Photography
with Sculpture

Photography *with* Sculpture

"How might camera-less photography provide a corollary to ephemeral/ time-based sculpture?"

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"One of the key aspects of the development of modern sculpture has been a growing awareness of its location at the junction between stillness and motion, between time arrested and time passing. Under such circumstances, it was perhaps inevitable that the paths of sculpture and photography would coincide."

- David Green (1996)

ABSTRACT

Ever since William Henry Fox Talbot used his plaster replica of the *Bust of Patroclus* (from 1842) as a model for the photographic invention he was developing, photography has had a long and entwined relationship with sculpture. It was not seen as a mortal threat (in the way that it occasioned proclamations of the death of painting), but rather a field of possibilities where the perception and meaning of sculpture could be explored. Whilst, in the 1960's, sculpture experienced an expansion of its terms, photography was consigned to a predominantly visual and scopic functionary of documentation; capturing representations of fixed moments in time.

This fine-art and practice-based research enquiry considers the relationships between photography: *of* sculpture, *into* sculpture and *as* sculpture, proposing that there may exist a preposition of 'photography *with* sculpture'. As photography continues to develop its own expansion of terms, with a movement away from the digital and representational toward a materialist and phenomenological expression, this research explores if there may exist a conjoining of these expanded fields.

With a specific focus on ephemeral sculpture and camera-less photography, the problematised question of time and the expression of the temporal are brought into sharp relief. Here a sculpture may transpose itself from a 3-dimensional to 2-dimensional form (where the "photograph" may yet retain an object status), and where the sculpture may change over time, its representation may follow, tethered, continually inviting us – after Robert Morris – into a "present-tense" of photography. In this manner new readings may become possible with implications for our understanding of both disciplines.

With rigorous documentation and reflection in the form of research diaries, a number of artefacts have been developed combining ephemeral salt sculptures with salt photography, reducing photography to the elemental nature of light sensitised surfaces, more or less fixed, with salt, to create unstable images.

Content

Appendices

A - Research Diaries 1, 2 & 3

B - The Data Analysis Matrix

C – Summary of process developed through practical research

D – Presentation of Photographs with *Sculpture*

E - Documentation for & of Performative Exhibition of Findings

F – Research Ethics Tier 1 Checklist

G - COSHH Risk Assessment & Chemical Safety Training

Images on pages facing section breaks formed of “photographs” constituting artefacts from the practice-based period of arts-led inquiry (refer Appendix B for further details).


12/07/18

Background & Context

I am here presenting a practice-led research project, who's genesis lies in my ongoing practice as an artist and architecture (I am an architect by training and profession); a trajectory of inquiry that has led me on a particular path of material exploration, specifically around Salt.

Despite the commonplace nature of the material I am working with, the research is situated within a Fine-Art context and is hybrid in nature.

My interest in salt began with a commission from Lincolnshire County Council for a public art installation in 2010, *Salt Licks* (unbuilt) [fig. 1]. The concept was simply to create a two-storey canvas, facing the North Sea, designed to capture the marks of the sun, rain and wind-blown sand on its continually eroding surface. Within the marine environment salt suggested itself as the only viable material, pure white in colour and returning to the sea on dissolution.

[fig. 1]
Salt Licks - (2010).

The provocation of this project was in the setting-up of a system before ceding control to the outcome (a direct challenge to the disciplinary control traditionally exerted in the discipline of architecture).

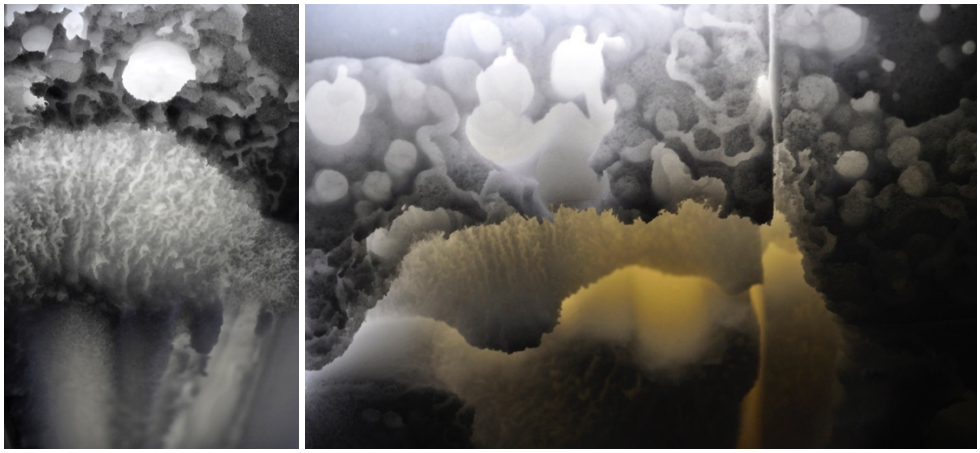
I recognised however that I could, nonetheless, explore the range of possible visual and material effects, and so began an ongoing series of salt sculptures, *Salt I*

Water (after Serra) - (2012 to present) [fig. 2], using water as a cutting tool, and using verbs to explore the range of potential forms; to drip, spray, splash, soak, etc. Richard Serra's Process Art, of working with verbs to explore the possibilities of metals, was a clear point of reference (Serra et al., 2007).

[fig. 2]
Salt I Water (after Serra) - (2012 to present).
99% Sodium Chloride, 1% other salts
Nom 10cm x 10cm x 30cm(H)

In documenting the results, I discovered that the macro photography I was engaging-in revealed qualities I had not previously expected [fig. 3]: the transparency of the material, the unexpected colour of the material, and the aesthetic links with landscape and geology were all aesthetic qualities that came to the fore.[1]

[1] Through the practice-led research period (and in fact throughout all of my inquiry into salt as a material) one constant has been the use of commercially manufactured salt blocks. These are made for domestic water-softening machines but are extremely refined objects constituting their use as serial objects in the Minimalist vein.



[fig. 3]

Macro photography of salt sculptures (2014).

At the time I was disappointed that the sculptures continued to change after they had been photographed, moving away from my judgement of what I considered to be the optimal aesthetic moment to be captured. Salt crystals continued to form, encrusting the sculptures surfaces, before crumbling in response to atmospheric changes in humidity or even through direct handling. The overall movement was towards entropy and decay.

But a serendipitous encounter with a poster for *Salt & Silver: Early Photography 1840-1860* [fig.4], held at Tate Britain (2015), alerted me to the fact that salt (or Sodium Chloride) was the chemical that made the invention of modern photography, as we know it today, possible.

[fig. 4]

Poster for *Salt & Silver: Early Photography 1840-1860*.

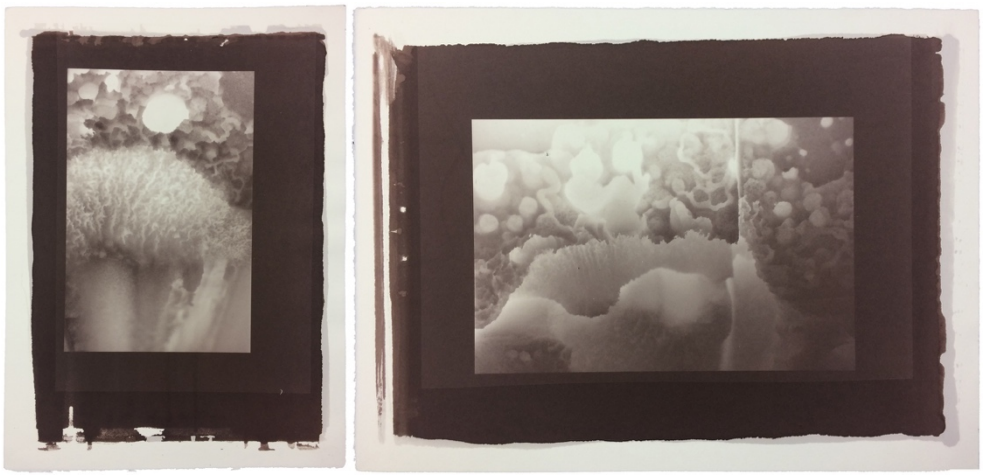
By this point I had already engaged with the possibility of making sculptures through the re-crystallising action of salt. *Preserve* (2014 to present) [fig. 5], consisted of a series of sculptures formed of objects of sentimental value,

wrapped in string and using the dissolved and reserved saline water from the sculpting process to create a crust of salt, preserving – if unavoidably altering – the objects contained within.

[fig. 5]

Preserve (2014 to present)

This cyclical flow of material suggested the possibility of using salt from the sculptures themselves with which to make the representation of that same sculpture; forming a direct link between object and representation.



[fig. 6]

Salt photographs of salt sculptures (2016).[2]

[2] These images were produced at a Salt Photography workshop held by Paul Deskarolis and Stuart Kuhn of Siderotype, held 21 May 2016. They followed the prescribed recipe and formula of early salt photography and were not at this point utilising salt from the salt sculptures. The principle was however established.

During the course of my research I discovered that early salt photographs were by their nature unstable and subject to change. If both the salt sculpture and the salt photograph could be considered ephemeral objects, could the photographic image – I wondered – follow the sculpture in its movement toward entropy and decay?

Aims & Objectives

My aim then, was to explore how the documentary nature of photography could become something more than simply a mimetic representation; where the proposed work might be both documentary and *a thing* in its own right. Could the material representation of sculpture have a more intimate and direct relationship to the sculptural object; a dialogue that might perhaps blur the boundaries between both disciplines?

In engaging with an arts-led and practice-based research, my objective has been to develop and test my proposition in the real world, making physical artefacts, and forming evidence of the process along the way.

Literature Review

Photography and sculpture, the convergence of two disciplines in this research, begins as a simple binary but quickly proliferates in complexity as the variables of ephemerality, vision/ seeing and time are introduced. This literature review is therefore necessarily wide-ranging in its scope with an emphasis on the relationship between themes over individual authors.

Maimon (2015) speaks of the critical moment in the 19th century when a photography founded on the material photogram, reverted to the ocular-centric use of the camera obscura. This is a decisive moment in the history of photography as the indexical referent became removed from the object.

A resurgent practice of cameraless photography (Batchen and Govett-Brewster Art, 2016) frames this particular strand of inquiry within the context of the Index.

To place this research within the context of the literature on photography and sculpture, I have used a series of prepositions as a way to frame what I see as the principle categories of a photography *Of*, *Into* and *As* sculpture. By doing so – and through extension – the preposition *With* has enabled me to identify a gap in knowledge which this research attempts to address.

The focus in this paper on ephemeral sculpture leads to a consideration of the expanded field of sculpture (Krauss, 1986), which gained prominence in the 1960's, but which was not met by an equal expansion of photography till the early 2000's (Baker, 2005).

Practices of ephemerality, which form part of this expanded field, are intimately linked to existential questions of death and decay (Hallam and Hockey, 2001). The memorial nature of photography, of time passing, brings us to the theoretical writings on Time which cannot be divorced from an understanding of photography; the ontology of photography's essence as a way to capture "what has been" (Barthes and Howard, 2000).

The return of the real and the contingent in sculpture (Foster, 1996), belies the digital turn in contemporary culture (Baudrillard and Willaume, 2016), which has foreclosed a rich vein of research into different conceptions and understandings of time (Rawson and Rawson, 2005).

