides a safe space to meet and socialise, but it can only do this through an adherence to the metaphor of urban landscape 'sustained by street-signs, streetlamps, benches, shrubbery, and statuary – all well-kept and protected from vandalism' (Goss 1993 p.26). The shopping centre is not, contrary to its best efforts to deceive, a public civic space, rather, it is a privately-owned realm with an agenda to sell goods and services. In order to do this, it employs techniques to draw the shopper through the space so as to encounter the maximum exposure to the

commodities for sale. Toilets are not placed so they might be found intuitively, they are positioned in order to require navigation via finger signs which introduce other tempting opportunities such as children's play areas and food courts. This necessitates exploration of new areas and new possibilities to happen upon sellers, if not on the way to the toilet, then on the way back. Malls are curved to mask the distance the shopper might be asked to walk and to give only a partial view of the prizes that may lie beyond. Anchor shops such as department stores with a high draw value are placed at the nodal points and extremities of the malls to encourage movement throughout the entirety of the scheme (Goss 1993). But the shopper is not a helpless slave and requires constant reward for their labour hence the inclusion of fountains, pop-up stalls, mini events, exhibitions, and cafes en-route. All of which contribute to a sense of carnival and spectacle that induces the shopper to stay longer, spend more and to return in the future. Whilst shopping centres are predicated upon a model of consumption, at their best they can provide a space to contemplate the cultural spectacle of consumer retail without the need to shop.

Figure 20. ***Prada II*** *Andreas Gursky (1997)*

I find window shopping, particularly when there is no intent to spend or indeed capacity to buy, in the case of prohibitively expensive goods, engages me in the purest contemplation of the value added through the strategies of retail enchantment. Andreas Gursky's photograph *Prada II* (1997) shows the empty display furniture and shop interior for Prada shoes. High end products such as designer shoes are presented like artefacts in a minimalist museum setting, a curated selection afforded a vast area (in normal retail terms) and

specialist furniture and lighting. It is an orchestrated space that even without the retail product still alludes to the value and exclusivity of the absent shoes through the specificity and scale of the display space. The rectilinear elevational composition of Gursky's photograph presents the shoe cabinet like a church altar, and as a window shopper the mystique and unapproachable nature of the Prada retail space has a resonance with sacred space where only the initiated may proceed. Hence, out of nothing more than the utilitarian need to cover your feet comes a myriad signal of cultural, social, and transcendent meaning. Consumer goods can therefore provide a compelling vision of enchantment through commercial intent. Advertising acts as a mediator between the material and the symbolic, seeking to instil a product with qualities that mask the otherwise prosaic status of its materiality and in doing so attribute meaning which might 'sever it from the social and spatial relations that structure its production and the human labour it embodies' (Goss, 1993:20). The shopping centre is an exemplar of the outworking of global logistics, labour, and economic systems. Naomi Klein (2010) revealed a darker truth behind the disconnect in highlighting the treatment and working conditions of low paid employees in manufacturing high value items, particularly those of some big-name sports brands. The plight of low paid workers in developing countries is hidden from the consumer, it has no bearing on the quality or efficacy of a product only on the price and the profitability of its production. Many high value consumer electronics are manufactured in regions where production facilities benefit from a low wage labour force and advantageous regulatory structures (Klein, 2010). Such facilities are not necessarily owned or run by the corporations that use them for the manufacture of their product, thus further separating the means of production from the company that designs the product and owns the brand. This is of interest in the context of this research in as much as it demonstrates one enchantment, that of the commercial intention to extend meaning and value beyond the simple materiality of the product as contingent upon concealing another, perhaps more remarkable aspect of a product – that of its role within a global network of labour, production, and logistics. Whilst labour practices might be of concern to the consumer when

they are made aware, there is now a growing consciousness of the ecological cost of extended networks of logistics and commodities. One recent example of a sudden heightening of consumer awareness has been that of the ecological impact of single use plastics. In 2017 an episode of the BBC television documentary series *Blue Planet II* (BBC 2017) focused upon the ecological crisis that has resulted from plastics pollution in the world's oceans. This program exposed the complexity of global networks of human waste and the scope of its effects. The presence of micro plastics (the result of plastics breaking down into tiny fragments when in the ocean) in virtually all areas of the world's oceans and its impact upon microscopic life begins to draw attention to the delicately balanced nature and irreducible complexity of ecosystems. The potentially catastrophic consequences of human activities on the environment at a planetary scale is brought into focus through film footage of familiar plastic waste in the most remote places. What is revealed is how a plastic product such as a single use water bottle is a localised manifestation of a much larger concern in the form of global plastic waste. The information provided by the BBC documentary undermines a coherent idea of a plastic bottle as simply a benign piece of packaging, rather, it becomes a component in an immediate and vast ecological problem with the attendant personal culpability of the user.

In his book *Hyperobjects* (2013), philosopher Timothy Morton advances the idea of hyperobjects as referring to 'things that are massively distributed in time and space relative to humans' (2013:130-35). The aforementioned plastic waste can usefully be considered a hyperobject as it is vast in scale, its reach is global and its impact is largely the result of its temporal status in that it lasts for centuries. Even when it breaks down to microscopic fragments its effect is none the less ecologically problematic and enduring. I say "usefully" in relation to Morton's term as the hyperobject is the development of an ontological entity which helps in imagining the role of an assemblage of things as having agency and existence outside of a means to see or directly experience it in its entirety. This may be because of its physical or temporal scale such as a global object or one which acts slowly and in some cases at

geological timescales. The agency of an object such as a plastic bottle is constantly changing as its role within the broader entanglement of things takes on new emergent qualities. Bruno Latour developed the concept of the Actor Network Theory (ANT) which supposes you treat all things as actors, all things have actant properties. In Latour's network an entity's identity is an expression of its relationship within the network and as such is mutable as the network is changed by events. The developing importance to consumers of environmental concerns particularly in the light of global warming has prompted increased scrutiny of a product's sustainability. As part of this scrutiny, an object's sustainability must be considered through its emergent qualities as part of an extended network of entanglements and its role in the hyperobject of human waste, chemical pollution and/or global warming. In both pre- and post-production/manufacture, the life of a consumer item cannot be divorced from the field of effects it produces. However, the complexity of these effects is not conducive to easily communicated marketing strategies. Rather, it is a necessary to employ a simplistic presentation of limited ecological virtues, such as recyclability or low energy use, to appease the consumers' concerns about a product's environmental impact.

In the context of retail, the appetite for enchantment simultaneously helps and befuddles the consumer in their choice of product or service. It can help by providing guarantees of consistency and quality, enabling the consumer to make purchasing decisions quickly and with confidence. Conversely, it can be used to introduce a mystique which undermines rational considerations and adds cost and immaterial value in order to imbue a product or service with an allure which differentiates it from otherwise indistinguishable and commonplace consumer commodities. Environmental virtue becomes another factor in projecting enchantments which help in differentiating brands and products for the consumer. The consumer is both aware of, and consequently complicit in, the imagined nature of retail enchantment. It is part of the pleasure of a retail experience even though consumer culture is ultimately unable to satisfy some important aspects of human needs and that

much of its offer is both illusory and without meaning. This is an enchantment borne of disenchantment. To fill the void left by a sense of a disenchanted world I am susceptible to vacuous strategies of enchantment. In effect, that which enchants me through illusion and deceit only serves to compound my alienation from the natural world and highlight the overarching loss of wonder. There is then, a simultaneity of enchantment and disenchantment which is emblematic of these spaces, there is a constant need to present the consumer with spectacle lest they become too aware of the rational, commercial intent and become disenchanted. Debord's *The Society of the Spectacle* (2014) provides a model for understanding this cultural condition as one in which lived experience is commuted to that of a representation. As such, the activities we engage in become part of larger commercial narratives associated with depictions of lifestyle aspirations and consumption. In summary, the Trafford centre is a place where the decoration and embellishment of the shopping space serves to disguise the calculable processes of selling products to customers. It becomes a series of encounters with spectacular events and spaces designed to make the customer stay longer and spend more.

