

The quarry as sculpture: the place of making

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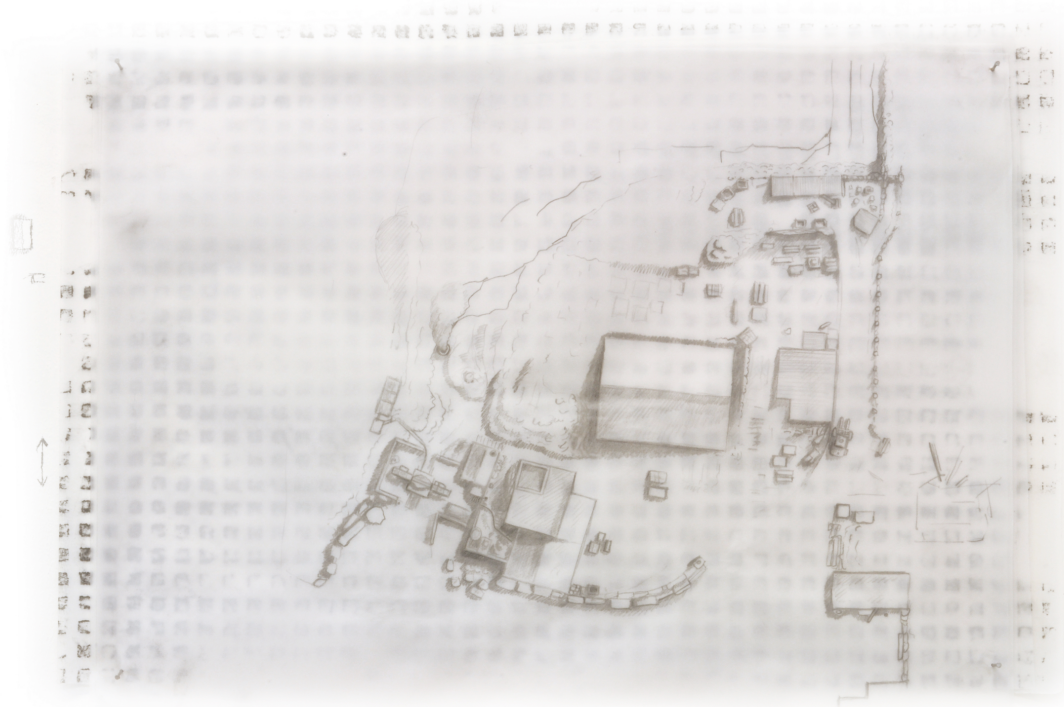
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DAVID A. PATON

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ABSTRACT

Practices of sculpture and geography have collaborated ever since Stone Age humans hoisted up rocks to point them into the air. The ephemerality of life was rendered in a circle of forms and mass that celebrated the union of sky, earth and dwelling. Through the manipulation of stone, the land became a place, it became a home, it became situated and navigable. As millennia unfolded, the land was written with the story of itself. The creativity woven into the story of place is an evolution of material collaborations. In recent decades, academic geographers have explored the realms of creativity in their work, and sculptors have critically engaged with the nature of place. I have united these disciplines in the exploration of a truth of materials. The aim of the research was to investigate the relationship between making and place. The structure of my PhD focussed on the development of a transdisciplinary research environment that could host a range of creative practices around stone-working. I developed a long-term relationship with Trenoweth Dimension Granite Quarry, working as an apprentice sawman and mason. Here, I examined the everyday practices of labour and skill development, from which emerged deeper material and human interactions, that went on to inform my sculpture and modes of making. Arguing that granite has threads of relational agency embedded within its matrix, I initiated a series of practices that made use of my emerging knowledge as a granite-quarry worker, cast within experimental sculpture, texts, performance, photography and film. By formulating my methods around the vibrancy of matter, I disclosed new materialisms and more-than-human relations. This assemblage of documentation and artwork records and reflects on a

series of practices and processes in tension. This productive tension arises from a re-rendering of artisanal practice as a research method; ushering in modes of representation as loops of experience and interpretation take place across different sites, spaces and times of mediation. The objective for the PhD research was to present a critically informed practice of sculpture-as-ethnography that could not only provide a model for practice-based research in general, but also significantly expand what might be meant by stone-work.

This PhD by alternative submission is presented as a Commentary with an accompanying Digital Archive website.

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ACCOMPANYING MATERIAL

Digital Archive website address: blogs.exeter.ac.uk/dapaton

Username: examiner

Password: examiner

To view the digital archive please type the address into your browser and then add the username and password into the required fields.

It is recommended that the reader have available a computer with a large screen and internet access during the reading of the Commentary. Headphones are also recommended, but be aware some audio pieces are loud, while others are quiet.

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I would like to thank my wonderful supervisors Caitlin DeSilvey and James Ryan for their enthusiasm, encouragement and support throughout my PhD. I am so grateful for their friendship and understanding during what has been one of the most exciting and challenging periods of my life. Their commitment to academic rigour and creative expression has helped shape my research, allowing me to fulfil so much more than I could have ever expected.

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**Only stones look on
and marvel at the briefness
of people, clouds, trees.**

Alyson Hallett, 'Only Stones' (2013)



PREFACE

1. The Commentary structure and Digital Archive

My PhD by alternative submission is presented as a Commentary with an accompanying Digital Archive. A focus on practice is made explicit throughout the methodology, content and outputs of the research. The delivery of the alternative submission was flexible in terms of how the final outputs could be presented, with decisions about how I collated and presented my research left open for as long as possible. I needed to analyse and synthesise the work I had done in order to generate a cohesive solution to the problem of its presentation. As the relationship between different work-modes at the quarry became apparent, I developed a sensitivity to very subtle tensions between documentation and creative processing. I also became aware early on in the PhD of the jostling claims of masonry and sculpture, with each strand of granite working contributing related but differing values towards the research. I was aware of not wanting to isolate any one form of making, and for there to be a degree of incompleteness in the various makings, leaving them more porous to one another.

My apprenticeship in the quarry saw a progression from the most basic job of sawman, to mason and finally to specialist carver, where I introduced my skills from years as a professional stone sculptor. I worked my way up through the quarry job spectrum,

learning about the granite and granite-working from Tim and the other masons. As a stone sculptor, I am very interested in the production of a finished carving; it is something to be experienced and cherished in its own right. I was at the quarry to work stone in a different way though, I was there to learn about granite and how, in the context of a work environment, that learning process could give me access to fundamentally different sculptural practices and knowledge production. Early in the research I made carvings in response to inquisitive remarks by other quarry workers, and as a way to generate dialogue between the masons and myself, and between masonry and carving. The detailed carving work I made as part of quarry jobs towards the end of the research had a specific value in examining a developing relationship between my skills and what the quarry could offer to its customers. Essentially I had built up an artisanal practice in the quarry, providing Tim's customers with a design-make service. Key carvings and sculptural research that employed experimental approaches to working the granite, along with re-interpretations of quarry practices, have been contextualised and feature strongly in the Commentary and Digital Archive.

As mentioned, critical to the reading of the work in the Digital Archive is the tension generated between documentation and a creative re-fielding of the quarry and granite through film, audio works and sculpture. The fundamentally productive spaces of tension allow the work to be configured and interpreted in multiple ways. During the research the interplay between these investigative methods allowed situations and made things, or shall we call them things that grow (Ingold, 2011, 2014), to perform in different ways, thus providing different reflexive constructs to think through. The

decision to establish a Digital Archive reflects and reinforces my assertion that the place of sculpture, and sculpture of place, operate within multiple registers and rhythms. The merged spaces of the Commentary and Digital Archive are also a sculptural form that collectively seeks and refines relationships, offering a rendering of the processes through which the research has been conducted. The PhD research as a process, and this presentation of material, is very much a foundation for a new sculptural practice, whose evolution over two decades has remained true to a set of values around (multi) material experimentation and process.

The Commentary follows a structure that firstly introduces my relationship to art and geography as a sculptor, along with key themes and terms. I move on to a brief description of granite geology in South West Cornwall and of the quarry itself in Chapter One, followed by Chapter Two that examines Merleau-Ponty's phenomenological work on perception and how aspects of his work correlate with new materialism. The following chapters, Three and Four, describe a number of methodological trajectories that cover aspects of quarry work along with a discourse on sculpture as it relates to the quarry and to broader sculptural contexts. The penultimate Chapter Five is dedicated to a description and contextualisation of the work in the Digital Archive, where both the Commentary and the Digital Archive are numbered to correspond exactly. Chapter Six is the conclusion, where I draw together a proposal for a sculpture-as-ethnography practice.

Throughout the Commentary and Digital Archive I have given myself a number of titles: artist, artisan, sculptor, mason, stone-worker, stone carver, quarryman, cultural geographer, researcher and artist-researcher. This is deliberate, for all these roles are interchangeable, with slight permutations, in the pursuit of knowledge about making in a quarry and telling the story of my place in the world of granite.

2. How to use the Digital Archive

The visual material is held in the Digital Archive (DA). The relationship between the Commentary and the DA is critical to a clear understanding of the research. The idea for the DA is not that it illustrates the text, it is a structured art-work whose content presents the investigative potential of working stone. The Commentary theoretically and methodologically contextualises the DA, and is concluded in such a way as to present the emergence of new sculptural practices. Chapter Five – 'Practices and processes: materials in tension' – indicates the moment in the reading of the Commentary where the visual material should be viewed as a whole and in numbered order. The order of the work oscillates through different modes of representation, creating a vibrant tension that navigates different spatial and temporal convergencies.

Before going further please go to Page 1 of the DA to view Quarry walk-through (2015), Page 2 – A day in the life of a sawman (2010) and Page 3 – A day in the life of an artisan quarryman (2015). There are two further points in the Commentary before Chapter Five where it is required for the reader to view the Digital Archive. The second and third

points are in Chapter Three, during Section 1. 'Footprint: The Soul of the Geologic' and Section 2. 'Thinking through a Quoin'.

The images at the head of each chapter are still shots from my film 'Stitch-Split: The Breath of the Geologic' (2014).



INTRODUCTION

1. Creative geographies

Thanks to transdisciplinary exchanges across traditional fields of study such as science and philosophy, art and science, environmental studies and social sciences, it is becoming difficult for geologists and biologists to hold to categorical distinctions between the "brute materiality" of geology's "external world" (rocks, minerals, mountains) and the soft, "inner" worlds of biology's living things. According to current scientific narratives about life, earth, and life on earth, it's possible to claim, without taking too much poetic licence, that we humans are walking rocks (Ellsworth and Kruse, 2013: 17).

Any mode of investigative practice within the sciences and humanities will inherently involve some form of creative process. Creativity can be understood as an improvisational response mechanism embedded in the rhythms of life, connecting the individual to the turbulence and sensuality of a lived-in environment (Hallam and Ingold, 2007). I dedicate much thought to the nature of creativity in this research, but it is not a task to be taken lightly as it relates to such a diversity of lived experience. Even so, cultural geographers have embraced a creative turn, and as Hawkins (2013) highlights, the relationship between geographers and art has evolved beyond a subject to be

studied, to the point where varied practices of art are now enrolled into geographers' research methods.

This Commentary aims to nourish the emergent thinking around the transdisciplinarity of creativity, further eroding the bounded locales in which creativity is usually considered to reside. Indeed, I demonstrate that creativity lies at the heart of human/matter relations, to the point that it erodes the binary therein. My doctoral project has embraced the need to improvise, making the research more-than-sensitive to the realities of life, and life more responsive to the research.

In raising questions of subjectivity, place, desire, and vision, art challenges the rational methodologies of geography. Traditional geographical discourse mediated against risk through elaborate strategies of technological and political control. Recent trends in critical geography, however, point to a sightline that appears more sensitive to the ground it travels over, and more open to the possibilities of getting lost (DeSilvey and Yussoff in Douglas, Huggett and Perkins, 2007: 583).

As the quote above suggests, a way of practicing geography is becoming apparent in which different creative modes offer a methodological flexibility more tuned to the sensual and mutable aspects of dwelling in and on the land. Geography has also sought to explore different ways of representing the experience of a messy world, and has seemingly found art practice to be a very sympathetic approach. This, then, is a

geography that finds value in a sculptor exploring the perimeters of geographical research, where making stuff has potential beyond the notion of a finished and exhibited object.

The adjectives that frame these emerging geographical outputs continue to proliferate – from imaginative geographies to more expansive terms such as emotional and experimental geographies. The terms emotional and experimental within geography signal multi-sensual practices of knowledge gathering and dissemination, which aim for a more porous investigation of the richness and complexity of peoples' daily experience in relation to environmental concerns and global socio-political issues. This is a geography that is free to stretch its own disciplinary boundaries and engage with a practice of geography that embraces artists as researchers. Recent examples of a surge in creative geographical work in conferences, workshops and academic departments include *Experimenting with Geography* (2010) at the University of Edinburgh (including the Experimental Research Network directed through Michael Gallagher), sessions at the RGS/ IBG conferences in 2009 and 2011, a recent conference at the University of Lyon (France) titled *Art and Geography: aesthetics and practices of spatial knowledges* (2013), *The Fourth International and Interdisciplinary Conference on Emotional Geographies* at the University of Groningen, Netherlands (2013), and *Lessons in Geography* hosted by the University of Derby in association with mac Birmingham (2013).

My doctoral research project forms part of a growing network of art-geography research. Explanations and descriptions of this emerging disciplinary field of action are reflected in analysis carried out by Hawkins (2013, 2014) and Foster and Lorimer (2007), practices of art-geography such as Insites - a book (2009) by Hawkins and Lovejoy, and PhD theses such as 'Fieldwork/fieldwalking: art, sauntering and science in the "walking country"', (2007) by artist Perdita Philips. For the discipline of geography, accommodating this emerging area of study in itself is a creative undertaking. Situating artists within core academic departments underlines a commitment to practicing new forms of geographical knowledge, and suggests a prescient concern for how, where and why geography is practiced. Artists' concern for place links the two disciplines in an overlapping and ever-expanding discourse around how and why our lives are played out in dynamic lifeworlds. Through much of this work, our understanding of place has moved to articulate the flux, complexity and interactions of human and non-human agency.

I am one of the inaugural group of researchers to carry out a practice-based PhD in a geography department in the UK. It feels vital at the outset that I present the opportunity the artist has to challenge disciplinary boundaries towards the formation of a practice of art-geography. This is a point to be registered critically within my research – I am a creative practitioner undertaking a PhD in geography, not a geographer adopting fine art practices as part of a research project. This Introduction is intended to establish the experience of an academic researcher immersed in the realities of daily life, who not only endeavours to develop original knowledge, but to challenge the narrow framings

which can confine a stone sculptor. In terms of creatively working with stone I don't wish to be segregated as a mason or a carver, a craftsperson or a fine artist; neither do I want my identity to be split between researcher and sculptor. I am a stone-worker who engages with every aspect of stone in order to fully embrace and animate the nature of its material properties and its creative significance in the world. Thus, from within a geographical sphere, I argue for the value of sculptural practice as a discipline which is ideally placed to articulate and investigate the social dynamics of matter as it relates to an emergent sense of place. The remaining sections of this Introduction firstly establish how I came to develop my research as a sculptor within geography, followed by an examination of some key terms and themes, and concluding with an outline of the progress of the Commentary.

2. A sculptor in geography

My childhood was played out in the dust and rock of East Africa, during which time my father was a quarry manager in remote road-stone quarries. I genuinely believe this early exposure to be part of the reason why I have taken to stone. My passion, my vocation, my connection to the material world, has principally been active through the making of stone things. My professional career as a stone sculptor has been dedicated to seeking out and working with different kinds of stones. In terms of site-specific projects, I have predominantly found myself attracted to sites of extraction – opencast collieries, dismantled limestone processing plants, brick factories and quarries.

The principle aspect of my established arts practice that I brought to the PhD was the tenet that (embedded in the elasticated and opportunistic time of investigative work) making is a deeply productive means to get to know the qualities and properties of a place (Ansell and Paton, 2009). A sensitivity to materials and place directed me to the expanding field of geography that Patchett and Enigbokan (2012) and Hawkins (2013) describe, where the porosity of a discipline is assumed and new critical discourses can emerge. What led me to considering geography, as opposed to fine art, as a location for my doctoral research project? In essence, I understood geography to be at a critical juncture in terms of its openness to creative practice, and to the value it placed on a very physical interaction with matter. Throughout my MA Fine Art degree geographical texts cropped up regularly in relation to place-based enquiry, and introduced me to the notion that making by human and non-human actants takes place in a creative textility (Ingold, 2011) of materials. I gained an appreciation for a discipline that was opening up to creative interpretation, and to a more fluid consideration of creative praxis.

In the early stages of my PhD I became aware of a substantial area of writing by geographers around public art practice (Burk, 2006; Foster and Lorimer, 2007; Hawkins, 2011; Kinman and Williams, 2007; Mackenzie, 2004; Morris and Cant, 2006), which demonstrated an eagerness to explore geographical creativity. These texts mostly came in the form of geographers writing about or collaborating with artists or arts projects. Overall, I sensed that geography was ready to synthesise with more varied categories of art practice, supporting a form of expanded critical and creative enquiry that was perhaps more open than that found in fine art.

As I explored geographical literature more fully I became aware of the emergence of an embodied and sensual writing practice developing within geography, suggesting a degree of malleability in terms of the ways I might perpetuate knowledge about stone-work. Writing had the potential to further disassemble boundaries between different art practices, disciplines and research outputs, and as Dewsbury (2014) discusses, engage with material obduracy and bodily sensuality in ways that change narrow conceptions regarding a particular practice. Writing is materially creative and investigative, with a plasticity that extends the handleability (Bolt, 2007) carried out in other areas of a practice-based research project such as craft-work or fieldwork. Practice-based research, that approaches the thesis as a dialogue between material process and theory, ultimately values the act of writing as a location where the art can maintain an emergent presence throughout the research (ibid, 2007).

To write for peer reviewed publication and doctoral assessment, as an outcome of being a quarryman, is surely a unique route to take, and demonstrates the support within geography for transdisciplinary research practice and outputs. Writings by Butler (2006), Cook (2000), Desilvey (2007), Lorimer (2012), Patchett and Enigbokan (2012) and Wylie (2005), to name but a few of the geographers extending the boundaries of the discipline, have demonstrated an eagerness to evoke otherness and openness. They offer a writing through rather than a writing up with regard to place, life and theory. Geography thus offered me the rigour of an academic tradition enlivened by a nuanced appropriation of research practices from other disciplines.

At the outset of my PhD research I proposed a geo-sculptural investigation of Trenoweth Dimension Granite Quarry. The potential of the quarry to act as a site of research had become evident whilst I was roughing-out a large granite block for a sculpture commission in 2008. The time I spent on this commission at the quarry gave me a sense that the place had so much to offer, primarily by animating how and why things get made in particular places. From a slightly externalised position, I was peering into the lifeworld of the quarry, drawn to its physical sensuality, combined with its historical, geological and laboured imbrications. The initial aim was to set up various sculptural interactions with the granite that could then be filtered through geographical theory. Personal circumstances very quickly determined the need for extra income. This financial pressure made me all too aware that an ability to improvise in the face of difficult situations was a creative process that resonated through work and family life, and that my personal circumstances could and should play a critical role in the investigative processes I employed at the quarry. I became aware that as an artist working in the discipline of geography, it was going to be more relevant to initiate my investigation of the quarry and granite through a social and political interpretation of sculptural practices. If I could be situated within the day to day operations of the quarry, and not merely an observer of quarry actions, a more nuanced synthesis of experience and interpretation could take place. The fact that a job was about to become available was perhaps a bit of luck. The crucial factor in this was the owner of the quarry, Tim Marsh, and his willingness to accommodate a PhD researcher with a rather flexible concept of quarry work.

I started work in Trenoweth Quarry at 8am on Monday 8th February 2010, when I began the job as an apprentice sawman. When I took up the post, I had a limited awareness of what it was like to work with granite, and indeed little knowledge of being a quarryman. My sense of granite's unique properties were more founded on a comparative relationship to other stones I had worked, than any deep familiarity with it as a specific material. I quickly became aware that, despite my many years experience as a carver, my body was not accustomed to the physical strength required to work at Trenoweth. I had developed a muscularity that could carve stone for eight hours a day, but not the stamina to heave blocks of granite around from 8am until 5pm.

The job of a sawman was much more about getting slabs and lumps from the forklift to the saw bed. It was also about working very quickly in order to keep the flow of granite moving onto the mason's banker (work bench). My apprenticeship as a sawman was based on working closely with Peter Davey, or Shandy as he is known by Ernie the head mason at the time. Peter was approaching retirement (65yrs) when I started; he had worked as a sawman and foreman at DeLank quarry, near Bodmin, for over 40 years. He was extremely fit and agile for a man with some considerable stature, and his computational skills were astonishingly fast. He could very rapidly locate the stone required, and mentally divide it up according to the cutting list in order to get the very most out of the stone. This quick manoeuvring and division of the stone slab, which required a three axial mental unpacking of its dimensions, was a tough introduction to quarrying – not only did I struggle physically with the work load, but I struggled with the mathematics. As my time at the quarry progressed, I realised that I was not suited to the

job of a sawman. I gained the physical strength to do the job, but not the interest. I was still too tied to the hand tooling of stone, and I truly disliked the pressure of worrying whether I had sawn the stone to the right size, especially if it was a very long, difficult to source and expensive slab.

With carving or masonry I can drift into a sort of trance with the stone as I work over it, acutely aware of my actions and fluid in movement and thought; this was a way of being with stone that I was accustomed to. After a year Tim became aware of the fact that I didn't like the sawman's job, and slowly over the following two years, I eased myself towards the banker sheds, and to doing masonry at the quarry. Eventually I came to realise the value of my time on the saws – my job as a sawman thoroughly expanded my relationship with granite, to the point where I felt robustly enrolled in the wider culture of the whole quarry. I had gained a technical understanding of how the granite moved through the quarry, which also gave me value as a worker at the quarry. I can now turn my hand to most aspects of quarry work, with a specialism in fine carving.