This research therefore endeavours to explore the possibility of new readings of time by linking photography with ephemeral sculpture.

Of/ Into/ As (Photography & Sculpture)

Photography *Of* Sculpture

From photography's earliest beginnings photography and sculpture have enjoyed a mutually beneficial and productive exchange. With extended exposure times, classical sculpture's compliance as an unflinching and stable object made it a natural subject for early photography (Wolfflin, 2013).

As the pre-eminent scholar of the work of William Henry Fox Talbot, Schaaf (1992) notes that Talbot made over 50 exposures of *The Bust of Patroclus* [fig. 7] over a five-year period, leading Talbot to acknowledge early photography's unique interpretive qualities: "…it becomes evident how very great a number of different effects may be obtained from a single specimen of sculpture" (Talbot, 1844).

Critically, Wagner asserts that: "Talbot's photographs of his plaster do not simply reproduce their object, they establish that reproducing sculpture photographically is an impossible goal. However directly or straightforwardly the camera seems to capture a sculptural object, such capture cannot be brought about. No single image of a sculpture is enough…" (2017, p.272).

[fig. 7]

The Bust of Patroclus, Henry Fox Talbot, salt print (1844).

The bust was a plaster cast of a marble original excavated from Hadrian's Villa in 1769.

"[The] complex ways that sculpture and photography have intersected in historical, aesthetic, and theoretical terms" (Johnson, 1998, p.2) is best captured by the scholarly work of Geraldine Johnson culminating in the collected essays of *Photography of Sculpture: Envisioning the Third Dimension.*

Although claiming that some contributors seek to explore the dissolution between disciplines, "thereby destabilising our preconceptions about each medium" (Ibid.), Johnson places *sculpture* first in the binary title of her investigation, indicating a primacy of the sculptural object, to which photography attends – if only in the temporal domain – where the sculpture must be made (and typically completed) before it can then be photographed. Sculpture remains the productive and motive force, whilst photography is relegated to an interpretive role.

Her earlier assertion of dissolving the boundaries between medium specificity is quickly reversed when she states that "…whatever claims such images have as works of art in their own right, the fact remains that any photographic representation of a sculpture inevitably fulfils a documentary function… whether intended or not" (Ibid., p.6.

Twenty years later, Hammill & Luke's *Photography & Sculpture: The Art Object in Reproduction*, though swapping the terms of their binary title, yet hold and confirm this representational function in an era of mass reproduction and dissemination of digital images, "…seeming to fulfil Benjamin's prognosis for sculpture's obsolescence in the age of mass production." (2017, p.21).

In contrast, the interest of this research is to re-embody and re-affirm both photography and sculpture's unique presence in space and time.

Photography *Into* Sculpture

Photography into Sculpture, was the first comprehensive survey of a new form of photography, curated by Peter Bunnell in 1970, for MOMA New York. Bunnell had identified a specific trend amongst a new generation of artists and photographers moving from two-dimensional to three-dimensional space with work printed on alternative substrates and revealing a concern with materiality. Processes of folding, cutting and assemblage with other materials to form spatial objects that came to be known as *photo-sculptures* (1993).

[fig. 8]

Installation view of *Photography Into Sculpture*, MOMA, New York, 1970

The work introduced a number of innovations including "…topographic structure, image participation, tactile materiality, procedural time, and the technology of plastics, liquid emulsions, fabrics, dyes, film transparencies, and emitted light… These artists exploited] the physical substance of photographs, or what might be called tactile materiality" (Bunnell, 1993, p.164).

Importantly, Bunnell perceived a move "from internal meaning or iconography… to a visual duality in which materials are also incorporated as content and at the same time are used as a way of conceiving actual space" (Ibid.). This opened up the possibility that meaning might not be only conveyed in optical descriptions but might emerge through the interplay between object and image.

This displacement of the ocular image was enormously significant, but as Morse notes, although the "exhibition brought recognition to a significant trend… [it] did not initiate a full-fledged movement." (2016, p.100). This may simply be because much of the work on display remained two-dimensional and illusionistic, struggling still to break from the flat plane of the picture. As Hilton Kramer observed in reviewing the show for the New York Times: "This exhibition leaves photography and sculpture pretty much where it found them – separate artistic entities." (Statzer, 2016, p.51).

It would seem that the prevalence of Concept Art had precluded the possibility of photography's re-evaluation. As Soutter notes: "Photographs that appear in a conceptual context are often documents of ephemeral operations, presented in a visually banal way specifically so that they evoke amateur or instrumental photography rather than art photography" (2016, p.71). The prevailing vector of the late 1960's was to make photography invisible, and not to draw attention to it.

It was not until 2005 that Godfrey was able to claim that the two disciplines were finally beginning to emerge as equal partners (2005). With this tipping point "the relationship between photography and sculpture had become so sophisticated, so diverse, and so widespread that it demanded a sequence of written and curatorial investigations" (Ibid). *The Photographic Object, 1970* was the response to this demand, edited by Mary Statzer, with a comprehensive contextualisation and re-evaluation of the exhibition (Dezeuze and Kelly, 2013).

Photography *As* Sculpture

Johnson refers to this conjoining of terms in two separate articles (1995, 2006), but her focus here is more to do with how photography could manipulate found

objects, whether natural or man-made (such as Brassai's *Involuntary Sculptures* of everyday detritus), photographed to reveal new sculptural forms.

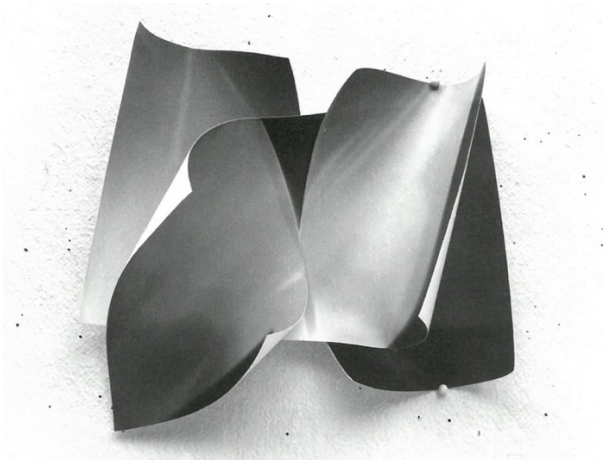
A more literal reading of this preposition is possible, if photography – in a necessary rebalancing of terms – is allowed to take precedence.

The development of *Concrete Photography*, after the *Concrete Art* of Theo van Doesburg, is one such example of an emphatic and self-referential mode of expression.

As one of the movement's founders and key theorists, Jäger insists: "Concrete photographs are not a semantic medium, but aesthetic objects; they are not represented, but presented, not reproduced, but produced. They are objects made of photographic material. They do not want to illustrate anything; they do not want to represent anything. They are nothing but themselves." (2005, p.15).

Here, no external subject is required. Photography becomes its own subject. Such photographs celebrate their facticity becoming sculptural objects in their own right.

In this conception, Photography *as* Sculpture foregoes the pictorial image and works directly with the photographic papers and chemicals, often achieving a three-dimensionality through material manipulation that created relief if not free-standing sculpture.



[fig. 9]

zwischen, durch, Gottfried Jäger (1985).

At first this may appear similar to Bunnell's *Photography into Sculpture,* but the key operative would be Bunnell's use of the term "into" as defining a process; one thing, in the process of becoming another. As Heinecken would later say: "Bunnell emphasised the idea that photography would be joined with or acted upon by sculpture – that the form, substance, or condition of photography would be changed." (Statzer, 2016, p.51). By contrast, the use of the preposition "as" does not suggest such a transformative engagement; with Concrete Photography, such a reliance on another discipline is entirely refuted.

The internal operations of concrete photography have produced fascinating and hypnotic results, but the singular pursuit of such medium singularity raises questions of relevance and worth, the suspicion being of ever decreasing meaning in a closed-loop and self-referential system.

Photography *With* Sculpture

A Photography *with* sculpture appears to be an area not addressed in theory or creative practice, perhaps with the exception of August Strindberg's explorations of crystal growths, where crystals of various elements (including salt) were formed on photographic plates (Strindberg et al., 2001).

[fig. 10]

Fotogram av Kristallisation nr 1B (1892-96). August Strindberg.

Similar to Johnson's definition of photography *as* sculpture (1995, p.6), here the sculptural relief becomes an unexpected and accidental outcome.

In light of this, the operation *With* – of two disciplines of equal standing engaging in a reciprocal dialogue – becomes the focus of this research.

Camera-less Photography (Indexical)

An 'Art of the Real'

All the early proto-photographers, including Talbot, worked with the direct printing of objects, seeking to capture their shadows (Barnes et al., 2010, Batchen, 1997) [fig. 11]. The camera obscura had been a known optical phenomenon for many hundreds of years, yet there was no requirement as such for the two to come together. Maimon identifies the imperative for this conjoining as being more epistemologically related to, "the theoretical limitations of the index as a tool of analysis" (2015, p.xvii). For Talbot and the other natural philosophers, the early image offered only another *wonder* amongst many, and was not a form of "irrefutable proof" (Barthes and Howard, 2000).

[Fig. 11]

Insect wings, as seen in a solar microscope, c 1840. William Henry Fox Talbot,

But against the domination of the ocular regime, cameraless photography has remained a consistent if under-represented form of image-making throughout photography's history. Batchen's exhibition and survey of the field in *Emanations: The Art of the Cameraless Photograph* attests to this, identifying an insistent engagement with the material ground of the photograph in both representational

and abstract terms from the mid-19th Century to the present day.[3] He notes "…cameraless photographs invite a consideration of the nature of photographic representation in general. Unmediated by perspectival optics, photography is here presented as something to be looked at, not through, and to be made, not taken. …photography is freed from its traditional subservient role as a realist mode of representation and allowed instead to become a searing index of its own operations, to become an art of the real." (2016, p.5)

The re-emergence, increasing credibility and popularity of this art can be seen in a number of major exhibitions held in recent years, including most notably, *Shadow Catchers: Camera-less Photography* at the V&A Museum, London in 2010.[4]

Suppression of the Referent

Many commentators have spoken of the emergence of craft-based practices in response to the increasing digitalisation and virtualisation of contemporary society, and many historians and theorists speak specifically of the perceived crisis of the truth-value in photography, now that not only can digital images be doctored with ease, but that they can also be entirely digitally constructed with virtual software (Ritchin, 2010, Mitchell, 1992).

Indeed, Baudrillard's language becomes almost catastrophic: "with this turn to the digital, …the image in its entirety …is sacrificed, is doomed forever" (2016, p.38). He equates *disappearance* with the increasing remove of the referent from the image, with the effect being that: "The subject disappears, [and] gives way to a diffuse, floating, insubstantial subjectivity" (2016, p.27).

[3] Batchen also notes the lack of representation of cameraless images in photographic histories and notes that a comprehensive history of the subject is yet to be written.

[4] Other international exhibitions include: *Shadows on the Wall: Cameraless Photography from 1851 to Today*, at the Museum of Fine Arts, Houston, USA (2014), and *Emanations: The Art of the Cameraless Photograph*, at the Govett-Brewster Art Gallery, New Zealand (2016). These exhibitions covered the wide-ranging field of camera-less photography and were separate from the many individual artists exhibiting in parallel.