Castles in the Air

One of the enduring processes of the rational intent to enchant within these spaces is the phenomenon of 'implosion' (Ritzer, 2010:118). Implosion is where multiple offers of consumption are brought together at one location. The Trafford centre includes: a cinema, an aquarium, Legoland, Laser Quest, and an adventure centre, in addition to shopping and eating facilities. The interstitial landscape is one filled with imploded concentrations of consumption. Shopping centres provide a destination for a broad spectrum of retail and leisure activities, but there are also more specialised imploded leisure offers which require specialist buildings and a specialist appreciation on the part of the consumer. A comprehensive examination of the architecture in the interstitial landscape is beyond the scope of this research but there is a returning theme of peculiarity in the design of buildings as a characteristic of the spaces in which I conduct my work. The Castle in the Air

bar is just such a building (figure 21). This is the second image I have made of this building; the first image was nearly identical but lacked the foreground detail in the road that I required and was taken at a time when there were cars parked in front of the building's façade. I re-photographed it from the same position during the second Covid 19 lockdown, this allowed me to create an image with no cars in front of the building and to correct some technical issues I had with the first image. Many of the images I have created are now in their second or third iteration, this comes about partly to address technical or compositional issues revealed in earlier versions, but also because my relationship with the place evolves with each visit and version of the image. Although the visual changes to each image may be subtle there is an evolution of my understanding and intention for the image. Visits that I make after having created a first image are informed by my, now, intimate knowledge of the scene through scrutinising the minutiae of its details and knowing it as an image purged of noise, smell, and a melange of logistical and behavioural anxieties. I now know things I could not have known before, and my attention is consequently changed. Colour becomes more noticeable, as does text within the scene, perhaps because of the time I have had to see it and, in the case of colour, work with it in preparing and manipulating the image in the computer. The process of removing people, moving objects and of correcting errors in the photo-stitching technique require me to look at every pixel within the image. The second time I photographed this building there were no people in the bar as it was closed due to Covid19 lockdown restrictions, but I still had to remove myself from the image, my high vis outfit was clearly visible reflected in the glass frontage of the bar. Filmmakers are often at pains to avoid the reflection of the camera and crew in reflective materials such as window glass. Showing themselves would reveal the artifice of the situation, likewise I remove myself, so the viewer is apparently first in the "chain of evidence", rather than me, the camera, and the plethora of technical interventions. My presence in the photograph would also mark a specific temporal event, the one where I press the shutter release and record my image. By removing all indicators of a fleeting moment my intent is to stretch the possible time frame – this image could be a timed exposure made

over many minutes or hours, it is not, but nothing in the image suggests otherwise. But it might also do more than that, the photograph is a record of a past event but one in which any imagined narrative can now move in either direction time wise. What happened before and after the photograph is subsumed by stasis. Edward Hopper's paintings have long held a fascination for me as conveying a vision of landscape as familiar yet isolating and unnerving. This empty Castle in the Air bar image has, perhaps, a resonance with the Hopper painting *Nighthawks* (1942) – as a place of isolating solace. The Castle in the Air is intended to be a bustling, lively place but in this instance, it is quiet and deserted. Unlike my image *Nighthawks* does have people but it is Hopper's depopulated paintings of the city which hold the greatest appeal for me.

Figure 21. ***Castle in the Air*** *– Wetherspoon bar, Stretford, Manchester. Author's image (2020).*

His paintings show all the signs of speed and activity such as roads and rail tracks but no cars or trains – they are places in a state of suspended

animation, time in Hopper's vistas has stopped to give the viewer a space in which they can be receptive to a contemplation outside the narrative of a specific moment.

Subverting any temporal specificity in my work has, in addition to a conceptual intent, evolved through technical and practical necessity. In my image of the Travelodge (figure 22) I returned to re-photograph the scene, as again I wanted to create more foreground detail. I could not photograph the entire scene as a coach was parked in front of the hotel, so I decided to add the new foreground to the previous image. It is often the case I must return another day to photograph a detail of a scene that might have been obscured by a parked vehicle or temporary structure. I had already done this once with the Travelodge to get an unobscured image of the entrance, which was added later, so this would in fact be yet another addition to the first image. What began to evolve was the image could become an aggregation of photographs from not just minutes apart (as in the initial process of photo-stitching) but days and even months apart. In the case of the foreground, there is a seasonal shift between it and the background.

Figure 22. ***Travellodge****, Stretford, Manchester. Author's image (2020).*

The result is an image which shows events in non-human time. There is of course the non-human aspect of the photograph as a technical representation of seeing, but in this case, I am more concerned with the non-human scalar quality of time which is presented in the image. These images seek to create a forensic investigation of the landscape but to do so they must, paradoxically, employ processes which undermine the indexical link with the object world and the fidelity of its temporal representation. The investigation requires the image to convey, not a direct trace of the object, but a distillation of it through an accumulation of practice in the form of site visits, and imagery to be combined and manipulated.

To return to an earlier point, my increased attention to text in the image is often the result of becoming familiar with the photographed details. The largest text in the image of the bar is the name on its frontage - 'Castle in the Air', and it initially prompted me to think of this building as associated with the visual language of air travel architecture. I imagine the building as part of the stark modernism of a soviet bloc airport terminal from the cold war era. I am not sure this was the intention of the architect, but there is a hint of brutalism in its angular walls and a complete disregard for any vernacular sensitivity, (because in this space, there isn't a vernacular to respond to). There is, a kind of purity in the design intent of buildings such as this, they must satisfy the functional and visual objectives of their use whilst constrained more by budget than locality. Building on the fringes of urban and rural space means few will object to oddities of design where its neighbour may be a featureless distribution shed or a food processing plant. A Castle in the Air suggests a fantastical structure, something which transcends worldly expectations or conversely, is fanciful, impossible to create and worthy only of ridicule. Henry David Thoreau, in a quote from his book *Walden* (2016) remarks, 'if you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them' (Thoreau, 2016:301). The passage articulates the importance of imaginative ideas and how they must be pursued, underpinned, and made a reality. The Castle in the Air bar is part of a larger leisure complex recently

rebranded ‘Beyond’ in Stretford, Manchester, which includes an indoor ski slope with real snow, a giant fan device to simulate sky diving, and a dinosaur themed crazy golf course complete with life-size fibreglass dinosaurs and waterfalls of lurid aquamarine coloured water. The name begins to seem rather apt given the strange nature of the multiple functions the bar is attached to. However, the derivation of the name is still more interesting. It comes from a local historic structure, the Barton Aqueduct, which carried the Bridgewater Canal over the River Irwell. Designed by engineer James Brindley, the project was derisively nicknamed the “Castle in the Air” as it was regarded with incredulity prior to its successful completion, after which, it was deemed a marvel of engineering. The name is then, a homage to a piece of Georgian infrastructure which no longer exists: it was demolished to make way for the Manchester ship canal. I have not been inside the Castle in the Air, but it is, apparently, an Alpine themed bar as part of the complex with the artificial ski slope. Just as the nearby Trafford shopping centre employs the theme of the ocean liner in its food hall to present a range of world cuisines, so the Beyond complex, of which the Castle in the Air is part, uses its primary leisure offer, that of the ski slope as the theme for its satellite eatery. The Castle in the Air is part of a reality-engineered leisure facility designed to provide a passable après ski experience without the need, expense, or logistical complexity of holidaying on a mountainside, and one which can be enjoyed as an afternoon out. I can imagine the combination of skiing (on real snow) followed by a meal in the alpine themed Castle in the Air, as having a sufficient level of simulated experience to provide some sense of wonder, whilst still being on the edge of Manchester. From the outside, it would be easy to ridicule such a place, not least because of the questionable sustainability of refrigerating an artificial mountainside, but on the inside, this is enchantment through leisure, and its structures, and ones similar to it, form a significant constituent in the landscape of the interstitial space.