Securing the job at Trenoweth produced an ethnographic framing to the process of researching the granite and the quarry. Although ethnography is a research method readily employed by artists and has been extensively written about (Bishop, 2006; Clifford, 1983, Clifford and Marcus, 2010; Coles, 2001; Foster, 1996; Schneider and Wright, 2010), it was a very different approach for me. Critical analysis of the artist as ethnographer was prominently delivered by Hal Foster, who observed, according to Marcus (2010), that the ethnographic practices employed by artists could be considered

naive, and also became too much a part of their cultural capital. Countering this criticism, the artist as ethnographer can be celebrated for an ability to deliver complex assemblages of meaning through the very nature of their desire to leave a lot unsaid, to leave gaps and celebrate misadventure. The position held by Schneider and Wright (2010) is to argue strongly for the experimental, and art is seen as the route out of stagnant disciplinary values and hierarchies. Artists' material outputs perforate boundaries in their pursuit of letting go and then gathering back up. This is a language of the everyday that also transcends mere representation, and extends the unfolding present into new arrangements.

The tension between artist/author and spectator/ reader is a persistent, and if I am honest, confusing one for artists as much as ethnographers. In an edited volume Coles (2000) sheds light on the intertwining of contemporary fine art and ethnographic practices. In a chapter titled 'Experience vs Interpretation: Traces of Ethnography in the Works of Lan Tuazon and Nikki S, Lee', Kwon (2000) examines the confluences and disparities of experience and interpretation within contemporary artists' employment of ethnography. Kwon's critical analysis becomes a discourse on the discipline of ethnography itself – in the hands of artists, ethnography is a tool to question the authority of art and the artist, as much as the authenticity of an experience. This is a valuable critical position to take into account, and I was very clear in my research that the job in the quarry established a very stable, if flexible, platform for all my research outputs – I needed the job, and was operating beyond the role of participant observer. Ethnography, as I came to understand it, was as much a tool to investigate the ethical,

political and cultural position of the [artist-]researcher as much as the subject of investigation. This blurring of the interior and exterior sites of research is actually a vibrant situation through which artists encourage audiences to question their own agency, culture and political position within any reading of a work. In another chapter of the book Clifford (Coles and Clifford, 2000) further substantiates the difficulties of representation by acknowledging the diversity of the agents that are the subject of any ethnographic research; in my case this included the granite itself. The job at the quarry offered a very grounded platform for my research and it established the opportunity to develop long term understandings of the quarry through the everyday practices of labour and skill development, from which deeper material and human relations emerged to inform my practice and modes of making.

Carrying out an ethnographic project was certainly not a new departure for the discipline of geography either. The nature of my ethnography can be understood in terms of yoking together an investigation of 'people as knowledgeable, situated agents from whom researchers can learn a great deal about how the world is seen, lived and works' (Cloke et al, 2004: 169) with an awareness of the granite itself as a knowledgeable situated agent. I wanted to situate myself at the nexus of the human-material world, and participate fully in the multiple human and non-human agencies at work in the quarry. I was asking my entire being to be soaked in the operations of a site beyond the boundaries of any humanist ontology, towards a rendering of all matter operating through Trenoweth as having equal affective potential.

In terms of the development of a skills-based methodology through which one can examine the production of knowledge, Marchand has produced texts (2008, 2010, 2014) that reflect on his experience as an apprentice and the experience of other apprentices. He argues that the depth of involvement in the learning process as an apprentice produces much richer veins of knowledge than merely observing the apprentices and their labours. Marchand states that an apprenticeship offers 'both a mode of knowing and a field method' (2010: 1). This is precisely the position I took as a practice-based researcher – being an apprentice while simultaneously stretching my awareness of the researcher as worker. Dissolving the nature and nurture binary towards an 'interdependence of minds, bodies, and environment' (ibid: 2) evolved as an acute awareness of myself and the intersubjectivity of human and non-human materials where knowledge circulated, dispersed and coalesced.

The way my research role in the quarry developed, an auto-ethnographic method refined the framework of my ethnographic research practices, and the nature of how my sensualised body could interpret and reflect on the engagements with the quarry and the granite. This fine tuning of the self within the research felt closer to the way I usually engaged creative practices. It focussed my attention on honing the interface between visual artist and nascent cultural geographer, gaining a deeper concern for the operational workings of the site and the multiple threads of agency at play. The rhythms of the quarry became mapped onto broader social and cultural rhythms surrounding art practice and the laboured history of the Cornish landscape. As Crang and Cook (2007) suggest, auto-ethnography offers opportunities for the self to be a more fluid and

intuitive conduit through which the lifeworlds of the field can materialise. In this sense, I felt free to apply my core artistic values without the commodity-based economies of art production leading me astray. New and emergent practices of geography allowed me room to expand my practice through a reverence for the 'slow-time' of ordinary worked life.

Through a series of diary writings I also began to sculpt the words to express my emotive and experimental processes. These writings led to performative lectures, sculptural performances and audio-visual experiments as ways to engage people in my research. As an outcome of the sculpted word, the academic writing acknowledged the reader as audience and as a co-producer of knowledge. This is a critical point to register in the Commentary and the Digital Archive, where the progression of my mindful body through Trenoweth Quarry's granite-infused presence is intended to evolve sensually as a co-authored event. The manipulation of matter through differently politicised and historicised modes becomes, I argue, a sculptural interpretation of my experiences viewable from multiple perspectives.

3. Key themes and terms

A number of key themes have emerged during the research that need setting out before I progress any further. I trace out these themes and terms in relation to experiences in the quarry and in accordance with the changing role of my job at the quarry between 2010 and 2015. As the PhD reached the final stages my position in the quarry began to change from mainly working for the quarry as a mason, to more of a

mixed role as mason-carver or artisan. I established more of a studio workshop environment, with my own separate workspace provided by Tim. I started to draw more interest in my carved granite work through artisanal commissions such as bespoke headstones and architectural features. Tim seemed to really like being able to offer customers a wider range of products through a design-make service. The change in my position prompted further thoughts on the different social interactions that took place in the quarry, and highlighted subtle differences in my relationships with other workers at the quarry. It was also about this time of transition that some other apprentices were starting work for Tim. I began to have more frequent conversations about the different ways we all learnt to use the tools, the qualities of the different granites, and the way I carved based on working drawings as opposed to templates.

i. Social makings of the artisan

The social aspect of making things gradually seemed to take on greater importance as the researched moved through different phases of intensity. My time appeared to operate as more of a merging of very personal relationships, and broader social science discourses. Latour states that sociology should not be defined 'as the 'science of the social', but as the tracing of associations. In this meaning of the adjective, social does not designate a thing among other things, like a black sheep among other white sheep, but a type of connection between things that are not themselves social' (Latour, 2005: 5). This is also clarified with the 'social not as a special domain, a specific realm, or a particular sort of thing, but only as a very peculiar movement of re-association and reassembling' (ibid: 6). This notion of an assemblage fitted well with what I was

experiencing in the quarry, where the extended period of research time in the quarry let the connections and arrangements of actions be registered and reflected upon. Merleau-Ponty's models of perception, published between 1945 and 1964, generated a constant reconfiguration of the world of things in relation to a moving body. Thus, the things that I did in the quarry both for Tim, and gradually more for myself, were constituted in a dynamic that I could reflect upon directly during the times when I was actually making something. In essence, making seemed to heighten my sensitivity to how people and materials were interacting, and that interaction was the social in action. Panelli states that 'social geographies can be 'everywhere' and [...] that social geographic thinking can be effective in highlighting the many implications and tensions found when work beyond nature/culture binaries is attempted' (2010: 85).

The sheer physicality of working granite in the quarry had a particular frequency that exaggerated how my body connected to the surrounding world. When I discuss social making in the Commentary, I am highlighting how physical labour, and working with my whole body, set up a hypersensitivity to interactions taking place between people, and between people and matter. This is where the open nature of having a studio in a quarry, and still doing work for the quarry, instilled a more fluid connection to a variety of human/ material interactions within a social context. This connection seemed to remain intact within the work I made as it moved through and out of the quarry, where tooling marks left on the work hinted at how well or not my body operated on a given day, how hard the granite was or even what the weather was. I saw making as social, not because I made a quoin or a memorial or a bowl in the quarry where there were lots of

people, but because there were seemingly changing relations and reflections being assembled, and within which the agentic capacity of the made thing formed ever more complex connections.

I believe where these actions lead is to a model of production situated between art and work. I have placed myself in the complex position of being both artist[-researcher] and worker simultaneously, and perhaps the best way to describe this merged role is as artisanal. Rahtz initially describes the term artisan as 'work that involves hand skill' (2012: 165) before embarking on an examination of sculptor Carl Andre's self-definition as an artisan. The term artisan is given a highly politicised framework by Rahtz, as the role of the artisan adopted by Andre brings about the complex historicism of the relationship between art and labour, and craft and labour. Both art and craft situated making with a specific social and cultural identity, and the material of choice with a degree of agency, which is lost under any capitalist mode of production. Rahtz describes how Andre 'identified himself with the figure of the artisan as a worker who owns his or her own means of production, as opposed to the industrial worker under capitalism, and also as a worker who retains a particular relationship with materials' (ibid: 166). Truth to materials, Rahtz, suggests, becomes closer to a truth of materials, as Andre aligns himself with trades like tile fitters, where he denies any specific formal manipulation of the material essence, becoming essentially an 'artisan who denies craft' (ibid: 166). I, on the other hand, manipulated and mediated the material in multiple ways, and expanded the field of activity to include multiple interpretations of where the site of production might take place, where and when material truths became registered and in what way

connections and relations formed. Operating, as I did and continue to do, out of a quarry and producing work that moves between differently historicised interpretations of art and craft, situates my work at a continual threshold. This threshold, this material threshold, is where the research has been most exciting and most rewarding, and it is also where it becomes the most socially inclusive. I was and continue to be, in a literal sense, an artisan, because of the work I do in the quarry. I am also an artisan in that, through my outputs for the PhD, I complicate the relationship between production and consumption. Sculpting-as-research is how I framed my activity within the quarry. I made things, all sorts of things using all sorts of media, and they all threaded through an emergent understanding of the quarry.

ii. Time and space

Developing a sensitivity to the making process suggested how the time taken to explore and know the multiple spaces converging and dispersing in the quarry contributed to this notion of re-associations and re-assemblings. Social making conveys the complex ways in which a made thing is not a bounded form made by an individual, but a form constantly remade as the rhythms of human and non-human actants realign and reassemble its relations.

The times and spaces in which the interactions between people and matter took place also seemed especially prescient in the intense conditions of Trenoweth Quarry. Time featured in a very literal sense in terms of the value I placed on learning new skills, and

processes of familiarisation. An apprenticeship does take time; that is the point. As a learning method apprenticeships counter the mind-body or mind-matter dualism through sensual exposure to the response mechanisms of materials in the presence of '[m]uscles, morals and minds' (Marchand, 2008). Marchand further elaborates on this subject in a later paper with 'knowledge-making is a dynamic process arising directly from the indissoluble relations that exist between minds, bodies, and environment' (Marchand, 2010: 2).

According to May and Thrift (2001) time was once understood through the metaphor of momentum and space was considered resistant to change and politically ambiguous. The 1990s brought a reexamination of space as a dynamic and constellated dimension, equally as commensurate with a political body, as time. May and Thrift argue for a disruption of any polarisation of time and space, and procure TimeSpace (ibid) as a coexistent and politically charged channeling of a complex existence. In a major reexamination of space-based theory Massey (2005) explored space as trajectory, and suggested that multiple and mutable trajectories are exercised on a global scale of relatedness. Massey advanced the unregulated potentiality of space to be continually performed and reformed in line with rapid technological change. The merged properties of space and time are commensurate with the multiple roles I maintain within and beyond the quarry.

TimeSpace as May and Thrift (2001) term the unified configuration of time and space, or space-time as I will term it, is the constant threading and rethreading of different social

interactions and rhythms, whose delineations become blurred, provocative, frustrating but always engaging. Space-time, as it relates to the quarry experience is fundamentally about the shifting relations between my experience and that of other bodies of matter. The momentum of time is constantly reacting with the introduction of different scales of knowledge and experience. The sensing body is creating knowledge through acquaintance and reacquaintance over time, as Hass (2008) suggests of Merleau-Ponty's positional framing, and where space-time becomes a durational-rich awareness of the body's own physical momentum in the world. In this cooperative sense, space and time do synthesise or act symbiotically; the body is creating the sensory arena from its own position and creates shifting and relational understandings as it progresses.

iii. Quarrying the more-than-human

One of the effects of quarry work has been to make me aware of and vigilant about the critical agency of matter. In terms of a research approach, and as a way to renegotiate the role of stone-work, the term more-than-human offers a critical engagement with the perimeters of liveliness. Whatmore describes this awareness as a reanimation of 'the missing 'matter' of landscape, focusing attention on bodily involvements in the world in which landscapes are co-fabricated between more-than-human bodies and a lively earth' (2006: 603). Pitt (2015) aligns knowledge gathering with a showing of human and non-human natures. With reference to Ingold's work on knowing and learning, Pitt (2015) argues that plants and people can share their grown capacities in the context of exploring plant agency, given the right conditions that allow for a flow of mutual

acknowledgment to emerge. Pitt suggests how this knowing and learning, or showing, ties in with geographers' more-than-human exploration of livingness.

In line with what Pitt, and others (Gibbs, 2009; Panelli, 2010) argue, political, ecological, gendered and economic thresholds have been gathered into a strategic restructuring of where, how and through what, life is lived. Being open to the sharing of grown properties was a matter of principle when learning to work granite in the quarry, and it was equally critical to learn from granite, as it was to learn from the people of Trenoweth. Exposure to these collaborating instructors was embedded in the methodologies, where an awareness of the more-than-human as a process of engagement actually resulted in a physical outcome. By this I mean what was initiated as a strategy for engaging with the granite gradually enabled the development of a fundamentally different approach to making sculpture. As the research developed, a granite-based more-than-human sculptural research practice became tenable. Even though I was using myself as the conduit through which the quarry and granite were being mediated, I maintained a position where the 'redistribution of energies puts the onus on 'livingness' as a modality of connection between bodies (including human bodies) and (geo-physical) worlds' (Whatmore, 2006: 603).

iv. Practicing a laboured lifeworld

'Indeed the world is both sensed and sense is made of it through practice, which also makes possible consciousness of such mediations' (Dawkins and Loftus, 2013: 667).

I make use of the term lifeworld regularly when describing my engagement with the quarry, as it signifies my bodily investment in research, in practice and in daily necessities. I understand the quarry as a lifeworld in terms that Buttimer (1976) describes – where an awareness of the individual's enrolment in the everyday becomes a shared and animated position of knowing and being. The individual is empathetic with the wider lived environment. The quarry lifeworld is a critically important framing of my research experience; where my own rhythms of research and life become enrolled in wider processes of living, labour practices and material relationships. The quarry is my world within the world, through which I am able to examine a more-than-human perspective and develop an embodied research practice within the discipline of geography.

Registering the interaction between bodies of matter (people and granite, tools and ideas) is fundamental to the process by which my apprenticeship works in the quarry. Examining how the knowledges generated by these interacting bodies then become part of the world is, in essence, what this research project attends to – how do I tell the world about the quarry and about granite in a way that affirms the exposure of my body to the laboured world of the quarry, yet has the interpretive flexibility of an artwork? The research had to therefore be tuned to recording and narrating the very real conditions of the quarry without losing a sensorial imperative. Dawkins and Loftus (2013) examine praxis in the context of a Marxist reimagining of the senses themselves, where the sensual is wilfully engaged as a practicing of the senses-in-action-and-reflection towards a political awareness of the self, and in relation to others, within a laboured world.

Practice, here, can then be contextualised as a knowledge gathering process based on being responsive to the interactions of bodies, of matter and daily life, yet flexible enough to experiment with alternative assemblages of gathered material. Practice as a research method is 'the production of knowledge or philosophy in action' (Barrett, 2007: 1), and operates according to Whatmore on the basis of a positional shift in social science research from 'discourse to practice... which relocates social agency in practice or performance rather than discourse – thinking and acting through the body' (2006: 604). These significantly repositioned relationships situate research within everyday life, and at the nexus of diverse life systems.

My research methods evolved whilst embedded in the work practices of quarry. The practice of being in the quarry adopted the term labour in the reading of interactions between the people and the granite. Acts of labour thus informed the methodologies by threading through the creative exchanges between different forms of action and reflection. Devin Corbin, in an emotive rendering of a stonemason's life on a Wisconsin farmstead says:

...the way I often hear it [labour] used, it seems to mean "non-intellectual." It's vaguely pejorative, a holdover from the mind/body dichotomy. Conjuring images of disembodied hands, it's a phrase which has forgotten, or has yet to realize, that our brains fan out through our bodies in branching neurons, lacing our muscles so tightly to our minds that it's meaningless to speak of one without the other (2003: 44).

Corbin's poetic and very personal rendition of working stone through his father's job attends to the nuanced union of work and life. I see labour as an integral part of creative practices, and I shall now explain why.

Cosgrove's (1983) Marxist correlation with geography's cultural turn establishes the broader disciplinary territory of work/life and human/nature practices, defined as the space where peoples' lives are constructed around the mutual adaptations of material conditions over generations. By default, as a cultural geographer/ artist-researcher and quarryman, I am entering a political arena that sets out to radicalise and counter the given trajectories of landscape where consumption is the default position of human actions. I am interested in the creative potential of more-than-human collaborations and productions. The Brazilian architect and activist Sergio Ferro (b. 1938) provides a substantial critical context for the renegotiation of labour as a creative and dynamic political process:

...Ferro [wrote] extensively on architecture as the production of commodity, whose 'modern' practices demanded a division of labour in order to generate the highest profits. For Ferro, this attitude was encapsulated in the architectural drawing, whose exclusive language alienated builders, couching them as ignorant manual labour. The situation was exacerbated through isolating each part of the construction process, which effectively gave architects complete control and removed all agency from those who built their designs. In Ferro's conceptualisation of architecture, the process of

designing buildings could not be separated from their construction ('Sergio Ferro', spatialagency.net, 15/12/2014).

The material politics registered in the above statement not only correlates with early 20th century development of direct carving – the fluid relationship between artist, masonry, idea and stone – but also aligns closely with how the medieval design process took place. Ingold (2013) discusses this design process in terms of drawing, where the question of how much of a building was established on paper translates into a discourse on the nature of drawing itself. Ingold asks on what kind of surface (and in what kind of place) drawing takes place, and a more nuanced proposal emerges that emphasises the descriptive rather than prescriptive nature of drawing. Drawing, as design, was not about fixing an idea in the mind to be then produced measure for measure; no, design was a process that understood the value of the stonemason's knowledge and ability to be technically adept at conversing fluently between projected structure and the unpredictable nature of material and gravity. Thus for the medieval stonemason, drawing may well have taken place on a stone floor, where the required measurements were worked out at 1:1 scale, and tuned to the preceding grown nature of the rest of the building. The suggestion here is that the higher grades of medieval stonemason operated more like a direct carver, delivering creative solutions in accordance with an in-the-mind's-eye structural trajectory and the unique properties of the stone. Drawing on the shed floor at 1:1 scale is something we have done at Trenoweth Quarry to mark out an arch, looking for the most pleasing dimensions of each voussoir in order to complete the span. This emphasis on the creative and adaptive

capacities of the builder has substantial value in representing the grown nature of the material – a truth to all material. As already stated, celebrating the improvisations emplaced within social making is a central trope of my research.

Following a tour I gave to a visitor to the quarry, where I showed him how we processed rough block into a finished article, he commented on the Fordist-style production system employed by the quarry. I realised that the production-line image I had created for the visitor sat uneasily with my whole research position. In terms of value, in the quarry I am a worker who has been encouraged to learn skills and become more efficient, so that the quarry can become more efficient and earn more money. That's one way to look at it. It's a business with supply and demand networks. Yet, being at the quarry as worker, artist and researcher, I am involved in all manner of subtle relationships that colour the intensity of working granite. My research practice in the quarry fundamentally disrupts any notion of a division of labour. This is where the critical resonance of new materialism becomes valuable in terms of defining someone who makes, and who is configured in a dense tradition of material engagement – stone-working. Yes, it concerns the reconfiguration of matter as inert into a material lifeworld of which humans are a part; it also brings about a retelling of how people work with matter. This introduces labour as a term that is complicit with an overall capitalist economy, yet is also conversant with a creative agency that truly unites material and person. This is about use-value and exchange-value – the complex mechanism attributed to commodities whereby labour investment is often concealed and distributed (often unequally) throughout human handleability and monetary

exchangeability. This Marxist formula attends to the liberation of labour, from a single or limited exchange of input to qualitatively diverse returns (Marx and Engels, 2002).

The complex relationship I have built with the quarry operates on multiple economic, social and cultural registers that render the term labour untenable in any fixed form. I feel obliged to scatter the term throughout the contextual representation of my activity at the quarry, as if to remind myself of what I do, and what I have achieved. This is precisely because at certain very specific points, early on in my job as a sawman and mason, the pressures placed upon me to overcome skill and strength inadequacies located me very much in a value system. My value was, as I was made aware by Tim Marsh, situated in accordance with the value of the product, but also as part of the lifeworld of Trenoweth Quarry as a whole. On a personal scale of input of labour versus financial return, I was quantified and often found wanting as my strength and skills improved fitfully, but I was always given scope to develop. It was when my skills as a carver began to manifest that my value evolved more radically within the social and economic structures of the quarry. I also found that I was comparing my value to that of the granite, and in a sense animating its life force. The material exchange I was experiencing was emerging from different value systems occurring through both explicitly visible and implicitly invisible threads. A material value exchange must be located in the hands of the labourer, and for me to highlight this intersubjective process within my research practice is an acknowledgement of Jane Bennett's (2010) political ecology that I discuss in Chapter Two and Three. Along similar lines Marx states:

But coats and linen, like every other element of material wealth that is not the spontaneous produce of Nature, must invariably owe their existence to a special productive activity, exercised with a definite aim, an activity that appropriates particular nature-given materials to particular human wants. So far therefore as labour is a creator of use-value, is useful labour, it is a necessary condition, independent of all forms of society, for the existence of the human race; it is an eternal nature-imposed necessity, without which there can be no material exchanges between man and Nature, and therefore no life (Marx, 2012: 7).

