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Photographic Empiricism: Reflections and Reconfigurations.

An extended essay presented in partial fulfilment
of the requirements for the postgraduate degree of

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Andrew Beck

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Abstract

Through experimentations with light and its reflection, separation and reconfiguration this project seeks to locate links between the process of photography and elements of philosophy centred within metaphysics and epistemology. Drawing on the ideas of dualism, analysis, synthesis and empiricism this project explores how photography can contribute to the discourse concerning the metaphysical and epistemological inquiries into the transfer of sense data, the development of knowledge, and the relationship between the material and immaterial. It also maps and describes the relationship between light and space through photography.

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Circular Structuralism

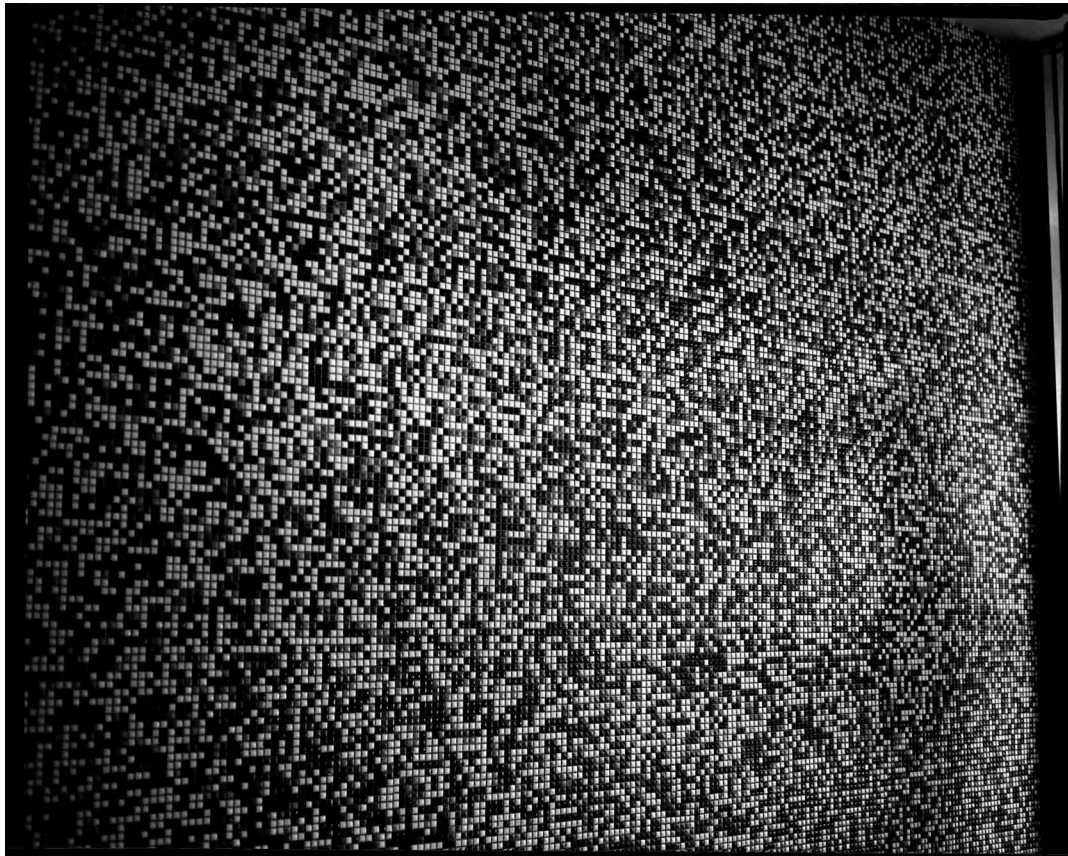


Figure 1. *Structure*, image by author, 2010.

This project began with a single image of a tiled wall. The wall was an array of tones, each block working with the next to create a pattern. It was a system of components working both individually and collectively. Each piece had a relationship to the next yet existed entirely in separation. The tiles consisted of three different tones (black, white, and grey), which seemed to create a singular body (Fig 1.). The body as a whole could not exist without its components.

The pre Socratic philosopher Heraclitus devised a theory known as the "unity of opposites". He stated, "It is wise to agree that all things are one. In differing it agrees with itself, a backward-turning connection, like that of a bow and a lyre. The path up and down is one the same."(Hicks, 1925, p. 344). His point being that elements in opposition to each other exist only in unity, one cannot be without the other. The tiled wall cannot exist without the tiles and the tiles have no application without the wall.

The wall's structure is directed by the arrangement and pattern of the tiles in the same way as any other structure of a substance. Philosophers through out philosophy's history have touched upon this structural nature of materials, however this had an increased significance in the 17th and 18th centuries due to the focus on the natural sciences and the developing scientific world view. Working during this period was scientist and theorist Robert Boyle. In trying to make sense of chemical behaviour Boyle speculated that material substances are composed of corpuscles that are small bodies that make up a substance, and that "different properties of different substances are to be explained in terms of their microstructure" (Boyle, 2002, p. 104). This theory came to be known as Corpuscularian Theory. Boyle's point was that the reason why something has the colour it does is because of the arrangement, shape and pattern of these corpuscles and how the light bounces off them. So the primary properties (the properties that can be detected by the senses, that are visible directly) of substances can be explained by their secondary properties (those that are undetectable via the senses). These two types of properties exist in servitude to each other in just the same way as the tiles to the wall. There is a circular relationship between these types of properties not dissimilar to those in Heraclitus "unity of opposites".

Photography's links to Metaphysics and Epistemology

Photography by its nature flattens the three-dimensional. Through light it extracts the visual properties of objects and space and represents them in two dimensions. Photography's ability to compress information has been used in this research in the investigation of the philosophical arguments found the studies of metaphysics and epistemology.

The primary question driving this research has been,

How can photography be used to investigate both the material and immaterial?

The philosophy of the 17th and 18th century has formed the centre of inquiry for this photographic investigation. The theories developed in the early modern period have been the generation point for the work that has been created over the course of this study. The two main subject of focus are the branches of philosophy know as

metaphysics and epistemology. Both these subjects found their roots around this part of history and hold interesting links and applications to a photographic practice being developed in a 21st century.

Historically metaphysics and epistemology as well as the theories of the early modern period had a strong link with photography when it was first being developed the early to late 19th century. In the centuries before the groundwork had been laid for these topics by such theorists as Descartes, Locke, and Hume. And with the introduction of photography these arguments developed in the early stages of metaphysics and epistemology became even more pertinent and remain equally if not more relevant in the current age.

Photography's connection with defining the nature of knowledge and 'the truth' render it a perfect vehicle for the exploration into these topics of philosophy that concern themselves with the same areas of inquiry. In this project photography has been used as a tool for examination and re-examination as well as an apparatus for the generation of new knowledge.

As a tool for the analysis and synthesis of information, photography holds a unique set of abilities with regards to representation. To render down to the minute detail is the trait that most find so attractive about photography. However the perfection associated with the medium is not the primary focus of this project. Instead photography has been employed to examine abstract subjects of philosophy whose forms do not easily lend themselves to physical representation.



Figure 2. *Pentagon*, image by author, 2010.

Photography still holds some residual association with perfect representation, abstract photographic images that have very little ‘real world’ associations go against the grain of conventional photography. In this project the majority of the photographs produced do not allow the viewer a quick and precise reading because of the deficiency of information in them that can be referenced back to reality. This method was employed in an attempt to build a dialogue between image and viewer regarding the thoughts behind the photographs that are slightly removed from reality. In the image *Pentagon* (Fig 2.) real world connections are still evident yet through the photographic manipulation these connections have become abstracted. Throughout

the course of this project photographs have been made that attempt to represent the non-physical. This is a method, which goes against the nature of the medium. In a sense they are photographs that work against photography.

The assumption that photography can represent reality accurately has been long since abandoned, however photography still holds a lingering association with truth and reality. Jean Baudrillard states in his text *Simulacra and Simulations* that "It is dangerous to unmask images, since they dissimulate the fact that there is nothing behind them" (Baudrillard, 1994, p. 172). In this text Baudrillard dismantles the photographic image as a perceived conduit for true representation. This lack of reality within photography has made a large contribution to the outcomes of the work produced in this project. In the acknowledgement of this images have been made that no longer seek to represent material 'things'. The subject has been the immaterial as well as the relationship between the material and immaterial.