Whilst not an overtly visual typological project as such, the entities within the images throughout my project are related by their presence within a certain type of landscape, which they help shape by being part of. It might be useful

to employ the metaphor of a theatre and its cast, in describing the relationship between the space and the different entities I photograph. If the zone, in which the structures I photograph occur, might be considered a stage, or theatre, then the structures themselves are the players, or actors. And, like the characters in a play, they have specific roles, narrative arcs, and interrelationships both discrete and overt, strained and symbiotic. They have backstories, invoke different emotional responses, and reflect values and concerns contemporaneous to the audience. A large part of the "stage" in the image of the 'Castle in the Air' is the road. Much of my reason for re-photographing the image was to achieve a greater control over the foreground, to make it apparent in all its detail. As part of the evolving visual effect within my work, the desire to create a flat field of focus across the entirety of the scene has become particularly important. Any hint of soft focus within the image compromises the democratisation of all details as having a technical photographic parity. Therefore, the storm drain grate is as visually important, as the building across the road from it. In the case of the storm drain this did require some further digital manipulation, as the grate was not originally central to the building. In fact, this image is quite heavily manipulated in order to achieve the formal composition I required. Street lighting has been removed, the sky has been replaced, and the road markings moved to create a symmetrical pattern. The overall image has also been reshaped to create a parallel linear relationship between the pavement, road, road markings and building, and the square aspect ratio of the image came about as a consequence of including the amount of foreground I required. The image of the Castle in the Air demonstrates a particular concern of mine when making an image, that of balance. Where possible, I seek to make photographs which have a balanced, symmetrical, 'straight on' view of an object. It presents an elevational orthographic feel and is intended to limit the sense of the photographer's (my) physical and interpretive point of view. What I mean by this is, the balance afforded by symmetry, where it is possible to achieve, creates a parity of significance across the frame which marries with the flat field of focus (all things from front to back being equally sharp) and the muted colour and tonal qualities of the light. All these considerations

are designed to allow the undistracted contemplation of the image content across its surface. The decision to re-photograph and make the technical changes to the road part of the image, was justified for me upon a careful examination of the pavement. As I viewed the Tarmac surface at high magnification I noticed among other things a small piece of clear broken glass. It is often in the foreground that details can become forensic, where tiny fragments of things persist to provide an archaeological record, and an imagining of past events. The glass fragment was shaped like a small uncut gem, a shape typical of how toughened safety glass fragments when broken. It seems probable this is from a car, maybe a window, but most likely a headlight. A minor crash? The result of a stone thrown up by passing traffic, smashing a light? It is a fragment which speaks of road use, of vehicular transport, and of past human activity. The photographic process has presented another actor on the stage, possibly just a walk on part, only a fragment of its former self, and maybe only a contextualising backstory. But, nevertheless, it is part of the larger narrative played out by the multiplicity of characters within the theatre and, ultimately, made visible through the object of the photographic print, (which, to stretch the metaphor further, could be considered an expositional narrator).

Flattened Lands

The interstitial landscape often provides the space and serendipitous opportunities for visual spectacles which would be unlikely elsewhere. The caravan sales lot is such a place. For me, there is something fundamentally fascinating where a collection of seemingly identical objects is brought together, away from their usual context, all in one place. Retail space, particularly selling large utility objects, often requires a collection of the same thing, presented together. The caravan sales plot (figure 23) does just that, lots of white caravans lined up and going nowhere. Vehicles that carry the potential for care-free nomadic holidaying are grid locked and car-less in an enclosed pen. This sales plot demonstrates how certain types of retail can benefit in areas where space is more available and affordable, and where proximity to footfall is not an issue. Consumers will make a specific journey

to visit specialist, or discount retail, as long as there is road communications and adequate parking. Massive shed-like buildings, open plots, and repurposed space; retail can exist with minimal concession to visual attraction as the shopper has already made the decision to visit. This results in functional, utilitarian facilities, and a very different aesthetic to that of the high street or town centre. The caravan sales lot is a rectangular plot of land, surrounded by a chain-link fence, and a porta-cabin as the office, a no-frills place to buy a second-hand caravan or motorhome. It is space to see all the stock in one place, sandwiched between unrelated commercial activities.

Figure 23. ***Caravan sales*** *Spencers Green. Author's image (2018).*

There are many associations I have with caravans, the smell of Calor gas from childhood holidays is an oddly distinct one, along with the swaying movement as other family members moved through its confines. It is so many years since I have been in a caravan that I can now only have a romantic, imagined, notion of them as the means to take your home with you and in doing so obviate the stresses and strains of unknown hotels or the alien cooking utensils and blunt kitchen knives found in holiday homes. They are the means to package the comforts and familiarities of home whilst exploring new vistas, the view can change but the accommodation is always the same. Given the

idea of the caravan as a home from home, it seems appropriate the largest text in the image is that of the store sign for 'Home Sense', centre right of the picture. Home Sense, in application to the caravan, might mean creating the impression you are at home, or perhaps a rationale which is derived from the qualities of being at home, a kind of common sense shaped by domesticity. A quick scan of the caravans reveals a vocabulary and jargon no doubt familiar to those in the know. Zenith, Swift, Venus, Coachman, Pageant, Pegasus, Sterling, names to suggest some of the potential contained within the paddock of caravans. It is difficult to see a collection of caravans and not think of Robert Adams' image *Mobile homes, Jefferson County, Colorado* (1973) (figure 24). His image, part of the New Topographics[53] which documented the encroachment of man-made structures into the landscape of the American west, also shows mobile homes from an elevated position.