Dawkins and Loftus (2013) highlight how Marx situated the senses at the forefront of a political engagement with the everyday lived realities of people. Embedding the notion of sensualised bodies in the laboured sites of production ideally enables the commodification of life and work to be dismantled. The points raised by Dawkins and Loftus, relating to the sensualisation of human perception, might well mobilise humanity's global political agenda to register and acknowledge a more-than-human knowledge network. Their assertion that '[s]ense experience within a philosophy of praxis is at the heart of the conditions of possibility for radical change and sense experience demonstrates Marx's creative vision for a communist society' (ibid: 669). This agenda makes way for art practices that draw on aspects of relational theory that are mainly concerned with forms of activism – 'These artistic practices take the sphere of human relations as the site and object of artistic production, something that has been accompanied by a radical decentring

of the author, positioning her within this matrix of social relations' (ibid: 771). Here, spectators of art maintain their own sensual relations that deny any form of passive reception, and in this sense-arena communities form and reform. The made thing is implicated in an active and sometimes provocative renegotiation of relationships between people.

The way my research practice has evolved in the quarry asserts a reevaluation of the idea of community, in that I have developed an understanding of the granite as a participant in the community of the quarry. The made thing in the quarry, be it a quoin, a headstone or one of my pieces of kiln fired granite, is not passive or readily distributed as mere commodity. Due to the way I have sensually registered and responded to the granite's laboured production as artist-researcher and quarryman, the made thing renegotiates the role of the object in art, and indeed the role of the sculptor in the context of research. Letting the quarry flood my creative methodology has opened up a reciprocal dialogue where people and granite acquire novel sense responses to one another in the context of a working day – 'By challenging the fixed identity of the worker under divisions of labour, relational and collaborative production of a sensuous, political moment can critique the separation of intellect from manual activity' (ibid: 674). Practicing a laboured lifeworld affirms my intention to make things in the context of a philosophy of praxis, where sensual response mechanisms are embedded in the oscillating daily rhythms of people and matter.

4. Positioning the research: the progression of the Commentary

The way in which this Commentary progresses is intended to build an understanding of a sensory engagement with the granite and quarry through various theoretical discourses, but also to create a sensorially rich environment for the reader. I have structured the Commentary in such a way that a sense of momentum, in terms of theory and sensuality, gathers pace towards the concluding chapter. In some areas of text I have attempted to impose a rhythm to the expression of ideas, replicating the sort of heightened and repetitive sensorial state that the quarry induced within me.

Over the duration of the research my relationship to the quarry underwent substantial changes and the quarry also changed in terms of who worked there, what equipment was used, where the quarry acquired its granite and even the kind of work that Tim was asked to do by clients. In Chapter One I provide a straight forward description of the quarry and its environs drawn from the many years working there. At different scales of enquiry the quarry actually changes every day, every second even, and the work in the Digital Archive aims to make visible those intricate scales of interaction that I engaged with. Chapter One is thus assigned to give a more pragmatic presentation of the working quarry.

As my PhD research progressed, I became aware of a body of work that sought to reassess human relationships with matter. Driven by emotional, political and environmental pressures, human engagement with matter has become a key ground from which academics and practitioners are advancing a vibrant and dynamic

consideration of cultural value systems. Matter may no longer be considered inert, without affect or simply redundant or separate from human life. Humans are of and in matter. This new materialism, according to Dolphijn and van der Tuin, was originally advanced by Manuel DeLanda and Rosi Braidotti, who 'first started using "neo-materialism" or "new materialism" in the second half of the 1990s, [describing] a cultural theory that does not privilege the side of culture' (2012: 93). The correlation between new materialism and Merleau-Ponty's phenomenological approaches to perception are put forward in Chapter Two. Coole and Frost (2010) unpack the origins of this new materialism, suggesting a creative ontology that might perpetuate fundamental shifts in the positioning of human life, where:

the human species is being relocated within a natural environment whose material forces themselves manifest certain agentic capacities and in which the domain of unintended or unanticipated effects is considerably broadened. Matter is no longer imagined here as a massive, opaque plenitude but is recognised instead as indeterminate, constantly forming and reforming in unexpected ways (2010: 10).

After a time working at the quarry I began to understand how the quarried granite and myself (and others) were breathing the same air and subject to the same weathering conditions. The daily rhythms of the quarry laid bare just how interconnected work and life, culture and matter, were. I wanted to make that relationship visible in ways that suggested my experience was a very real and shared experience. Gaining the job to

support my family countered any pretext that I was trying to discover the true nature of the quarry and represent it; instead I wanted to present an experience and way of learning that was tied into fundamental human needs. Thus, my assertion that the granite was somehow alive and in this way dialogically grounded in everyday actions, gave me the confidence to not seek some superficial aesthetic stamp on research outputs, but to let the relations between the different mediations of my experience grow more organically. Visual material that I produced, whether digital or physical, performed live or documented, needed to have the time to form its own network of meaning. I had a physical and emotional position from which I was experiencing the quarry, and from there I could substantiate and qualify making things in the quarry not merely as an artist, or researcher or quarryman, but all of these simultaneously, and in multiple space-times. In published work I hinted at aspects of my family life and in presentations I carried out manual demonstrations of quarry-work, creating a more accessible reading of research practices.

Attending to my sensual body as a primary resource, a phenomenological approach to my position as a researcher was entirely logical. Focusing attention on making as a form of being in the world, relative to ordinary lived experience, opened up a whole new dialogue around what might be thought extraordinary and/ or mundane. Here, then, I could discuss how made things reflected the juxtapositions of simply being human – of at once being a defined individual, while simultaneously being enrolled in many interconnecting and affecting threads. I was trying to find where the nature of making, made things and human life intersected. As Coole (Coole and Frost, 2010) hints at in her

initial discussions on new materialism, employing Merleau-Ponty's existential phenomenology overcomes the passive tendency to separate real experience from the perceptual configurations that one deals with as an embodied human. The perceptual mode, explored by Merleau-Ponty, relies on the movement of the positioned body through time, thus expanding the remit of where knowledge was situated – essentially at an always emergent present where space and time operate as 'the measures of being' (Merleau-Ponty, 2005: 385), and matter is therefore always lively. Again, these ideas are explored in Chapter Two. What I am getting at here is that, with all the will in the world, I would never have arrived at such a deep understanding of the relationship between how one learns, and how one explains to others what one has learnt, without getting to grips with exactly who was doing the learning and the telling – I learnt a great deal about myself in those first few years of the research when I worked for Tim. Communicating that experience to others seemed to have so much more vitality because of the visceral nature of quarry work. Situating this intuitive relationship with granite at an academic level, for me, found its grounding in the journal article 'Materials against materiality' (2007) by Tim Ingold. From this pivotal text, I discovered other writing around new materialisms, and none more focussed and generous of thought than Jane Bennett's Vibrant Matter: A Political Ecology of Things (2010). Bennett's discourse on matter allowed me to develop a focus on the granite which attended to so much more than its misrepresentation as a static and hard stone.

Taking the time to develop a reflexive and responsive research agenda that critically examined processes of familiarisation in a work environment became a persuasive

argument for a long term auto-ethnographic and creative research practice. I developed a sculptural geography that had a political agency, where a creative approach to material relations challenged limited and repressive notions of labour and recognised skilful making at all levels of material engagement. Deep analysis of two very distinct quarry processes in Chapter Three – following the waste from the saws, and exploring the expanded field of actions around the making of a quoin – provide tangible evidence of how material processes evolve through different configurations and present more-than-human labours as creatively productive investigative mechanisms. I attend to the notion of assemblage in some detail, and discuss how this mechanism for narrating the relationships between agents within a network can form deep understandings of the liveliness of matter. Here, the results and processes of quarry work are presented as highly mobile trajectories of human and non-human interaction. The rhythms of these mechanisms are further examined in the conclusion to Chapter Three through a brief discussion of Lefebvre's rhythmanalysis project, which proposes 'that places are in a process of becoming, seething with emergent properties, but usually stabilised by patterns of flow that possess particular rhythmic qualities whether steady, intermittent, volatile or surging' (Edensor, 2010: 16). Developing a methodology based around sculptural geographies, and attending to the rhythms of these materials-in-action as they occur in the quarry, has generated an argument for creativity as the agentic thread that flows through the world.

After spending time in the quarry, it did not take long to appreciate that many rhythms and cycles of activity were present, and were also persistently mobile. Keying into these

shifting rhythms required a very flexible and improvisational research method in order to identify how they interacted. Bearing witness to events and unlocking patterns, that in turn evoked the texture of a lively quarry, became the route into a creative representation that did not fix one position, but let many representations and subjectivities co-exist. (May and Thrift, 1997). This coexistence is a fluctuating cohesion where all matter has a social trajectory and is alive to the interchangeable paths of becoming (Ingold, 2011). Engaging with the multiple forms in which places are evolving dovetails with making processes; stone-working in a quarry, as acutely tuned to its environment as it is, could also be viewed as a model for more universal material relations to be registered. In Making the Geologic Now (2013) the creative urgency of situating humans within non-human scales of production is attended to. The authors seek, as I do, to emphasise the potential for cultural change by coopting non-linear and more-than-human temporalities towards what might be perceived of as a social matter of the world:

We may be living creatures, but our aliveness is composed of geologic materials such as calcium, iron, and phosphorous. And the comparatively tiny living organisms that inhabit the earth's surface, be they humans, lichen or bacteria, are now seen to be key players in setting and precipitating monumental geological processes and planetary-scale chemical transformations in geologic materials (Ellsworth and Kruse, 2013: 17).

Describing matter as alive is perhaps a step too far into mysticism, but as a stone-worker I have always considered stone to be a living material. Living, in the sense that when I am working it, there is an evolving connection with its properties and an anticipation of emergent forms. Makers are highly conversant with the notion of describing their material of choice as living and breathing. Take that phrase literally, and one is suddenly evoking the trials and joys of daily life and the intake and exhalation of worldly matter on a cosmic scale, suggesting synthesis, complexity and adversity.

In Chapter Four I draw out the conflicting natures of what a (stone) sculptor might be, why he or she might be an expert researcher of place, and what they do towards that process of discovery. The chapter builds on an emergent framework for a practice of sculpture-as-ethnography through an examination of sculpture's material values. I explore these material values through a contextualisation of 20th century sculpture and through the work of two sculptors – the intimate (yet globally networked) studio space of Barbara Hepworth and the epochal temporalities of Robert Smithson. The purpose for framing the role of sculptors who work with stone is pertinent to the central argument in this Commentary and the research practice as a whole – that the processes of sculpture, and particularly stone sculpture, can be performed in such a way as to provide an effective, more-than-representational, methodology for the examination of place as a process. Nourishing a sculptural practice with cultural geography and other social science disciplines, has I believe, pushed sculpture to be seen in a more subtle chiaroscuro.

The penultimate chapter (Chapter Five - 'Practices and processes: materials in tension') provides a description of all the visual material and corresponds numerically to the Digital Archive. The practical role of this chapter is to provide basic contextual information on projects. Prose texts, further methodological and contextual details are found within the Digital Archive. The chapter is introduced with a description of why the format of a Digital Archive was chosen, what equipment was used to carry out documentation and how to use the archive in relation to the Commentary text. I also contextualise the productive tensions in the Digital Archive that take place between documentation and artwork, forming an assemblage of the quarry and its network of relations.

The conclusion to the Commentary draws on the theoretical principles of more-than-human assemblages and the methodological practices carried out as sculptor, researcher and quarry worker to establish the artisanal nature of a sculpture-as-ethnography practice, and looks ahead to how that might be employed in my work after the PhD.



CHAPTER ONE

THE LAY OF THE LAND

1. Cornish granite: a brief geological account

The geological formation of Cornwall has a complicated arrangement, consisting mainly of slates (Killas) and granites, interspersed with many smaller sedimentary deposits. A very limited fossil record within Cornwall makes dating difficult, especially as the geology has seen such massive global migrations and reconfiguration through various episodes of extreme compression and magmatic heat. The granites provide the most visually distinctive landscape features of Cornwall, with notable examples such as the famous Cheesewring on Bodmin Moor, and the rugged coastal cliffs extending around West Penwith, which form the farthest south westerly mainland district of Britain.

The five main granitic intrusions (also called plutons, or bosses) of the south west of England, are all connected to a single structure called a batholith, lying at some considerable depth below the current land surface. The Cornubian Batholith, as it is known, extends approximately 250km in a roughly east to west direction by 50km north to south. The plutons are arranged from Dartmoor in the east to Lands End in the west, with the Carnmenellis pluton lying roughly in the middle. The plutons intruded into Devonian and Carboniferous sediments during a period between approximately 400

million and 250 million years ago. Magmatic fluids cooled against a roof of sedimentary rocks that have subsequently been massively eroded during global land-mass migrations, numerous sea level changes and also by periglacial action and weathering. Thus, the landscape of Cornwall, and the accessibility of the granite for quarrying and ore extraction, is only possible through unimaginable geological machinations across immense stretches of time (Selwood, Durrance and Bristow, 1998; Westwood, 2004).

The minerals veined within the granites have provided much of the wealth for the south west region, with metal ore extraction and trading from the granite supposedly dating back 3000 years. Tin and copper mining and processing is generally regarded as Cornwall's primary industrial activity, but this has ceased due to foreign competition, with the last mine closing in 1998. The dimensional granite extraction and processing industry reached its zenith between the mid to late 19th and early 20th century. More recently European sources have undermined the demand for Cornwall's granite in major construction projects, to a point where the number of large operating quarries fell from over a hundred to just a handful by the 1980s. A history of working granite on an industrial scale in Cornwall, which began 5,500 years ago with the working of exposed moorstones for tombs and menhirs, had all but disappeared by the 1990s (Stanier, 2000). Penryn, near Falmouth in Cornwall, was once home to a substantial masonry yard that processed granites from many of the Cornish quarries during the heyday of granite production. It was the centre of operation for John Freeman and McLeod Ltd, a name that is still mentioned with fondness by residents and masons today. This economically influential company finally closed in 1965, after decades of high profile granite

processing and exportation (Stanier, 2000). Although evidence of the granite productivity that lined the dockyard area of Penryn is all but gone, not more than two miles away sits Trenoweth Dimensional Granite Quarry, where I work and have carried out my research.

2. Trenoweth Quarry: the place

Trenoweth Quarry has been in operation since the mid 1800s, and is currently owned and run by Tim Marsh. Tim served his time as a granite mason and quarryman, working in and eventually purchasing Trenoweth in order to produce architectural masonry for the local building trades. The quarry sits high above the River Fal, with its opening facing East-North-East, and has been excavated back into the Carnmenellis granite pluton, though the last time granite was quarried was in 2006. Carnmenellis granite (including its outlying intrusions) has seen extensive working, with nearly a hundred large and small known quarries. There are now only two main producers of granite masonry working from their own quarry – DeLank near Bodmin in the north of Cornwall, and Trenoweth. Trenoweth has two saws to process the granite – the primary saw and the secondary saw. The primary saw cuts the stone much like a huge horizontal band saw, using a diamond beaded wire with water lubrication, that gradually moves down through the block. It can accommodate a maximum cube of approximately 2.6 metres and is used to produce slabs and large forms. The secondary saw reduces slabs into smaller blocks or geometric forms according to the job – which can be anything from a simple quoin to a one metre diameter sphere or complex moulding. This saw uses a circular steel blade with a maximum cutting depth of 315mm, again with diamond tips

and water lubrication. Once the granite exits the secondary saw it usually passes onto the masons. When the quarry is busy, the sawn granite can sometimes stand for a week or more in the yard before being finished by hand.

The saws produce a vast quantity of waste or sludge that used to meander its way down through the busted and articulating rock structures of the quarry faces. In 2012 Tim installed settlement tanks that trap the waste before it reaches the bottom of the quarry. The saws are part of a small complex of buildings and storage areas which are the business hub of the quarry. At the very highest point of the quarry sit the masons' huts, or banker sheds, beyond which there is a twenty meter drop down the side face of the quarry. Much of the old quarry is now accumulating a dense growth of ferns, campions and shrubs, along with fauna commonly found in semi abandoned rocky landscapes – rabbits, crows, ravens, the odd hawk, buzzards, predatory mammals and various small birds that are regularly fed seed by the workers. At the base of the quarry face sit a series of benches, or ledges of granite, that have yet to be blasted. The lowest point in the quarry holds the sump (reservoir) providing the water that is pumped up to lubricate the saws.

The quarry is usually a few degrees colder than Falmouth whatever the season. The port of Falmouth lies a few miles south east and several hundred feet below the quarry, and hosts both holiday and commercial shipping in its deep water harbour. Winter can be very harsh, and on occasion the entire quarry is frozen, with the saws held in icy suspension for weeks at a time; needless to say not much is done during these periods.

It can also, on occasion, be extremely hot and dusty, with the shimmering sea visible beyond the docks. What ever the weather, the quarry, like many working quarries, has a distinct atmosphere – a set of idiosyncratic relations between people, stone type, machinery, flora, fauna and weather, all folded into the processing of a raw material uprooted from its geological massing.

3. The granites at Trenoweth Quarry

Trenoweth granite, as with many granites, has its own colloquial name – Buckle and Twist. The name is suggestive of the complex movements which took place within the granite, during its formation as a molten material. It also describes a relationship between the body and the material – a reciprocating field of activity between human labour and matter. Granite has a grain that performs differently under certain processing conditions, according to the direction it is being worked and with what tool. The grain acts on three plains (x,y & z axes) which are termed tough way, second way and grain way, with grain way being the most forgiving. Buckle and Twist can be unpredictable to work due to its contorted grain. It is a fine-grained, bluey-grey granite most suited to memorials, as it takes a high polish. Softer, more open grained granites cannot attain such a penetrating shine. Tim has not blasted at Trenoweth for eight years as the economics and legislation rendered it a costly procedure, but he had stated that in late 2015 he might consider quarrying an area of the remaining 7,000 tonnes of Buckle and Twist left in the quarry. Over the past eight years Tim has used Carnsew fieldstones found in the subsoils of agricultural land nearby, recycled architectural masonry, along with other already quarried local or Cornish granites. These already quarried granites

include the silver-grey fine-grained granite from Carnsew Quarry itself, along with Tor Down from Bodmin, which is hard with a mixed colouring of browns and greys.

The feldspars found in most Cornish granites form distinctive patterns and are usually noticeably larger within the overall crystalline matrix; they are mostly creamy-white, and can be anything from a small pea sized crystal-like form to a large thumb sized oblong. Generally the more brown and rougher the grain, the softer the granite, but this is in no way a firm rule. Trenoweth's main granite product line is architectural masonry for restorations and new builds. The masonry is sawn to size as acutely as possible with usually 5mm slack for the hand finishing. The sawing reduces the amount of waste removal required by the mason that in the past, before the advent of heavy mechanisation, was removed using a hammer and fire tempered point (a heavy duty cone-ended chisel) – sometimes up to 20 centimetres needed to be beaten or punched off before a finish could be applied. A range of finishes are available to clients – polished, fine-axed (using a flat chisel), fine-punched, medium-punched, rough-punched, dollied (using a pneumatic multi-pointed pounding tool), chisel draft (a flat chisel pattern around the edge and punched in the middle). The finishes are dependent on the type of build, with rough-punched usually required for renovations of pre-Georgian buildings, and finer work required for later periods. Hand carved memorials are also requested on occasion, which are often given to me to do as there are not many granite masons who can carry out this kind of relief work.

4. The people of Trenoweth Quarry

Trenoweth attracts a broad array of customers, ranging from wealthy developers or homeowners working on large scale projects, to architects, builders, garden designers, the National Trust and those looking for a little addition to their domestic garden. In order to produce the finished granite for all these customers, a mixture of full time and part time workers are needed. As mentioned, there is Tim Marsh who is passionate about his quarry, Cornish granite and the products that are made there. He has been very supportive and encouraging over the eight years that I have know him; much of my knowledge of granite and how it is worked from a raw material has come through working with him. Until May 2014 the other most permanent member of the work force was head mason Ernie Hillson (65yrs). Ernie continues to do work for Tim, but mainly at his Bodmin workshop. He has worked granite all his adult life and served his apprenticeship in the North Cornwall quarries. He lives in Bodmin and commuted most days. Over the years I have come to value Ernie as a most vibrant and invigorating friend and work colleague. One couldn't imagine a more divergent social and cultural background than ours, but we get on very well. He has taught me much about quarry life and about granite, and I am in awe of his stamina and fortitude through life and work. Even when he is not feeling well, I still can't keep up with him on the bankers. Then there is Peter Davey, Ernie's brother in law, who retired in 2012 as foreman and sawman. They are great friends, and when together their Bodmin dialect is heightened in each other's company. Tim recently took on a new full time apprentice mason, Charles Addison. Charles has taken to granite masonry very well, and has been mainly instructed by Tim and Ernie. A whole spectrum of other people work at the quarry on a part time and

irregular basis. A photographic record of the people of Trenoweth Quarry are viewable in the Digital Archive on page 4. Ultimately most of us can carry out a number of different jobs in the quarry, which means that we all contribute to the flow of granite into finished structure – from a carved bowl to a whole house.

5. The tools of Trenoweth Quarry

Apart from the saws, the other main large pieces of equipment in regular use are those used for handling and transporting the granite: three forklifts of varying weight capabilities, four lorries, an ex-army crane, a flatbed Transit, a dumper, a cement mixer used for rumbling of granite setts (see DA page 14), a tractor and skip, mobile compressors and a Ford pickup. The material degradation of quarry equipment is rapid, due to both weathering and the constant handling of the granite. There is a network of pneumatic pipe work around the top part of the workshop and masonry areas which is used for drilling, finishing and lifting. We utilise pneumatics for a number of different masonry uses, from fine lettering to mortar-bed texturing of ashlar. Using the Bon Accord pneumatic gun with the dolly is a very quick technique for texturing and waste removal (see DA page 6), but this slightly archaic machine is very unkind to the arms and hands due to vibration. In terms of hammers and chisels, everything is heavy duty; hammers are all 3lbs and above, and chisels are in the form of points, pitchers and flats. All deliver different characteristics to the granite surface. I have developed my own set of tools and machinery in order to carry out the kind of detailed work I do for memorials. My toolkit is documented in the Digital Archive on Page 6, along with a description of what each tool is used for. Finally one must consider the body as a tool; a vital piece of

equipment, able to manoeuvre and alter the granite with careful dexterity and choreographed formulations of a stone-metal-flesh dialogue.