Because of the representative nature of the medium, photography by default has connections to the philosophical idea of knowledge. One of epistemology's central concerns is the separation of belief or opinion and knowledge, that is what is believed to be known and what can be known with certainty. The integrity of knowledge gathered from the photographic image precarious at best. The paradox of photography becomes evident when held along side these epistemological concerns. Philosophy is an examination of truth and reality and photography can be seen as something that obscures these things.

Regardless of this conflict epistemology and photography can be linked with a common characteristic. This characteristic is light; light acts as a comprehensible type of information that is arguably responsible for all human understanding and knowledge. It is a type of information vital to the mechanism of photography and to the generation of knowledge through visual sense perception. It plays an often uncredited yet intriguing roll in both fields.

Metaphysics is the branch of philosophy that deals with the first principles of things. Where the natural sciences accept the rules and principles of reality as given metaphysics examines the very framework of being. "It includes abstract concepts

such as being, knowing, substance, cause, identity, time, and space" (*Oxford dictionary*, 2009, p. 445). A significant portion of the development of this project has come about through the analysis of these elements within the subject of metaphysics. This analysis was conducted both in relation to and through photography.

Within both metaphysics and epistemology specific arguments act as the framework and generation points for the creation of work. These arguments are centralised around the ideas of structure, repetition, sense data, analysis and synthesis as well as the nature of the minds interpretation of reality.

Methodological Skepticism

The first of the arguments to be applied were of those of French philosopher Rene Descartes' Methodological Skepticism. A reductive approach, Descartes' ambition was to establish what one could know with certainty about the world and to refute anything that was speculation or opinion. His method was to reduce knowledge to its framework. "I had to raze everything to the ground and begin again from the original foundations, if I wanted to establish anything firm and lasting in the sciences"(Descartes, 1996, Meditation I, p. 12). Descartes postulated that to gain clarity of a subject, situation or system complete reduction of the pre-established knowledge surrounding them must occur first. Then the method was to rebuild that system of knowledge through reason and logic. Photography can arguably be viewed as a medium that can reduce as well as augment, reducing three dimensions down to two, situations to singular insitences; and it can also transform the physical to the metaphysical through its repetition and representation.

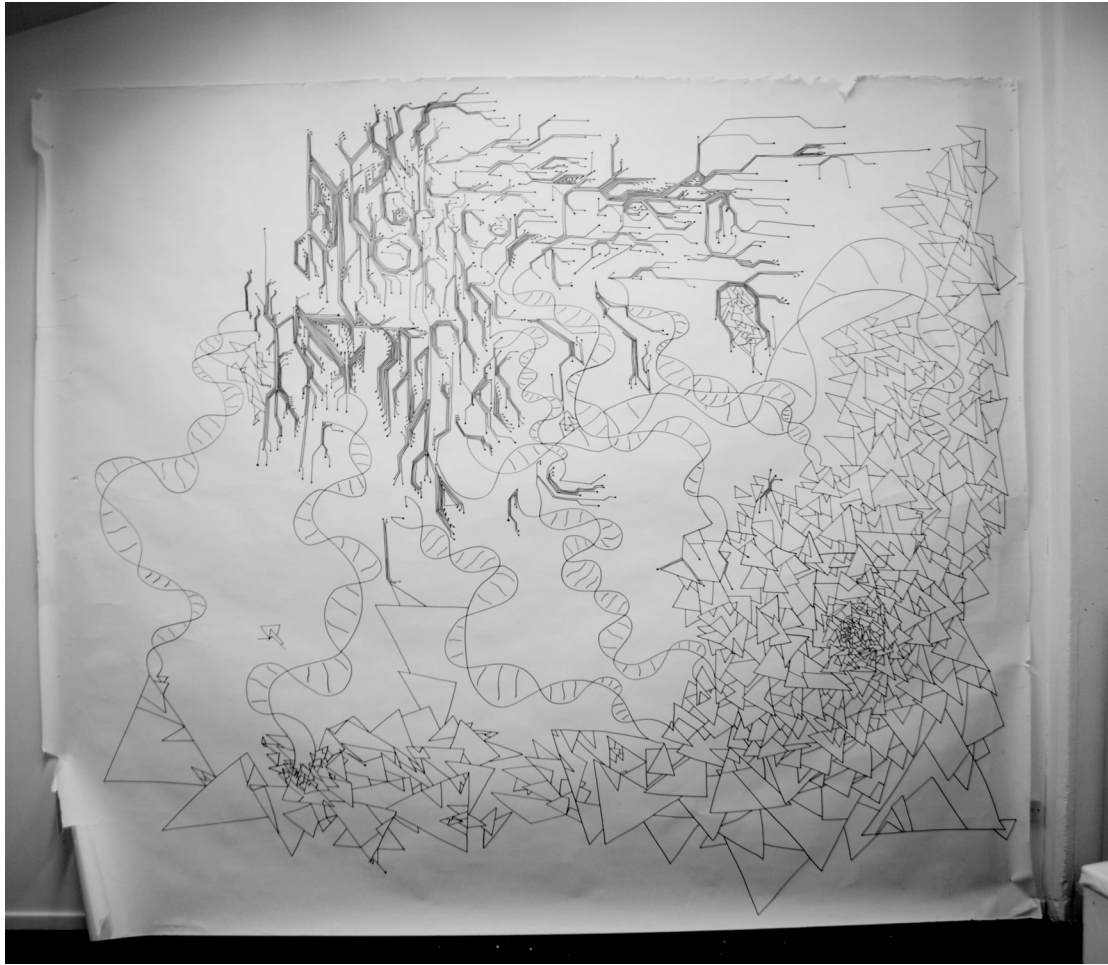


Figure 3. *Reduction*, image by author, 2010.

To begin with, ideas of reduction and fundamental structure were developed through the process of drawing rather than photography. This was a way of working through complex ideas with a direct and physical approach. Using this simplistic method of representation allowed for a step back from photography as a medium and a re-examination of the medium at the beginning of the project. It was an approach that acted to establish the method to which new work was based from. This initial work was a largescale drawing (Fig 3.) that consisted of a simplistic set of rules for representation. Thin black lines were used on a white background with no rendering or shadow. This style and subject matter was influenced by the large-scale drawings of Japanese artist Yayoi Kusama (Fig 4.) who in this particular series of drawings worked with very simplistic reductionist representations of bodily and organic structures and systems.