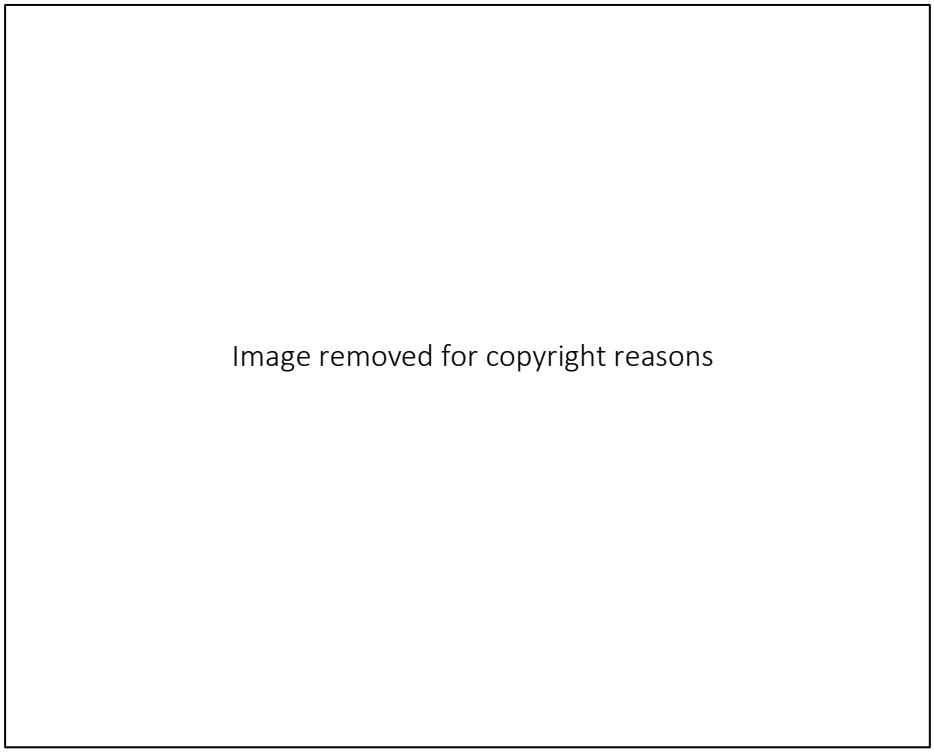

Figure 24. ***Mobile homes****, Jefferson County, Colorado. Robert Adams (1973).*

[53] The *New Topographics: Photographs of man altered landscapes exhibition* curated by William Jenkins in 1975 marked a pivotal moment in landscape photography. The exhibition brought together a collection of photographers whose work showed the overlooked and unsought landscapes which are the result of urban sprawl, industrial expansion, and often ill-considered development. The work showed landscape as an indicator of social and economic conditions through a deadpan, objective scrutiny which sought to position the photographer as a dispassionate witness.

The image I made of a caravan sales lot (figure 22) initially appealed to me as a possible subject because of its visual peculiarity. The viewpoint is from a raised section of road, the elevated position I was able to work from, enabled a view which echoed a drone shot, and with it, a hovering overview. This speaks to the idea of a non-human mode of seeing, one which must be the result of something other than a human eye level perspective. Like the Robert Adams photograph, the elevated viewpoint suggests a detachment and emotional distance which invites scrutiny of a space outside of a conventional human experience of eye-level seeing and the limited field and depth of vision that comes with it. You can see to the horizon from this privileged position, the perceptual field of a giant, able to see further and wider, and with it the capacity to grasp pattern, scale, and form hidden at human eye-level. The expanded visual field mirrors the enlarged breadth of space which is encountered in the interstitial landscape. The low-rise expansive nature of this space brings me back to the flat lands of Dutch painting or the Norfolk landscapes of John Crome such as his painting *Mousehold Heath*, *Norwich* c1818-20. Because much of the landscape I photograph is within in the Cheshire plain there is an inevitable visual resonance with art created in similar landscapes. I was reminded of this caravan image, and of some of the potential qualities infused into mobile living by Chloé Zhao's film *Nomadland (2020).* The film tells the story of a woman living out of a van, having lost her home through economic hardship, as she travels through the American West, and encounters a community of similar travellers as part of her nomadic lifestyle. This film is, of course about more than the circumstances of living in a mobile home, it shows a microcosm of what a community can be outside of a conventional cultural narrative of the American Dream, which, in this case, has failed the protagonist. The American Dream is re-imagined as a nomadic existence in the manner of the early settlers, travelling across the vast, beautiful expanses of the Badlands, working in solidarity with others in the community of nomads and reaping the benefits of a simpler existence. This is an oversimplification of a complex and nuanced film, but the romance of mobile living is certainly present, and the film leaves me imagining myself living in the back of a Ford Transit, whittling my own cooking utensils. The

caravans in my image are Nomadism 'lite'. So much of what I might crave - going off the grid, living a simpler more holistic life, closer to nature, and so on - can only be a one or two week imagined reality. An enchantment propagated by the makers of caravans perhaps, the lure of the open road. Even when on holiday in a caravan, I would be bound by the constraints of infrastructure. I can go – only where roads take me, I can stop - only where the rules allow (which, in England, is restrictive with a caravan or mobile home).

In each of my photographic images I try to present a vision of the space as cleansed of movement and people to allow uninterrupted scrutiny of the detail manifest within the inert non-human entities left behind. The absence of people contributes to a narrative which employs the traces of human activity at both a micro and macro level, to comment upon the symbiotic, agentic relationship between the apparently inert non-human entities and the absent human actors. The objects within the manipulated photograph become signs relating to indices of human presence, evidence provided through the incidence of manmade constructions and accidental remnants, buildings and vehicles, marks on tarmac, or the "desire" paths across landscaped spaces: the envisioned, the vestigial, and the trace. This image was made before the pandemic. In the light of the Covid19 pandemic, I find the rows of caravans carry with them a particularly poignant symbol of deferred activity and loss, as if each trailer is emblematic of a holiday not taken due to lockdown or illness. It is a world in stasis as seen from a safe distance above the street level and possible infection. From the start of this project I have removed people and objects in motion to control or limit a narrative associated with individual people in the scene, and to avoid the appearance of the image as a frozen moment. Inevitably, the depopulated spaces can look somewhat post-apocalyptic, and the pandemic, which started in 2019 resulting in national lockdowns and restrictions on movement, has familiarised us all with the reality of empty streets and roads without traffic. An escape, such as a caravan might allow, again, carries a greater sense of urgency in a pandemic. Isolation and quarantine are

potential qualities of the caravan and mobile home, but in reality, all such ideas are curtailed by lockdowns. It was not my intention to give a visual foretaste of what a lockdown would look like, but there is an inescapable association now between a space devoid of people, and the events of 2020. The fragility of normality became very apparent when facing an infectious pathogen with a global reach.

Unlikely Bedfellows

This section of the thesis has looked at the nature of enchantment, of how it became eroded by rationalism and calculation and how it has been reinvented through new ways of encountering the world. I have examined some of the reoriented understandings of human/non-human relationships as conduits to enchantment, and the different yet no less sophisticated strategies of commercial enchantments developed in advanced capitalist consumer culture. The enchantments offered by a reoriented ontology of matter and those calculated as commercial tactics to charm consumers into spending time and money would seem fundamentally incompatible with no equivalent or comparable status, and consequently unlikely bedfellows. However, creating photographs in the interstitial landscape has provided an opportunity to scrutinise a combination of both intentional (as a commercial strategy) and unsought ways in which I might regard the landscape as invoking enchantment. As I analyse my images, whether it is in the jewel encrusted chandelier of the Great Hall or the unexpected fragment of car headlamp on a footpath, there are wonders to be found and encounters to be had which might quicken my attention or spark a sense of the uncanny. It is perhaps more the case that the commercially driven invocations to enchant do so, not because of the calculation of advertising executives, but because of the unanticipated, provisional effects which emerge as a function of an unstable ontological state. In other words, the nature of simulated environments and the strange incongruity of the structures and enchantment strategies which occur in the interstitial landscape create their own unique field of wonder as entities both big and small form contingent alliances as a product of their context, the play of light, texture, colour, weather, and so on.

Enchantment it seems, continues to infuse an experience of the world to provide insights that inform new or reoriented understanding of the objects around us. The interstitial landscape is peppered with the potential for enchantments, as it is home to a multitude of structures which, intended or otherwise, invite me to reconsider them as actant and agentic. My photographic work helps in sharpening my awareness and receptivity to wonders and in doing so prompts a want to wonder.