By the end of his slight monograph, one has almost forgotten an earlier and emphatic statement made, that, "…nothing just vanishes; of everything that disappears there remain traces" (2016, p.27). I would argue that what remains is a different form of haptic and embodied image making that refutes the scopic "burden of responsibility" that Jager speaks of (2005) and allows the previously suppressed to step out of the shadows.

Resurfacing surfaces

The referent – or Index – is a key concept within photography and stems from the writings of C.S. Pierce who speaks of three different forms or signs of representation; *iconic*, *symbolic* and *indexical*. Iconic signs resemble the subject in a direct and representational way (this can include paintings, photographs, or comic book representations). By contrast, symbols are often arbitrary in form but are given cultural association, for example through the use of language. Indexical signs however "involve an 'existential' relationship between the sign and the interpretent." (Sturken and Cartwright, 2009, p.32). The fact that the indexical mark and the subject would have coexisted, not only at the same point in time but in the same physical space, become the defining application of this sign to photography. "[It] is this real connection which gives the yardstick its value as a representamen" (Peirce and Buchler, 1955, p.109). Pierce gives examples such as smoke from a chimney, or a knock on the door (Peirce and Buchler, 1955).

In photography it is the fact that the same rays of light that illuminate the subject are deemed to be the same rays that expose and register the film or sensor, that provide the truth value that has haunted photography for much of its history. For although the likes of Ritchin bemoan the sense of doubt created by digital photography (2010), the manipulation of photography – from the supposedly benign and objective acts of framing, image selection, etc. to the intentionally and misleading cynical manipulations of photographic imagery for monetary gain, have existed since photography began (Kriebel and Zervigón, 2017).[5]

[5] Kribel & Zervigon also refer to the exhibition at MOMA, New York in 2012 curated by Mia Fineman; *Faking It: Manipulated Photography Before Photoshop*.

Bazin (2005) and Sontag (1973) both recognise this affinity with the real, with Barthe's *Camera Lucida* (2000 – first published 1980), perhaps the most well known and apprehended, his description of the phenomenological *noeme* of photography as "That-has-been" (Ibid., p.77), placing the camera and the film in the same space as the subject photographed.

However, Elkins (2011) takes issue with and refutes Barthe's assertion of the invisibility of the photograph, attacking the affective mode of inquiry that focuses exclusively on the subjective pull of emotions that Barthe's chosen images exemplify (the *punctum*, prick or wound that touches us in unexpected moments). By contrast Elkins reply to *Camera Lucida* is an insistence on the act of seeing – not through the picture as frame or window, but emphatically at the photograph. He sees for example the traces of time and use in Barthe's own photos and holds the paradox of photographs that simultaneously represent a fixed moment of time past, whilst themselves existing *in* and *through* time (2011, p.37).

Ephemeral Practices

Entropy & Decay

For sculpture too, the move in the 1960's, from the fixed and stable forms of modernist sculpture, to what Krauss & Bois (1997) later referred to as the *Formless* (a series of operations within modern art pertaining to: horizontality, base materialism, pulse, and entropy[6] (Ibid., 26)), was a radical break.

Following the second law of thermodynamics, Krauss & Bois defined *entropy* as meaning, "the constant and irreversible degradation of energy in every system, a

[6] *Horizontality* looked at ways in which artists moved and worked between the vertical wall-plane and the horizontal ground plane (Jackson Pollock's drip paintings and later floor-based Minimalist sculptures came under the heading). *Base materialism* related to George Bataille's desire to liberate art from idealising tendencies. *Pulse* effected an attack on modernisms exclusion of the temporal (of time and movement) from the visual field. *Entropy* was embraced by Robert Smithson's with a number of artists following to engage with entropy as "…a sinking, a spoiling, but perhaps also [as] an irrecoverable waste" (Ibid., p.38).

degradation that leads to a continually increasing state of disorder and of nondifferentiation within matter… Entropy is a negative movement: it presupposes an initial order and a deterioration of that order." (Ibid., p.34-36).

Entropy, decay and disappearance can therefore be linked to explorations of the ephemeral in art, but it is important to distinguish between transitory and temporary objects and installations, and my intended definition within this research.

For the purposes of this study, ephemeral art is that where the deterioration and decay of the material – over time – is an intended consequence and meant intentionally to affect subjective experiences and readings of the work.

An example would be *Strange Fruit (for David)* (1992-1997) by Zoe Leonard [fig.12], who intentionally used organic and perishable materials, stitching the skins of fruit back together to leave an empty casing or receptacle, an elegy to loss and remembrance.[7]

[fig. 12]

Strange Fruit (for David) (1992-1997), Zoe Leonard

[7] The work was purchased by the Philadelphia Museum of Art but only after a conflicted exchange whereby the Museum wished to chemically preserve the objects whilst Leonard's express injunction toward both a subjective and experiential understanding was that the work be allowed to decay naturally as "The very essence of the piece is to decompose" (Leaonard quoted in Buskirk, 2003, p.145)

Such *ephemeral effects* as Collins calls them deal with "…transience and decay, themes that underscore the provisional nature of our lives," where works made from organic materials "…address a raft of ideas about time, chance, growth and decay, ethics and commerce, consumption and conservation issues. It has a life of its own beyond that of its maker, who cannot accurately determine its progress or prolong its presence" (2014, p.198).[8]

Buskirk (2003) questions such definitions of contingent forms of art-making given the plurality of methods and heterogeneity of materials and practices used. The antecedent for this is of course Krauss's seminal essay on *Sculpture in the Expanded Field* (1986). Here Krauss reformulates the definition of sculptural practice through the use of Kleinian groups; an expansion of oppositional terms (landscape/ not-landscape, architecture/ not-architecture) as a way to create a field that could contain the many diverse and complex forms of artistic expression. As she argues: "Sculpture is rather only one term on the periphery of a field in which there are other, differently structured possibilities. And one has thereby gained the 'permission' to think these other forms." (Ibid., p.284).

"Permission" is a surprisingly condescending term to use, especially as the works Krauss refers to were already completed and developed within various oeuvre's and practices of individual artists; as though these works required validation and official sanction. Taking Lippard's "dematerialisation" of art as his starting point (2001), Foster (1996) identifies this institutional and academic suppression of the material ground of art, resurfacing as an often traumatic and violent reflex. The suppressed trace becomes form, returning us to Baudrillard's assertion that nothing completely disappears.

I contend however that in the photography *of* such sculpture, the anxiety of the repressed material turn is yet placated through photography's memorialisation of

[8] Other artists that have engaged explicitly with ephemerality and decay include: Eva Hesse, Dieter Roth, Janine Antoni, Nayland Blake and Anya Gallacio, though surprisingly, beyond Buskirk's book on the contingent in art (2003), there does not appear to be a consolidated published survey or account of this particular treatment of ephemeral materials in contemporary art.

time past. What might it mean for the base materiality and existential disturbance of such sculpture to continue into its representation?

Barthe's assertion that "Whether or not the subject is already dead, every photograph is this catastrophe", rings true (2000, p.96). Whether an art of sculpture or an art of photography, and whether representational or material, entropy expressed in various forms of decay link us ineluctably with existential notions of death.

And yet the representation of material forms subject to durational modes of the ephemeral, have remained surprisingly fixed in medium specificity.

Expanded Fields

In an effort to address this, Baker – mirroring Krauss – attempts a similar Kleinian manipulation of photographic terms with his article on *Photography's Expanded Field* (2005). Where Krauss is making sense of a creative expansion that has already occurred, Baker's attempt is yet more hopeful. Acknowledging that, as an object in crisis, "…photography itself has been foreclosed, cashiered, abandoned – outmoded technologically and displaced aesthetically" (Ibid., p.12), Baker recognises possibilities in the cinematic and therefore durational and seeks tentative evidence in such filmic practices in the work of Jeff Wall and Cindy Sherman.

What he is unable to do however is to consider the possibility or need to forego the scopic regime of representation, and so remains caught in its strictures. Where Krauss was able to say that sculpture "could no longer be defined by what it was, more by what it wasn't" (Ibid., p.10), Baker remained trapped in the epistemological concerns that led to the conquest and primacy of the camera obscura over the photogram. It would take a further four years, and a response to a somewhat scathing critique of his article by Walead Beshty (2009) before he could concede: "We face the imperative to understand anew today what it might mean for photography to 'move beyond representation'" (Baker, 2009, p.363).

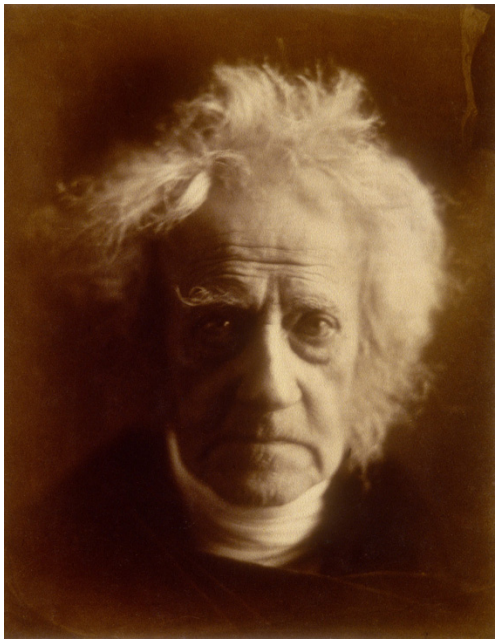
With developments in abstract and concrete art going back to the early 20th century, one might expect that the world of art might allow the ties of representation to loosen more readily, but Green (1996) reports on how the influence of Concept Art had the opposite effect. Rather than have its ontological roots challenged, photography instead was asked to become witness to arts dematerialisation. It was precisely its neutrality and objectivity, its denotative capacity that was valued.

In contrast to Baker, Green however sees the opportunities inherent in bringing the qualities of sculpture to bear on photography: "One of the key aspects of the development of modern sculpture has been a growing awareness of its location at the juncture between stillness and motion, between time arrested and time passing. Under such circumstances it was perhaps inevitable that the paths of sculpture and photography would coincide and that this has happened only of late is a reminder of the strength of Modernism's insistence upon the integrity and purity of any medium" (1996, p.13).

The Aura of Lived-Time

For a short period during its earliest beginnings, photography had already experienced a similar juncture, "between time arrested and time passing." It was durational in nature; "a strange weave of space and time" as Benjamin would describe it (1999). Due to the long exposure times required, sitters for portraits were required to enter into the making of the photographic image over long-extended periods [fig. 13]. And yet this lived experiential time is palpable and described by Benjamin as the *aura* of the photograph[9].

[9] For Benjamin the *aura* is lost through mass reproduction as it is not possible to give any copy precedence over another BENJAMIN, W., ARENDT, H. & ZOHN, H. 1973. The Work of Art in the Age of Mechanical Reproduction. *Illuminations. Edited and with an introduction by Hannah Arendt. Translated by Harry Zohn.* London: Fontana.. Despite this loss Benjamin saw a political and democratising possibility in the reception of images.



[Fig.13]

Portrait of Sir John Herschell (1867), Julia Margaret Cameron.

Batchen claims that: "Subjective life and photography here, …are like each other, in some deep and misunderstood way. Perhaps more than *like*, the subject and the photograph are *continuous* with each other, one "growing" into the other" (2013, p.69).

This appears to affirm both the uniqueness of the experience and the importance of the singular image. Indeed this lived-time was also experienced in early images that faded over-time and were deemed to be "unstable" (Schaaf, 1992) leading the Photographic Society to set-up a Fading Committee in 1855 to address the visual evidence of natural entropic forces at play.