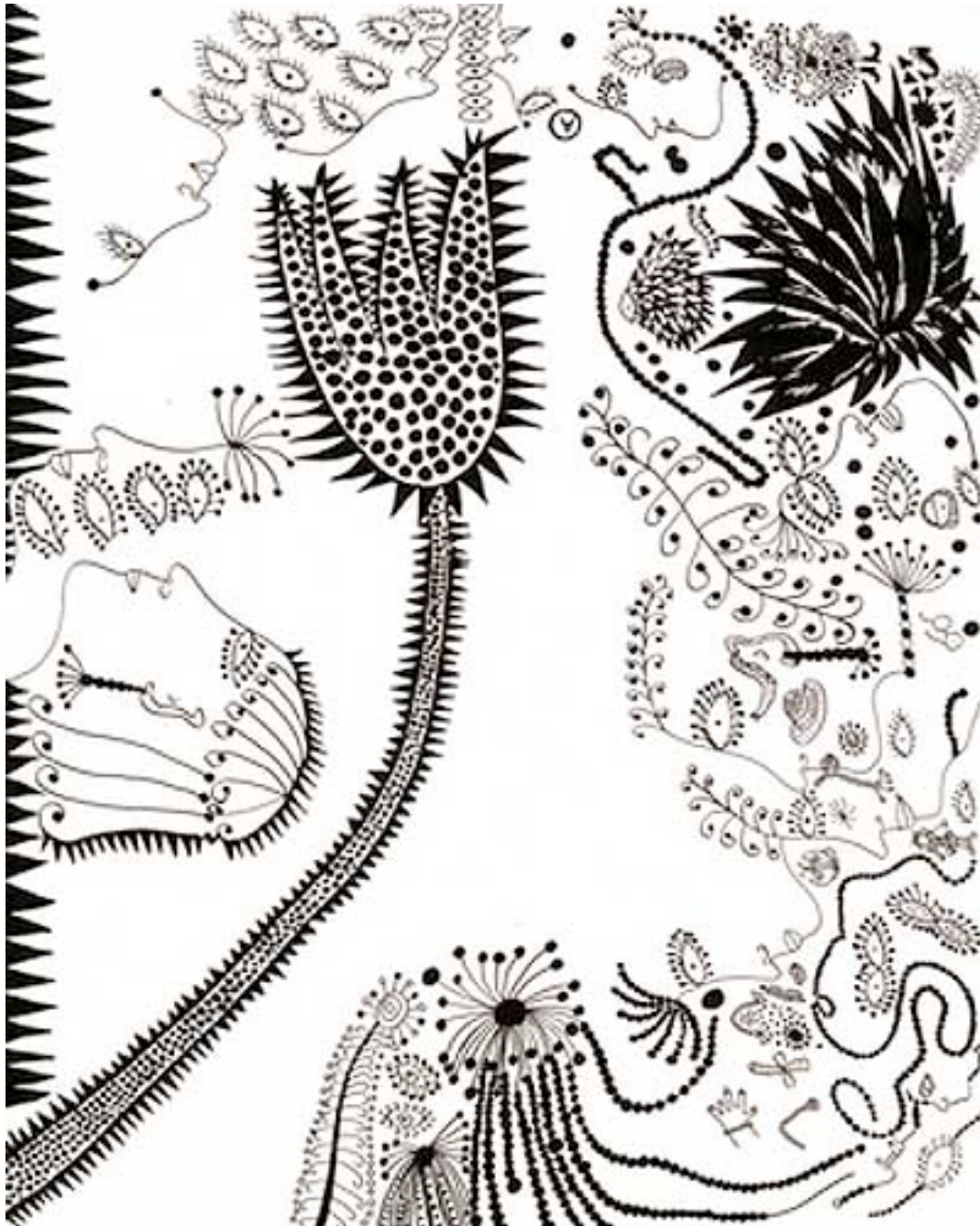


Figure 4. *Untitled*, Yayoi Kusama, 2009.

The components of the drawing are sub-structures that build other structures. DNA strands, geometric shapes as well as computer coding start to blend together so it became hard to delineate between the separate structures. This drawing exercise began with an investigation into the similarities and differences between naturally and artificially occurring structures through both photography and drawing.

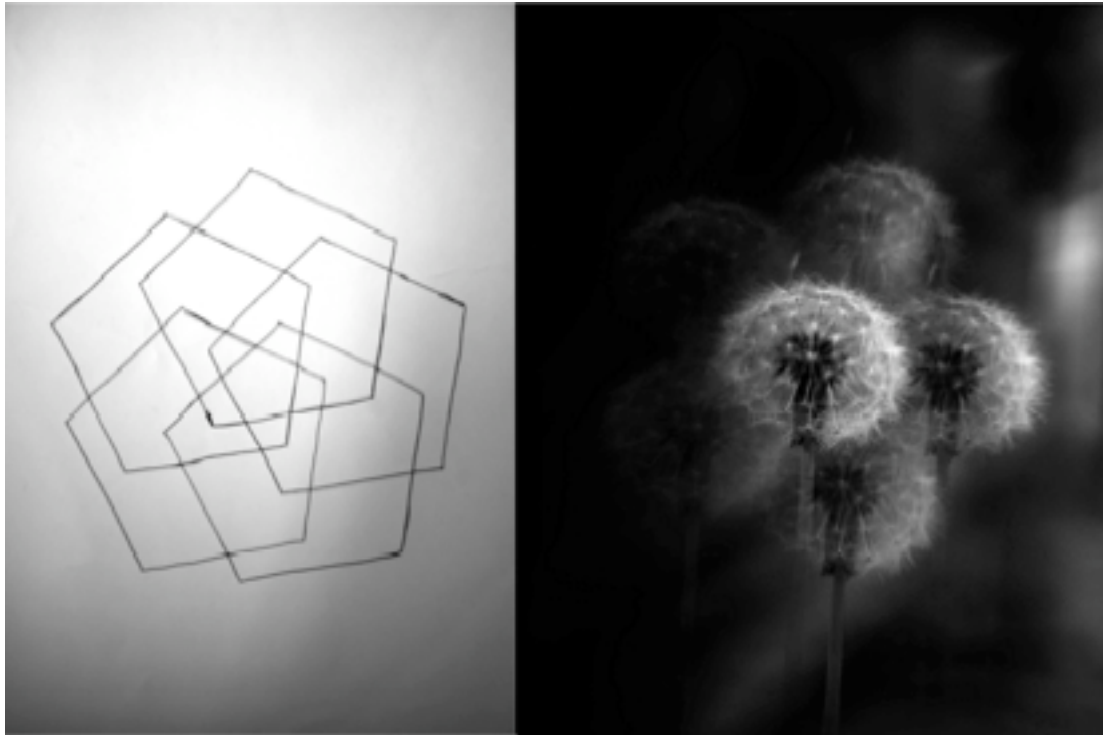


Figure 5. *Pentagon I and II*, image by author, 2010.

These similarities and differences were drawn out by the use of both photography and drawing. The method was to either first make a drawing of a simple geometric shape then take a photograph that mimicked or echoed it, or to do this in reverse and to make a drawing from a photograph (Fig 5.). By experimenting with the sequencing of the drawings and photographs a dialogue developed about the relationships present in the content of the images and in the methods used to create them. The works were presented as a series with no spaces between them, so they could be read as a whole work in the space and as separate images working together (Fig 6.). This exercise also explored physically the philosophical relationship between the component and the whole that was an idea carried through next phase of work in the project.

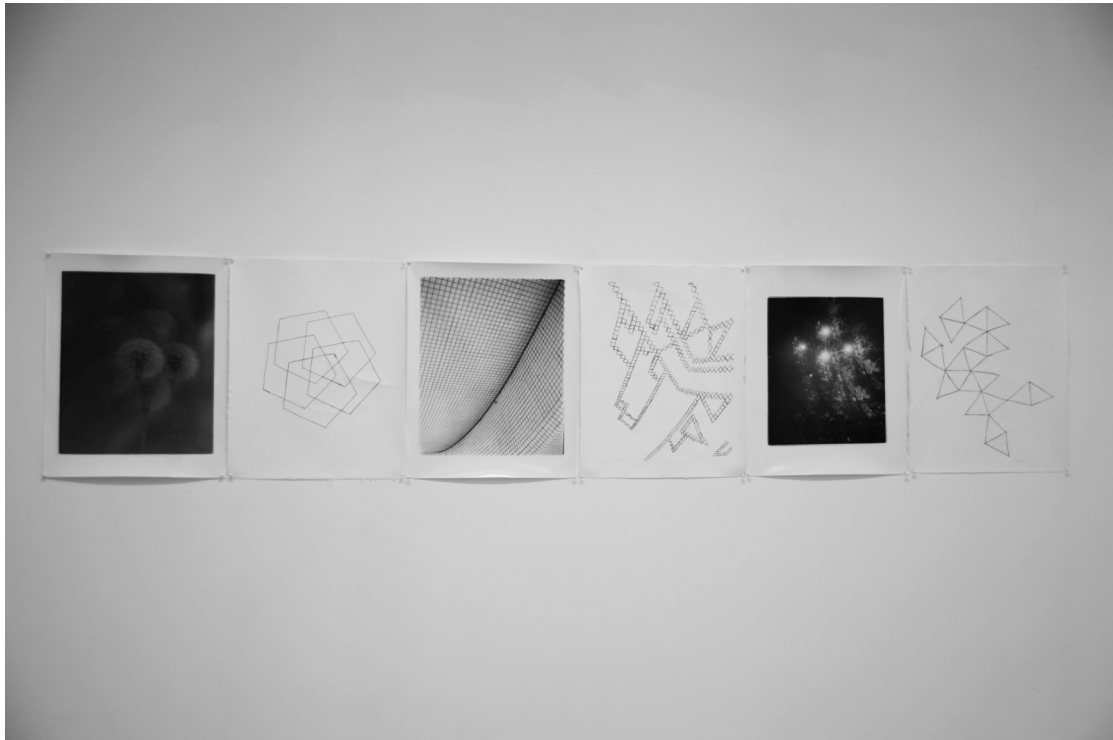


Figure 6. *Sequenced Images*, image by author, 2010.