Conclusion

I recall, when I first embarked upon this project, the difficulties I had with reconciling practice as a research tool within an academic context. With the help of my supervision team, I have come to understand the role of practice as generating knowledge through the creation of my photographic imagery. My working methods and approaches to making photographs in response to a research question has evolved as a synthesis of ideas and practices informed by personal histories, intellectual inquiry, and happenstance. Throughout the project I was aware of the need to avoid the practice becoming illustrative of theoretical coordinates, instead it must tread the difficult path of being informed by those coordinates whilst creating novel imaginative outcomes which transform the ideas through the act of making an image. There is then an oscillation between the ideas which act to prompt the creation of new work and the work as a process of transforming and articulating those ideas in a manner which feeds their development and evolution. In effect the process becomes a feedback-loop which advances both practice and ideas, and with it the research. What became clear early in the process was that an experience of the practice as a physical print would be essential for a full understanding of the research. This thesis contains images of the work, but these do not convey its effect or significance as a research outcome and are only illustrative. The practice must be experienced as a full-sized print for its originality and contribution to knowledge to be considered. Ultimately, the practice is the way in which a contribution to new knowledge and advancement within a field of research is made. This thesis acts in dialogue with the practice to provide a critical reflection upon the work

and to help in understanding and appreciating its role in generating new knowledge.

This practice-based research has allowed me to investigate the photograph as a way in which interstitial landscapes might be considered as invoking a sense of enchantment. To do so I have brought together autobiographical, technical, and theoretical positions to inform and interrogate my practice of making photographic images. My photographic work sits at the convergence of several processes, concepts, and experiences. These are:

1. The nature of landscape which exists as an interstitial ever-changing zone between rural and urban as an often-overlooked site, but which acts as a contemporary pastoral, an exemplar of networked entanglements, and a barometer of economic and ecological conditions.
2. The Mars surface imagery which introduces an idea of enchantment and wonder through a telepresent photographic examination of landscape, and which prompts an examination of extended visual cognition.
3. And finally, the conditions which must be met to constitute enchantment as examined through encounters with the world outside of rationalist, reductive enquiry, and anthropocentric models alone. Such encounters might allow an experience of agency within non-human entities and a reconsideration of matter as active, alive and purposive outside of human thought and action.

The practice that developed from these considerations created its own field of effect outside of my expectations. What emerged was how my appraisal of, and response to the outcomes of the practice would shape its development and create new tactics both in the technical execution and the imaginative and emotional engagement with the work. One example of this was how I had initially intended to travel across the country identifying and photographing landscapes, but the process, particularly in post-production

identified the merit in returning to sites. The familiarity with the location as a result of the scrutiny I had applied in making the image often prompted a desire to return. Sometimes this was to improve or test a technical procedure or other times to simply revisit the process of making an image but with a greater awareness resulting from having studied the landscape previously pixel by pixel. Hence some of the images I have made are second or third iterations of the same site or an aggregation of photographic material collected over multiple visits. These were unexpected outcomes and tied to another emergent role, that of the extent to which my own innate behaviours shaped the creative process. There is the learned behaviour and sensitivity to the interstitial landscape which comes from a professional background in working with building design and landscaping but also the autobiographical associations and triggers that shape interests and preferences, anxieties and pleasures. There is a necessary tension between the intellectual and the innate in creating this work, and in letting the outcomes manifest or emerge as unforeseen qualities and attributes. The process becomes a conduit to an expression of both a rational and intuitive response to the landscape. The site visit, the setup, the post-production, all begin to have a quality that accesses an intuited as well as a reasoned approach.

The images I make are ultimately intended to be seen as a print. Many of the qualities I hope for in the work can only be actuated when the image becomes a physical object. I had realised from the start of this project that the final work would take the form of printed images shown as an exhibition. This is the way in which the work and its contribution to new knowledge is disseminated. The print is the principal way in which the role of the photograph acts to engage the viewer as an invocation of enchantment. Each point in the chain of events which go to make up the final image is an element in an amalgam that will ultimately be realised as an artefact in the form of a print. It is my ambition that the print as an artefact fluctuates between the object world it depicts and its own status as an object in the world. By this, I mean that the print acts simultaneously to show the viewer a landscape but also invites examination of the print as something which offers an

unexpected ambiguity in its construction and provenance. This seems an essential characteristic which helps to unsettle the viewer's expectations of what they are looking at. In January 2022 I staged an exhibition and showed the work as prints in a gallery space (figure 25). Despite working within the continuing Covid restrictions imposed at the time it was possible to get

Figure 25. Exhibition of the author's work at Rogue Studios (2022)

feedback from visitors looking at the work. This helped determine the success or otherwise of the images in prompting the necessary reconsideration of the interstitial landscapes and content they presented as invoking a sense of wonder. In talking to visitors to the exhibition I was able to get an impression of the qualities that started to emerge for the viewer as they approached and inspected the work. An often-repeated phrase was that of the 'uncanny', of a trait in the work that caused the viewer to question whether the image was a painting/drawing or a photograph, or some sort of hybrid between the two. The reason for this, they explained, was how the detail within the work becomes ever more apparent the closer you get and with it your perception of it as a conventional photograph changed. I was also pleased to see how people would be drawn in to look closely then step back to reconsider the context of the detail and then move in again. This was part of the embodied cognition and enactment of seeing through movement to scrutinise the minutiae as well as the overall picture I had hoped for, and as a result actuate some of the prerequisites of telepresent engagement with the landscapes and the objects within them. This did point to an error on my part in hanging

the work a little too low on the wall (I had set the average eyeline height at 1.5m and hung the work so the midpoint of the image was at that level) as visitors would have to crouch to examine the lowest regions of the work. The height at which to hang work is an important consideration in how the images are to be perceived by the viewer. Photographer Candida Höfer's ongoing series of images showing interior spaces such as libraries and museums is hung relatively low on the gallery wall. In combination with Höfer's signature central perspectival view, the positioning of the work creates an almost trompe l'oeil effect where the floor and structures of the image appear as a continuation of the gallery space for the viewer. My work is in part concerned with inviting the viewer to examine the image across its surface rather than as a window through which to look, and in testing I realised the work needed to be higher on the wall. The final two years of the project have been conducted under varying levels of Covid19 restrictions and I have talked about some of the aspects of this earlier in the thesis, but one of the most significant restrictions I and many other artist practitioners have faced is the inability to show work or test it at scale. Being able to see the project realised as prints on a wall was a major milestone for me and one that allowed me the first opportunity to bring together the images in one space at the same time since testing earlier work at an exhibition in 2019. I had been examining the work as prints before this event but only as individual works. The exhibition offered the opportunity to make considerations of relationships between images and how they should be arranged. My aim in the way I hung the work was to create as great a disassociation between images as possible. This is to say, images with similar compositional or tonal characteristics would be kept apart and separated by those with contrasting qualities. The reason for this was to avoid any suggestion of diptychs or triptychs occurring – each image should warrant individual attention by the viewer and not seen as a sequence or group. It did, however, demonstrate that whilst I did not want images to appear as sequences there were perhaps limits to how visually disparate images could be and that this could only be a deliberation made through mounting an exhibition. My image of the Trafford Centre Great Hall was conceptually aligned with the other images as part of the project and making

the shopping centre photograph was helpful in shaping my ideas and advancing the research. But it did not sit comfortably in the exhibition as an interior space amongst landscapes and I have since concluded not to show it alongside the other images in future shows.