CHAPTER TWO

NEW MATERIALISMS OF QUARRYING ACTIONS

This chapter assesses recent developments in new materialist theory; mapping its movement through phenomenological perspectives on bodies and knowledge, and on towards a consideration of the liveliness of matter. I focus on how a granite block is split in two, unpacking this exhalation of the geologic as an explicit example of material agency, in line with Merleau-Ponty's theories on perception. In the shared and socially dynamic space of the quarry, the distribution of creativity is enrolled in the complexity of the laboured workplace, becoming complicit in a wider ecological and societal agenda. I examine current framings of vital matter and Merleau-Ponty's relationship to new materialist discourses. The contemporary contextualisation of his phenomenological project includes work by Jane Bennett (2010), Coole and Frost (2010) and Jussi Parrika (2012).

1. Reading a stitch-split through Merleau-Ponty

The first section of this chapter examines a stitch-split, the method for separating blocks of stone without a saw. The stitch-split is shown here to be an ideal vehicle to explore aspects of Merleau-Ponty's models of perception. The intention is not to explain his entire philosophical proposal, but more to develop an understanding of my

engagement with the quarry through a specific action. The stitch-split has emerged as one of two principle loci for sculpturally experimental interactions with granite and the quarry, the other being the kiln-firing of granite. Stitch-splitting carries with it much of what I have come to understand about material agencies, and embodying the reasoning behind my emplacement in the quarry.

Phenomenology, whose lineage is traceable to Husserl (1859-1938), is fundamentally concerned with experience, and the structures that experience must have to be considered an experience. In phenomenological terms, experience is a process where sensorially expansive knowledge sets are already active in the actual experiencing of an object. The object is therefore not alone in the world, it is being registered beyond its formal presence through an accumulating set of manifestations or intentions that operate as perception. In other words there are essential structures at work within the reading of an object that preempt any causal model of experience (Cerbone, 2006). By focussing on a stitch-split – an action built around intentionality and the properties of the human body in relation to the body of granite – the work of Merleau-Ponty, whose concern was the ‘bodily character of experience’ (ibid: 7), becomes a tenable means to investigate the agency and actions that take place in the quarry.

To focus on one object or one experience – the stitch-split – is very much a model for a phenomenological investigation, as it immediately initiates further examinations of what experiences are accumulating around the event of the stitch-split. These emergent properties are explored in the film ‘Stitch-Split: The breath of the geologic’, viewable in

the Digital Archive. So just to reiterate, there are essential structures (of experience) enmeshed within the intentionality of the granite and my body that register the experience as a manifestation of seen and unseen actions, material properties and agencies. As a quarry worker, the constant preoccupation throughout a working day revolves around the structural and more subjective qualities of a rough block. The decision making process potentially impacts upon the structural integrity of a building; it can affect the reputation of the quarry, so it is imperative to do a good job. Applying deeply embedded knowledges when deciphering the integrity of a granite block impacts upon economic efficiency, skill and physical labour. It is also about dissolving interiority and exteriority and working one's way reciprocally with the material. I will now discuss splitting granite and how, via Merleau-Ponty's phenomenological project, one can establish the nature of perception as a bodily process and explore my positional relations to that of the granite, and thus to the quarry as a whole.

Merleau-Ponty's Phenomenology of Perception, first published in 1945 and translated into English in 1962, situated the body as being operative within a dynamic world of material agency. His emphasis on reciprocity set a philosophical precedent in reconfiguring material values. The fleshiness that he called attention to is not matter itself, but more a processes of experiencing matter and a registering of frictions, tensions and interactions. As a sculptor, as a quarryman, I continually examine my relationship to the material I work with as a condition of the work itself. Knowledge exchanges between my labour and more-than-human matter structure a condition of learning that I continually reflect upon in my research. This approach initiates a rigorous

blurring of Cartesian dualism, towards an appreciation of the textility (Ingold, 2011) of the sensual body in the world (Carman, 2008, Coole and Frost, 2011). Merleau-Ponty's perceptual model states that sense data is not received as isolated information, such as hot, but rather hot is an acquired understanding generated over time and space in relation to gathered experiences and backgrounds – hot occurs in relation to colder air and warm cloth, and tepid steam and so on (Hass 2008). Here, the person is not the terminus of perception, but a co-constituent entity whose bodily position in the world determines a perspective entirely connected to and related with all other matter. In order for the person to see, he or she must therefore be seen, so being amongst things and responding to them confirms that one is affecting and affected by them (Carman, 2008; Dillon, 1998). This enrolls the entire sensual capability of the moving body in the emergent sense of the self in the world, to the point where the person cannot have a perceptual capability without a dynamic entanglement within his or her surroundings.

The Cartesian model, which Merleau-Ponty sought to counter, proposes that the idea of a thing is deposited in the mind, and thus renders the thing as a construct, not separate, but at the end of a path of bodily experiences. An idea is formed and then projected out and onto a thing. The thing is seemingly known without any acknowledgement of bodily continuity and the mind becomes an enclosed forum for narrating a remote gathering of representations. Merleau-Ponty, on the other hand, proposed that perception is formed as the experiencing self engages in an ongoing expansion and expression of sensory relationships that gives meaning to spaces, times and matter (Carman, 2008).

In The Visible and the Invisible (1997) Merleau-Ponty altered the landscape of phenomenology further (Bennett in Coole and Frost, 2011; Burch in Johnson, 1993) by proposing even greater synthesis, through friction, between humans and things. It is this proposition that Merleau-Ponty sought to disrupt towards the end of his life. Hass (2008) suggests that Merleau-Ponty formulated a way to make the expression of what had been acquired (as a phenomenology of perception) to be still part of the creative rendering of the world, and not a means to fix it. Thus The Visible and the Invisible exercises the means by which coordinates are provided for new and further insights to be formed and reformed – the invisible or cognitive being the apparatus whose qualitative status brings exchangeability and adaptability into the processes of language, or expression as Hass (2008) affirms. That is precisely what this Commentary and work in the Digital Archive aim to achieve – to interpret coordinates of the sensual and the expressive and to encourage those who experience the work to create new forms through their encounter. The issue of representation is challenged by the fleshiness of the continual arising of new coordinates and relations as the work is presented and digested. It is precisely this move towards a more reciprocal transit between forms of knowledge and expressions of knowledge, and how this relationship is expressed in my work and the world, that leads in part to the political nature of new materialism. Responsibility to the world becomes an implicitly sensorial context within which humans and non-humans can operate.

Let's go back to stone splitting for a more pragmatic unravelling of Merleau-Ponty's proposal. Trenoweth had a small secondary saw in the 1960s, but prior to that stone was entirely extracted and dimensionally reduced by splitting it. The granite mass in the

quarry has interlocking and twisting joints running horizontally and vertically that guide the efficiency of extraction. This structural arrangement of the granite would be assessed by the banksmen (stone splitter), a block or section identified and deep drill holes would be emplaced to make best use of the natural joints. Essentially, the joints allowed room for the block to break away from its locked-in state. The drilled holes would be packed with black powder (enhanced gun powder), ignited and the block gently “bumped” out from its position with a dull bang, according to Tim Marsh. The banksmen could then carry out a further series of measured splits according to the jobs or orders that the quarry had.

The general process of splitting a large granite block into slabs is carried out with linear stretches of drilled holes 15cm apart down the middle of the block, with a set of plugs and feathers placed within each hole. The block is always reduced by halves if possible, allowing an equal weight distribution on each side in order to obtain a clean split. The grain of the granite also features in the equation; where possible the block is split to make the best use of grain way – the most accommodating of the three axes. The gauge and distribution of the holes, and the size of the plugs and feathers, is specified by the depth or mass of the granite to be split. On smaller slabs or blocks a chisel is sometimes used to mark a line between each hole, guiding the momentum of the split as it comes into being. The plugs and feathers are placed in the holes until they feel tight and then the banksman lines himself up with the flow of the split and progressively hammers in the plug between the two feathers. The pressure builds within each hole, and the accumulating forces exerted outward along the line of holes splits the block in two. The

sound that the uniting steel work makes as hammer-impacts-upon-plug-impacts-upon-granite is felt acutely as one proceeds along the row of plugs. The tone distorts on each impact, like pulling on the fretboard string of a guitar as one plucks it.

Fine grained granites, although usually harder, are easier to split as they have a tighter crystalline matrix, which allows the forces to travel more keenly through the block. There is a perceptible clanging of the plugs and feathers as they become loose when the pressure eases and the split is enacted. One can keep hammering until the blocks become two, or, as some like to do, "let it arc" on large blocks – leaving the split to gather a slow momentum whilst the banksman has a cup of tea. At Trenoweth, the slabs were lifted out of the quarry by a Derrick crane, part of which is still protruding from the ground to the left of the banker sheds today. When I have split a granite block, small or large, the moment it begins to go is profoundly beautiful; it is a moment when I receive an overwhelming sense of what geological time scales actually represent. The freshly presented faces of the split granite exert an awareness of the scales of time at work; where the granite batholith, although immeasurably old in the scale of a human life, is a mere flicker in the timescale of the universe. I no longer feel a discordant relationship to geological time in the moment of splitting; I feel of it, and equal in material natures. I come back to that opening workaday query about what's going inside the block of granite, and I am invited to participate in the sonorous implosion of interiority and exteriority.

What does the splitting of a piece of granite in the quarry say about Merleau-Ponty's phenomenological enquiry? Taking the notion that the body is inherently of the fleshy processes of the world, as he proposes in his last unfinished work The Visible and the Invisible (Merleau-Ponty, 1997), where does this leave us when trying to look into a block of stone to assess its value? After all, we are talking about the interior of the block of granite, a material interior that is most definitely external to my own body. We are also talking about the pressures of efficient working practice, and of judgement in accordance with accumulating experience and skill-sets. If Merleau-Ponty's proposal concerns dismantling the binaries of interior and exterior, to the point where the body is a continually growing perceptual entity, then how and why do we need to talk about a block of granite that is over there and needs assessing for its hidden material integrity before and after it is split? In aiming to address this apparent binary, we encounter a crucial aspect of Merleau-Ponty's ontology – that of the body as process. According to Ingold (2000), the physical priority of sensorial practices is often given to sound, and vision is considered to have less physical properties. Ingold argues that the physical nature of light is as valid in the materially sensorial perception of the world. This physical visuality establishes the reception of images within the body as a manifestly material action, to the extent that material interiors and exteriors cease to become spaces that occur across a divide, but are contingent and active relationships that take place simultaneously. Here, the whole body becomes enrolled in the processing of material properties. The interior of the granite block is, in an objective sense, hidden; yet perception, as an accumulating sensorial skill-set, can nevertheless be implemented and the interior of the block is read and fully emplaced in an ongoing dialogue. Past, present

and future knowledges are brought to bear upon the ramifications of using a particular block of granite for a particular job, and I am already primed to engage with its properties.

Artist Lisa McCosh (McCosh, 2012) gives a tacit account of material connectivity when discussing painting and the sublime. She calls upon the notion of the liminal space operating between subject and object that Merleau-Ponty also puts forward. McCosh demonstrates the reciprocal vibration between things, stating that '[t]hrough sensory interaction, the sublime can be understood as a threshold experience that bridges the gap between the subject and object by mediating between the visible or known, and latent forms of knowledge. [...] Materials make visible latent forms of knowledge. Matter therefore is active. Materials provide a bridge for the painter between the subject and object, making experience visible in a new way' (McCosh, 2012: 136). Although there are manifest differences in medium and intention between painting in a studio and splitting granite in a quarry, there are similarities in terms of seeking an output for the human experience of being of and with the land. I am seeking ways to coalesce a temporal experience of life and labour, one that transcends representation towards simply an experience.

Splitting granite as a performed exercise focusses the experience of working the granite, and magnifies the intensity of the sensual body's relationship to a working environment. Bodily perception, as a phenomenon and as position of knowledge, is honed and enhanced through repeated exposure and repeated testing. So to go back

to the pace and criticality of daily work pressures in the quarry, the experienced banksman becomes an exemplar of a more general field of enhanced perceptual modes. Just by being with that piece of granite, and acknowledging the affective vibrations taking place via conversing material properties, one can piece together evidence which says that "that is definitely worth all the effort", or "forget it, it's not the piece that we need".

To return to McCosh's processual presentations of landscape, and the experience of ushering in the sublime through the material exchanges during the act of painting, I became aware of fielding an acutely personal, yet historically resonant experience of land through the process of splitting. I propose that a moment of sublimity is reached as the granite is splitting and exhaling the geologic. The intensity of perceptive vibration resonates through seer and seen, condensing or collapsing the geologic into a perceivable space-time. We return to the notion of skill, of gathering knowledges over time and where making things with materials ushers in a recognition of mutual sensualities.

Through repeated trials I have begun to understand the act of splitting granite as a condensation of my quarry experience generated through research practice, and presented as new knowledge – as art, as craft, as sculpture, as experience. The exhalation of the geologic is the moment where the role of quarryman, investigator and artist fields a perceptive mode that is traceable to Merleau-Ponty's proposal for the thread that is being woven and rewoven between person and thing. The active thread is

materially and creatively mutating through each renegotiation of intent and is charged with both the sensed and the sensible, the chiasm as Merleau-Ponty (1997) terms it. The dialogical relationship of actions positions bodies of matter at an interchange of emergent properties, where the temporal offers a fundamental thoroughfare for the body's engagement with matter, and where the body then "takes possession of time' and 'brings it into existence" (Merleau-Ponty quoted in Smith, 2013).

So, just to re-affirm my position, as I try to look into the granite block to ascertain its worth, I am drawing on both past experience and the dense anticipation of potentiality that eventually secures its worth by splitting it. Spanning a period of over fifteen years, Merleau-Ponty advanced the relationship between consciousness and knowledge gathering, exposing the exchange between things and events to an ever more fluid state. Merleau-Ponty was essentially eroding any sense of a fixed positionality of the body as he brings about the flowage of all matter. In this sense, it could be said that the granite block and myself assess each other through a shared exertion of material properties to the point where we no longer can be separate. Merleau-Ponty explains:

There is a circle of the touched and the touching, the touched takes hold of the touching; there is a circle of the visible and the seeing, the seeing is not without visible existence; there is even an inscription of the touching in the visible, of the seeing in the tangible - and the converse; there is finally a propagation of these exchanges to all the bodies of the same type and of the same style which I see and touch - and this is by virtue of the fundamental

fission or segregation of the sentient and the sensible which, laterally, makes the organs of my body communicate and founds transitivity from one body to another (Merleau-Ponty, 1997: 143).

According to Merleau-Ponty then, an always emergent and present sense of the expanding self becomes viable, to the point where the flesh is the body that is the world, and thus simultaneously the seer and the seen. Ultimately I would advance the idea that it is the geologic, stone, Cornish granite, that brings about a more-than-human model of perception. In 'The Geology of Morals' (DeLanda, 1996) the reader is led through the complexities of a non-metaphorical [bio-]geological processes in order to outline modes of political and socio-economic process – markets and hierarchies. Through the proposal of meshworks, DeLanda aligns complex coalescings of the social with the geological igneous intrusion, a magmatic event whose ability to accommodate catalytic change within its matrix is processually accommodated within granite. To put it simply, the coming into being of igneous rock has a particular way of forming as a single mass (as opposed to a stratified hierarchical process) but with an ability, too, for its interlocking crystalline structure to be affected by surrounding matter. He concludes with:

Living creatures, according to this stance, are in no way "better" than rocks. Indeed, in a nonlinear world in which the same basic processes of self-organization take place in the mineral, organic and cultural spheres, perhaps rocks hold some of the keys to understand sedimentary humanity, igneous humanity and all their mixtures (DeLanda, 1996).

It is those temporally stretched out human-geologic associations – so prominent in the Cornish landscape through Neolithic activity and 18th and 19th century industrial productivity – that resonate with me so acutely when splitting the granite. The ways in which I engaged with the granite put me in touch with a broader human and non-human narrative stretching out across time, suggesting that a discussion around the nature of perception can find a focus in the geologic, and in the moment of splitting. Merleau-Ponty's discourse on perception has found new ground in humanity's attempt to escape a self-induced isolation through a reinterpretation of human/ matter relations.

2. Merleau-Ponty, new materialism and the future of matter

Life participates in a boundary conflict. It pits the necessity of shaping a local world to have stable borders and horizons against a necessity for scalar instability and ontological uncertainty as a means to retain adaptive capacity (Stallins, 2012: 438).

As a precursor to discussing some of the current and emergent proposals for a new materialism, I will discuss certain characteristics that are shared with earlier attempts to reconfigure humans and the land they moved over. The interplay between matter and culture, proposed as a shared and non-hierarchical sphere of operation in new materialism, was also registered on a naive and ethically complex level in geographic work developed during the early 20th century. This early attempt at establishing the science of geography is identified as environmental determinism. Ideas were structured around bounded climatic and environmental factors that informed the characters of the societies contained therein. Ellen Semple's Influences of Geographic Environment, on

the Basis of Ratzel's System of Anthro-geography (1911) particularly set out to establish the scientific credibility of geography, giving a detailed account of the relationship between people and land. The progressive stance taken up by Semple is often maligned by a narrowness of perspective that looks out from a singular cultural position, suggesting a lack of appreciation for the complexities and values experienced by other peoples and non-human actants. Keighren (2010) suggests how much of the content of Influences was written through secondary literature, although she had previously undertaken fieldwork in the Kentucky Mountains. This narrow perspective can be detected in the following statement:

Open and wind-swept Russia, lacking these small, warm nurseries where Nature could cuddle her children, has bred upon its boundless plains a massive, untutored, homogeneous folk, fed upon the crumbs of culture that have fallen from the richer tables of Europe (Semple, 1911).

Much has been written and considered regarding the relevance of and discrepancies within environmental determinism in the intervening 100 years (Cosgrove, 1983, 2004; Hulme, 2011; Livingston, 1992; Peet, 1985). The important position it held in the development of geography as a discipline is generally given its due, yet always placed in relation to its colonialist perspective. Hulme's (2011) focus on aspects of the anthropocene and the development of the language of climate change, identifies specific issues with environmental determinism based upon the supposition that flows of influence operate principally from land to person. New materialism, on the other

hand, proposes a relational field of influence that radicalises any reductionist position – environmental determinism is read as a reductionism of discrete and closed systems operating in isolation by Hulme (2011). The flaws that ultimately dismantled the theoretical architecture of environmental determinism were based around Sauer's proposals that the transit of material relations flowed along multiple paths, not just from land to person (Peet, 1985). Keighrens (2010) states that Sauer's main contestation of Semple's argument involved an examination of how different immigrants who settled and worked similar lands evolved culturally distinct practices of agriculture and architecture. In Sauer's argument the settlers did not conform to a generic form of living in accordance with the specific nature of the land. Here the determinants are registered with a degree of complexity and reciprocity that unravelled the bounded notions of singular transits of influence. What eventually emerges in this long discourse on people and land is a biogeography of dynamic scales that connect, diversify, fold back and re-emerge. Or, more specifically as Stallins (2011) states, organisms, and not the environment, operate at multiple scales, informing and affecting human and non-human cultures. So, to simplify the trajectory of thought within western human geography – the spaces and times of human life are woven into a dynamic, multi-scaled and relationally complex lifeworld that is in no way, or at any point, fully formed or complete. Thus environmental determinism, which strove to provide a scientifically valid and overarching principle for a location-specific distribution of human characteristics, failed to deliver a sensitivity to the heterogeneity of life.

So how does the failure of environmental determinism and the emergence of new materialism relate to Merleau-Ponty's phenomenological position? New materialism appears to have in some way progressed as a means to reengage the seer with the seen, to grapple with Merleau-Ponty's monism of dynamic transits. Johnson (1993) demonstrates this in several ways but it can be condensed through metaphor as a mirror reflection, where one is seeing oneself, and simultaneously seeing oneself seeing. A distinct positionality threads through the disciplinary and theoretical tracts mentioned so far, namely geography's concern for the complex and mutable synergy of human beings and the land, new materialism's emergence as a reaction to the fixed determinants of material agencies and Merleau-Ponty's sensual comprehension of bodies in motion. Matter is universally present, and the process of seeing is in and of itself a tacit engagement that moves through the world (Toadvine and Lawlor 2007).

The material natures of a monadic lifeworld are built from the interstitial moments where everything is visible all at once, and the seer is embedded in that moment of being seen, in relation to all other things. The vibration or friction of seer and seen that permeates matter permits us to consider an active agency operating at multiple scales, and consistently setting up new spaces for interaction. Semple's writing (1911) demonstrates a willingness to engage with places and people, and an attempt to articulate the interactivity of people and land; but the lack of any perceptual models that engaged the reality of the thinking feeling body in real time and space, resulted in a detached position – 'space was seen as a container that had effects on the objects existing within it, but was not itself affected by them' (Cosgrove, 2004: 58). This gave

way to a form of agency that terminated in the mind of the onlooker, and left no room for the reciprocal actions that, by necessity, persistently emerge and shift amongst multiple life forms. Land, in these terms, becomes culturally deadened, as singular and bounded agencies are established – a colonisation written on a single scale and on a single plain. Through Merleau-Ponty's re-examination of the positioning of the self in The Visible and the Invisible (1997), I have been able to demonstrate in my research the potential for the geologic to come alive and for granite to be resonant with agency, and yes, to also influence the shape of a human being. The thingliness of granite – reflecting as it were, the doer and the doer doing – unites the dualisms of subject and object in a constant dialogue.