Dualism

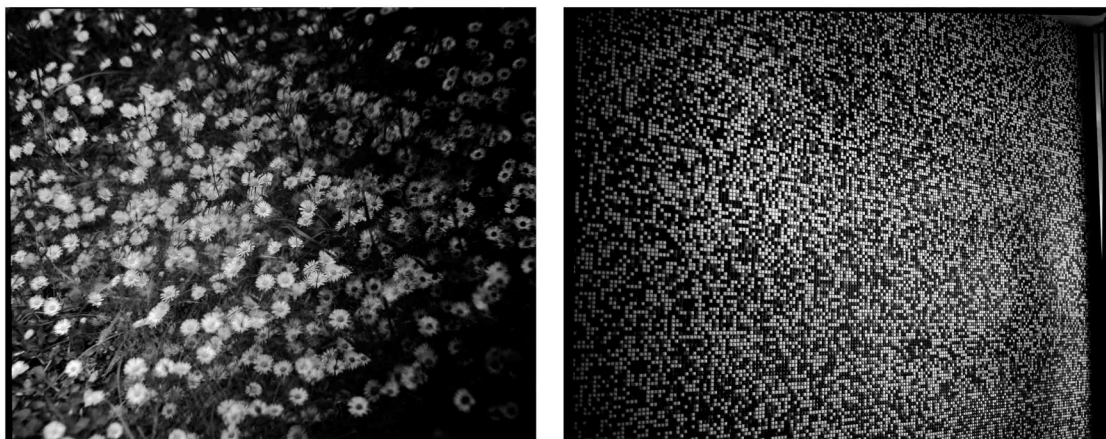


Figure 7. *Repetition and Structure*, images by author, 2010.

A combining of the content and physical presentation was combined in the developing. Following from these initial drawing experiments. The ideas of similarity and difference within the natural and the artificial was also carried through in this stage and were now conveyed through photographs and their arrangement rather than the methods previously used (Fig 7. to 8.). The images were presented in pairs and a dualistic methodology began to emerge. This approach was influenced in part from the philosophical theory of Cartesian Dualism. Developed in tandem with Descartes'

Methodological Skepticism, Descartes' theory of Dualism considers the relationship between the material body and the immaterial mind. Descartes' argues that the mind is different in its essence to the body and that each exist in separation from each other. He argues that because we only have access to the content of the mind we can never understand or have true knowledge of the physical world.



Figure 8. *Repetition and Structure*, images by author, 2010.

Descartes argues that " I am not the assemblage of members called the human body; I am not a thin and penetrating air diffused through all these members, or wind, or flame, or vapor, or breath, or any of all the things I can imagine; for I supposed that all these were not, and, without changing the supposition, I find that I still feel assured of my existence"(Descartes, 1996, Meditation II, p. 16). These ideas were applied when thinking about the materiality of the photograph, alongside the immaterial conceptual ideas held within the content of the photograph. This interest in the physicality of photography was explored through the arrangement, positioning and hanging of the prints.

This method of arrangement to convey the physical properties of the photograph was also partly influenced by the work of Gavin Hipkins. Hipkins series entitled *The Field* (Fig 9.) consisted of a grid of photograms arranged alongside each other pinned to the

wall of the gallery. His use of the grid of photographs working in sequence helped to communicate the physicality of the photographic prints. Rosalind Krauss noted in her essay *Grids*, "the grid declares the space of modernist art to be at once autonomous and autotelic"(Krauss, 1979, p. 10). Hipkins use of the grid helps the work to position itself physically thus reminding the viewer that the images are material objects as well as conduits for immaterial content.



Figure 9. *The Field*, Gavin Hipkins, 1994.

Empirically derived knowledge: The Analytic and Synthetic

The focus on the physical arrangement of works initiated a shift in the content and subject matter within the photographs, adding a layer of theoretical inquiry within metaphysics and epistemology to the work. This began with the epistemological theory of empiricism developed by the 17th century British philosopher and theorist John Locke. In *An essay concerning human understanding* Locke presents the idea of empiricism "Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas; how comes it to be furnished? To this I answer in one word, from experience"(Locke, 1690, p. 122). Locke believed that ideas about the external world that weren't derived directly from experience did not exist and that there was no such thing as knowledge that could precede observation. He also

speculated that at birth the mind was a tabula rasa, a blank slate to be filled with knowledge about the world directly from empirical evidence given to it via the senses.

The camera can be seen to be functioning in a similar manner to the mind with respect to Locke's idea about the tabula rasa. The mind is blank until exposed to ideas about the world and to a similar effect the photographic film inside the camera is a blank slate to until it is exposed to the information passing through the lens. The senses are like the lens in that they act as conduits for the raw information given to the mind. This raw information is termed as "sense data".

Locke differentiates between two types of ideas, simple and complex. "The better to understand the nature, manner, and extent of our knowledge, one thing is carefully to be observed concerning the ideas that we have; and that is, that some of them are simple and some complex"(Locke, 1690, p. 124). Complex ideas are compounded from simple ideas, and the simple ideas are taken directly from the senses and cannot be broken down any further. Whereas complex ideas can be built upon through synthesis to no end. This relates to Robert Boyle's Corpuscularian Theory, which was used as the initiator to this project, Corpuscularian Theory was now built upon in the work through the theory of analytic and synthetic propositions. Analytic and synthetic propositions are terms created by Scottish philosopher David Hume, one of Locke's contemporaries. He expanded on Locke's empiricism and theorised on the nature of the minds development of knowledge from empiricism.

In Hume's essay *An Enquiry Concerning Human Understanding* he presented an argument commonly referred to *Hume's Fork*. In this he talks of two frameworks that human knowledge is constructed around. These are analytic statements, which are a priori or created through deduction and synthetic statements, which are developed a posteriori, or through induction. Hume used the example of a bachelor to explain analytic statements; we know through the definition that "all bachelors are unmarried" as the fact that they are unmarried is intrinsic to the idea of a bachelor. To the opposite effect synthetic statements build and combine existing information, Immanuel Kant's *Critique of pure reason* used is the statement that *the cat on the mat*, is a combination of these two simpler ideas of the *cat* and the *mat* through synthesis you can produce the abstract idea of the *cat* being *on* the *mat*. A drawing (Fig 10.)

was produced in response to this idea as a way of illustrating and representing this theory in a digestible manner. It also acted as a trigger for the photographic work that followed. It was an exercise in representing a simplistic way breaking down and building up of information idea developed in *Hume's Fork*.

The ideas of analytic and synthetic propositions became integrated in the physical process of photographing in this body of work. Through the idea of synthesis a methodology involving layered photographs was developed. The photographs contained layers of separate images compounded together by way of multiple exposures. So the information within each work had been synthetically produced by physically layering the light on to each negative in the camera. By exposing a single piece of photographic film numerous times to different variations of the same scene a new composite image was made. This new composite of exposures retained pieces of information from each exposure and at the same time created new information through the layering process. The process also eliminated information through its synthesis, in much the same way as the mind and how it creates obsolete ideas through the development of new ones.