The show prompted me to consider experimenting in future shows with how and where the work is hung – how the merits of each image might be considered regarding hanging height and position within a space. I am reassured by how an event such as showing the work in a gallery space has prompted questions of layout and presentation, and whilst a significant milestone it is not a full stop. It is instead a catalyst for new ideas in showing the work and for creating more images. More broadly, this project has helped me to develop my practice as a form of ongoing enquiry where my interest in the interstitial landscape grows as I continue to photograph it. I have written about the role of personal histories and professional backgrounds in making work but there is also the evolving identity of myself as someone who photographs interstitial landscapes, and how my behaviours and inclinations develop over time alongside a growing familiarity with and cognisance of my research subject.

In summary, this research looks to engage the viewer with interstitial landscapes as places which can be reconsidered through photographic scrutiny as places redolent of wonder and enchantment. The images look to contribute to an examination and awareness of such landscapes as places which serve to inform us of the networked entanglements of human and non-human entities and of the ecological complexities which arise in consequence. The work sits within a broader desire to challenge an anthropocentric world view and presents a relationship with material which recognises a greater parity of action and effect between human and non-human. In doing so it seeks to invoke an understanding of enchantment which can be experienced in unlikely landscapes. Are there wonders in the interstitial landscape, and can photography invoke an understanding of such places as being enchanted? This question acted as a driving force in creating

the work and has energised my desire to make more images, and the success or otherwise in addressing the question is ultimately actuated in the response of the viewer to the work. For me, the project has changed my approach to photography in that I find it almost impossible to make a conventional photograph using a single exposure. To return to the title of this project - *For Want of Wonder*, G K Chesterton aligned himself with the miniature boy Peter as someone able to enjoy the wonders that surrounded him, of which he was now aware due to the reoriented cognition of the world that his size allowed. Photography is now my means to collect sufficient data to build images that let me see as the diminutive Peter does in Chesterton's story. Not so much as a miniature boy, but as someone with a changed awareness of the world around them, and a reconsideration through photographic scrutiny to excite a sense of wonder. My ambition for the work is that those viewing it might sense the same.

Bibliography:

Ainsworth, P. (2015) Evidence and Graham Harman's Third Table. *Philosophy of Photography*, 6(1), 37-47.

Alexander, D.A. et al. (2006) Processing of Mars Exploration Rover imagery for science and operations planning. *Journal of Geophysical Research: Planets*, 111(E2), n/a-n/a.

Andrews, M. (1999) *Landscape and Western Art*. Oxford: UK Oxford University Press.

Ascher, I. (2010) Max Weber and the 'Spirit' of The Protestant Ethic. *Journal of Classical Sociology*, 10(2), 99-108.

Atkin, W. (2017) In the Aura of the Object: Modernity's Re-Enchantment. *Art History*, 40(1), 210-214.

Atzmon, L. & Boradkar, P. (2014) Introduction A Design Encounter with Thing Theory. *Design and Culture*, 6(2), 141-152.

Auge, M. (2009) *Non-Places*. London: Verso Books.

Barrett, E. & Bolt, B. (2019) *Practice as Research: Approaches to Creative Arts Enquiry.* London: Bloomsbury.

Barthes, R. (2009) *Mythologies*. London: Vintage Classic.

Barthes, R. (2000) *Camera Lucida*. London: Vintage Classic.

Bartram, R. (2004) Visuality, Dromology and Time Compression. *Time & Society*, 13(2-3), 285-300.

Baudrillard, J. (1994) *uma and Simulation*. USA: University of Michigan Press.

BenDor, T.K., Metcalf, S.S. & Paich, M. (2011) The Dynamics of Brownfield Redevelopment. *Sustainability*, 3(6), 914-936.

Benjamin, W. (2008) *The Work of Art in the Age of Mechanical Reproduction*. UK: Penguin.

Bennett, J. (2004) The Force of Things. *Political Theory*, 32(3), 347-372.

Bennett, J. (2009) *Vibrant Matter*. Durham USA: Duke University Press.

Bennett, J. (2016) *The Enchantment of Modern Life*. Princeton: Princeton University Press.

Berger, A. (2006) *Drosscape*. New York: Princeton Architectural Press.

Biro, M. (2012) From Analogue to Digital Photography: Bernd and Hilla Becher and Andreas Gursky. *History of Photography*, 36(3), 353-366.

Braidotti, R. (2013) *The Posthuman*. Cambridge: Polity.

Breede, L. (2019) THE PRESENCE OF ABSENCE: Michael Reisch's and Andreas Gefeller's Impossible Realities. *photographies*, 12(2), 249-263.

Brown, B. (2001) Thing Theory. *Critical Inquiry*, 28(1, Things), 1-22.

Brown, B. (2016) *Other Things*. Chicago: University of Chicago Press.

Brown, B. (2010) Objects, Others, and Us (The Refabrication of Things). *Critical Inquiry*, 36(2), 183-217.

Callaway, H.G. (2014) *Arthur S. Eddington, the Nature of the Physical World*. Cambridge: Cambridge Scholars Pub.

Campany D (2016) *Seeing Slowly. Markus Brunetti's Facades* [online] [Accessed on 18th November 2021] https://davidcampany.com/seeing-slowly-markus-brunettis-facades/

Campany, D. (2020) *On Photographs*. London: Thames and Hudson.

Candy, L. & Edmonds, E. (2018) Practice-based research in the creative arts: Foundations and futures from the front line. *Leonardo*, 51(1), 63-69.

Certeau, M.D. (2011) *The Practice of Everyday Life*. California: Univ of California Press.

Chesterton, G.K. (2007) *Tremendous Trifles*. Cosimo Classics.

Coole, D. & Frost, S. (2010) *New Materialisms*. Durham USA: Duke University Press.

Cotton, C. (2014) *The Photograph as Contemporary Art*. London: Thames and Hudson.

Coverley, M. (2018) *Psychogeography*. Harpendem: Oldcastle Books.

Crawford, T.H. (1999) Conducting technologies Virilio's and Latour's philosophies of the present state. *Angelaki*, 4(2), 171-181.

Dahó, M. (2019) LANDSCAPE AND THE GEOGRAPHICAL TURN IN PHOTOGRAPHIC PRACTICE. *photographies*, 12(2), 227-248.

Debord, G. (2014) *The Society of the Spectacle*. Berkley CA: Bureau of Public Secrets.

Delanda, M. (2016) *Assemblage Theory*. Edinburgh: Edinburgh University Press.

Dennis, K. (2015) Eclipsing Aestheticism: Western Landscape Photography After Ansel Adams. *Miranda*, (11),

DeSilvey, C. & Edensor, T. (2013) Reckoning with ruins. *Progress in Human Geography*, 37(4), 465-485.

Dillon, B. (2011) *Ruins*. Cambridge, Massachusetts: MIT press.

Dittmer, J.N. (2007) Colonialism and place creation in Mars Pathfinder media coverage. *Geographical Review*, 97(1), 112-130.

Dolphijn, R. & Tuin, I.V.D. (2012) *New Materialism*. Open Humanities Press,

Durepos, G. & Mills, A.J. (2012) Actor-Network Theory, ANTi-History and critical organizational historiography. *Organization*, 19(6), 703-721.

Eco, U. (1995) *Faith in Fakes*. London: Random House.

Edensor, T. (2005) *Industrial Ruins*. Oxford UK: Berg Publishers.

Edensor, T. (2011) Entangled agencies, material networks and repair in a building assemblage: the mutable stone of St Ann's Church, Manchester. *Transactions of the Institute of British Geographers*, 36(2), 238-252.