Scope & Research Question

"As it becomes detached from its status as visual document, and is forced to abandon its representational function, photography must find for itself a new relationship to the real and a new objectivity of and for itself." (REF, p13).

In the 1960's the fixed and stable forms of modernist sculpture began to dematerialise (Lippard, 2001) and take on new forms within an expanded field of possibilities (Krauss, 1986). Photography however was unable to release itself from

the scopic and ocular imperative, remaining a documentary functionary to these dematerialised forms of conceptual art and long into the decades that followed (Green, 1996).

Only since the turn of this century, in seeming reaction to an ever-increasing virtualisation of society, has there been a resurgence of interest in the material and phenomenologic possibilities of photography (Rexer and Close, 2002).

Whilst in 1996 Green (1996) was suggesting the time had come for a meeting of the two disciplines, within a decade Godfrey was able to assert that "…photography and sculpture have entered a more complex phase of their relationship, folding over each other, reversing positions, flipping back and forth, the one becoming the other" (2005, p.147).

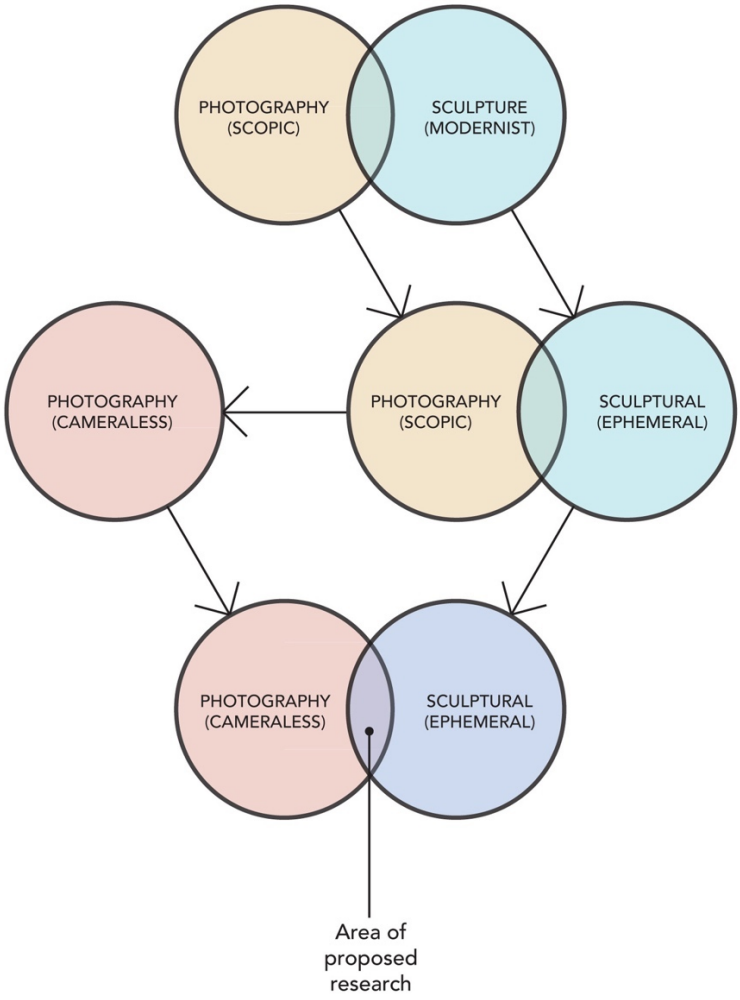
In seeking to explore the operative possibilities of a Photography *with* sculpture, my Research Question therefore asks: **"How might camera-less photography provide a corollary to ephemeral/ time-based sculpture?"**

The term "corollary" in this formulation is critical. According to the online oxford dictionary[10], the definition of corollary is: "1. A proposition that follows from (and is often appended to) one already proved. [and] 1.1 A direct or natural consequence or result."

This therefore extends the preposition with to allow for a photography that may also change over time and follows the sculptural moment toward entropy and decay.

In summary, this research seeks to explore how a materially expanded field of abstract and cameraless salt photography, might constitute itself when brought into productive and constructive dialogue with ephemeral (salt) sculpture.

[10] https://en.oxforddictionaries.com - accessed 05.06.18.



[fig. 14]

The relationship of the expanded fields of first sculpture and then photography, forming the scope of this research.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Contextual Review

In recent years an emerging body of disparate artists is growing seemingly in reaction to the dominance of digital and technological image-making (Rexer and Close, 2002). These artists are returning not only to analogue photography but often to the very beginnings of the discipline's history – before 'ways of seeing', to appropriate Berger's expression (1972), had been codified and normalised. Working again with real materials and processes requires not only an investment of time and resource by the artist, but often asks the same of the viewer with images that cannot be immediately understood or consumed.

Using Gray & Malins (2004) metaphor of the landscape of knowledge, this review charts a course across the contextual terrain by identifying specific artists who have formed signposts to the uncharted area this research seeks to explore. The route mapped out in the following pages follows a thematic rather than a chronological link, beginning with and returning to salt.

A Lens on Time

Although a combination of representational and abstract imagery with vastly different forms of image-making, the process of developing a series of diagrams (or lenses with which to look at photographs) helped clarify how time is the central motif of this research.[11]

Diagram A looks at optical and digital image-making. The diagram identifies the process of formation/ creation of the sculpture, the point at which the maker deems the work to be complete, and the later moment at which a digital representation is captured. Theoretically (as this is contested terrain due to

[11] These diagrams were appropriated from the principles of Content Analysis, of which Rose notes that: "There are aspects of visual imagery which [content analysis] is not well-equipped to address. It focuses almost exclusively on the compositional modality of the site of the image itself. It therefore has very little to say about the production …of images" ROSE, G. 2007. *Visual methodologies : an introduction to the interpretation of visual materials,* London ; Thousand Oaks, Calif, SAGE Publications..

technological obsolescence (Albers, 2017), the digital image can remain inviolable in perpetuity.

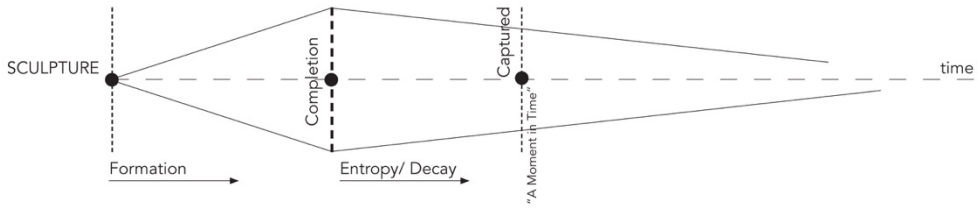


Diagram A

Moments *in* time (optical/ digital)

Diagram B refers to moments *in* time and *over* time and speaks more to traditional forms of photography where a representation of an artefact was produced which, being in the real world (i.e. an image on a paper substrate), would be subject to the effects of time and decay.

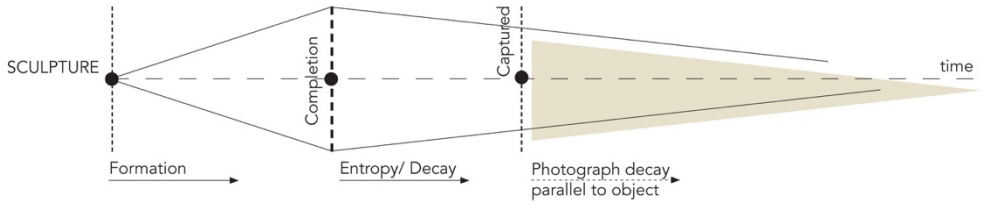


Diagram B

Moments in time and *over* time (optical/ physical)

Diagram C speaks to the possibility of a *material index* whereby the creation of the image follows the sculpture in real time, like a shadow. Importantly, this exercise has helped to confirm a gap in existing practice and research; the diagram suggesting the possibility of a still photograph that captures the making of the sculpture in place of a filmic and representational documentary.

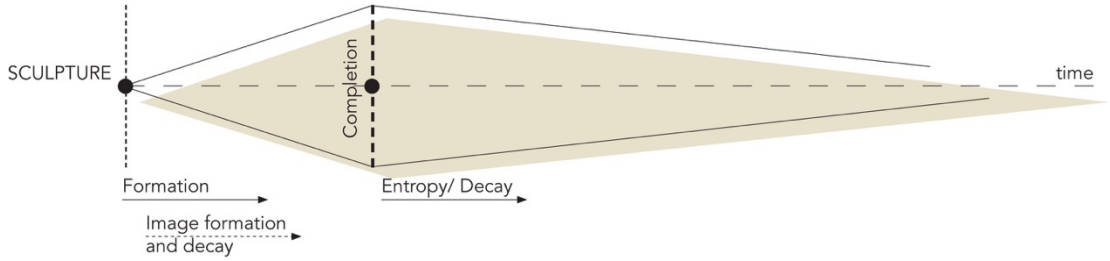
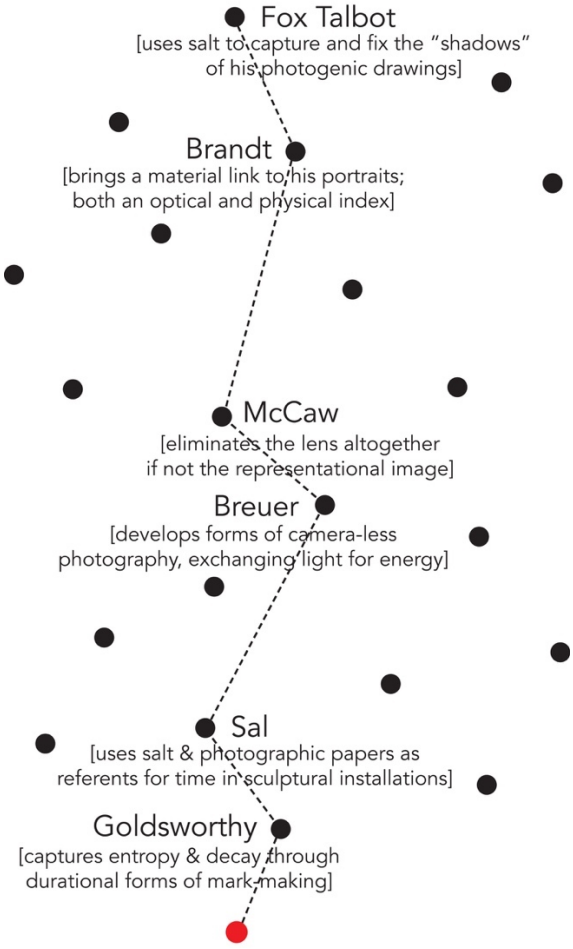


Diagram C

Material index (physical index/ corollary)

Charting the Terrain

The roadmap that captures key historical and contextual moments in my scholarly research, is summarised below:



[fig. 15]

Charting the terrain (the landscape of knowledge)

William Henry Fox Talbot (1800 – 1877) discovers common salt as the means to fix his images, establishing photography as a new discipline and codifying its visual interpretations (Schaaf, 1992).

He uses the stable and inviolable sculptural object as the perfect immobile sitter able to withstand extended exposure times – the white marble a perfect foil for early duotone images.

The photographic image is yet to be seen as a transparent window, and the marks of the photograph's making (brush strokes, fingerprints, hair and various debris) bring one's attention back to the physical surface and object nature of paper and chemicals.