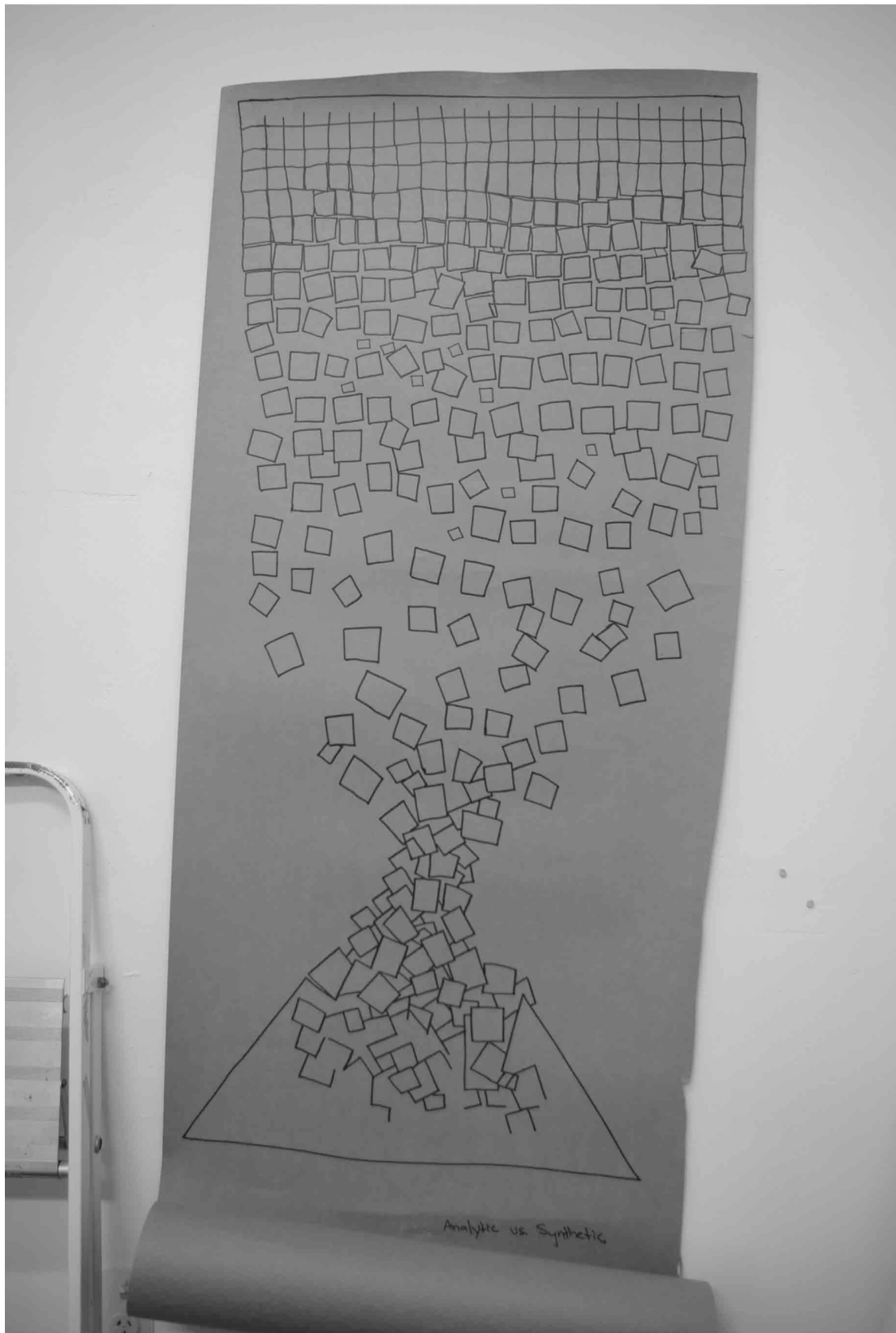


Figure 10. *Analytic Vs. Synthetic*, image by author, 2010.

These photographs (Fig 11.) produced during this stage of the project were abstract in the nature of their content. They primarily depicted scenes of repetition and structure

and unlike the previous works were now completely devoid of any natural content. These scenes of repetition and structure were again referencing the Corpuscularian Theory developed on in the earlier works. The nature of the content within the images developed an immersive quality to the prints. This was then enhanced physically in the prints by the use of scale. The scale of the prints was large enough that they created an immersive experience within the space they were shown. Rosalind Krauss' discussion on the nature of grids within conceptual art allows insight into these qualities "The grid's mythic power is that it makes us able to think we are dealing with materialism (or sometimes science, or logic) while at the same time it provides us with a release into belief (or illusion, or fiction)" (Krauss, 1979, p.10). Because of the nature of the content the viewer is both reminded of the physicality of the print as well as being enveloped into the illusion the photograph provides.



Figure 11. *Layers*, image by author, 2010.

Light Experiments: Reflection, Reconfiguration, Categorisation.

The physical layering process employed in the multiple exposure works helped the project break into a new field of research. It began in an exploration into the nature and significance of light in relation to photography and the materiality of the photographic print. The new work was a physical experimentation (Fig 12.) with light as a tool of photography and as a tool that can be used in sculpture.

In its early stages this new phase of work used naturally occurring light as a sculptural tool. This rendered the work site responsive and light dependent. The function of the mirrors in the works was to redirect the light in the space and to reflect and dismantle the physical dimensions of the space. Using the existing light in the space this made elements of the work less controllable. These two factors meant that the documentation of the light in the space became the work. The photographs suspended the light at one point, whereas in the physical viewing the light was fluid and subject to change.



Figure 12. *Reflection Test I*, image by author, 2010.

In Robert Smithson's essay *Incidents of Mirror-Travel in the Yucatan* Smithson documents temporary sculptures built in the landscape from mirrors. Because of the

temporal nature of the work Smithson's photographic documentation has become the work. Nancy Spector of the Guggenheim writes "The mirrors reflected and refracted the surrounding environs, displacing the solidity of the landscape and shattering its forms. Part earthwork and part image, the displacements contemplate temporality; while the mirror records the passage of time, its photograph suspends time"(Spector, 2006, p. 1). In Smithson's mirror works (Fig 13.) there is a categorical link between the mirror and the photograph, this link is played out in the conflict between the physical and non-physical. The photographs capture the physical environment and the non-physical reflections within the mirrors, in this regard there are elements of dualism at work.



Figure 13. *Mirror Displacement*, Robert Smithson, 1969.

Donald Goddard reviewer for *New York Art World* discusses this dualistic element within Smithson's Mirror Displacements,

As pictures, the mirrors are entries to other worlds. But they are also indications of disjunctions in our understanding of how the world is put together, what material and spiritual consciousness mean. They are literal avatars of illusion. Photographs—like maps, measurements, geological excavations—doubly embody the illusion of knowing, because on the one hand they are assumed to reproduce a scene precisely, when in fact that assumption is the very basis for misinterpretation, and because they contribute to a larger body of knowledge, which itself, perforce, must be full of misapprehensions, imprecisions, or at least questions (Goddard, 2005, p. 1).

Goddard touches on the ability of displacement and dismantlement the mirrors hold in Smithson's work. This is also true of the mirrors in the light experiments in this project. The mirrors redirect the light in the space and separate and dismantle the space itself. Goddard discusses the fallible nature of the photograph as a documentation tool, the light in the space is not the light as it appears in the photographs.

From this temporal natured stage of the project a contrasting body of work developed. In this a stage of experimentation a controlled artificially generated light was used to reflect beams of light into geometric patterns and arrangements (Fig 14.). This new stage of development held an ambiguity to the images. This was in how the light was being created in the scene (as the light source was not evident) and in how the light had been reflected and manipulated.