Edensor, T. & Millington, S. (2018) Learning from Blackpool Promenade: Re-enchanting sterile streets. *The Sociological Review*, 66(5), 1017-1035.

Elder-Vass, D. (2015) Disassembling actor-network theory. *Philosophy of the Social Sciences*, 45(1), 100-121.

'Episode 2'. *Modern Metamorphoses* (2021) [Radio] BBC Radio 4, 23:30 20th February 2021.

Farley, P. & Roberts, M.S. (2012) *Edgelands*. London: Random House.

Flusser, V. (2004) *Writings*. Minneapolis: University of Minnesota Press.

Flusser, V. (2011) *Into the Universe of Technical Images*, Minneapolis: University of Minnesota Press.

Flusser, V. (2013) *Towards a Philosophy of Photography*. London: Reaktion Books.

Foglia, L. & Wilson, R.A. (2013) Embodied cognition. *Wiley Interdisciplinary Reviews: Cognitive Science*, 4(3), 319-325.

Freud, S. Mclintock, D. and Houghton, A. (2003) *The uncanny*. New York: Penguin Books.

Fried, M. (2012) *Why Photography Matters as Art as Never Before*. 4th edition, Yale University Press, Newhaven and London.

Fried, M. (2005) Barthes's Punctum. *Critical Inquiry*, 31(3), 539-574.

Garrett, B.L. (2016) Picturing urban subterranea: Embodied aesthetics of London's sewers. *Environment and Planning A: Economy and Space*, 48(10), 1948-1966.

Gilbert, D., Matless, D. & Short, B. (2003) *Geographies of British Modernity*. Oxford: Blackwell Publishing.

Goldberg, K. (2001) *The Robot in the Garden*. Cambridge, Massachusetts: MIT Press.

Goss, J. (1993) The. *Annals of the Association of American Geographers*, 83(1), 18-47.

Goss, J. (2006) Geographies of consumption: the work of consumption. *Progress in Human Geography*, 30(2), 237-249.

Graham, S. (2010) *Disrupted Cities: when infrastructure fails*. New York: Routledge.

Gumpert, L. et al. (2018) *Landscapes After Ruskin*: *redefining the sublime.* Munich: Hirmer publishers.

Gunn, M.D. & Cousins, C.R. (2016) Mars surface context cameras past, present, and future. *Earth and Space Science*, 3(4), 144-162.

Gursky, A. et al. (2018) *Andreas Gursky*. London: Hayward Gallery Publishing.

Halloy, A. & Servais, V. (2014) Enchanting Gods and Dolphins: A Cross-Cultural Analysis of Uncanny Encounters. *Ethos*, 42(4), 479-504.

Harden, C.P. et al. (2014) Understanding human-landscape interactions in the "Anthropocene". *Environ Manage*, 53(1), 4-13.

Hariman, R. & Lucaites, J.L. (2016) Photography: The Abundant Art. *Photography and Culture*, 9(1), 39-58.

Harley, J.B. (1992) Deconstructing the Map, Michigan: MPublishing.

Harman, G. (2012) *The Third Table*. Ostfildern, Germany: Hatje Cantz Pub.

Harman, G. (2018) *Object-oriented Ontology*. UK: Pelican Books.

Harman, G. (2019) *Art and Objects*. UK: Polity.

Harvey, P. & Knox, H. (2012) The Enchantments of Infrastructure. *Mobilities*, 7(4), 521-536.

Heidegger, M. (2013) *The Question Concerning Technology, and Other Essays*. London: Harper Perennial Modern Classics.

Hubbard, P. & Lilley, K. (2004) Pacemaking the Modern City: The Urban Politics of Speed and Slowness. *Environment and Planning D: Society and Space*, 22(2), 273-294.

Ingold, T. (2010) Bringing things to life: Creative entanglements in a world of materials. *World*, 44, 1-25.

Ingold, T. (2016) *Lines*. Abingdon, Oxon: Routledge.

Jain, S.S. (1999) The Prosthetic Imagination: Enabling and Disabling the Prosthesis Trope. *Science, Technology, & Human Values*, 24(1), 31-54.

Jentsch, E. (1997) On the Psychology of the Uncanny (1906). *Angelaki: Journal of the Theoretical Humanities*, 2(1), 7-16.

Johnstone, S. (2008) *The Everyday*. London: Mit Press, Whitechapel.

Kane, C. (2018) The Toxic Sublime: Landscape Photography and Data Visualization. *Theory, Culture & Society*, 35(3), 121-147.

Kellner, D. (1999) Virilio, war and technology: Some critical reflections. *Theory*.

Kember, S. (2017) After the Anthropocene: the photographic for earthly survival. *Digital Creativity*, 28(4), 348-353.

Kerruish, E. (2019) Lessons on telepresence from the Mars explorer Rovers: Merleau-Ponty and the open perceptual circuit. *Culture, Theory and Critique*, 60(3-4), 344-358.

Klein, N. (2010) *No Logo*. London: Harper Collins.

Landy, J. & Saler, M.T. (2009) *The Re-enchantment of the World*. California: Stanford University Press.

Latham, A. & McCormack, D.P. (2009) Thinking with Images in Non-Representational Cities: Vignettes from Berlin. *Area*, 41(3), 252-262.

Latour, B. (1997). On Actor-Network Theory: A few Clarifications, [online] [accessed 18 November 2021] http://www.bruno-latour.fr/sites/default/files/P-67%20ACTOR-NETWORK.pdf

Latour, B. (1993) *We Have Never Been Modern*. Cambridge, Massachusetts: Harvard University Press.

Latour, B. (2007) *Reassembling the Social*. Oxford: Oxford University Press.

Lee, R.L.M. (2010) Weber, Re-enchantment and Social Futures. *Time & Society*, 19(2), 180-192.

Lefebvre, H. (1992) *The Production of Space*. Oxford: Wiley-Blackwell.

Lister, M. (2013) *The Photographic Image in Digital Culture*. London: Routledge.

Lowenthal, D. (1991) British National Identity and the English Landscape. *Rural History*, 2, 205-230.

Lyon, D. (1991) "Bentham's Panopticon: From Moral Architecture to Electronic Surveillance," *Queen's Quarterly*, 99(3), pp. 596–617.

Mabey, R., Sinclair, I. & Newcomb, M. (2010) *The Unofficial Countryside*. Dorset: Little Toller Books.

Macfarlane, R. (2009) *The Wild Places*. London: Granta Books.

Macfarlane, R. (2019) *Underland*: *a deep time journey*. UK: Penguin.

Mahon, D. (2011) *New Collected Poems,* Loughcrew, Oldcastle, County Meath, Ireland: Gallery Press.

.

Maimon, V. (2010) Michael Fried's Modernist Theory of Photography. *History of Photography*, 34(4), 387-395.

Mariani, M. & Barron, P. (2013) *Terrain Vague*. London: Routledge.

Marx, L. (1964) *The Machine in the Garden*. USA: Oxford University Press.

Matless, D. (2010) Describing Landscape: Regional sites. *Performance Research*, 15(4), 72-82.

Matless, D. (2016) *Landscape and Englishness*. London: Reaktion Books.

Merleau-Ponty, M. (2013) *Phenomenology of perception*. London: Routledge.

McGuigan, J. (2010) Naomi Klein,No logo: taking aim at the brand bullies. *International Journal of Cultural Policy*, 16(1), 50-52.

McManus, I.C. et al. (2011) The psychometrics of photographic cropping: the influence of colour, meaning, and expertise. *Perception*, 40(3), 332-357.