[fig. 16]

Antique Statuette of a Sphynx, William Henry Fox Talbot, from 'The Pencil of Nature' (printed 1844-46)

Matthew Brandt (b. 1982), a century-and-a-half later, and in a series of intimate portraits, uses salt from the secretions of his sitters (semen, sweat and tears) with which to salt the papers he prints on. He later photographs a series of lakes and reservoirs using the water from the site both to develop and subsequently decompose his prints (Brandt, 2014).

Fig. 17

Charles (2007), Matthew Brandt. Salted paper print with sitters mucus.

Chris McCaw (b. 1971) exposes large format paper negatives to the sun for extended periods allowing the sun to engage directly with the paper with no mediating lens, literally burning through the paper and opening the paper to three-dimensional space (McCaw, 2012).

McCaw's work hovers between the scopic, lens-based and representational medium of photography and a new attitude of direct engagement with the material surface. It is though arbitrary in the sense that once the parameters have been carefully selected, Nature is left to create this image, the hand of the artist is removed.

[fig. 18]

Sunburned, GSP No.41, San Francisco (2007).

Chris McCaw. Unique gelatin-silver paper negative.

Marco Breuer (b. 1966) by contrast, rejects the agency of nature, preferring to evidence human intervention, and goes further than both Brandt and McCaw by eliminating light altogether. He engages with photographic papers directly subjecting them to physical operations of burning, scratching and abrading. Once developed, Breuer's images reveal the marks of their making, his operations having transformed his papers from two-dimensional to three-dimensional objects (Breuer, 2007).

[fig. 19]

Untitled (C-1189) - (2012), Marco Breuer.

Returning us to the use of salt, **Jack Sal** (b. 1954) is an installation artist who combines steel, salt and photographic papers to bring attention to temporal concerns over the course of his exhibitions. Although preceding the generation of artists listed above, Sal's work comes closest to a tentative spatialisation of objects and durational processes. However, photography in this context is residual and is used more as a sign or pointer to ideas of registration and duration. As Rexer notes, Sal sees photography itself as a "memorial object" who's status resides "…not in its imagery but in its ability to record changing conditions that reflect the passage of time" (2009, p.146).

[fig. 20]

Untitled (1992). Jack Sal. Installation with steel plates and photographic papers, Moore College of Art & Design, Philadelphia.

[fig. 21]

Sale/ Sala (Salt/ Room) (1999). Jack Sal.

Detail from installation, Centro Espositivo Rocca Paolina.

Steel beams, salt and photographic paper.

In many ways the snowball drawings created by **Andy Goldsworthy** (b. 1956), come closest to my concerns, though I would emphatically place them within the discipline of drawing and mark-making. With this series snow is mixed with organic matter (locally sourced earth, leaves and fruits) before being placed on long rolls of paper to melt. Once dried the coloured and melted snow has reacted with the paper to create a visual record of the snowball's ephemeral dissolution.

[fig. 22]

Elderberry Snowball (1999), Andy Goldsworthy. Photograph of the process of making.

[fig. 23]

Earth Snowball (1999), Andy Goldsworthy.

This requires that I clarify my definition of photography for the purposes of this research. For this I would return to the etymology of the word; *phos*, *phot*- "light" and *graphos* "writing" or "drawing", together meaning "drawing with light".[12]

This leaves only the components of various silver salts as a light sensitive chemical and recalls the first discover of silver's light sensitive qualities by Johann Heinrich Schulze who used stencils on jars of chalk and silver nitrate to demonstrate the light and not heat was the cause of its discolouration.

Cameraless photography can be seen then to be returning us not only to the materiality of the image but to photographic essences.

[12] Taken from *The Language of Photography*, by Rosamond Moon http://www.source.ie/issues/issues2140/issue22/is22artlanpho.html - accessed 09.09.18.

Methodology & Methods

As a photographer, I consider myself to be an amateur and a novice, especially with regard to the technical foundations of photographic practice. Images of note I have produced have come about through a combination of serendipity and an eye for composition derived from my skill as a professional designer. It is therefore important to acknowledge that personal and tacit knowledge plays a significant factor in my output (Gray and Malins, 2004).

As a researcher it would be disingenuous of me to pretend that I have knowledge and skills in the complex and detailed world of analogue photography and its chemical processes. Further, stating the limits of my technical knowledge is important in defining an ethical position in relation to the veracity of my research data.

Talbot's Inductive Method

In reading about the birth of photography I recognised then the uncertainty experienced by those early inventors, feeling their way toward an outcome that was by no means certain. Batchen identifies at least 24 people who had failed to discover a method for fixing the image, before Talbot's own attempts (1997).

However, when first presenting his discovery to the Royal Society in 1839 with his paper "Some Account of the Art of Photogenic Drawing", Talbot prioritised the methodology of the scientific inductive method that led to his discovery – above the finding itself, for he remained doubtful of photography's practical value and possible applications (Maimon, 2015, p.3).

Maimon infers from this that "both science and the inductive method were not secured and in urgent need of 'reassurance'" (Ibid.). A growing understanding of the complexities of the world had exposed the limitations of the deductive method within the positivist paradigm of inquiry.

Within the discipline of economics, Arthur explicates that the type of perfect rational logic that deductive reasoning requires is useful for addressing abstract theoretical questions but breaks down as real-world complications lead to exponential complexity: "Beyond a certain level of complexity human logical capacity ceases to cope – [simply because] human rationality is bounded" (1994, p.406). To complicate things further, the interacting agents being studied cannot themselves be relied upon to behave with perfect rationality, requiring then a degree of supposition and guesswork on the part of the analyst.

Arthur notes however that humans excel at pattern recognition, arising from an evolutionary imperative, and that within complex models such patterns can be identified from which to build hypothesises and schemas. "When we cannot fully reason or lack full definition of the problem, we use simple models to fill the gaps in our understanding. Such behaviour is inductive" (Ibid, p.407).

Talbot's experimental and inductive method of discovery was very much based on this approach bringing an exhaustive process of reflective action to bear as various combinations of chemicals were rigorously tested in order for poorly performing hypotheses to be regularly updated and replaced with new ones.

Design Thinking

In considering the use of an inductive methodology, two issues came to the fore. Firstly, and fundamentally, I am not a scientist. I am not remotely a novice chemist. I am an artist and, by training, a Designer.

The second issue concerned the limited time available for the completion of the practical phase of research for this MRes submission. The inductive process requires patience, rigor and most importantly time, whereby variables can be introduced and tested against all previous permutations.

In seeking to develop a hybrid methodology that would address both my personal skill set and my limited time-resource, I turned to design and the writings of Nigel Cross who has theorised extensively on the nature of *Design Thinking*. Cross cites

Lionel March who argues that the conventional forms of deductive and inductive reasoning, "only apply logically to analytical and evaluative types of activity. But the type of activity that is most particularly associated with design is that of synthesis, for which there is no commonly acknowledged form of reasoning" (2011, p.27).

He continues: "A scientific hypothesis is not the same thing as a design hypothesis. A logical proposition is not to be mistaken for a design proposal. A speculative design cannot be determined logically, because the mode of reasoning involved is essentially *abductive*." (Ibid.)

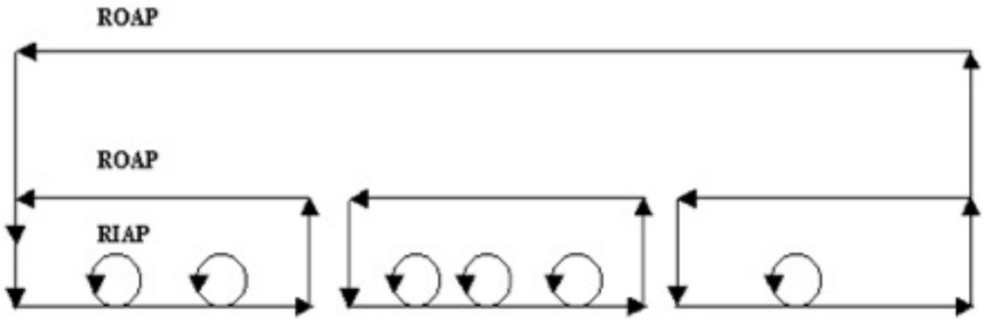
March himself draws on the work of Charles S. Pierce to help define this concept of abductive reasoning. According to Pierce; "Deduction proves that something *must* be; induction shows that something *actually* is operative; abduction suggests that something *may* be." (Ibid.) It is this hypothesising of what *may* be, the act of producing proposals or conjectures that is central to the act of designing.

Unlike conventional logic, a design solution cannot be derived directly from the problem but can only be matched to it. This is where Schön's theory of reflective practice comes into play: a cognitive process of reflection-in-action as the intelligence that guides 'intuitive' behaviour in practical contexts of thinking and acting.

Cross develops this argument to propose that at the heart of reflection-in-action is the "frame experiment" in which the practitioner frames or poses a way of seeing the situation. For Schön, designing proceeds as "a reflective conversation with the situation" (1991), an interactive process based on posing a problem frame and exploring its implications in "moves" that investigate possible solutions.

The use of design frames or conjectures may be similar in type to that of the hypothesis, but the difference is a matter of degree and of vision: where the inductive approach may make consistent and incremental changes to an evolving hypothesis, design or abductive thinking allows for larger leaps to test a series of wider potentialities, the most successful of which are then refined over time.

Scrivener's diagram of 'Reflection in Practice' [fig. 24] appears particularly pertinent in this context and can be read as cycles of reflection during work, at key moments or work stages through the research, and as a summative reflection of the work as a whole at the end of the project. Each cycle can be read as a frame experiment allowing for a re-evaluation of the conjecture.



[Fig. 24]

Reflections in and on design episodes and projects. Steven Scrivener (2000),

Success through Failure

Critically then, designing does not posit an optimal solution to a given problem from the outset, but is an ongoing, exploratory and iterative process that succeeds only failure. In *Success Through Failure: The Paradox of Design*, Petroski speaks of how notions of success and failure are intertwined. Indeed, "Failures are remarkable. The failures always teach us more than the successes about the design of things" (2006, p.49). With every failure knowledge is gained that leads to improved parameters for the following iteration. By definition then, failure not only challenges the limits of our knowledge and questions our assumptions of what is known and what may be knowable, but as we have seen may be thought of more particularly as *productive* (Roberts, 2011).

This suggests that in combining an inductive methodology with an abductive approach, the likelihood of failure along the way means that through every cycle of action and reflection, the conjecture will necessarily refine and perhaps even radically change course.

From personal experience I know that working consistently at the edge of such uncertainty is anxiety inducing and brings with it the danger of prematurely foreclosing possibilities. The challenge for me – as a designer and researcher – will be to not get caught in the constraints of a preconceived outcome.

This sentiment is echoed by Levine (2013) who writes: "Too often research is a repetition of what the enquirer already knows. In our quest for new knowledge, can we avoid basing our research practice on our own habits and memories? Especially in the case of "outcome" research, we often seek to find the result that we anticipate. This raises the question; how can we build upon what we know and still discover something new?" (Ibid., p.126).

Levine and Sajnani each turn to improvisation in art-based research as a possible solution. As Sajnani declares, "To improvise is to risk stepping into the unknown. …the prospect of discovery begins by placing one's attention on what is emerging rather than what exits already in action… Knowledge emerges as a yearning, a desire, as a *verb* rather than a known" (2013, p.81).