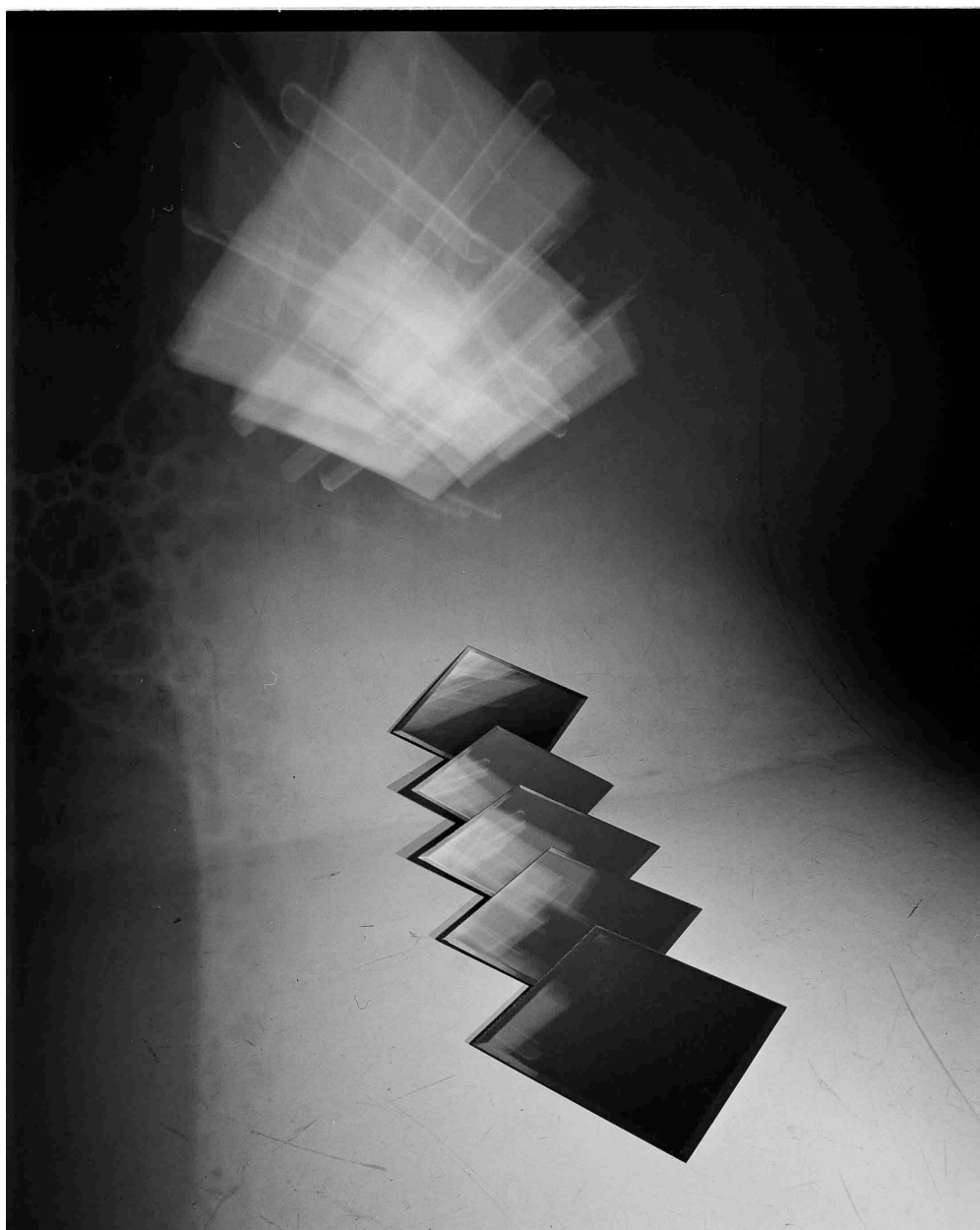


Figure 14. *Reflection Test II*, image by author, 2010.

In these works the mirrors were acting as conduits for the information/light that was directed to them. The shape or form the information took was dictated directly by the shape of the channel it was passing through. In that sense it was the conduit that created the forms for which the information was to conform. The light was a malleable substance for the mirrors to alter and transform. The mirrors are acting in a similar manner as the mind, changing and correcting the raw information/light being delivered to them. There is a link between this experiment in light and the theory of sense data or impressions by David Hume. Both the mind and the mirrors change and restructured information. These arrangements were conducted in a photographic

studio so unlike the previous work before where the space was just utilised as it was, the studio allowed for a completely neutral and controlled environment.



Figure 15. *Reflection Test III*, image by author, 2010.

The final experiment in this series (Fig 15.) took place back in the original unregulated space of the ‘naturally’ generated light works. The coda stage of these

experimentations involved an added focus on the relationship between the mirror and the light, the conduit and the information. These works linked the two elements by physically overlapping them in space, presenting a meshing of light and mirrors, which had not occurred in the previous work. The geometric configuration of the mirrors was directly reflected by the arrangement of the corresponding projections of light. Returning to the naturally lit space was an important exercise that helped to illustrate the change that took place in a space through the manipulation of light. The photographs of the light arrangements again became the work. Through these exercises in light manipulation three different approaches had emerged and showing the photographs of these different approaches alongside each other aided in the illustration of this. The newly generated approaches were

1. Naturally occurring light in an uncontrolled space
2. Artificially occurring light in a controlled space
3. Artificially occurring light in an uncontrolled space.

It was from this categorisation a loose framework and methodology was developed for the continuation of the project.

Solar Experimentations and Transmissions: The Point of Generation

From this framework and methodology of categorised approaches a new stage of work was developed using the sun as its generation point. This work took place out in 'the field', unlike the previous work this branch of inquiries was conducted in completely uncontrolled space. It was a reactionary development in the project and acted in contrast to the methods formally used. This was a search for naturally generated light arrangements, patterns, and occurrences.

This added a new element to the inventory of constituents within the project. The sun's conceptual link with time and duration started to become a focus. The movement of the sun across the sky is the most primary of illustrations of duration; this space between two points was conveyed through the content of these new images as well as their physical presentation. The content of the images was created using the various different approaches and categorisations developed in the earlier stage of this project. In the image *Solar Transmissions* (Fig 16.) the camera has been used to create and map light lines between exposures of the sun. By exposing a piece of photographic

film numerous times to the sun and moving the camera, lines of light were recorded, in effect drawing with light physically. Using the sun as a tool this exercise mapped distance, duration and time.

In Marco Fusinato's *Sun series* (Fig 17.) the sun is rendered as the apotheosis of the photographic process. It acts as the generation point for the images as well as the content. Hamish McKay said this regarding the images "It's the punk ethos of making something exciting out of barely anything....your mum tells you 'don't look at the sun - it will hurt your eyes' ... But you do. After all what is photography if it's not light hitting film. Here Marco has gone to the guts of the main source of light - the sun. " (McKay, 2010). Fusinato's images like the *Solar Transmissions* are reductive comments on the process of photography but at the same time use a complex method of representation to convey this most basic of ideas.



Figure 16. *Solar Transmissions*, image by author, 2010.



Figure 17. *Sun Series*, Marco Fusinato, 2009.



Figure 18. *Unstructured Light*, image by author, 2010.

In the late afternoon the reflective glass on the high-rise buildings in the city acts in a similar manner to the mirrors in the ‘controlled’ experiments in the previous body of work. The buildings reflect patterns of light onto the pavement in random and uncontrolled configurations (Fig 18.). This was an arrangement that had completely absolved of any geometric structure, it was fluid and unstructured.



Figure 18. *Structured Light*, image by author, 2010.

In contrast to this unstructured light reflected from the buildings the *Structured Light* (Fig 19.) image is a documentation of light conforming to a grid on the pavement. The grid provides a structure to which the cube of light is fitted. It also helps convey the idea of the light occupying space. This was because the way it divided the space in the image its lines recede towards the end of the frame. Rosalind Krauss discusses these issues within the text *Grids* " Insofar as its order is that of pure relationship, the grid is a way of abrogating the claims of natural objects to have an order particular to themselves; the relationships in the aesthetic field are shown by the grid to be in a world apart and, with respect to natural objects, to be both prior and final." (Krauss, 1979, p.10). The grid within the image provides a pseudostructure for the light when really there is none and the light only appears to fit within it.



Figure 19. *Sequenced Photographs (Installation view)*, image by author, 2010.

This structural element in the images was carried through in their physical presentation (Fig 19.). The idea of sequence and arrangement became important in the hanging of the photographs. By hanging the works continuously with no breaks between the images the work could be either read as a whole or individually, this hanging method again like previous work was influenced from Robert Boyle's Corpuscularian theory. It also took influence from David Hume's arguments concerning the problem of induction and the defining of sequence.

David Hume's argument for the problem of induction is based around a skepticism of the trust and reliance generally held for sequence, order, and structure with regards to causation. Hume's point was that "No inductively strong argument guarantees the truth of its conclusion." (Hume, 2007, p.44). In other words a repetitive consequence of an action does not guarantee the same result in the future. The images appeared in a sequence that naturally created a dialogue between them, it also created a consecutive progression. They were sequenced using a logic based around their content. However in places this logic was broken with images that did not fit with the sequence in an effort to experiment with the breaking of a preset structure and order. The configuration of the space was also used in the alteration of the presentation of the photographs. The corner of the room became an aspect of the presentation by acting

as a junction point for the sequence of images. It divided the sequence in two and added a three dimensional element to the work as it had been spread across two planes rather than just a single wall. This was intended to give an immersive quality that played on the viewer's three-dimensional awareness of the space.

The Immaterial Through The Material: Light, Time, Duration, Space.