Merriman, P. (2006) 'A new look at the English landscape': landscape architecture, movement and the aesthetics of motorways in early postwar Britain. *cultural geographies*, 13(1), 78-105.

Minsky, M. (1980) Telepresence. *Omni magazine.*

Misa, T.J., Brey, P. & Feenberg, A. (2003) *Modernity and Technology*. Cambridge, Massachusetts: MIT Press.

Misrach, R. (2020) *Richard Misrach on Landscape and Meaning*. Aperture, [s.l.]

Morton, T. (2013) *Hyperobjects*. Posthumanities, Minneapolis: University of Minnesota Press.

Morton, T. (2013) Poisoned Ground. *symplokē*, 21(1-2), 37-50.

Nomadland. (2020) Directed by Chloé Zhao. [Film] United States: Searchlight Pictures.

Ole Bærenholdt, J. (2016) Experiencing the enchantment of place and mobility. *Journal of Consumer Culture*, 16(2), 393-411.

'Our Blue Planet'. *Blue Planet II* (2017) [Television] BBC Four 22:10 14th May 2019.

Ostergaard, P., Fitchett, J. & Jantzen, C. (2013) A critique of the ontology of consumer enchantment. *Journal of Consumer Behaviour*, 12(5), 337-344.

Papagiannis, H. (2014) Working towards defining an aesthetics of augmented reality. *Convergence: The International Journal of Research into New Media Technologies*, 20(1), 33-40.

Peck, J. (2016) Vibrant Photography: Photographs, actants and political ecology. *Photographies*, 9(1), 71-89.

Perec, G. (2008) *Species of Spaces and Other Pieces*. London: Penguin Books.

Prendeville, B. (2000) *Realism in 20th Century Painting*. London: Thames and Hudson.

Pyyry, N. (2016) Learning with the city via enchantment: photo-walks as creative encounters. *Discourse: Studies in the Cultural Politics of Education*, 37(1), 102-115.

Ricketts, J.R. (2011) Land of (Re) Enchantment: Tourism and Sacred Space at Roswell and Chimayó, New Mexico. *Journal of the Southwest*, 53(2), 239-261.

Riley, J.A. (2017) Hauntology, Ruins, and the Failure of the Future in Andrei Tarkovsky's Stalker. *Journal of Film and Video*, 69(1), 18-26.

Ritchin, F. (2009) *After Photography*. London: W. W. Norton & Company.

Ritzer, G. (2010) *Enchanting a Disenchanted World*. California: Pine Forge Press.

Roberts, J. (2010) Photography, landscape and the social production of space. *Philosophy of Photography*, 1(2), 135-156.

Roberts, L. (2015) The Rhythm of Non-Places: Marooning the Embodied Self in Depthless Space. *Humanities*, 4, 569-599.

Rosenberger, R. (2013) Mediating Mars: Perceptual Experience and Scientific Imaging Technologies. *Foundations of Science*, 18(1), 75-91.

Rubinstein, D. (2009) Towards Photographic Education. *Photographies*, 2, 135-142.

Rubinstein, D. & Sluis, K. (2008) A Life more Photographic. *Photographies*, 1, 9-28.

Saler, M. (2006) Modernity and Enchantment: A Historiographic Review. *The American historical review*, 111(3), 692-716.

Sayes, E. (2014) Actor-Network Theory and methodology: Just what does it mean to say that nonhumans have agency. *Soc Stud Sci*, 44(1), 134-149.

Schuster, J. (2013) Between Manufacturing and Landscapes: Edward Burtynsky and the Photography of Ecology. *Photography and Culture*, 6(2), 193-212.

Seidman, S. (1983) Modernity, Meaning, and Cultural Pessimism in Max Weber. *Sociological Analysis*, 44(4), 267-278.

Sherry, P. (2009) Disenchantment, re-enchantment, and enchantment. *Modern Theology*, 25(3), 369-386.

Shirley, R. (2016) *Rural Modernity, Everyday Life and Visual Culture*. London: Routledge.

Shore, S., Schmidt-Wulffen, S. & Tillman, L. (2014) *Stephen Shore - Uncommon Places*. London: Thames & Hudson.

Skopik, S. (2003) Thomas Struth retrospective. *History of Photography*, 27(3), 302-303.

Smith, O. (2019) INTRODUCTION: PHOTOGRAPHY AND LANDSCAPE. *photographies*, 12(2), 137-142.

Smith, O. (2019) The Reality of The Place Where We Live: Interview with John Davies. *photographies*, 12(2), 143-153.

Smith, S.M. & Sliwinski, S. (2017) *Photography and the Optical Unconscious*. Durham, USA: Duke University Press,

Smithson, R. (1967) "The Monuments of Passaic." *Artforum International,* 6(4), 52-57.

Somdahl-Sands, K. (2013) "Non-Representational Theory for the Uninitiated: Come JUMP with me!". *Geography Compass*, 7(1), 1-6.

Sontag, S. (2001) *On Photography*. London: Penguin.

Tarolli, P. et al. (2014) Landscapes in the Anthropocene: State of the art and future directions. *Anthropocene*, 6, 1-2.

Taylor, P.J. (1996) What's Modern about the Modern World-System? Introducing Ordinary Modernity through World Hegemony. *Review of International Political Economy*, 3(2), 260-286.

The Stately Pleasure Dome. (2017) [Radio] BBC Radio 4, 23:30 30th December 2017.

Thoreau, H.D. (2016) *Walden*. London: Penguin Books Limited,

Thrift, N. (2004) Driving in the City. *Theory, Culture & Society*, 21(4-5), 41-59.

Thrift, N. (2008) *Non-Representational Theory*. London: Routledge.

Vertesi, J. (2012) Seeing like a Rover: Visualization, embodiment, and interaction on the Mars Exploration Rover Mission. *Social Studies of Science*, 42(3), 393-414.

Vickery, M.B. (2020) *Landscape and infrastructure: reimagining the pastoral paradigm for the twenty-first century*. Bloomsbury Visual Arts, London.

Virilio, P. (1994) *The Vision Machine*. Indiana University Press.

Virilio, P. (1995) *The Art of the Motor*. University of Minnesota Press.

Virilio, P. (2006) *Speed and Politics*. London: Semiotext.

Virilio, P. (2009) *The Aesthetics of Disappearance*. London: Semiotext.

Virilio, P. & Richard, B. (2012) *The Administration of Fear*. MIT Press.

Wade, A. A Dromology of the Videogame. *gamephilosophy.org*.

Walton, K.L. (1984) Transparent Pictures: On the Nature of Photographic Realism. *Critical Inquiry*, 11(2), 246-277.

Weber, M. (2013) *The Protestant Ethic and the Spirit of Capitalism*. UK: Amazon.

Weber, M. & Owen, D.S. (2004) *The Vocation Lectures*. Indianapolis: Hackett Publishing.

Wells, L. (2019) HIDDEN HISTORIES AND LANDSCAPE ENIGMAS. *photographies*, 12(2), 177-193.

Whittle, A. & Spicer, A. (2008) Is Actor Network Theory Critique. *Organization Studies*, 29(4), 611-629.

Williams, R. (1993) Cultural origins and environmental implications of large technological systems. *Science in context*, 6(2), 377-403.

Woods, M. (2011) *Rural*. London: Routledge.

Wooldridge, D. (2016) Visibilility and realism: Photography and the problems of transparency. *Philosophy of Photography*, 7(1), 11-20.

Zylinska, J. (2017) *Nonhuman Photography*. Cambridge, Massachusetts: MIT Press.