With a desire to re-negotiate the dynamic transit of influence between matters, and reimagine the relationship between body and land, Jane Bennett has perhaps delivered the most far reaching exploration of new materialist thinking in her book Vibrant Matter: A Political Ecology of Things (2010). The book explores theoretical currents of human-matter relations through a series of specific material engagements – metal, power blackouts and waste are but a few. Bennett's project aims to offer up a means by which humanity becomes materially decentred in a drive towards a redistribution of what it means to be alive and politically operative. A criticism of the book in a review by Noel Castree (2011) stated that a lack of any direct political platform blurred the book's edge. I would say that Bennett created an ecology, or living-growing space-time, within which political activity could be honed as the manifesto for new materialism diversifies and develops. Tolia-Kelly (2013) brings about a more nuanced appreciation of Bennett's

book, demonstrating its timely advancement of material thought for cross disciplinary thinking. Bennett (2010), as well as others such as Coole and Frost (2010), acknowledge Merleau-Ponty's place in the development of this vibrant material engagement, stating how his work sought to redistribute liveliness, his Phenomenology of Perception (2005) engaged the perceptual presence of the human agent in a wider discourse on agency – 'His [Merleau-Ponty] Phenomenology of Perception was designed to avoid placing too much weight on human will, intentionality, or reason. It focused instead on the embodied character of human action, through its concept of motor intentionality, and on the agentic contributions made by an intersubjective field' (Bennett, 2010: 29-30). Bennett later suggests that Merleau-Ponty's move towards an even greater flexibility of agency towards the end of his life frames the malleability she sought in the politics of matter – '[a] vital materialism attempts a more radical displacement of the human subject than phenomenology has done, though Merleau-Ponty himself seemed to be moving in this direction' (ibid: 30). Vibrant Matter (2010) describes a route into formulating a political environment for the made thing, and explains how the made thing is both an assemblage in its own right and contributes to a growing assemblage of human and non-human actants. The maker is therefore, by default, a part of the assemblage as it expands, shuts down and reforms through time and space.

The mobility of the maker, as much as the made thing, is what constitutes the emergent properties of agency and of human and non-human actants. The politics of the maker and the made thing are responsible for each other, and as such critically affective in the

world. As this quote suggests, there is much to be gained from thinking about materials differently:

The desire of the craftsman to see what a metal can do, rather than the desire of the scientist to know what a metal is, enabled the former to discern a life in metal and thus, eventually, to collaborate more productively with it (Bennett, 2010:60).

Through the making of things, artists are employing a strategy to gain access to different cultural markets. The degree to which those made things act as catalysts for broader social change is dependent, I believe, on how much the maker attends to the assemblage that Bennett and others such as Parrika attend to. Parrika's work (2012a, 2012b) with various new materialisms is foregrounding how technology is a vibrant material condition that should not be subjected to any reductionist structure:

For example, how a mineral, itself born as part of the activity of matter some hundreds of millions of years ago, participates in an assemblage of information technologies, which are themselves embedded in various levels of catalyzing forces – global trade, human labor, standardization processes, manufacturing – the multiple circulations of desire that frame electronic media devices as part of post-Fordist capitalism, the a-signifying operations from magnetic stripes to software code, parts of the abstraction levels of computers and networks (Parrika, 2012a: 98).

Bennett, on the other hand, introduces the notion of assemblage through the examination of an electrical blackout in North America in 2003. The constituent parts assembled within the blackout ultimately direct Bennett to consider where charges of accountability for abusing earthly resources might sit, whether across a broad human and non-human life-system or more specifically in the hands of particular humans. If too much agency is attributed to non-human actants, Bennett asks where might the focus of ecologically sensitive discourse take place. Bennett's move to evolve a political agency in non-human matter is developed via a confederation of materials and conditions that throb with tension and arrhythmical friction. Bennett's position on assemblage is a treatise on global structures of efficacy and responsibility. What seems highly evocative in her description of assemblage is how a proactive and productive distribution of these more-than-human value systems can have a remarkable effect on political and environmental policy. I have engaged fully with the multiple frictions of the quarry, with the aim of introducing new conceptions of labour within art practice. I am arguing for a recognition of multiple material values to be assigned to practices of labour. To ignore why and how a made thing moves through the world, and how it transforms as it navigates multiple networks, is to shake off any responsibility for the flow of matter within cultural and economic structures.

New materialism, which emerged out of an array of theoretical lineages touched upon earlier, and described in intricate detail by Dolphijn and van der Tuin's in their edited volume (2012), carries with it a certain burden for the artist-maker. This burden can be understood as a necessity to acknowledge, from the very first moment that the body

negotiates with other matters, that there is a continual intensification of the relationship between a made thing and the maker. What I am suggesting here is that the initial process of interacting with a material during the act of making does not take place in some remote reality, it is already actively participating in a materially, politically and culturally dynamic assemblage. For me, working in the quarry, the made thing remains meaningfully porous, and my bodily investment continues to have value as an act of creative labour. The politics of this relationship resides in how I transform the exchange-value of my made things, from existing within a monetary framework associated with art markets and public realm development, into a use-value that can contribute to a wider cultural debate on human/ matter relationships. The quarry situates my multiple roles in a more complex assemblage that operates across many disciplinary and life-based practices. Taking into account the trajectory of Merleau-Ponty's sensually immersed body and Bennett's assemblage of vibrant matters, an examination of my sensorial body's capacity to narrate transdisciplinary practices in the quarry can now take place. The following chapter examines two distinct quarrying practices and how they each negotiate a route into wider material assemblages.



CHAPTER THREE

ASSEMBLAGES OF GRANITE

This slow flowage makes one conscious of the turbidity of thinking. Slump, debris slides, avalanches all take place within the cracking limits of the brain. The entire body is pulled into the cerebral sediment, where particles and fragments make themselves known as solid consciousness (Smithson in Flam, 1968: 100).

In this chapter I consider sludge (the material byproduct of the sawing process) and granite quoins. Sludge is examined in 'Footprint: The Soul of the Geologic' and the quoin is the focus of 'Thinking through a Quoin'. These two quite different quarry products provided the methodological platform for further sculptural inquiries, focusing my attention on a developing set of associations between my body's actions in the quarry and creative interpretations of the quarry experience. This chapter uses different textual forms to represent my quarry experience. The reader is guided to view the Digital Archive at specific points in the chapter, where visual work and further creative texts that accompany 'Footprint: The Soul of the Geologic' and 'Thinking through a Quoin' are presented.

Trenoweth Quarry assembles a large volume of visceral material around the act of stonework, laying bare all the co-constituent practices that aim towards a finished piece of masonry. In this chapter I attend to these processes and examine them as expanded narratives. In the first section – 'Footprint: The Soul of the Geologic' – the transit of thought and action oscillates between the bottom of the quarry and out to another time and place, when footprints were emplaced in the coastal silt near Formby. I propose that speculative narratives around the Formby footprints and recombinant geologies of Trenoweth confirm an assemblage of human and material intention whose imprint on the world is ultimately a creative form – 'An assemblage owes its agentic capacity to the vitality of the materialities that constitute it' (Bennett, 2010: 34). The vitality that Bennett talks of examines the properties of creativity that thread through materials and actions. Creativity, in this sense is a route out of any restricted notions of labour, allowing human bodies to tune into the sensorial flow of the world. This flow of relations is in line with new materialist concerns for a perceptual mode that dismantles a mind-body dualism. The body is thus a constituent of a performing lifeworld whose vitality is a process within which all beings operate.

The interchanges between prose writing, first person text and contextual writing are intended as a play on Merleau-Ponty's (1997) frictional synthesis of the seer and the seen, a mirror for the self seeing. This tension between different modes of representation is also a critical aspect of the Digital Archive and is discussed further in the introduction to Chapter Five. The interchangeable roles of being a researcher, artist and labourer is made apparent through the spatial and temporal tension created in

different forms of mediation and representation. This tension also informs the search for ways to represent the potential for sentience throughout the differing value systems attached to matter, especially in sites of harsh and laboured activity.

In methodological terms, my research practice as quarryman and granite worker forms part of a critical imperative for the development of geographic research practices. Lorimer's (2010) investigation of the moving image as research practice articulates the broadening methodological shift for geographers, and situates the more-than-human position as fundamentally key to expanding the scope of research outputs. I have already provided a framework for thinking about the more-than-human, but just to restate its value in my research, Lorimer describes it as '[a] sustained inquisition of the modern cartographies that establish which forms and processes have agency, challenging the ontologies of humanism to draw attention to the diverse objects, organisms, forces and materialities that populate an emergent world and cross between porous bodies'. Lorimer also states that '[r]ethinking humanism involves rethinking what forms of intelligence, truth and expertise count. Attention has turned away from cognition to issues of embodiment, performance, skill and affect' (Lorimer, 2010: 238). A concern for the more-than-human is a route of enquiry that initiates outputs of diverse media in order to qualify, as much as possible, the many constituent tensions of the assemblage.

In the quarry, I regularly confronted the physical effects of my own emotional state. Humping around blocks and smashing away at granite for eight hours, returning home

after a long drive exhausted and bedraggled, was not an easy day. Working for Tim, with his inhuman strength and fortitude, was quite a pressure; he needed me (and the others) to work hard so that the quarry could operate efficiently. It was excruciating if I let myself succumb to fatigue, or if my confidence ducked because I had done something wrong; then the work seemed impossible and it felt like I was lifting the hammer through air made of treacle. So I would change my mindset, dig into angry emotions, get wilful and beat, and then the day picked-up pace and flowed again. I had to think about the food I had eaten and imagine how it was there to power my body, drawing on the energy of bread, cheese, crisps, chocolate and tea. As I got better at masonry work, where strength and skill seemed to flow with greater intensity, the quarry day seemed ever more immersive. Sometimes it felt like time had a physicality that consumed my body. The rhythm of beating granite and listening to heavy beats on my headphones sucked me deeper into myself, with my senses operating at a heightened intensity. What I am describing here is something of the internalised and sometimes conflicting dialogues within me that were all the time extending the networks of granite. The deepening immersion into myself also made me more adept at acknowledging the activity of the quarry. Or, to put it another way, the less self-conscious I became about the standard of my work for the quarry, the better I became at registering it and finding ways to interact with the granite. Bennett argues for an agency that doesn't privilege the human body as a reference point, as Merleau-Ponty's The Visible and the Invisible (1997) also proposes. I am in total agreement with her here, but it does take time. Bennett pushes the envelope of material agency, to further situate the human within a milieu of material flux.

The stone tool (its texture, color, weight), in calling attention to its projected and recollected use, produced the first hollow of reflection. Humanity and nonhumanity have always performed an intricate dance with each other. There was never a time when human agency was anything other than an interfolding network of humanity and nonhumanity; today this mingling has become harder to ignore (Bennett, 2010: 31).

Although I am very tuned to this evocation, and adhere to the sensuality of being immersed to such an extent, the physicality of beating granite is always a profound reminder (of the limitations) of one's own body. The agencies that are in flow from the time of the molten intrusion to when I let the finished quoin drift on through the world, coalesce in my body, as my arm raises again and again over the day, to smash the chisel point into the sawn surface. This is by no means a process where I wonder off into some automatic unconscious state. Ingold states that 'the skilled handling of tools is anything but automatic, but is rather rhythmically responsive to ever-changing environmental conditions' (Ingold, 2011: 61). In the quarry I have to be sensorially aware in order to not get squashed by a block of granite. I also have to be sensorially aware in the quarry so that I can relay my experiences as part of my research. That is not to say I have any control over what my experience-as-research will do out there in the world, or how it will be interpreted.

The fluidity of labour is attended to in the second section of this chapter – 'Thinking through a Quoin'. My body is absorbed in acts of making and moves through matter

with a compression of conscious intentionality and wildly opportunistic abandon – raw creativity is pushing up against the will power of material structure. This is why being a sculptor is so valuable as a way through the sometimes treacherous search for meaningful negotiations with, and representations of, matter and place. This is also a search for what constitutes agency, and again contributes to my understanding of sites of creativity or improvisation that always seem on the edge of cognition. Acknowledging the mutability of sites of creativity, where my own bodily position is being examined, also addresses the different scales of assemblage operating across multiple spaces and times. The physical and emotional linkages are being laid bare in my research and emergent sculptural practice in order to demonstrate these scales of connectivity. Ingold, inclined towards notions of immersion in the lifeworld, would no doubt find the material insistency of the granite being worked at Trenoweth to be a very sound measure of the vitality of matter. For that reason Ingold's work features strongly in this section.

Being in the quarry over a long time manifests a much deeper understanding of the relationship to the granite, and in 'Thinking through a Quoin' I argue for the process of familiarisation as a critical means to understand agency. The quoin is a vehicle to think about how familiarisation weathers the surface structures of things and generates associations that form multiple and expansive intersubjective fields. Amongst a range of work by Ingold, I discuss 'Materials against materiality' (2007a, 2011), and how this offers a cooperative yet not fully complicit account of material values than with that proposed by Bennett (2010).

The threads of material conditions that sludge in section one and quoin making in section two offer up, could perhaps be seen as the related extensions to which Bennett and Ingold take their thoughts on material agency. My focus though, has been to deliver a deeply immersive and politically aware ecology of matter and material productions, firmly based on my everyday experience. I use my duration-rich experiences to acknowledge and produce an assemblage of creative responses that operate on different registers within quarry work, art and research practices.

The chapter is concluded with a consideration of rhythm. Here I propose that rhythm, and the analyses of rhythm, offers a way to read the assemblage and in-turn develop a research practice that is also a practice of sculpture. The registering of rhythm is also a means to read the quarry productions as an affirmation of a new materialist agenda, the sludge and the quoin becoming part of a discourse on creative methodologies for transdisciplinary thought. The following chapter (Chapter Four) goes on to define the role, context and value of sculpture as a porous discipline and as a research practice.

1. Footprint: The Soul of the Geologic

There's a granite slab ready on the saw bed, everything is set, all the measurements are punched in, the slab has been codified. I press the button. The diamond-tipped saw blade kicks in, and I pull the lever for the water to flow. Up to speed, 1450 rpm... auto – and off it goes, toing and froing, down through the slab, 4 millimetres at a time. As the blade cuts down through the granite, water flows continuously as a lubricant over all surfaces. Water spins off the blade and runs down over the granite slab and the saw-bed. The water, in motion, has tiny particles of granite suspended within it.

The saw cuts multiply the slab's surface area, and all the cast off micro-blocks of granite drift outwards, seeking new connections. As the momentum of the particle-infused fluid slows in contact with the concrete floor, on its transit from the building, the particles bind and a residue of sludge begins to build up. If the floor has not been washed down with the hose after a day of sawing, sludge forms in layers ranging from pale grey to cream, slate grey to brown, a temporary sedimentary accumulation, a palimpsest of granite idiosyncrasies that is then peeled back as the jet of water makes contact. The sludge has thixotropic properties – the substance cracks under sudden foot pressure, resisting the moment of refluidity until it gives in and is swept away in the watery flow.

This section examines the processes of material growth and transformation implicated in the working of stone. Here, I speculate on sludge as a recombinant geological component and as a vital collaborator in manifesting the temporal scales at play in a working quarry. Like the stitch-split described in Chapter Two, the material interactions brought to life here bring broader human narratives into contact with geological processes. The proposal here focusses on how the locus of the perceptual body can operate within the predicted global impacts of human activity on the geologic. I begin in motion, with the movement of a saw through stone, and the movement of water over both. I follow the flow of material through the quarry's spatial and temporal contexts, with a particular focus on how the sludge's movement weaves together embodied geographical knowledge and durational geological processes. Sludge – minute particles of ancient mineral cast off as watery waste – allows me to explore a world-in-

formation, to 'follow the multiple trails of growth and transformation' (Ingold, 2007a: 9) that converge in this material narrative.

The flow of silty water emerges from the back of the little saw shed, and encounters a sprawling buddleia, a tree whose dusty branches drop their leaves into the water course, setting up mini dams. This buddleia is destined for the chop. Just past the buddleia, the little saw outflow joins the sludge stream from the big saw (£50,000 well spent, as Tim the quarry owner would say), and the two water courses merge before plunging down a foliated rock face. Over a murky waterfall, the sludge-stream negotiates and overflows a series of corroded steel drums before its course disappears underground and re-emerges in a small delta-like accumulation. The watery transit continues down the inside edge of the quarry-face access road, passing by half-submerged and tired old forklifts and pallets, wild plant growth and the unseen machinations of insect and mammal activity, navigating all manner of rusty quarrying artefacts and cast-offs.

Granite sludge concentrates in the quarry at different densities and at different locations. Sometimes the water:granite ratio is heavily in favour of the water, and the substance moves quickly; at other nodes, concentrations of sludge build up over decades. The sludge is at once sad and epic – it is the residual trace of the industrialised dismantling of the granite batholith, the by-product of the transformation of granite from matter to functional material. Tim Edensor, in his investigation of the processual activity of building stone, comments on the presumed durability of stone as 'matter emblematic of obduracy, with a hardness, weightiness and apparent immutability epitomised by the phrases "hard as rock" [and] "stony-faced" ' (Edensor, 2011: 240). He goes on, however,

to point out that 'unpredictable processes of change' mean that the rate of decay and relative stability is always variable where '[i]ts destiny depends upon the changing and particular agencies of particular contexts' (ibid). Sludge is the product of an accelerated degradation of the granite, where the rock is shunted from its geological slumber into the life cycles of quarrymen and machines. The process of erosion by water and abrasion, which usually occurs over extended time-scales, is mechanised and intensified in order to meet the demands of the local building trade.

As the flow slows and levels out at the bottom of the quarry, it filters off through rocky embankments into the quarry's water sump (or drainage reservoir) where, at the far end, a sludge beach has formed, and milky murky waters form littoral-like markings on its shoreline. There is a small pump house hidden in the undergrowth, and blue plastic pipes carry water up from the sump pond back to the top of the quarry, to the saws, for another go around. Half submerged in the middle of the sump are granite boulders, their peaks bleached white with dried out sludge – resembling Anish Kapoor's early stone and pigment sculptures, with their brave simplicity. The water in the pool is partly sieved of its granite particles by the vegetation that it passes through, but on the other side near the gathering piles of granite off-cuts I can still see the trace of suspended granite. Time is the collector here, and the sump pond is definitely not clear water. It might be that some particles have been in transit for at least a decade, and some for a hundred years or more, in other motions around the shifting spatial context of the quarry.

The making of a granite headstone or an ashlar block is not a linear performance; it branches and twists, takes odd paths and loops back on itself. By analysing the animated life of sludge (in which the production of the desired, discrete granite object is

a significant interval), I highlight how specific materials function as components within much larger growing entities. Sludge is more than waste; it is a thing in the making, and the study of it reveals how human making intersects with geophysical making (and growing) in unpredictable ways. While human making effects change through manipulation and applied labour, geophysical making works through accretion, erosion, pressure and time. By giving attention and value to the movement of sludge I am able to track how granite – a material archetype of stony durability – circulates as a dispersed, expansive element within complex lifeworlds. Trenoweth Quarry emerges as a mobile and mutable environment, where the restless process of landscape comes into sharp focus, and where ‘even the most inert objects are [revealed to be] made up of the spin of microscopic particles that will eventually split, decay and transform’ (Yusoff and Gabrys, 2006: 447). Trenoweth’s granite – its processing and by-products, and the lives that are woven through it – asserts a persistently transient agency not independently attributable to either material or persons in isolation. Rather, granite becomes a kind of cosmological drifter, generating creative and emotive convergences between persons and matter.

In the rest of this section I experiment with the idea that sludge has the potential to form a recombinant geology out of layers sedimented in the sump pond at the bottom of the quarry pit – a geology collaboratively emplaced by people and machines. The concept of recombinant geology extends from work in ecology that has focused on the emergence of novel plant and animal populations in sites with a legacy of intensive human use, where ecological processes absorb the chemical and mineral residues of

the industrial past with often unpredictable results (Barker, 2000). Others have extended the concept of recombinant ecology to describe 'ecological cofabrications', in which a unique 'politics of conviviality' accommodates both human and non-human agency (Hinchliffe et al., 2005). A recombinant geology, as I imagine it, works a parallel cofabrication with primarily mineral and geological substance.

In the quarry sump-pond, deltas and beaches of sludge gather up and make visible the convergence of cultural process and synthetic geomorphology; they are an emergent landscape feature formed out of the workings of mechanical abrasion, fluid dynamics, gravity and granular deposition. Granite becomes enrolled in a socio-economic process (driven by the demand for durable material) that then allows the residue of production to reconnect with geological timescales. The sludge slips between natural and cultural registers, in its transit and eventual (but temporary) settlement. Other such landscapes where recombinant geologies are evident include beaches 'nourished' with stone-processing waste products, such as the 'marble beaches' of Tuscany (Nordstrom et al. 2008) or the beaches at Carlyon Bay, Cornwall, enhanced with 'stent' waste rock from the nearby china clay industry. The recombinant geology that I explore takes its inspiration from a preserved footprint pressed into the coastal mud of the North West of England around four thousand years ago. By placing my own footprint in the Trenoweth sludge, I imagine some of the tactilities and properties of granite sludge that might resonate four thousand years into the future of the emplaced sediments. This exploration of granite's evolution unfolds through an experimental narrative that uses the granite's past to try to understand its potential future, working through a research

method that understands story as an active tool for analysis and understanding (Price, 2010). The anticipatory history (DeSilvey, Naylor and Sackett, 2011) that emerges folds the future of an emergent landscape feature into the past and present co-productions of Trenoweth Quarry.

i. In the Quarry

As my relationship with the quarry deepens it becomes apparent how materials can act as conduits and conductors for the messiness of lived experience. Sludge is a specific kind of matter, a waste; it is an altered form of granite, expressive and mobile.

Granite is valued as a building stone for its properties of hardness, durability and flexural strength, and for its relatively uniform structure (Hunt 2005), but the character and composition of granite can vary widely. People employed at Trenoweth Quarry have their own vernacular lexicon that situates the personality of each type of granite within a hierarchy according to its salient properties and its relative ease of working. Buckle and Twist is a perfect example of this. The language of granite working (as with the language that attends other stone trades) is derived from generations of familiarity, as well as frustration, with the material properties of the stone (Leitch, 2007). The first granite workings in the region were concentrated around the surface stones, often called moorstones. Boulders and granite outcrops of the exposed uplands were transformed into an impressive array of functional objects – tin moulds, cheese and cider presses, millstones, troughs, gateposts (Stanier, 2000). Many of these objects were crafted in situ. As the industry advanced, masons developed tools to cut pits or grooves into the

surface of the rock; they would then drive metal wedges in to split the material along the desired plane.