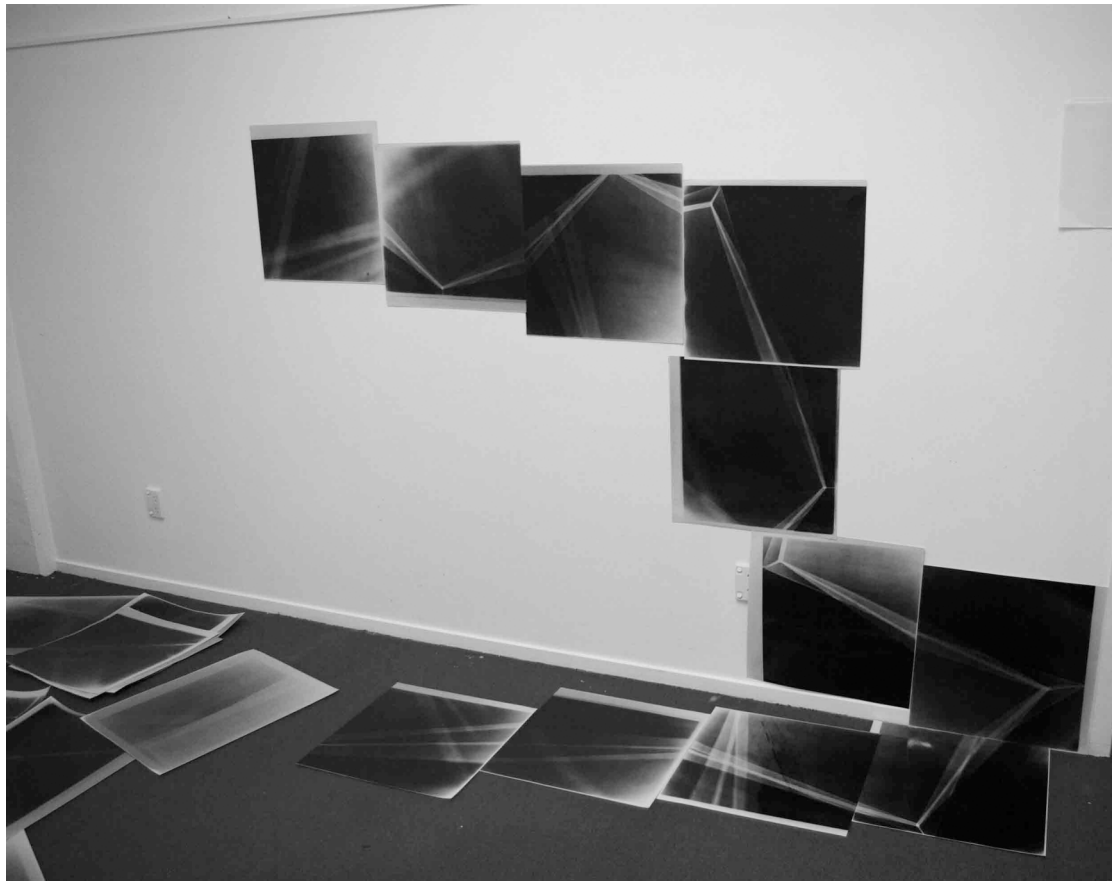


Figure 20, *Installation Experiment I. (Transfers and Inflections)*, image by author, 2010.

From this focus towards three-dimensional installation a new body of developed. Employing (Fig 20.) a larger scale as well as a greater consideration of how the work functioned in space. The content of the photographs within the work was now dealing solely with light and reflection. The method used to create the work was one of separation and reconfiguration of light through the photographic process. The process in its first stage of development used mirrors to expose lines of light onto large sheets of photographic paper; these sheets of photographic paper were then cut into pieces and reconfigured on the walls and floor. The separation and reconfiguration created a contrast in tones between the individual photographs, also because of the make shift

nature of the method the alignment of the pathways of light did not truly line up. The break down of process became an intrinsic conceptual element of the work as it conveyed the imperfect nature of representation and interpretation of information through photography. The process and presentation was also an attempt to represent an immaterial substance through a physical medium. The work acted as an imperfect and incomplete bridge between the material and immaterial this element of the work held strong links with the early explorations of this project into Cartesian dualism.

The act of rendering the immaterial through physical means is the one of the focuses of artist James Turrell's practice. Turrell uses light as a tool and medium as well as a subject for his practice. His installations use light to transform spaces and create illusions of space, dimension, and depth. In *Argus White* (Fig 21.) a three-dimensional triangle prism is created through a light projection. The prism shape appears to be three-dimensional but in reality it is an ethereal two-dimensional projection of light.



Figure 21, *Argus White*, James Turrell, 1967.

Turrell states on the nature of his installations,

I put you in a situation where you feel the physicality of light. This is an area that people try to touch on and yet there's nothing to touch. There is first of all no object and there is no image, nor any place of focus. What are you then looking at? Well I'm hoping that you then have this self reflexive act where you are looking at your looking, seeing yourself see to some degree and it does reveal something about your seeing as opposed to it being a journal of my seeing (Turrell, 1990, p.95).

The reflexive act Turrell describes in his work is circular by nature and has strong links with the process of seeing which is one of reception and exchange. Objects

project themselves into reality through their properties. These properties are then given validity through the observation of them. The circular relationship between light and vision is an elementary example of this. As Uwe Ruth notes in the essay *Light: A Spiritual and a Sensual Phenomenon* "This dual process of seeing is the crucial point why the reflections of light from the external world which a person has perceived, are registered and interpreted subjectively, depending on the mood and disposition: consider, the image of the room, composed of light rays, there the conscious (and subconscious) mind of a seeing person which has been sharpened and conditioned on certain emotional or real objects." (Ruth, 2007, p.69). Ruth's account of this



Figure 22, *Installation Experiment II. (Transfers and Inflections)*, image by author, 2010.

transference of information was an integral part of the second development of these photographic installation experiments (Fig 22.).

Transference was explored through the realignment taking place in the work which was carried through from the previous stage of development. Realignment took place in the work through the lines of light and the relationships between the individual

photographs. The reintroduction of geometry brought about a re-examination into structure in the work both aesthetically and



Figure 23, *Installation Experiment II. (Transfers and Inflections)Detail*, image by author, 2010.

conceptually. Structural element of the work gave the realignment of the pathways of the light lines an added logic. The logic of the arrangement of the individual prints was now based around the fitting together of the geometric shapes and the content. The arrangement of the work was also based around the space it was hung in, because of its nature it could change its configuration and structure to conform that of the space it was in.

The work was transported from its existing space of conception to a new space, which triggered a transformation. The light in this new space was angular, powerful, and abundant. There was a correspondence between the light in the space and the geometry within the work (Fig 24.).

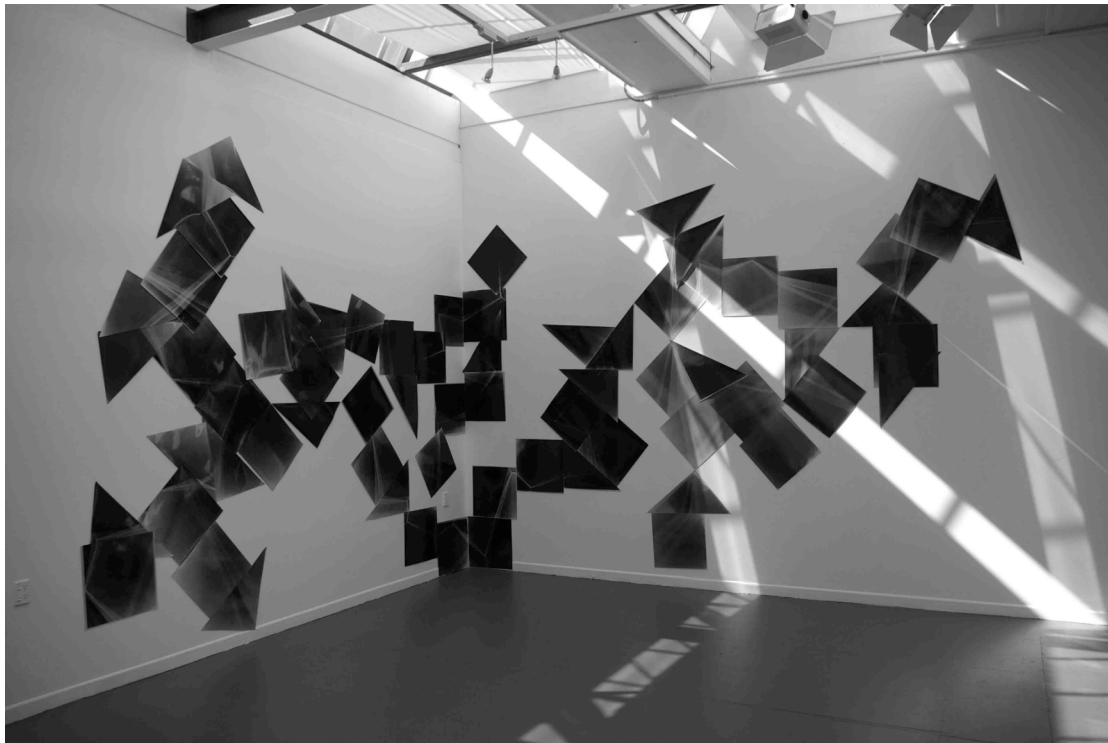


Figure 24, *Installation Experiment III. (Intension, Extension)*, image by author, 2010.