This attitude of seeking requires an ability to sit with the discomfort of un-knowing and necessitates both a sensitivity to where the flow of energy suggests, and the flexibility to move in that direction. Response becomes almost pre-verbal and instinctive.

The Material World (a Phenomenological attitude)

To follow knowledge as a verb, requires a heightened attention to one's senses and a responsiveness to the unexpected. Such a response is necessarily haptic and embodied.

Following the recent discoveries of cognitive science, Lakoff and Johnson (1999) speak of an *embodied realism* that is closer to the Greek conception of *metaphysical realism* than the disembodied Cartesian and analytic philosophy that has ruled so much of Western thought that promotes a separation of mind and body. Here there is "…no split between ontology (what there is) and

epistemology (what you could know)" (Ibid., p.94), because the two are conflated – the mind understands the world through the body and is part of it.

This recalls Merleau Ponty's maxim of *being-in-the-world*, of which he says that: "To return to things themselves is to return to that world which precedes knowledge, of which knowledge always *speaks*" (Merleau-Ponty et al., 2007, p.57 – original emphasis).

Through this emphasis on a lived experience, phenomenology rejects all forms of dogmatism and *a priori* accounts of the nature of knowledge – any pre-formed notion that might be imposed before the phenomena itself has been understood (Moran, 2000, p.5).

In this research I therefore advocate a post-positivist and realist ontology (accepting that reality exists but can never be fully understood or comprehended), with a subjective methodology rooted in a phenomenological understanding of experience as a unity of body and mind, accepting the role of reflexivity and subjective involvement in the role of the practitioner-researcher (Gray and Malins, 2004, p.21).

Material Culture (Thinking through Making)

If we are to be sensitive to the subtleties of lived human experience, then the question of material and materiality (or material culture) becomes foundational to this inquiry: What Merleau Ponty is demanding is a dialogue between subject and object through which understanding can develop.

Ingold speaks specifically to this point when developing his conception of a *correspondence*; an art of inquiry as he calls it, to not "describe the world, or to represent it, but to open up our perception to what is going on there so that we in turn, can respond to it" (2013, p.7). Through a correspondence with the world of object-matter, Ingold postulates a method of *thinking through making*, where "the conduct of thought goes along with and continually answers to, the fluxes and flows of the materials with which we work." (Ibid., p.6). Deleuze and Guattari

speak of this flow as; "…matter in movement, in flux, in variation, matter as a conveyor of singularities and traits of expression. This has obvious consequences: namely, this matter-flow can only be followed" (2004, p.409).

As ephemeral objects the sculptures I make are bound with the material of their making: of salt and the chemical states of salt – its phases and its phase transition states (melting, boiling, evaporating, condensing and solidifying/ recrystalising). It is an attentiveness to the possibilities of this material that has led to forms of expression that disregard discipline or medium specificity. I simply followed where the material flow took me in an ongoing conversation.

The working premise here is to continue with such an engagement, with the materiality of both the sculpture and the photograph, allowing a dialogue, or correspondence, to occur between the two and having the distance to observe but also to reflect – to allow me as the researcher to contribute and direct the conversation, but be prepared to change approach if and when the material I am working with suggests so. This can be thought of as a form of 'praxical knowledge' (Smith and Dean, 2009), a very specific status that can induce 'a shift in thought'" (Ibid. p.6).

To conclude, Malins & Gray note that "We learn most effectively by doing – by active experience, and reflection on that experience. We learn through practice, through research, and through reflection on both" (2004, p.1).

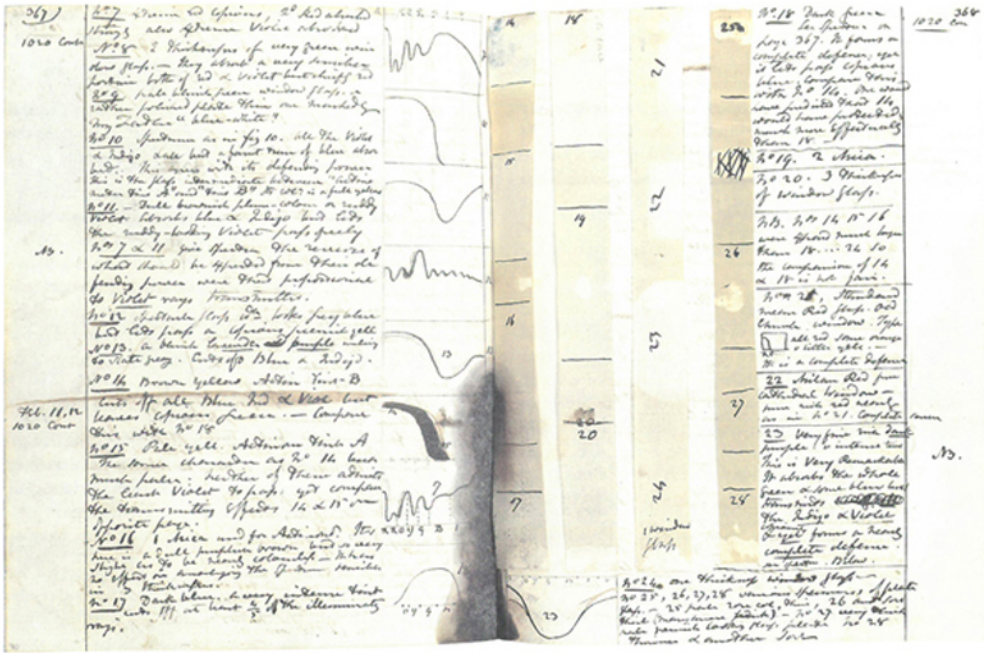
The Research Diary

Toward demonstrating the validity of the research process the primary and umbrella tool I have used is that of a reflective journal, or Research Diary, charting in detail the development of the work and the reflexive thinking required in analysis and synthesis of the process.

In order to demonstrate rigor, validity and the verifiability of any practice-based research, the description of the creative process becomes of paramount importance. "…this should focus on the recording and reporting of these

moments of reflection, including intended and unintended consequences and responses to them" (Scrivener, 2000). Such description would enable the process to be scrutinised, replicated, tested and conveyed to a wider audience.

I am supported with precedents by Sir John Herschell who used his diary in a much more immediate way than Talbot, to capture his reflective process in parallel with fragments of material exploration (Schaaf, 1992).



[fig. 25]

Sir John Herschell, Extract from Research notebook, 11 February 1839, The Science Museum Library, London. Reprinted in Schaff (1992),

For the purposes of this research, the reflexive journal/ diary forms a repository for the artefacts produced through the period of practice-based research, along with observations and analysis of findings during the process. It is a locus for all data collection from factual descriptions of experiments to analysis and review of outcomes and in so doing provides for verifiability, reproducibility and thereby transparency.

Triangulation (& Performance)

Data analysis is not a discrete stage in itself, but part of the ongoing process of reflection and continual readjustment that the iterative and inductive process requires.

I therefore employed a multi-method strategy to provide the necessary triangulation of the output against which the work could be tested, to ensure it was both reliable and critical:

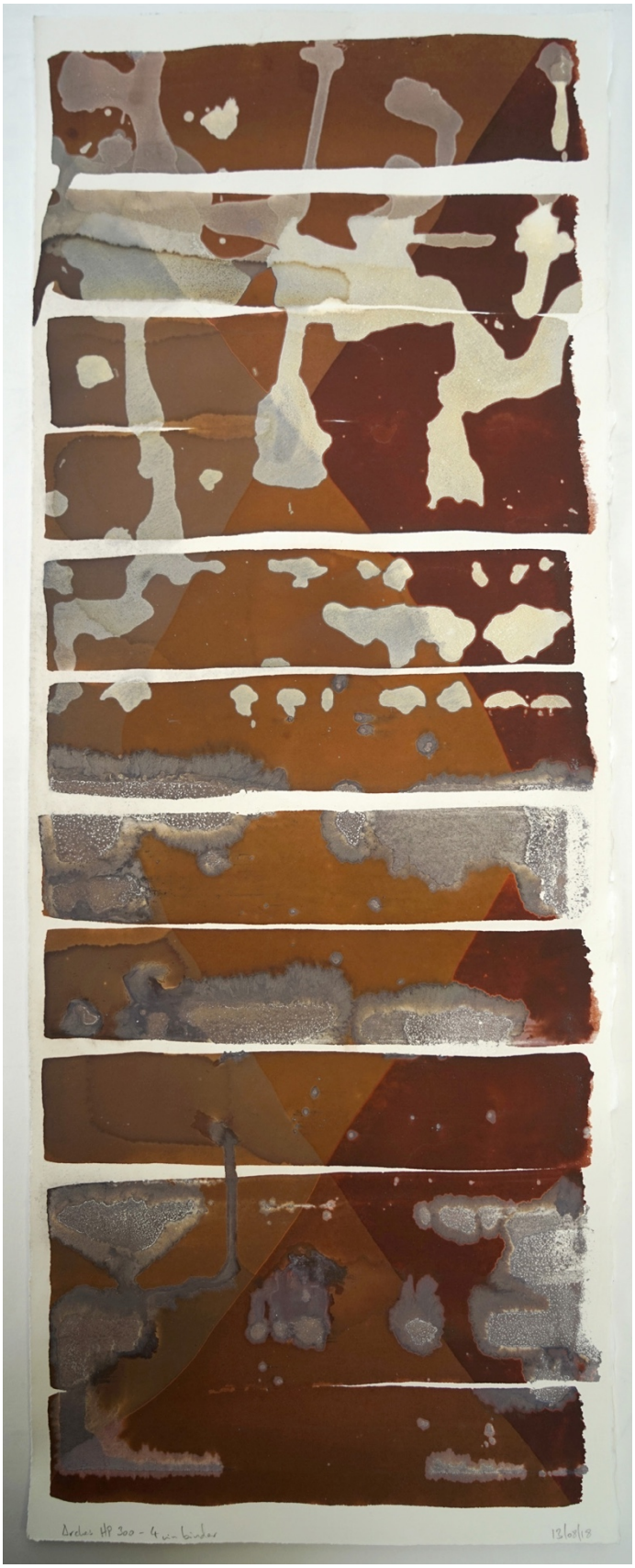
i. the work itself ("photographs" as resultant artefacts of the process)
ii. the research diary (recording the process of action and reflection)
iii. a performative exhibition of my findings

Such an exhibition not only provides an opportunity for the research to be disseminated, but more importantly to receive critical feedback and responses from peers as a way to test the veracity of the work. Performative then, not only in the sense of making art, but in the engagement of visitors becoming active agents in the meaning-making of the work.

Performance then has come to play a central role in this research on a number of levels: If I intend for the photograph to fully correspond to the sculpture, from its formation to the onset of decay at the moment of completion, then the performance of the sculpture's creation is necessarily to be made explicit.

The "performative turn" in art has been widely theorised (Goldberg and Anderson, 2004), but my reference point for this research would align with the action paintings of Jackson Pollock considered the apotheosis of an art of action, but also in consideration of the performance being inseparable from the well-known films and photographs taken by Hans Namuth (Hoffmann and Jonas, 2005).