An applied, idiosyncratic language emerged from the flesh-metal-stone nexus; this language carries through into the current era of automation and diamond-tipped saws. The name Buckle and Twist still speaks deeply of the relationship between bodies and materials, and signals an ongoing process of growing through a condensed history of human-matter making – growing knowledge, growing relations and growing material potentialities. The name speaks of the density of a relationship between human, place and material over time; it speaks of process. Unlike the word stone, which fixes a generic identity on the material, and is useful primarily as a crude shortcut for ease of communication, a name like Buckle and Twist implies a lived material knowledge. The name suggests that a richer and more dynamic set of relations are at play here, which redirects 'our attention from the materiality of objects to the properties of materials' (Ingold, 2007a: 12). This is granite not as inert substance but as worked matter, generated through recurring encounters between person and stone.

A similar expression of relational geology was outlined by Ithell Colquhoun in her book The Living Stones:

The life of a region depends ultimately on its geological substratum, for this sets up a chain-reaction which passes, determining their character, in turn through its streams and wells, its vegetation and the animal-life that feeds on

this and finally through the type of human being attracted to live there
(Colquoun, 1957: 46).

Colquhoun's writing develops a rich evocation of a person who dwells intensely with a physical landscape. Her use of the phrase 'attracted to live there' suggests a mutual space for intersubjective relations to develop, that is, if one is willing to grant sentience to the landscape itself. The personal and the geological are intertwined and active across space and time.

Several hundred miles from the quarry in Cornwall, on the Sefton coast north of Liverpool, there is evidence of another entangling of the human, the geological and, indeed, the non-human animal. Over the past few decades, accelerated erosion on the exposed coastline near Formby has peeled away layers of marine sediments to expose traces of lives lived on the muddy foreshore close to four thousand years ago. As the waves scour through successive layers of laminated strata, footprints appear – human footprints, but also the prints of red and roe deer, auroch and crane. Research carried out on the Formby formations indicates a wide range of activity occurring on the Holocene mud flats – women collecting shellfish, men tracking deer and wild cattle, and many children, collecting but also mudlarking, dancing about for the joy of feeling mud between their toes (Huddart et al., 1999; Roberts et al., 1996). Imaginative reconstructions are given sustenance when such human-matter relations are laid bare and when the enfolding of lives into the processes of matter formation becomes visible. If humanity can allow the accustomed boundary between then and now to waver, we

become witnesses to geological time shimmering on the upturned hand of a woman picking razor shells from the mud, her footprints pooling with silty water behind her.

What might this seemingly distant and unrelated story tell us about the granite sludge at Trenoweth Quarry? At the edge of the quarry sump pond sludge is being grown, layer by layer, as the muddy sediments grew at Formby – though at Trenoweth the growing is a by-product of the process of sawing up granite for memorials and new buildings. The sludge is also growing in terms of relations that it attracts, and are attracted to it. There is the granite, sat in its bed. There are humans extracting it and processing it, shaping it into parts of buildings and sculptures, headstones and hearths. Around this process there are people talking, and weaving their worlds together. One of many products of these doings – sludge – is a new deposit of sediment in formation, a future landscape under construction. I offer a speculative story that examines how this future might unfold.

Through geological time, the sludge deposit at the bottom of the quarry could solidify into a coarse sediment, with rough grains of quartz held in a matrix of finer decaying mica and plagioclase feldspar. Assuming this relic of the landscape's industrial past doesn't get washed out to sea, it will gradually get buried under other layers of material, and with steadily increasing pressure it may re-crystallise into a more durable sandstone, laced with traces of steel and iron from the quarry's abandoned infrastructure as the 'tools of technology became a part of the Earth's geology' (Smithson, 1968: 104). If this sandstone formation happens to get caught up in a major (if extremely slow motion)

collision – the subduction of the North Atlantic seabed under the North American continent, for example – the long-buried sludge would be subjected to intense pressure and heat. These forces would realign platy minerals in the sandstone to give it a cleavage, and cause the sedimentary beds to fold and buckle, eventually forming gneiss, on their way to becoming granite again. It is more likely, however, that the sludge will adopt clay-like properties in its afterlife, and 'some clays, if kept at a constant moisture content, regain a portion of their original strength after remoulding, with time' (Skempton and Northey, 1952). A comparable recuperation of original strength would be more complicated for the granite sludge, implausible but not impossible.

What if I were to attempt to leave a footprint in the sludge, an intervention available for some future uncovering? A Trenoweth footprint might form part of a new bio-geological feature that, like the Formby footprints, expresses the interface of human action with the properties of matter. Artist Rona Lee, in manipulating a block of clay, notes how 'the visible traces of my handprints upon these lumps of clay conjure an infantile desire to know the world by sensation rather than observation' (2010: 217). These moments reveal my emplacement in a material stream, seeking some form of geological conversation that suggests I am engaged with matter on a sensual level, without the hierarchical constraint implied by subject-object distinctions. This might lead us towards an understanding of matter based on mutual relation and relevance. Matter, as emotive as the weather (Ingold, 2011), as mundane as house dust, as bright as a thought, stimulates a person's senses, prompting that person in the world into a more fluid and

openly responsive mode. Who is to say that as the Neolithic people crossed the mudflats they were not relishing the sensation of soft, cool sludge between their toes?

Please view Page 7 of the Digital Archive where photographs of my journey to the sludge beach are presented along with a storying of the day.

ii. Growing pains

The simple act of pressing a bare foot into sludge helped me understand the relational properties of matter. Just as Bender, Hamilton and Tilley (2007) used archaeo-sculptural practices to explore the Neolithic site at Leskernick, seeking to rematerialise past sensualities within a lived present, my footprint articulates a desire to enter into a conversation with the decades of material manipulation that have taken place at Trenoweth. I sought to react with sensual porosity to the shifting modalities of granite, and to see the quarry in a different light. Although separated by millennia and intention, both my footprints and the Formby footprints highlight the reciprocity and receptivity of human relations with matter. Physical and emotional immersion in place opens up the possibility of a universal, shared sentience. From this unifying position, new knowledge is grown (not merely established) about the evolution of human-material relations. The Formby footprints appear to us as the outcome of a series of geophysical processes, and are relevant here because they indicate how traces of physical human presence have led to a greater understanding of the cyclic accretion and erosion that has stretched across the land over the past several millennia (Knight, 2005). Through the optic of Formby I can understand the Trenoweth sludge in a more expansive and

fundamental way; engaging with a geological dimension, the sludge is no longer merely a human product. The footprints indicate an entangling of geophysical process with human biographies, a potent recombinant geology.

There are other parallels between the Formby footprints and the Trenoweth footprints. The same life necessities persist across millennia – myself as a sculptor and researcher providing sustenance for my family, as did the beach hunters' shellfish gathering at Formby. Granted, my footprint in the sludge at Trenoweth was an intentional outcome – I aimed, and nearly failed, to reach the beach and submerge my foot. But this action produced a deeper understanding of the properties of sludge, of what happens to granite in certain conditions, and what it feels like to inhabit this part of the quarry.

Engagement with matter carries with it life threatening dangers – at Trenoweth, the potential to be sucked down in quicksand or crushed by falling rock is a prescient concern. Yet humans have always risked their lives during endeavours to improve livelihoods. The Formby footprints demonstrate a set of material relations that played out in a potentially dangerous environment, driven by the day-to-day requirements of sustenance. The mud absorbs a human life in action, drawing us into the pragmatics of existence, across time. The process of learning to navigate the physical world may involve pain, healing, and regeneration. Growing pains refers to the slow, sometimes awkward and strained gathering of material knowledge. Materials, while hard and resistant on first encounter, become familiar and develop richly embedded relations over time. For the novice using a hammer and chisel to work a stone surface can be a

painful and frustrating experience; yet gradually, the ease with which actions are performed increases and the degree of fatigue and injury lessens with the increasing skill generated through practice. With growing familiarity matter takes on sentient properties, which are filtered through a perception of reciprocal knowing – both knowing the stone and the stone's seeming to know its worker in return. Sustained engagements with a material prompt new understandings.

To make a footprint in the sludge at the bottom of a quarry is to reach out multi-dimensionally and materially across millennia, to speak to the bodies and machines that ground away the Great Cornubian Batholith. The footprints at Formby and my own footprint at Trenoweth Quarry are not isolated events; they both bring into focus the movement of emotive bodies trying to understand their role in the world. My attempt to place a foot in the sludge led to new knowledge of the quarry, and allowed the material to instigate sensualised perceptions of place (Ingold, 2011). As Lee (2010) asserts in her discussion of how her multidisciplinary arts practice engaged with deep sea geoscientific mapping, people attain new relationships with the unfamiliar by entering into sometimes uncomfortable mutual exchanges. Referring to Bennett's (2010) notion of vibrant matter, Tolia-Kelly articulates the monadic material cosmology made up of 'vital materialisms' in which humans and non-humans are 'not dividable, separate or separable, but integrated, co-constituted, co-dependent' (Tolia-Kelly, 2013: 154). Material relationships need time to develop, in a reciprocating sensual exchange of properties that feed and influence each other.

Trenoweth's waste material, sludge, offers insights into granite's other passages through space and time. With my exploration of sludge's journey, I witness how a fuller understanding of the myriad objects that move through life must include an appreciation of the residual matter produced through their making. The processing of any material usually produces some form of waste, a point that has preoccupied sculptors as varied as Constantin Brancusi, Phyllida Barlow, Robert Smithson, Rachel Whiteread, and Eduardo Chillida. Yet waste can communicate significant aspects of the creative process and disclose essential information about a material's properties. Most made things produce a shadow product, the overlooked other to the finished product. Both of these products have a life journey of equal significance, an awareness that challenges the negative connotations of the term 'waste'. A visit to a sculptor's studio or workshop offers a glimpse of the generative-destructive process often hidden in the finished product – examining discarded matter can reveal how material allows itself to be moulded and manipulated. The same holds true for the product that is sludge at the bottom of the quarry, even though the sculptor is the sawman and the artwork is often as simple as a granite sill or post.

Smithson's 'Asphalt Rundown, Rome' (1969) – in which a sheet of asphalt cascades down an exposed earthen bank – expresses some of the poetic dialectic between humans and their waste production, as a material associated with industrial road-building performs a collaborative event with a scarred geological feature. In their discussion of Smithson's work, Yusoff and Gabrys describe 'how mind and matter map back onto one another, always transforming and working upon each other – chart[ing] an active relation with

landscape' (2006: 448). Waste, as Smithson so eloquently articulates in his work (as quoted at the start of this chapter), has a distinctly anthropomorphic disposition – oozing, flowing, bulging, rotting, being subsumed. I come to understand a made thing as emerging from a diverse substrate of materials and potentials. Smithson understood that the world of matter-in-process seeks out (but never secures) equilibrium, and that from degradation and wasting other forms always materialise. In his pulverisations he mimicked processes of rock and mineral disintegration – oxidation, hydration, carbonisation and solution – to 'begin to know the corroded moments, the carboniferous states of thought, the shrinkage of mental mud, in the geological chaos' (Smithson, 1968: 107).

By witnessing (or encouraging) granite's properties of dispersion and mutability I call attention to the fact that while the number of potential material relations and transformations increases exponentially across time, the potential always also remains for reversion to geological matter. If I perform a 'deep mapping' (Biggs, 2011) – a multi-sensual, multi-disciplinary and multi-durational investigation of place, people or objects – I see that all material narratives return to a geological source or influence. Within this kind of expansive frame of reference, granite's enrolment in cultural projects, such as headstone, sill, trough or cladding seems radically ephemeral, a brief stop on a much longer passage through time. Matter moves in and out of different registers of meaning – social and scientific, architectural and geological – and cultural artefacts are exposed as temporary arrangements of physical matter, only stabilised through a substantial investment of conceptual and physical labour (DeSilvey, 2006: 2012).

Things made are not irrevocably static. They continue to be made, or more specifically, they grow, according to the capacities and tendencies of long term encounters between people and material properties. Both making and growing register deep material exchanges between persons and matter. Where making and growing perhaps diverge is in the notion that making suggests focused working towards the realisation of a pre-ordained human design, at which point the making is considered complete. Descriptions of a thing as made, at least in contemporary western contexts, tend to reduce that thing to an isolated and bounded form, assuming it to be a singular and circumscribed entity that performs in the world only in specific and delineated contexts. Growing, on the other hand, suggests a more-than-human process unfolding across multiple life-cycles, and implies that the made thing has potential applications beyond its originally intended function. As Sennett (2007) suggests of tools used in the wrong way or in a way for which they were not intended, such usages might well throw up a sudden advance in technology in directions previously unimagined. Thus the sludge has been given new meaning that allows it to function beyond notions of waste. The notion of growing can be used to undo the fixed designation of things, to acknowledge the porosity and mutability of bounded surface attributes. Through evidencing something as grown, the net of relational variability is cast much wider. Thus, the sludge can function as a recombinant geological feature, a creative springboard for human-matter investigations.

The design and intentionality embedded in a thing – for example, a granite headstone – is not simply imposed upon its material being. Rather, a thing is animated through the

geo-temporal properties that people grapple with, in the construction of a lived-in environment. Human encounters with matter are porous and cyclic navigations. In this chapter, my investigation of sludge and its journey through the quarry, of the people it has become entangled with and of the textual speculations it has inspired, suggests that all of the countless products made at Trenoweth in its 170-year history have also been grown, and continue to grow, whether they are built into a structure or silted up at the bottom of a stagnant pond. As Brian Massumi asks, 'from what does all individual awareness arise and return? Simply: matter. Brain-and-body matter: rumbling sea for the rainbow of experience' (Massumi, 2002: 190).

2. Thinking through a Quoin

i. Why make a quoin?

I make a quoin because there is no question about what it is and what it is used for. I make quoins because they are not sculpture, but they do help me think about sculpture. I make quoins because I am working for Tim. The quoins that are produced in Trenoweth Quarry today are made from sawn blocks instead of from split blocks, yet they are finished in such a way as to look like they have been worked from rough. A quoin is a structural and (sometimes) decorative building block situated on the corners and fenestration of buildings. It is usually larger than the infill building blocks (ashlar) and, in the case of granite, finished with a range of fine to rough textures dependent on the style or period of building. Granite quoins are a staple item in Trenoweth Quarry's product line, with numbers running into the many thousands having been made over the history of the quarry.

In this section I explore how the sawn blocks that are punched and finished in the quarry made me think about surfaces, or rather question where the surface was. As I thought more about the interface between rock and flesh, I realised there was a process of familiarisation with working practices in the quarry that began to perforate the surface of things. The following examination of surface and familiarity also reflects Ingold's interest in making, skill and dwelling. I also demonstrate a mode of representation that acknowledges how the transit of knowledge, or showing (Pitt, 2015), takes place in relation to the making of a quoin, and how multiple narratives are enrolled in its making. This is where the lifeworld of making permeates a textility (Ingold, 2011) of times and spaces. The making of a quoin is very specific, yet offers insight into how such embedded familiarity with a material (through making) emphasises the surface as a critical property operating at the perceived interface of lived experience and material things, and indeed at the threshold of interdisciplinary thinking on place and material culture. It is about bodies operating in places as creative forces of knowledge, as disclosed in many of the texts referenced in the Commentary. The detail comes in the form of the tools and materials that are central to any notion of making, and to any accumulating knowledge of vital materials and place-making.

For the reader to fully appreciate what the making of a quoin involves, please visit the Digital Archive on Page 8 where a film, images and texts describe the making of a quoin and the assembled narratives that move with it.

ii. Surface tension

The imagery, film and texts about making a quoin, presented in the Digital Archive, evoke the assembled relations and particularities of tooling, along with the laboured action of punching the surface of the granite with a hammer and point. What follows is a critical unpacking of the tension that unites the extraordinary accumulation of skill in each punch, with the mundanity of repeated actions leading into the making of a pallet load of quoins. In this section I describe the processes of familiarity that hosted this tension of the extraordinary and the mundane, for it was through this tension that I became materially embedded in the quarry lifeworld. It was also through the work of Tim Ingold that I became inspired to examine the expanded narrative of the quoin, leading ultimately to an expanded narrative of the whole quarry.

I pick up another smooth-sawn block from the pallet, the smell of creosote fills my nostrils as a small plume of dust puffs up and around the block as I drop it onto the hefty wooden banker.

Ingold's range of published work (2000, 2007a & b, 2010, 2011, 2012, 2013) consistently presents a deep consciousness of vital matter. Perhaps even more crucially, he demonstrates a valuable account of what it means to make with materials throughout much of his writing. With The Perception of the Environment (2000) Ingold builds a formidable argument for the human being as an organism-person. He describes this being as a 'developing organism-in-its-environment, as opposed to the self-contained individual confronting a world 'out there'' (Ingold, 2000: 4). This organism-person is immersed in a lifeworld whose perceptual mode is multi-sensory and already pre-

loaded with the environment within which he or she has developed complex more-than-human relationships.

In terms of skill Ingold states that '[b]y skills I do not mean techniques of the body, but the capabilities of action and perception of the whole organic being (indissolubly mind and body) situated in a richly structured environment' (ibid: 20). The framing of skill that Ingold describes is, in terms of my examination of the making of a quoin, presented as a gathering of vibrant matters that emerge as an instantaneous mutual recognition of the emotive, muscular, and grown properties of myself and the granite. Ingold qualifies this with '[t]hus, skill is at once a form of knowledge and a form of practice, or – if you will – it is both practical knowledge and knowledgeable practice' (ibid: 331). Having now made many quoins for Tim Marsh over the past five years, I am only too aware (as is Tim) that I have got better and faster at making them. This is important to me, and to Tim. This improvement does indeed involve the development of skill. Yet, if this framing of skill is seen in isolation as the principle goal of learning to make something, then it rapidly slips into a capitalist model that submits knowledge and creativity to a commodified, quantified and fixed value. How I, and quite possibly Tim Marsh, understand skill, it must take place as a flow of material acknowledgement, a creative exchange between material and labour that supplies the self and the world with a shared knowledge.

In Making (2013), Ingold talks about the process of self-discovery becoming the grounds for a negotiation between the idea and material insistency; each becoming

deeply embedded in the other. The question of what to make means, in the context of architecture say, becomes a conversation between designing and building. As mentioned previously in the context of medieval stone masons, designing is an in-action process where drawing and masonry are united as making; a flow of material investigation that gradually resolves itself into a built structure, or in other words a grown building. Likewise Trenoweth Quarry, its masons, sawmen and labourers have become entangled in the grown nature of buildings across south west Cornwall.

In literal terms, the division of labour as a quarryman at Trenoweth occurs in delineated time slots; for me this might mean taking a series of photos in the morning for a paper or presentation, then making a load of quoins. I would therefore be an artist-geographer/ researcher and then mason – both roles ultimately gathering similar strands of knowledge towards a greater understanding of the quarry. For Steve Brown, assistant sawman, he might literally swap between the secondary saw and the banker many times in a day, changing from sawman to banker mason. The only quarry worker who retains their formal title on a pretty permanent basis is the mason; when I started in 2010 this would have been Ernie, but since the summer of 2014, Charles Addison is the full-time mason. But these definitions are not really applicable to how I, or anyone at the quarry actually works. We are all workers of granite, and may carry out any number of job descriptions throughout any one day. Essentially Tim needs everyone to muck in; we all need to understand the whole quarry as a network of activities, and as a site of co-production. The way skill-sets are applied at Trenoweth across all the processing methods – from splitting, sawing and masonry – establishes a specialisation of the

entire quarry as a creatively laboured site. This sense also extends to how we engage with other operators that come to the quarry, and when we go to other sites to work. This became very apparent when we all had a day out for Ernie's retirement day on the 27th May 2014, and visited a number of buildings and sites where his masonry was placed. We talked freely with owners and construction workers about the ways we had made the masonry and how it had been located into the building. We became an extension of the improvisational productions of making a habitable structure.

I am punching now, moving across the block and listening to Mark in the next banker. I can tell which stage of the quoin making he has reached by the gaps between strikes, and the sound the different chisels make. I know how many he has made... it can get quite competitive.

At the 2014 Architectural Humanities Research Association's conference in Newcastle upon Tyne (where I presented a film and paper), the theoretical focus centred on the imbalance of creative input in architecture. The organisers proposed that a tectonic shift needed to take place in architectural practice, towards a consideration of the supply side and to the building site as being the true nexus of creative production. This change in the value systems and sites of creativity within architectural practice in effect opposed the primary role given to architectural drawing studios as the main creative hub of architectural practice. This shift in emphasis exposes the demand/ client-led strategy that maintains a division of labour within architecture, where creativity is supposedly hosted principally between the architect and the client. This dynamic has driven ever more standalone buildings being procured by very wealthy clients in cities such as

London. The supply aspect of architecture turns the attention to the creative structures of skilled and non-skilled labour; an essentially Marxist strategy offering innovation across social structures, and advocating improvisational practices on and around the building site itself. The making of a quoin, as described in this section draws attention not only to the specifics of making an architectural staple, but to its unfolding relations beyond the times and spaces in which the quoin is made. This understanding of the quoin's trajectory attends to the notion of assemblage, where the unpredictability of numerous agents from past, present and future collect, form and reform in the moments of making.

As I got better at granite masonry, I became acutely aware of just how much investment of knowledge is involved in creating a punched texture to the block, and setting up a straight and clean chip line. The fluidity of strength and accuracy when beating hard was only achieved through repeated practice, and once I had it, each quoin that exited the banker shed to be stacked on a pallet almost seemed to have been birthed from my flesh. It was a very visceral experience as the pallet of quoins grew higher and the beats on my headphones exaggerated and heightened my sense of rhythm. These scales of rhythm, from the alarming first few days of starting work in the quarry, the days of painful frustration trying to get better at masonry, to the trance-like production of architectural components, suggests that I had to practice at tuning into a more-than-human material agency. I had to practice at being myself in the quarry with granite, I had to practice my body and my state of awareness in order to corroborate my immersion in the lifeworld of the quarry. This rhythmic and arrhythmic practicing concerned the development of an

awareness for the inhibitive structure of the surface, and breaking it down in order to awaken a sensorial kinship with the matter of the world. It is hard work to accept this time-absorbing condition of labour that aligns with Ingold's statement that 'acting in the world is the skilled practitioner's way of knowing it. It is in the direct contact with materials, whether or not mediated by tools – in the attentive touching, feeling, handling, looking and listening that is entailed in the very process of creative work – that technical knowledge is gained as well as applied' (2000: 331). The degree to which I was able to accept the tough conditions of quarry work, especially in the winter months, was through acknowledging 'a perspective that treats the immersion of the organism-person in an environment or lifeworld as an inescapable condition of existence' (2000: 168).