Figure 25, *Installation Experiment III. (Intension, Extension)Detail*, image by author, 2010.

There was also a relationship between the physical light in the space and the represented light in the work. The relationship was developed through the arrangement of the components to respond to the physical movement of the light (Fig 25.). The work combined the non-physical represented light in the photographs with the physical beams of light moving through the space. Again, this synthesis related back to the Cartesian idea of dualism; the relationship between the immaterial and material was represented in this unification of light.

Synthesis

In this final stage of development the unification of these two divisions of light became a crucial element of the work. This feature added the factor of time to the installation because of the movement of the light within the space over the course of the day. This movement was responded to through the arrangement of the work the



Figure 26, *Light Documentation I. Installation in progress (12:30pm)*, image by author, 2011.

lines the light created in the space (Fig 26.) could be mapped by the positioning of the prints to respond to different points during the day. Before this could occur the movement of the light had to be plotted to determine the positions the works would take in the space. As the light configurations in the space depended on the weather and changes in the position of the sun the work could never give a complete or accurate response to the light. In response to this lack of accuracy the work changed from one solid accumulation of components to small constellations of prints that worked with different light appearances that appeared in the space at different points during the day (Fig 27.).



Figure 27, *Light Documentation II. Installation in progress (5:30 to 5:42pm)*, image by author, 2011.

In *Light Documentation II* the work functions from 5:30pm to 5:42pm. For this 12-minute duration the light is in tune with the configuration of the prints. The angles in the arrangement of prints correspond with the angles created by external sun the light filtered through the architecture. Throughout the course of the day different constellations of prints respond to the light in the space, sometimes for brief durations as short as one minute. When the sun sits at it's highest point in the sky the primary piece of work in the space functions. At 1:00pm the sunlight creates four vertical lines of light in the space (Fig 28.). These four light lines created a framework and structure for how this main piece of work would be configured in the space. As the four lines move throughout the day they become aligned with different segments within the work. Therefore the time period for the optimal viewing of the work became 1:00pm to 4:00pm. The work acts as a map for light and by default time within the space. This element of time is communicated through the titling of the works.

The final installation consists of numerous works in the space. They are one body of separate installations therefore they are to be viewed both as a whole and in

separation from each other. This idea is also reflected in the titling. The title of the body of works is *Synthesis*. The word synthesis is used in Hegelian philosophy as the final stage in the process of dialectical reasoning, in which a new idea resolves the conflict between the two elements it is composed from. The introduction of the temporal elements to the work was the 'new idea'. It is the coming together of two elements in the case of the work these elements are the material and immaterial. And because the body of work consists of different components it is titled in parts eg. *Synthesis I. (5:30 to 5:42pm)*.



Figure 28, *Light Documentation III. Installation in progress (1:00pm)*, image by author, 2011.



Figure 29, *Synthesis(12:00 to 12:01pm)*, image by author, 2011.

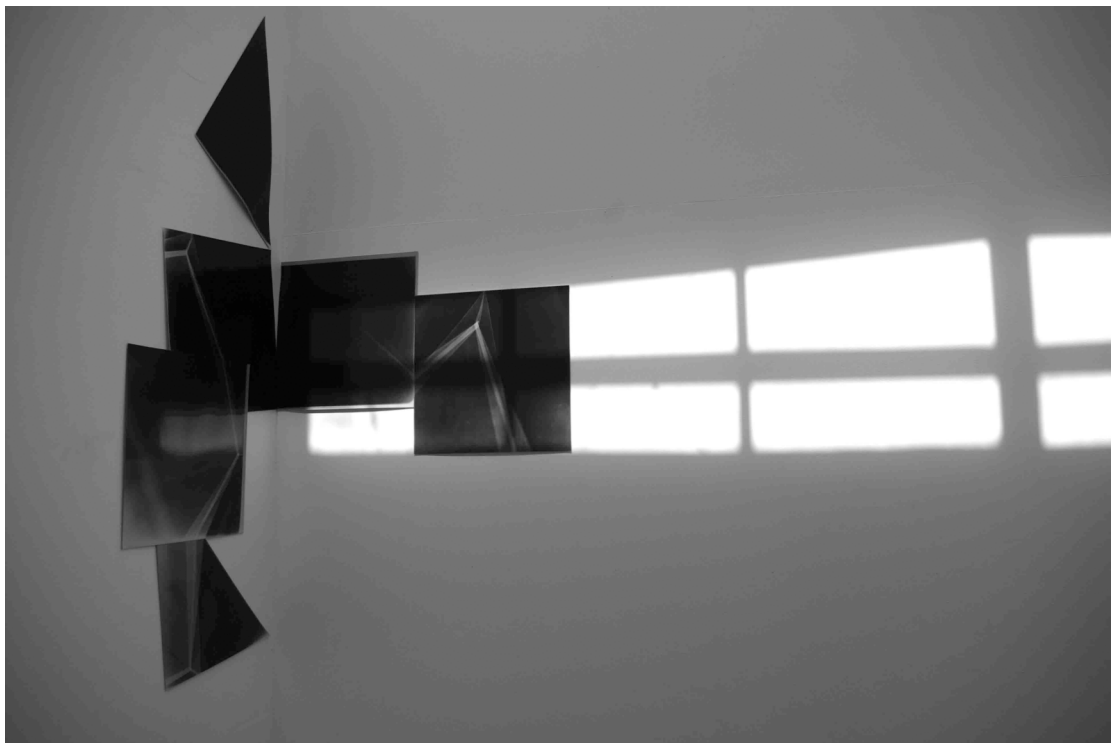


Figure 30, *Synthesis(3:52 to 3:54pm)*, image by author, 2011.



Figure 31, *Synthesis(3:15 to 3:19pm)*, image by author, 2011.

The work as a whole maps not only the light within the space but also the contours and architecture of the space. The prints are fitted around where the light falls in the space and so the works wrap around the edges of the walls and bridge the junctures between the floor and walls. The physical properties of the prints contribute to the manipulation of the space. The surfaces of the prints are glossy thus reflect the light in the space along with its movement and the movement of the viewer. The physical nature of the prints is also one of imperfection as they are created by hand; they warp and buckle as they sit on the surfaces of the space like a second skin. The prints describe the movement of the physical light and map the pathways of the light captured in the content of the images. The work carries an illusion of movement through the light lines as they pass from print to print. The original question driving this research was,

How can photography be used to investigate both the material and immaterial?

In this final work the divide between the material light in the space and the immaterial light described in the photographs is blended. The interface is facilitated in the work through time and space it is a mapping of both elements at once. The task of mapping

the light is intrinsically infinite and impossible; the lines of light described through the photographs thus hold the suggestion of the infinite movement of light. The lines emerge from blackness and have no start or beginning. The work shows the viewer only a partial perspective of a structure that is limitless by nature.

Glossary

Induction: A method of reasoning by which a general law or principle is inferred from observed particular instances.

Deduction: 1. A valid argument in which it is impossible to assert the premises and to deny the conclusion without thereby contradicting oneself.

2. The inference of particular instances by reference to a general law or principle.

Epistemology: The branch of philosophy concerned with the theory of knowledge. Traditionally, central issues include the nature and derivation of knowledge, the scope, and the reliability of claim to knowledge.

Metaphysics: The branch of philosophy that deals with the first principles of things, including abstract concepts such as being, knowing, substance, cause, identity, time, and space.

Cartesian: Of or relating to Descartes and his ideas.

Dualism: 1. A theory or system of thought that regards a domain of reality in terms of two independent principles, mind and matter, immaterial and material (Cartesian dualism).

2. The division of something conceptually into two opposed or contrasted aspects.

Empiricism: 1. The theory that all knowledge is derived from sense-experience. Stimulated by the rise of experimental science, it developed in the 17th and 18th centuries, expounded in particular by John Locke and David Hume.

2. Practice based on experiment and observation.

Intension: The internal content of a concept. Often contrasted with *Extension*.

Extension: The property of occupying space; spatial magnitude.

Corpuscularian: Of a minute particle regarded as the basic constituent of matter or light.

Skepticism: A denial of the possibility of knowledge, or even rational belief, of the external world.

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