Namuth's photographs capture performance as a *moment in time*, but perhaps of most interest would be the notion of a performative photograph: images not made to be looked at passively, but photographs that ask that they be watched for how they are changing over time.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Analysis & Evaluation

Overview of Creative Practice

Three research diaries were created during the course of this practice-based research project.[13]

This was the first time I had used a research diary as a formal method and so the content of the diaries can also be seen to develop through a similar process of thinking-through-making, with a level of consistent rigour developing in the early weeks of Research Diary No.2.

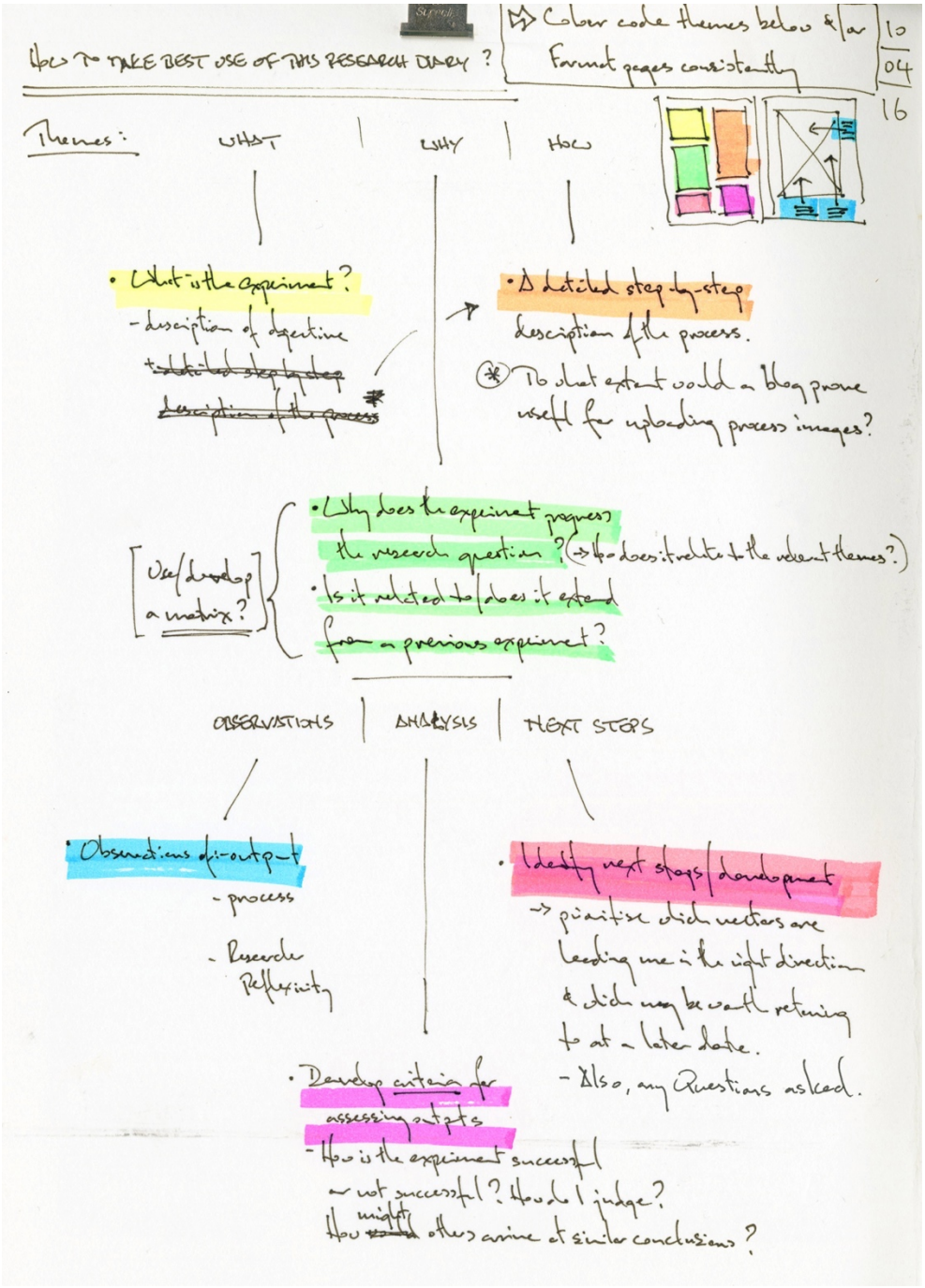
The planned programme (based on part-time study) was to allow for 8 weeks of research-led practice, with one experiment per week. Three days of research time would provide for a day of experimenting, a day for analysis and reflection, and a third day for iteration and preparation for the next cycle of experiments.

However, as processes became more complex and involved, so did the time taken to complete each cycle affecting the desired for sequential clarity. As experiments began to take several days to complete, the diary becomes populated with other reflections, propositions and more immediate experiments.

Data Analysis (the Analysis Matrix)

A system of colour coding was developed to allow for subsequent data reduction, identifying the *How* (what procedures and techniques were tested in each experiment), the *What* (observations of outcomes/ revision, refinement and development toward next steps) and the *Why* (a discursive approach to an emergent set of criteria).

[13] The first, Research Diary (No.1), was started in 2016 in parallel to the writing of a draft literature review and methodology – RDM02 Task 1 – and incorporates a number of initial practice-based pilot studies. Explorations from the ADM03 Creative Enquiry module have also been included, but so identified. The second and third diaries (Nos. 2 & 3) were developed once the research was resumed in the summer of 2018 and captures the primary arts-led and practice-based inquiry of thinking through making.



[fig. 26]

Extract from Research Diary No.1 – the key/ legend for colour coding of content.

To allow for interrogation and verification, the research diaries are reproduced in full in Appendix A, followed by a first level process of data analysis and synthesis captured in an Analysis Matrix (Appendix B). This records in detail both specifics of the experiments for comparison (paper type, salting, etc.) along with notes on the pace and progress of research.

The Analysis Matrix developed (after Gray & Malins (2004)), captures the primary artefacts produced through the research process, providing descriptive context of the intention behind each experiment, identification of significant observations and reflective responses.

What follows here is therefore a necessary rationalisation and synthesis of research outcomes.

Weeks 1 to 5 explored both high-level opportunities (order of application of chemicals) as well as detailed permutations (application tools, variations in preparation and fixing times, etc.).

Weeks 6 to 7 moved toward both synthesising outcomes and took the opportunity to reconsider alternative paths: questioning the use of paper as a substrate or even the need for a substrate at all.

Week 9 included these further experiments, deemed at the time as residual and extraneous to the main body of work, but ended with an unexpected moment of revelation that significantly moved the research forward.

Evaluation of methods and methodology used

Despite the challenges of maintaining consistency and rigour from week to week, the research diary became an invaluable tool and worked well as a repository for artefacts and reflections. The tests themselves, being much larger than the journals, could not however be incorporated so remain separate, subject to damage, and only represented within the diary as small Instax photographs.

The hybrid methodology of inductive and abductive reasoning (design thinking) was ultimately successful, if not in the manner that was originally envisaged.

The injunction of "What might be?", or more commonly in design language; "What if…?", only occurred at the beginning of the process when imagining an unrealistic end result – or vision – which almost stopped the research in its tracks (see beginning of Research Diary No.2), but more significantly toward the end of

the period of creative practice with the questioning of assumptions, allowing for a productive disruption of the process.

The inductive approach had taken me a surprising distance in a short period of time but had also run dry of new insights. The disruption (intentionally creating opportunities for productive errors) opened up the possibility for a different way of reformulating the conjecture and answering the research question.

Evaluation

Critically the Analysis Matrix identifies the emergent evaluation criteria, compared against outcomes. These were developed and refined through the period of practice-led research, tested with peer feedback at the performative exhibition of findings and summarised below.

Criteria 1 developed as a result of this research and a particular investigation into time (how the image might capture the process of the sculptures formation). Whereas criteria 2 to 4 are for analysis and comparison of the image artefacts produced, held against the characteristics of ephemeral salt sculptures. This transposition of criteria stem from the use of the word "corollary" in the research question (i.e. how well these characteristics of salt sculptures are captured in the images produced):

Criteria 1:	Does the object-image (photograph) capture in any way the process of the sculptures making?
Criteria 2:	Is the object-image durational and subject to change over time? Further, can it be seen to be moving toward a state of entropy and decay?
Criteria 3:	Does the object-image capture any of the aesthetic qualities of the ephemeral, namely lightness & delicacy?
Criteria 4:	Does the object-image respond to environmental conditions?

Critical moments on the research journey

By week 8 I had a suspicion that the work was becoming very similar, that minor permutations were being explored but that little new was being added to the knowledge base I was building.

A series of reflections on the assumptions I was working with enabled me to identify a number of disruptions to my working method:

- If my definition of photography is the use of light sensitive chemicals, why had I become so constrained to the use of paper as my substrate? Might the use of textiles open-up new avenues? After Eva Hesse's sculptural installation *Contingent* (1968), might the use of fabric open-up the possibility of 3D form becoming 2D with the potential to become 3D once more in a multi-level reversal?
- Could the substrate of the photograph be removed altogether with the application of the silver nitrate directly onto (or even into) the sculpture?
- The overall process (salting, sensitising, exposing and fixing) followed the very linear arrangement in the making of traditional photographs. I had explored various permutations of the sequence, but what would happen if I repeated the sequence in a cyclical fashion?
- The making of the sculpture itself had become secondary and residual to the process of image-making. Could greater attention to the formation of the sculpture bring some new insight to the image made in parallel?

A number of these experiments led to dead-ends (refer to Analysis Matrix), but one may have become a defining moment: 'Test.4', an earlier "failure", was used to explore whether a further exposure might be possible – the re-application of salt and silver to the papers surface [fig. 27].

[Fig.27]

The possibility for double or more exposures in salt photography.

Not only did this produce an extraordinarily vivid result, but it transpired that – in consultation with an expert in alternative photography[14] – it is in principle, possible to make multiple exposures with salt-photographs; with re-application, each layer of salt serving to sensitise the following layer of silver nitrate.[15]

This created the possibility of an image that on the surface might parallel multiple exposures, but one which could be created in real time, and until such point that the sculpture was deemed to be complete.

A disruption to the working process had allowed a failed experiment to become a significant finding.

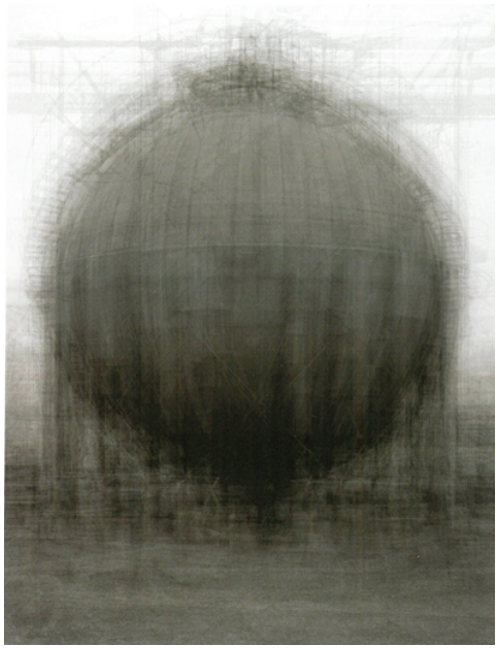
Synthesising outcomes

One pilot project completed in 2016 (documented in Research Diary No.1) is worth referring back to. This appropriated Idris Khan's methodology of taking a series of images and digitally overlaying them to create work that expresses multiple temporalities. Khan's most well-known pieces used the seminal recordings of industrial buildings by Bernd and Hilla Becher. These he overlaid to

[14] My thanks to Paul Daskarolis of Siderotype for this observation.