In Being Alive (2011), Ingold spins a humorous yet serious yarn about a Spider and an Ant musing on what is meant by social. Mostly they agree, until they attempt a definition of what kind of agency connects the components of a social assemblage, and thus in what sense an assemblage is constituted. Ingold critiques Actor Network Theory for ultimately holding to the fact that the assemblage has to be given as a whole and enduring presence in order for the agency to be agentic. The network is critiqued for its point to point structure, whereas the spider's web is processually active as a perceptual meshwork. As stated in the Introduction, I find much to celebrate in considering the social as a re-associative process, where networks are entangled and disentangle as new points in the assemblage emerge. Yet I find that Ingold's web, although a little stretched, is categorically fleshy in character and tuned to Merleau-Ponty's agency as process. The material conditions that form threads of hyper-social inclusivity, may or may not be

present as already formed bundles, or may have threads that dangle and seek new connections; the point is rather that they are not fixed, and remain porous as further actants infiltrate the connective processes. Discussing Ingold's Spider and ANT may seem like a digression from unpacking the nature of quoin making. What I am suggesting here is that the granite quoins that are seen being made in the Digital Archive are not only connected by their associated function as structural building block, but by the creative matrix of relations that form meanings around the ongoing activities of the forever incomplete quoin. The process of making the quoin is a synthesis of material properties, a conversation that ignites a deeper perceptual mode in me, and perhaps within the granite. This is perhaps where I tend to really engage with the sheer obduracy of good quality granite. It's in the world for a very long time.

The tension between the sensual reciprocity of materials and the ambiguities of material culture has prompted vital dialogues in anthropology. Ingold has written provocatively on the subject of 'Materials against materiality' (2007a, 2011), where he argues that materiality in current discourse all too often signifies a separation of humans from the substances of the world. He speaks of a need to relate our quest to be in the world with things to a necessary engagement beyond the surface of objects. Ingold advocates a much greater flow of meaning through the material itself, and he takes us on a journey with, if you go with it, a soaked pebble set in front of you as you read – a real thing with which he is also generating a relationship and a familiarity throughout the text. Ingold's claim is that the innate properties of materials instigate our sensual relations with the world, whereas materiality renders objects static in the process of naming them as part

of a human world. Ingold, in the later collected volume Being Alive, examines this presensualising activity of elemental presence as 'belonging to the fluxes of the medium, not to the confirmation of surfaces', where elemental matter is '[f]ar from being enfolded into the body – as the concept of embodiment would imply – they take possession of it, sweeping the body up into their own currents' (2011: 134 - 135). Ingold's focus on weather in this elemental discourse could equally be attributed to matter such as granite. Material qualities can shift, shift a human life even, and like Ingold's pebble drying out, transmit infinite potentialities of stoniness into the world.

The final tidying up of the quoin now — the chip-line, and it has to be done in the right order. First pitch down along the squared line marked five millimetres in. Then pitch around and punch the quoin end. While it's up-ended mark another line and pitch down from the quoin end. This starts the process of creating a sharp line along the arris. Next lay the quoin down and pitch any ragged edges. The final tidying up is with the Choc chisel, where I create the crisp white line that marks the transition from one face to another. No bruising of the line on this one, this is Tor Down granite... fine-grained and hard.

Christopher Tilley talks of 'a body and a mind which always encounters the world from a particular point of view in a particular context at a particular time and in a particular place, a physical subject in space-time' (2004: 2). Although Tilley's starting point with materials excavates a similar lode to Ingold, there are differences in the positioning of material properties which will become apparent shortly. In the initial journal responses to Ingold's 'Materials against materiality' article (see Ingold, 2007b; Knappett, 2007;

Miller, 2007; Nilson, 2007; Tilley, 2007) a number of criticisms (and responses) emerge. Tilley clearly adheres to the importance of materiality, in that his reading of the world of things 'embrace[s] subject-object relations going beyond the brute materiality of stones and considering why certain kinds of stone and their properties become important to people' (Tilley, 2007: 17). Tilley states that our relations to the world of things is a materiality, a process of navigation in which humans are the primary register, for humans are the beings looking and feeling. Ingold adheres to a monadic material cosmology, where matter instigates the emotive capabilities and sensualities of humans. Carl Knappett is more multilateral, sensing a need for both positions to play out:

Perhaps just as archaeologists find it difficult seeing through the material to the social, so it seems the ethnographer or sociologist struggles to see through the web of social relations to materials and their properties (2007: 21-22).

This suggests an opportunity for creative practitioners and makers to bridge the delicately configured arrangements of sentience within different forms of matter. For me the defining comment within the dialogue comes again from Knappett, who states, 'Perspectives from materiality have perhaps paid too little attention to time' (2007:23). This comment suggests how a fluid and reciprocating subjectivity carries valuable investigative potentialities. Furthermore it hints at recent work being carried out on memory, place, and materials – a set of relations wholly reliant on recognising the significance of temporal processes. This mode of research and representation also

suggests how memory and emotion are active as affective determinants equally within matter (such as granite) as humans (Bender et al., 2007; Cook et al., 2000; Davidson et al., 2005; DeSilvey, 2007; Edensor, 2011; Jones, 2011; Leitch, 1999, 2007; Marchand, 2008, 2010, 2014; Tilley, 2004, 2007). Indeed, as Tim Edensor suggests in his article on Manchester's (UK) building stones, matter operates in the world beyond a 'brute reality' (2013: 4) through to the emotive resonances of a dynamic more-than-human lifeworld; toward a monadic cosmological consciousness if you like (Mathews, 1991, 2003). Thus, as I consider materials such as granite as being sensual protagonists deeply involved in our evolving collective memory, then I can begin to determine what critical influences familiarity might play out in the mobility of a surface. Familiarity is a co-constituted emotive practice that informs Bennett's vitality and her concern for 'the capacity of things – edibles, commodities, storms, metals – not only to impede or block the will and designs of humans, but also to act as quasi-agents or forces with trajectories, propensities, or tendencies of their own' (Bennett 2010, viiii).

When I think about familiarity, I become drawn to different kinds of memory – for example, my body's muscular memory that is formed by the sensible properties of working granite. Jones (2011) suggests that memory is a rich and dynamic oscillation of knowledges, describing personal experiences that colour the reading of a site. Individual memory tracts are, for him, a critical area within the current discourse on place and representation in need of further investigation. Memories locate my own experience at the quarry as patterns of open relations that connect different spaces and times – some drawn from a childhood in my father's quarries, some from the numerous

occasions spent in sandstone and limestone quarries looking for the perfect block for a carving. Some memories present themselves from a previous week, or month, and are specific to Trenoweth. My long-term ethnographic study of Trenoweth Quarry, where memory practices play a critical role in an emergent relationship with the site, nonetheless remain part of a broader social analysis of memory that, as Jones (2011) establishes, is well documented.

My concern here is more about the body's memory, the sensorially dynamic transit of knowledge exchanged between matters. The consistency of time – its material substance – becomes a substrate through which relationships between person and matter communicate. This communication is recognised through an everyday mode of memory – familiarity – where place is an emotion transmitted through tooled-up material exchanges. It is possible that memory and familiarity maintain interchangeable roles. Yet, without any scientific backing, I sense that familiarity is more of a honed material exchange working within bracketed timeframes, whereas memory flows insistently through temporally complex pathways of relations. The familiarity that I am concerned with is an accumulation of bodily knowledges, where dense and fibrous relations with spaces and materials grow.

DeSilvey's (2007) unravelling of a Montana homestead accounts for the critical importance of mining the processes of familiarity in the reading of a site. As a mode of research, it opens up an emotive state permitting otherwise hidden goings on to emerge. Without an acknowledgement of memory-based processes, explorations of the

site would curdle, the past not quite gelling with the present, the words not quite merging with the writer. It is at this nexus of emotive orders that I became aware of the activity of surfaces – objects were hard without that familiarity, for they were just stuff over there, doing their own thing, impenetrable. As artist Rona Lee asserts in her inquiries into geoscientific processes of deep-sea mapping, familiarity is something innately desired, that emerges from the 'romantic pull of the unfamiliar and the impulse to know' (2010: 217). Another artist Jessica Harrison, who learnt to carve with the Gloucester cathedral masons as part of her PhD research, offers a nuanced description of the haptic encounter – 'The moment we touch is the moment that boundaries defined by the visual become blurred and information is passed through surface and skin' (Harrison, 2011: 193).

The resonances between material and person, between matter and maker, between myself and granite in a working quarry are not divisive, they are more a focusing in on a particular temporal region. It was in the quarry – where the fiery upheavals and material absorbtions of a molten intrusion became evident, where weathering and abrasions occurring over unimaginable millennia persisted, and the puny (in comparison) yet comprehensive mechanised dismantling of structural integrity was in action – that surface relations became a critical mode of engagement with productions of place. Deep revelations congregated in a millisecond at the point of impact between chisel and granite; the dense physicalities that have induced terms such as Buckle and Twist rush into the present. The sweet thud of impact, that to some would seem impossibly hard, to the mason is a fluid bodily motion. Muscle readily accustomed to this activity

flexes without complaint; the granite accommodates an impact that on other stones would render it useless, bruised, or even shattered. This was an exchange of sensual properties, for it was within this compressed shared moment that surface was rendered meaningfully transient.

Perhaps, as Tilley states when discussing stone menhirs, there remains an intrinsic moment where the worked stone object initiates 'bodily processes of perception and reception through which particular forms of representation and meaning come into being' (2004: 35). Surface in this sense is a perforated interface, initiating a personalised memory trail of stoniness through the sensual body. Similarly Edensor's extensive work on the narratives of stone not only evidences a respect for the material and a deep understanding of its dynamic presence within the built environment, as well as an intrinsic notion of the practical and emotive activity of surface where 'unpredictable processes of change, produced by internal properties or outside catalysts, mean that stone, like other forms of matter, varies in its rate of decay and relative stability. Its destiny depends upon the changing and particular agencies of particular contexts' (2011: 240).

If one considers the interface of one material with another (say granite and air) at an atomic level, then the pace of transition is incredibly slow. This slow scale of relating to the processual activity of things is explicitly more-than-human and beyond surface. Harrison again describes a physical and emotive encounter with a made thing, suggesting 'an ambiguity of boundaries in the moment of touch, imagined boundaries

becoming fluid, allowing us to connect with objects and the world, opening up that which is closed' (Harrison, 2011: 193).

What familiarity means for me, is that the longer one's relationship with a material, the more flexible the bounded form of that material becomes, the greater the porosity of surface, and the more abundant is our sensitivity to place. Porosity concerns the level of movement permitted to flow through matter, eroding notions of interior and exterior, where processual familiarities break down the static hierarchies of one material over another, and of what is considered living and what is not. This is what I think Ingold is getting at, where the interplay of person and matter is not about the imposition of one material onto another, but a growing exchange of material properties that form unique yet constellated relations.

Materiality is generated by every individuals' life experience within an omnipresent gathering of active matter. Working the granite at Trenoweth, in the company of all the goings on that I have described above, has offered an insight into what it means to make, and how relationships grow with a place through making with a material. Making is not just about the material; making becomes social and emotional from a position of individual knowledge working heterogeneously in a creative and sensorial mode. The relationship between maker and made remains intact within the material; it is stored in the very being of the material.

Where technological advancement is imposed too abruptly, as was the case in Alison Leitch's observation of the workers of the Italian Carrara marble quarries, there was a marked disruption of the slow learning approach of the apprenticeship system. This body-and-mind learning method that generated truly shared knowledges was disassembled, resulting in the erosion of a sensual knowledge of the quarrying process and a sensitivity to the marble itself (Leitch, 1999, 2007). Thus, there is a complex balance required that permits craft skills to advance without a damaging rupture in the dialogics of person and material. Surfaces can be rehardened within social and cultural upheaval, as pasts are forcibly siphoned off into an abyss. Relationships can be broken and familiarities can be disengaged as the complexities of progress (political, technological, and economic) are forced upon the sensual body.

Through actions and processes of familiarity, place can be considered a crafted space, where surface properties are materially mined through the fleshy manipulations of people, elemental, and animal interactions over time. By using the term craft, I am placing it in the context through which artist Alison Smith (Mikulay, 2009) advocates the term – craft as a verb – a doing word, a world of exchange, and a sociocultural collaborative mode of relating to materials. Our interactions with materials keeps space relatable, our modes of representation are encouraged to freely roam the rich lodes of intersubjectivity. Like Bennett's politically and ecologically motivated vibrant matter, recognising the value of familiarity at a sociocultural level might prolong our relationship with the material things in our lives. The emotive capabilities of long-term material relations disrupt the surface binary, permitting longer and more fruitful

engagements with things to play out. Matter does really matter, and familiarity is one of a range of tools to make it matter.

My objective has been to make the making central, and not a subsidiary mode of research; by making, I am researching. In this research I have called on a number of makings with the granite and the quarry – live performances in the quarry such as the 'Tilted Matter' project (Paton and Ernstman, 2012), conference performances, photo-documentaries of a day-in-the-life, creative texts based on diary recordings, experimental films, experimental sculptural process, and letter carving collaborations with poets. Generating knowledge that utilises a multi-sensual approach enriches the more pragmatic necessities of disseminating research, as much as being a model of representation-in-practice in its own right. Making has been the mode through which I am knowing and representing the quarry. Making a quoin condensed my understanding of the physicality of quarry work, where the apparent simplicity of its function and appearance belied the extraordinary set of actions assembled in its form.

In terms of a representation of this making, I have had to deal with issues surrounding site and non-site, of the experience and its documentation, and concur with Bender et al. in their conclusion that '[t]he form created is thus at the centre of a node of relationships serving to articulate them. What, then, is in the work and what is outside of it becomes consistently blurred. The work spills out beyond itself and is thoroughly mediated' (2007: 316). Any talk of blurring brings us back to surface – to perimeters and edges, framed time-scales of the day-to-day and the extraordinary, material belongings,

information technologies and emergent knowledge relations – that ultimately must be cross referenced and be creatively de-surfaced into an understanding.

I have known the quarry through a deepening porosity of emotive physicality, washed through with graniteness, where making a quoin opens up the orders of material activity operating within the quarry. It is through the quoin that I have come to know the vibrancy of matter. The surface has been literally punched away, there, here, then and now. The photographs of the making of a quoin in the Digital Archive, with accompanying texts, attest to a social configuration that draws in multiple agencies, life stories, histories and future histories. These narratives that move through the making of a quoin are one assemblage of material configuration given a perspective by me and my position in the quarry. Yet my positionally does not fix the assemblage, it merely represents one of multiple trajectories for the quoin and its relations.

iii. Again... Why make make a quoin?

I make quoins because Tim has many orders for them. I make quoins because they reveal the rhythms of a working day. I make quoins because people inhabit the world and need shelter. Glenn Adamson, when discussing Kenneth Frampton's architectural pedagogy concludes 'Frampton reminds us that through the mechanism of skill, the builder [like the mason I would add] engages with the internal forces of material: these in turn, provide a set of constraints that test and shape the building. In the process, the

material becomes the cultural' (Adamson, 2007: 101). The specifics of where and how something is made, with what material and by what tools, not only expands the field of knowledge about the geographies of place making, but as Hawkins (2013) elaborates in her article that makes use of Rosalind Krauss's Expanded Field theory, it generates ways of understanding a place such as Trenoweth Quarry as sculpture. The tools and the material provide an analytic framework of the contexts through which things work on and in places. Holding onto the values of making sculpture – of addition and reduction, of the culture of materials, of craft or the rejection of skill, of labour and creativity, of collaborations, of changing muscularities and overcomings – remains a prescient concern. It is possible, therefore, to read Trenoweth as sculpted; Trenoweth has been literally, emotionally, materially, geographically, and creatively formed. The quarry is a more-than-surface constellation of productions. Surface in this sense becomes a much diminished presence in the quarry when making is in full flow. The maker is explicitly anti-surface, whose approach is to unknow the received name of things.

The pallet is stacked five high by four by six. It's five minutes to five. Mark and I have done well, all day repeating the same manoeuvres, but every strike slightly different, each point-mark on the granite a differently modulated combination of body, mind and material. I've lost count of how many Mark has done, I was listening to music on my headphones for a few hours anyway. It doesn't matter, the game is always about finding ways to counter the mundanity of this extraordinary set of actions.

iv. The granite de-surfaced

The word surface persists; surface needs to be present for ease of communication. I need to name things, but a reliance on the word might induce the separation of the mind from the body. The polished handled area of my chisels is visible as a surface change from dull to shiny, but what that change in surface quality discloses is a dense filigree of animate material relationships. The now familiar stone-metal-flesh dialogue expands to tell many stories. A surface needs to be present, which can then be worked on, an interstitial moment of apprehension before immersion is initiated.

What has my time working with granite at Trenoweth Quarry demonstrated about the virtues and nature of surfaces? Well I return again to Ingold's materials versus materiality, to the focal point converging beyond surface renderings, and to understand that the artefacts I encounter or produce at the quarry exist 'through the gradual unfolding of that field of forces set up through the active and sensuous engagement of practitioner and material. This field is neither internal to the material nor internal to the practitioner (hence external to the material); rather, it cuts across the emergent interface between them' (Ingold, 2000: 342).

In more specific terms relating to the working of a piece of granite, the block I work on has a structure and situatedness that is informing my own interior processes, migrating along instances of force and perception, in tune with what Naji and Douny distillate from Ingold as the 'practice of making, skills and intelligence as emerging from a progressive and continual adjustment of practitioner's perception and body movements in relation

to their environment' (2009: 413). My now intense familiarity with Trenoweth Quarry has come about through my working there, through working the granite. The mundane reality of making, and thus of labour, is resolutely political, a geographical imperative, and a critical means of operating a meaningful relationship with this material life. The quoin in all its utilitarian simplicity and structural integrity offers much in terms of acknowledging the creativity of labour. The quarry, now recognisable as a complex and mutable assemblage, has within its cycle of interactions further scales of assembled materials that might include anecdotes caught in the frequencies of the hammer blows and fraying winds of Trenoweth's banker sheds. Surface, now understood as hyper mobile and porous, allows the assemblage to shift its constituent properties with tensioned fluidity. The quoin remains a quoin, yet it is alive with emergent relationships. The quoin that I made will remain part of my trajectory through the quarry, and through that connection the quoin and I will grow.

3. Rhythms of the assemblage

The rhythms of thought pass through the fingers and grip of this hand into the stone (Hepworth, 2014).

I have laid out two vital material encounters – the formation of sludge and the making of a quoin. They define my understanding of an intersubjective activity, where the relationship persists through generative and degenerative processes. In the introduction to these two encounters I proposed that the one way to define intersubjectivity or

agency was in terms of creativity. Intersubjectivity is also revealed in the sharing or showing discussed by Pitt (2015). The complicity of matter in the formation of its own meaning is something that Merleau-Ponty celebrated (Hass 2008), and is a process that could be seen to work across human and non-human matter; materially intuitive yet pertaining to forms of intention at given points. The physical natures of these processes become, by way of textual and visual representation, meaningful activities in my attempts to reveal the quarry. This is after all what new materialism, with its nod to Merleau-Ponty, aims to do, only in slightly different configurations. With this research project I have plotted a course through the quarry related to the values of making sculpture, always trying to examine the simultaneity of all facets, dimensions and axes. As an artist I use skills of non-linear thought to present an arrangement of observations and responses left open for others to interpret – agency, or creativity, is given freedom to keep on working as I relinquish control. The way in which this creativity might be seen to work then, is as a rhythm.

Ingold has much to say about the rhythms of skilled work and examines the nature of rhythm as the connective force that occurs during the making process – ‘practical skill, in bringing together the resistances of materials, bodily gestures and the flows of sensory experience, rhythmically couples action and perception along paths of movement’ (Ingold 2011: 16) and ‘it is in the very ‘tuning’ of movement in response to the ever-changing conditions of an unfolding task that the skill of any bodily technique ultimately resides’ (ibid: 46). Rhythms act in accentuated and differentiated ways within making and during any retelling, forming the constant renegotiation of an event long

after it has occurred. These creative and messy space-times are the underpinning of the things I do, why I do them and why they are important. Ingold acknowledges Lefebvre's Rhythmanalysis project where 'rhythmicity [...] implies not just repetition but differences within repetition. Or to put it another way, fluent performance is rhythmic only because imperfections in the system call for continual correction' (2011: 60).

A sculptor who works primarily in bronze once asked me if I could characterise the process of stone carving if I were introducing it to a new student, and I answered promptly with the word rhythm – the rhythm is everything. Rhythm ties the physicality of the body to the grown structure of the stone, the tools to the hands and mind, the cycles of practice unite with mistakes, the granite blocks being disassembled are reassembled, the production and removal of waste materials that form new geological structures, the oils and water pumping through machines, the differing paces of fellow stone-workers, family life and work life, getting to work and leaving work. All these rhythms that are interrupted and diverted, if examined, tell the story of a made thing, and tell the ongoing story of a place. These many rhythms of Trenoweth Quarry, that have hopefully become evident in this Commentary, are presented according to the coordinates of my body. Every other body in the quarry will also operate accordingly.

When I am working for Tim, I arrive on or before eight o'clock in the morning, with a 50 minute drive to get me there. The day is broken into segments, with crib-time at 10 o'clock until 10:30am, then lunch from 1:30pm until 2pm. It is more common than not for these times of the day to flex, and sometimes in Tim's favour, as in when I stay on

after five o'clock to ensure a job that is nearly finished is finished. These important rhythms set out objectives and productivity values, and give a marker on how well I am working according to say how many quoins I have made. The breaks are something to look forward to because they mean fuel; if I have managed to make something nice to eat, even better. The breaks are fun, especially if Ernie is present. This dividing up of time and space to service biological, economic and social systems is even present when I am given a long lintel to dress; here I will often divide up the eight foot length into quarters with a drawn line; something Ernie taught me. It makes the job not seem like one long task, but provides a sense of achievement in shorter bursts. This self-deception always amuses me, but it really works.