[15] In traditional salt photography the photograph would be thoroughly washed after each cycle of sensitising and fixing, requiring salting of the paper once more before applying silver nitrate.

create visual icons of types (becoming in the process archetypes), creating images that seem to transcend both time and space with vibrating energy.



[fig. 28]

every…Bernd and Hilla Becher Spherical Type Gas Holder (2004). Idris Khan.

I used this methodology (taken at 5-minute intervals) to capture images of a salt sculpture in the process of formation and dissolution.

[fig.29]

Pilot study (after Khan) – (2016)

Returning to the diagrams I developed as lenses through which to engage photographs in my contextual review (see page 39), this study can be seen to fall into the first category of a digital and unchanging reproduction, immobile and fixed in time; a photography *of* sculpture. The durational form of multiple exposure possible with salt photography however emphatically sits with the 3rd diagram I developed (Diagram C) whereby the making of the photograph follows in parallel with the formation of the sculpture.

A last observation on the point in time where both sculpture and photograph move toward a state of completion: From the moment a sensitised paper is exposed, the paper begins to develop. The speed is surprisingly quick and directly observable in the first few minutes[16]. The same is true for the making of salt sculptures that dissolve quickly in contact with water but also form crystals quickly on drying.

However, from this point onwards, as both sculpture and image move into the stage of entropic decay, the rate of change begins to slow, approaching but never quite reaching the zero point of disappearance.

For the purposes of replication, I have outlined the practical procedure developed for the multiple-exposure form of photography with sculpture developed, which can be found in Appendix C.

Feedback following the Performative Exhibition of Findings

A performative exhibition of findings was held on the 25 August 2018, at the School of Media, University of Brighton, Edward Street, Brighton (see Appendix D). As well as beginning the process of dissemination, this was more importantly an opportunity for peer feedback (invited artists, practitioners and academics), with a number of valuable observations and suggestions made toward validating emerging conclusions. Nine visitors attended during the course of the day.

[16] A 20 minute video of papers developing on first exposure can be found on my website at: https://phillipphall-patch.co.uk/photography-with-sculpture/ - where dissemination of this research has begun.

[fig.30]

Visitor/ participants to the performative exhibition of findings.

More than one commented on the possible use of time-based media (i.e. film) with which to capture the speed of the printing-out process of the photographs on exposure to daylight, or to extend the scope of the research with a response to a felt-sense of movement over time (the multiplicity of images in a multiple-exposure photograph seen as creating parallels with a filmic expression).

An observation made again by more than one visitor regarded my perceived failure of the initial brush application to Test.4. Rather than a solid application of silver nitrate, the expression was more a series of fine lines which lead to a dialogue around aesthetic possibilities of increasing control of the application further.

Again, more than one visitor asked after the status of the artefacts and whether there existed a summation of the research as a definitive artwork.

A particularly useful conversation with my supervisor (Dr Johanna Love) revolved around the possibilities for a more considered approach to the display of the art-work and its reception as sculpture (horizontal/ plinth-mounting) or photography (vertical/ wall-hung) – (refer Appendix D).

Recent Research by Others

In bringing this research project to a conclusion, I have reviewed once more the available literature and contextual references for other artists and researchers

exploring a similar terrain since the start of my own investigation. Two artists have come to light; Phil Chang and Meghann Riepenhoff.

Chang works with photographic contact prints, using developing-out papers in a printing-out process. Chang's *Cache Active* series (Benn Michaels, 2012) [fig. 31], consist of papers with various transparencies overlaid onto each other and exposed to light during the course of an exhibition and insist on an anti-archival mode of image consumption. With an explicitly performative quality the papers expose over time to a brown monochrome.

[fig. 31]

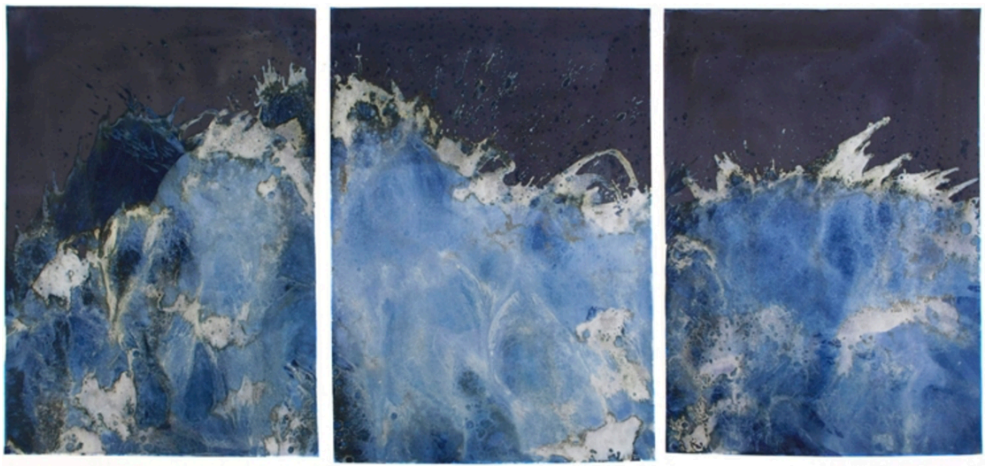
Phil Chang, Monochrome during and after exposure. Unfixed Silver Gelatin Print (2012).

Chang's concerns with temporal duration and the expression – through cameraless photography – of a movement towards entropy, are clearly similar to my own, yet the omission of an indexical object means that Chang's images maintain a medium specificity; an insistence that these monochromes be seen as photographs.

More recently, Riepenhoff works with cameraless cyanotypes taking direct impressions from nature. Part performance and part artefact, *Littoral Drift #270 (Ft. Ward Beach, Bainbridge Island, WA 6.16.15, Tidal Draw, Five Minutes Preceding Low Tide)* (2015) [fig. 32], has been described as: "…a cartographic impression of

the continental shelf created by submerging light-sensitive photo paper in the sea. Riepenhoff employs saltwater, sand, and marine flotsam as agents to manipulate cyanotype emulsion, producing monumental tableau's that capture the unruly power of tidal flows."[17]

Critically, Riepenhoff's artworks are ephemeral as they also remain deliberately unfixed, continuing to transform and evolve over time, and with a clear indexical referent in Nature. This complicates and problematises the diagrams I developed by way of content analysis, as Nature – by its nature – cannot be considered a man-made artefact formed over time.



[fig. 32]

Littoral Drift Nearshore #529 (2017), Meghann Riepenhoff.

With both artists the question of duration, of exposure as experience, is foregrounded. For Riepenhoff the images are created through contact with a referent, the sea, whilst Chang's require full exposure before attaining an object status; before seeing has been transformed into being.

Although these concerns touch on my own, I have not been able to locate any other research that ties the durational change of the photograph to the object of its representation, specifically a human-made sculptural form.

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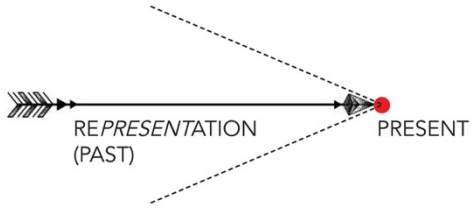
[17] Online exhibition review by Margolis-Pineo, Sarah. *Salt/Water at the Photographic Center Northwest*. 17 Feb 2016. (https://www.dailyserving.com/2016/02/saltwater-at-the-photographic-center-northwest/) - accessed 27 Aug 2018.

Discussion

Through both the contextual review of artists working with the physical materials of photography, and with the outcome of this practice-led research, I propose that photography can also be a concrete expression of lived time: or what Robert Morris expressed for sculpture as "The Present Tense of Space"; as the moment when images, "...the past tense of reality, begin to give way to duration, the present tense of immediate spatial experience" (1995, p.176)

Morris speaks of the "I", or: "…that part of the self at the point of time's arrow which is present to the conscious self. The 'me' is that reconstituted 'image' of the self formed of whatever parts – language, images, judgements, etc. – that can never be coexistent with immediate experience but accompanies it in bits and pieces." He continues: "What I want to bring together for my model of "presentness" is the intimate inseparability of the experience of physical space and that of an ongoing immediate present" (Ibid., p.177).

Ephemeral, or otherwise temporary sculpture, repeatedly returns us to the "I" of experience. It is about being present to that moment that cleaves time. The very next moment is the past and the point from which representation occurs.



[fig.33]

"Presence" at the point of time's arrow.

Bring into this Ingold's conception of a *correspondence* (2013), then a corollary is created between photography and sculpture, tethering one to the other. This is where new meanings may be allowed to form, between two disciplines, both in conversation with the material world. The changing state of the sculpture keeps bringing us back to the present-time of the photographic image (the image at the very point of time's arrow) and so begins a potentially new way of seeing and understanding photography.


WATERFORD CP(HOT) - 425 g/m²

Conclusion

The inquiry forming the basis of this research project developed organically from a fine-arts practice already interdisciplinary in nature: public art, installation, sculpture and photography. Acknowledging the importance of photography's documentary status led to research exploring the possibilities of a hybrid practice where the referential and indexical nature of the photograph could be more directly identified with the sculpture.

Historically sculpture has tended to a position of primacy over photography, whether through its links as a discipline to classical antiquity, its founding in material expression, or simply because the sculpture is traditionally made first before it can be represented/ photographed.

In an age of *liquid modernity* (Bauman, 2000) photography's ontological relationship to the referent has come under a sustained assault, leading Baudrillard to claim the death of photography (Baudrillard and Willaume, 2016).

This research study has sought to question a number of these assumptions. Can there exist a strengthened connection between object and referent? Can a hybrid practice begin to dissolve the material boundaries between the disciplines of photography and sculpture?

Within the focussed and necessarily constrained parameters I have set myself (ephemeral sculptures made of salt, working with salt photography, and seeking to work with the most limited variables of photo-chemistry), it would seem that there is indeed a relationship that can be forged, of a photography *with* sculpture.

If this premise is accepted, then the door is open to exploration with other organic material. After all, John Herschell had begun, in the 19th century, to explore the distillation of fruits and vegetables to extract dye's for experiments towards a colour photography (Schaaf, 1992). And we have already seen that a number of contemporary artists also work with such organic forms to make an expression of

the temporal dimensions of decay explicit (Anya, Gallacio, Zoe Leonard and Andy Goldsworthy, as examples).

The unexpected outcome of this research however, was the recognition that through the tethering of photography and sculpture, the theories of time attributed to sculpture – specifically those around the notion of presence (Morris's "present tense") – could bring new possible readings to photography and a new understanding of a phenomenological subjectivity with regards the image.

The camera-less photograph needs no longer be constrained to a historical moment past, but can also be experienced as an image in a constant state of entropic material change, constantly bringing one back to this moment,
and this moment…
and this moment…


WATERFORD CP (HOT) - 425 g/m²

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into which are inserted a fragmented text, art works, documents, interviews, and symposia, arranged chronologically and focused on so-called conceptual or information or idea art with mentions of such vaguely designated areas as minimal, anti-form, systems, earth, of process art, occurring now in the Americas, Europe, England, Australia, and Asia (with occasional political overtones), Berkeley ; London, University of California Press.

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