The rhythm of quarry labour, although harsh at times and requiring a certain fortitude when it gets tough going, is never one that aims to sink the spirit. Quite the opposite, as is evidenced by the nuanced relationships described in this research. The work, the granite and people all have rhythms within rhythms, rhythms that speed up, disrupt and diverge. Lefebvre's Rhythmanalyst is a permeable being, seeking opportunities to slow down and revel in the movements of life:

The rhythmanalyst calls on all his senses. He draws on his breathing, the circulation of his blood, the beatings of his heart and the delivery of speech as landmarks. Without privileging any one of these sensations, raised by him in the perception of rhythms, to the detriment of any other. He thinks with his body, not in the abstract, but in lived temporality (Lefebvre, 1994: 21).

I feel very close to the person described above; for it is how I have registered the interactions of matter that are fizzling with creativity – the agency or showing of the lifeworld. Edensor considers that the 'Rhythmanalysis welcomes vitalist perspectives but warns that not everything continuously changes. It recognises consistencies, repetitions and reproductions, moments of quietitude, not withstanding the furious work that goes into the sustenance of stable arrangements, and is open to moments of chaos, dissonance and breakdown; moments of arrhythmia' (2010: 18). The quarry has been working for well over one hundred and fifty years, and is no hurry to close. With these frequencies of engagement, we begin to tune into the generational and epochal rhythms of the land and on into the geological temporalities that ultimately narrate a cosmic system.

Humans are granular wayfarers, grains amongst many grain types in the shifting dune of material forces, eventually to be subsumed, sedimented and intruded. In the conclusion to Vibrant Matter: A Political Ecology of Things (2010), Bennett offers a series of self-doubting propositions as to the basis of a vital matter. Throughout her discourse on submitting the human to some fundamentally unifying plane of material consciousness, an acceptance that anthropomorphism is one way to overcome a reluctance to fully assimilate living matter into our political system is a brave proposition. The evident irony being that it is always a situated human that is enacting some social or cultural shift in consciousness, but this just has to be accepted – it is the problem of representation. It is also the issue of perception. 'The point is this:' Bennett says, 'an active becoming, a creative not-quite-human force capable of producing the new, buzzes within the history

of the term nature' (2010: 118). The closest we can get to being part of this material stream, of extending our conscious selves beyond limited prioritisation, is when we make something. Making places me/ humans within the realm of growing, and growing is part of the intersubjective or materially-shared exploration of the worked-in world.

I chose to attend closely to the sludge partly because I had such a visceral response to its strange properties, and partly because it offered the opportunity to transcend linear approaches to time. The quoin offered a different way again to think about time due to its clear demarcations of improvements in my skill and efficiency. The work gathered in the 'Practices and processes: materials in tension' chapter and in the Digital Archive establishes a dialogue between all the makings that have taken place in the research. Sludge and the quoin offered a control from which these other makings have been generated, and they also offered tangible evidence of an assemblage in process.



CHAPTER FOUR

MORE-THAN-SCULPTURE

1. The nature of sculpture

This chapter proposes an expanded framework for the discipline of sculpture in the context of a move to establish a research practice of sculpture-as-ethnography. Here I formalise the nature of sculpture as a geographical method for exploring Trenoweth Quarry and its granites. Sculpture's traditionally perceived focus on material plasticity within the fine arts, limits its potential as a uniquely placed ensemble of social and material practices. Sculpture, as I define it in my research, emerges as an acutely tuned method of exploring and rendering the dynamics of the lifeworld. That is to say, the unique relationship between stone and carver (or mason) through tooled-up exchange, requires a deepening familiarity over time, as the shifting spaces of its occurrence are performed and a sense of the multiplicity of place is highlighted. The geologic and the mammalian are woven together through material exchange and consequently score new rhythms of people and place. In that sense I understand that making as a process, and the made thing, are social; the intersubjectivity, showing, sharing and assembling are all illuminated by the connectivity that is embedded in my research methods and outputs. I see making as necessarily related to a wider creative thread, and I see my skill-set as a porous polyrhythm, where influences are spatially attributed and shifted.

There is another more-than-dimensional aspect to making that interests me too; something about the dialogue or perhaps discord between my conscious and unconscious being. I think it relates somehow to what I stated earlier regarding the reality of day-to-day living being an iterative condition of making – let's call it making a living – a tacit and sensual reflexivity the nuances of which occur in some kind of meta-time. The individual maker is situated in an intimate dialogue entirely reliant on the time taken to be good at what they do, set in relation to an ever present yearning (call it a desire) to be in the unknown. This is where the artful letting go of material control occurs, allowing the grown natures of the materials to do their thing and become a formal and imperative sculptural condition. As a rhythm, this may occur to a lesser or greater extent within the alternating stages and conditions of making a thing. Being in the quarry as a quarry worker and experimental artist-geographer celebrates different levels of control and of letting-go, as well as processes of familiarisation.

The trajectory of human/stone relations, which have persisted for tens of thousands of years, give rise to a tension for the contemporary stone sculptor. I attend to stone on the one hand as an enduringly practical building material, while on the other as providing a portal through which I can decipher the sensorial habitation of the land. In Stone Worlds (Bender, Hamilton and Tilley, 2007), a multi-voiced investigation of a Neolithic site at Leskernick near Bodmin, the researchers utilised a number of creative models to interpret the experience of place and the research process itself. The large research team became makers, with experiments that were productive and integral to understanding the site. With the team's extended presence around Leskernick, there

was a real attempt to narrate the site as a collision of pasts and presents. As the authors of Stone Worlds say of their archaeo-sculptural experiments '[t]ime is present not simply in the production of the art but in the act of encountering and experiencing it: travelling to the site, the duration of the visit, the hour of the day, the season of the year, and so on' (Bender et al 2007: 315). Fieldwork as practice is a strand of research in the arts, archaeology, anthropology and geography demonstrating a critical form of enquiry that attends to the field researcher's direct experience as a creative practitioner. The creative outputs from this form of research are also being reimagined as a means to expand disciplinary research practices and sensorially engage the reader in the process of investigating a site.

This second methodological chapter contextualises the tensioned productions of stone-working in relation to other sculptors' work and the traditions of fine-art sculpture. The chapter also looks to acknowledge where a more porous disciplinary field connects with stone-sculpture practices. I firstly establish what sculpture is, and some of its key terms in relation to stone-work. I then examine some of Barbara Hepworth's and Robert Smithson's works and working methods before concluding the chapter with a refinement of my sculpture-as-ethnography practice.

i. What is sculpture?

In the current sphere of contemporary fine art practice, it would be impossible to define sculpture as any one type of fine art activity, or score it with any material hierarchy. Hall tells us the term sculpture has been 'expanded and tested to virtual destruction' (1999:

6). Curtis and Wilson present British sculpture as a discipline that has performed a duty to 'confront loss, grief and public expectation' (2011: 21) over the course of the 20th century. Then, after sculpture's swansong of the 1980s and 90s with artists such as Anish Kapoor, Tony Cragg and Alison Wilding, sculptural agendas changed perspectives from the spectacle of scale and mass to where 'the truly monumental is not large, but rather serves to remind' (ibid: 27).

Ingold considers sculpture in Making (2013) where, in this case, he is not so clear in his configuring of the term embodied. Seeking clarification about an object's worldly immersion, he discusses the processes by which a sculpture by Moore (Warrior with Shield, bronze 1953-4), and a facsimile of the same piece by Simon Starling (Infestation Piece Muscled Moore, bronze and muscles, 2007), evidence liveliness and movement through the world. Yet, unusually for Ingold, he seems to opt out of considering the invisible-to-the-human-eye scale of life that might inhabit both works. Unusually, Ingold's analysis rests on subjective narrative and mere surface in his relationship with the sculptures, interpreting the original Moore as entombed in its own solitude, or as he suggests, more inwardly embodied; and the Starling version, with its crust of live muscles, as porous to the world and vibrant with potential. The making aspect of sculpture seems lost on Ingold here, where he is stuck in a material and interpretative abstraction. A bronze sculpture should be considered, in this discourse on grown things, as formed from a dynamic set of relationships between artist and matter that stretches back through to the deposition of clays for modelling, limestones for plaster casting, and rock ores from which the work is made.

Ingold's consideration of the two works highlights a dilemma for the sculptor regarding the original intention of the work, and how it is received according to conflicting critical positions. For sculptors there are three reasons where a misreading of their work might occur. To be clear I am not disputing the critical importance of the authorship of the spectator, I am concerned here with a temptation to see the sculpture as fixed in a present form or formation. Firstly the sculptor (working within traditional and or social spheres) usually deals with complex material processes that are not apparent within the final work; secondly the space in which the work is received is in tension with living beings, taking up, as it does, related conditions of human time and space; and, thirdly, the creative and socio-cultural climate in which the work is made and received can be vastly different. Sculpture is, as Kester (2004) outlines, dealing with the friction of autonomy versus theatricality, and the degree to which processes contain, embody or simply are, social in nature.

It is crucial to acknowledge sculpture's capacity to dwell fully in the dynamism of a more-than-human lifeworld, and engage accordingly with the drawing-in and exhalation of earthly elements. Ingold's interpretation of the Moore and the Starling sculptures seems counterproductive to his usual consideration of the quantum conditions of liveliness. Sculpture is always inherently theatrical, and therefore social, if it has in any way addressed the relationship of a material then-and-now to a perceptual here-and-there. Sculpture is lit, moulded and eroded by the same conditions that we humans have to endure. Sculpture is usually considered as the three dimensional fine art discipline, primarily focused on spatiality and mass. Not only does spatiality host more complex

mobilities than merely framing something as three dimensional, I consider sculpture's spatio-temporal configuration to have more involving and entwined properties. In other words, a sculpture draws upon the social time of its making as a formal presence within the work; whilst also providing the basis for expanded fields of disciplinary activity. Moszynska (2013), whose discussion of sculptural practice opens with work from the 1990s and ends in 2013, defines her subject area not through medium but through key areas of investigation, such as the body, nature, light and sound and the everyday, to name a few. The practice of sculpture, in these contexts, is indeed not confined to three dimensional objects, but as a more-than-dimensional, multi-disciplinary and multi-medium attempt to locate art in the context of lived space and time.

In terms of the development of the discipline of sculpture, the move away from the plinth in post-war European and American sculpture is perhaps the moment when it attempted to dispense with unnecessary embellishments and engaged with the inhabited spaces of daily life. Moszynska places this primary shift during the reactionary politics of the 1960s, where conceptually this moment was propped up by Merleau-Ponty. She states that his Phenomenology of Perception, contributed to turning the attention of sculptors away from 'the stress on pure opticality (how things are seen) and instead turned towards the wider sensorial nature of perception (how things are experienced) within the space where the object is located' (2013: 10-11). This reading of sculpture's departure from divisiveness to just being, occurred even earlier though, through the political, economic and religious upheavals of the early to mid 20th century. The work of Brancusi could be cited, or even more radical examples from Kurt

Schwitters's installations, such as the astonishing Hanover Merzbau (1923 - 1937) built in his parents' house during the build up of national socialism in Germany, and the later Elterwater Merzbarn (1948) in Cumbria. These works by Schwitters announced a profound shift in sculptural practice towards total immersion. His work produced a critical environment for sculpture that encouraged the spectator to venture into the convergence of material processing and his own personal history. The disentangling of the plinth from the meaning of the work – as is the case with monuments that might elevate repressive ideologies above the status of lived life – is not to be seen as entirely literal or linear in progression, or its origins as clearly situated in time. In another sense, artists such as Robert Smithson had equal, if not greater impact on the disciplinary boundaries of sculpture than say Anthony Caro's 'Early One Morning' (1962), where the extenuated autonomy of the work also placed the sculpture perhaps too far away from lived experience, elevating the work of art beyond common experience. This condensing of the autonomous artwork was something that Smithson fought against (Shapiro, 1997).

As a sculptor I have experienced an internal conflict around the presentation of my sculpture in galleries. I have, throughout my 26 years of making sculpture, mostly avoided the plinth, always finding it a distraction from the processes in which I have been involved with. Also, the dialogue between the making of a sculpture and its subsequent siting in a public space or gallery is problematic. Taking the work out of the site of its making breaks some form of bond. In practical terms of maintaining a sculptural practice, I have had to overcome this concern; but with my PhD research I

have been able to allow for the nurturing time that a more-than-sculptural process requires. From personal experience, visiting sculptors' work spaces and studios offers a glimpse into the imbrication of materials, tools and thingly arrangements that are highly evocative of physical thought. What occurs in a work/ studio space is a build up of relationships over time between artist, workplace, process and material; gaining a rhythm of response that is, in phenomenological terms, a continual re-referencing of the coordinates of the self through time. I have made the quarry a studio, and in that sense made permeable the spatial adjustment of those coordinates to outside influences, allowing other histories and futures to secrete into the making of sculpture. This permits the process of sculpture to narrate place as an integral part of it coming into being. I understand and explore the openness of research practice as sculpture too; sculptures within sculpture, the seer and the seen lived out in the pressures of the creative threading of livelihoods. What emerges from a brief scan of the development of sculpture in the 20th century is its search for an identity.

Tucker's The Language of Sculpture (1974) provides further analysis of European 20th century sculpture. Tucker addresses a range of sculptors' work in a formal way, as a sculptor would talk about a sculpture. He brings the process and material of sculpture into focus, directing attention to why the artists chose to work with particular materials, and how these decisions allowed sculpture to break free from the academic salons, where sculpture was entombed in systems of reproduction. Tucker celebrates the fleshiness of matter that sculptors like Rodin, Brancusi and Degas delivered in their works, and the advances they made towards an art form that straddled the rarefied

spaces of art with the grounded physicalities of real things affected by real actions. The plinth features in Tucker's discourse on these artists, with perhaps Brancusi paving the way for a sculpture that evoked the true nature of an object as he puts it; this is a nature that contained and articulated its own presence, with or without the context of art. Tucker's language of sculpture, which does indeed celebrate the fleshiness of matter in the sculptor's hands, is let down as he delivers reductionist principles of an ultimately inert matter reliant for its liveliness on human control over form, representation and meaning. For me this is emblematic of a restricted sense of what sculpture is about and what working with stone is about.

The relationship between human and stone is described poetically by Jackson (1984), and rather more pragmatically by Tilley (2004), but both attend to the intense material presence of stone that registers its connectivity to an ephemeral life-force. In a sense, the stone-worker has had to weave a path through both a spiritual sphere and as engineer. There are many situations that see this dualism merged, as in the flint knappers who maintained an almost mystical role in Stone Age culture, or as medieval mason carvers and the master masons who designed and built cathedrals. Yet as the socio-cultural complexity intensified through the Enlightenment, the arts sought to elevate artists' cultural role and the artist gradually became separated from the carver. The masons held on to their skill and training, which was then exploited by the academician (Tucker, 1974). It was not until the arrival of artists such as Brancusi and Hepworth, that the division of artist and stone-worker ceased to have precedence, in favour of the more unified artist-carver or direct carver. This returned stone-work

perhaps to a more culturally elevated position. Then, as modernism was replaced by postmodern tendencies in the sixties and seventies, artist and carver again became separated, with stone carvers gradually finding their social and cultural relevance aligned to a more ancient relationship with the earth. The modernist honed the authorship of the work to the uniqueness of the creative individual, and postmodernism wrestled the authorship of the work away from the artist and into the flux of a dynamic and uncertain world. Throughout this Commentary I reveal the ongoing tensions of the contemporary stone-worker which I seek to counter by offering an altogether more complex rendering of working stone. My proposition is all about the multiple and simultaneous facets of being a stone-worker, exemplified in my many-titled modes of operation scattered throughout the text. I do create skilfully with granite, yet the granite creates skilfully with me.

ii. What does truth to materials mean?

...Henry Moore's conception of "truth to materials" demands that the sculptural material be determinant of sculptural form. Sculpting (as distinct from mere craftsmanship) involves a dependence on the thingliness of its material, for the form is continually adjusted to the material the sculptor feels in his hands or beneath his tools. For Moore, the woman comes out of the wood. If the image had been imposed on the wood, the thingliness of both the woman and the wood would not have been revealed. Truth to materials is respect for the material as a thing (David Martin, 1979: 17).

For sculptors, and particularly stone carvers, truth to materials is a tenet that holds many associations with the idea of a deep respect for the material. In respect of the phenomenological mode of perception and the interconnectivity of new materialism, there lies a truth in the nature of granite (and the working quarry) as a grown material influenced by multiple factors over long durations (Hallam and Ingold 2014). The truth will out if you like, no matter how the carver works the stone. The issue that Bolt (2012) takes with truth to materials and art practice concerns its incompatibility with modernism's focus (and enduring legacy) on the uniqueness and strategic agency of the artist. In essence Bolt's position is in direct conflict with Tucker's limited conceptions of material dynamics. Bolt's position strikes a potent critique for how artists relate to their materials and mediums, where she proposes that material truth is often surrendered to the art market in the modernist oeuvre, subservient to cultural taste and to the all-consuming brilliance of human creativity. The space where a more-than-human agency flickers with intention can often be situated in parenthesis by the artists' cultural role, and yet by addressing the wider social implications of making, agency maintains a more acute cultural presence.

On many levels, I concur with Bolt's point; my research and developing sculptural practice sought to let go of the control mechanisms I previously relied on to make sculpture. I have responded to the grown capacities of the granite and found beauty in the forms and distortions driven by the granite's own structures, which is evidenced in the stitch-split work and fired granites presented in the Digital Archive. Indeed, the social studio that I developed in the quarry disrupted the traditions of the maker as

producer of isolated objects, and although my work does not conform to any environmental politics directly, the notion of social sculpture is present in my research practice because I attend to the made thing as the product of multiple personal, economic, social, cultural and material origins – ‘This isn’t about connective aesthetics. It is connective aesthetics. An emerging, expanded process. Drawing in and on all kinds of connections’ states Cook (2000) on the social sculpture work of Shelley Sacks. In my own work, different modes of documentation and experimental sculpture converged with films and texts shown in galleries and at conferences, contributing to a temporally reimagined sculptural practice. The different modes of recording life at the quarry, and the making and documenting of things made at the quarry, escaped fixed representations because they were consistently reassembled in different configurations for different contexts over time. This is a strategy consistent with installation art, where the aim is to ‘heighten the viewer’s [and the artist’s I would say] awareness of how objects are positioned (installed) in space and our bodily response to this’, and where ‘the space, and the ensemble of elements within it, are regarded in their entirety as a single entity’ (Bishop, 2005: 6).

It is critical to register the term object here as thingly, and thus processually inclusive of matter and materiality, and less consistent with the limitations of something static and fixed. Operating across disciplinary and professional boundaries, and going with the flow of the material, is a formal and decisive strategy that confounds the usual frameworks for sculptural practice, and where the modernist objectification of truth to materials contended by Bolt, is understood to be more flexible. It is worth mentioning

here that using photography and film to record the quarry, and the processes I have developed through working at the quarry, could be critiqued as mere documentation and an attempt at fixing the truth of the quarry. It is the case however, that I have always situated the films and photographs in different temporal and spatial assemblages (as did Robert Smithson) as I show later in the chapter, allowing multiple interpretations and configurations to emerge that inform the proposal for sculpture-as-ethnography. The experimental processes employed in some of the sculptures are a documentation of a formal response to certain conditions and processes beyond my absolute control; along with the films, photo-films and texts, they all thread back to the quarry and remain open and essentially investigative. Further arguments for working with digital photography and film are discussed in the introduction to Chapter Five.

Within my research project I am a quarryman and mason, and this does suggest a less polarised conflict than the one that Bolt offers. The historical context of stone-working within architectural masonry, religious or spiritual artefacts and memorials, blurs what Bolt sees as a clear problem. Zilczer (1981) shows how branches of early 20th century modernist stone carvers advocated a direct carving and reactive approach to stone-working; this was a movement against European academies and salons that encouraged a separation of fine artist from stone sculptor. Zilczer suggests that in Britain they fell into ideologically divergent perspectives. Eric Gill approached truth to materials and direct carving with a socio-political agenda, where craftsmanship and a sense of design were an attempt to re-empower practices of labour with creativity and self-hood. Henry Moore and Barbara Hepworth, on the other hand, arrived at the united practices of truth

to materials and direct carving partly through early modernist primitivism – a celebratory, deeply felt, reactive and possibly occultish absorption and interpretation of essentially African and Polynesian tribal artworks, that rapidly gained significance in European art from 1907 (Rubin, 1984).

I am not going to delve into any discourse on Hepworth and Moore's sculptural practice here, although Hepworth features strongly later in the chapter. I want to briefly consider Eric Gill in order to make a point about the inherently social and political nature of stone-working, and explore how this disrupts any clear positioning of the stone-worker as trespassing upon a universal material agency. Bolt (2012) is right to question the conflicts of human agency and truth to materials; yet, in the case of stone, its employment as a material enrolled in complex structural engineering is always present. Its practical applications in the built environment establish stone's maternal configuration, where the Earth body – the geologic – provides a nurturing materiality for life to propagate. This structural agenda suggests that stone plays a complex cultural and socio-political role in attending to how deeply one might dwell within the earth, and not on it. Architectural carvers like Eric Gill often demonstrate profound sensitivities to the geologic, and to place and process, through both practical necessity and embedded reciprocities. His statement that 'the sculptor's job is making out of stone things seen in the mind' (Gill quoted in Zilczer, 1979: 46) is to be regarded as a confirmation of Gill's belief in entering into a direct dialogue with the stone, without any intermediary process or mason. This is direct carving. It is also a suggestion of being seen; the mind is not the termination of a relationship with the material, but more a

transitory and evolutionary state complicit with the nature of the stone and the ideology of the artist as carver. This in essence is a truth of the material – an always emergent relationship that is concerned directly with the processes of rendering form in stone, not truncated in the rendered form. In this sense, the form in stone is dynamically present and continually reactive in its carved state, as it becomes further enrolled in the mutable complexities of a more-than-human lifeworld – weatherings, human made erosions, and accruing all manner of flora and fauna.

Gill acknowledged the degree to which his work was made through commission – often ecclesiastical work – and he established in his writing a very strong belief in art and work being utterly inseparable. The job of the stone carver was specific and precise in service to God, and to the architect, yet came into being through a fluid and joyous engagement with the stone (Collins, 2006). With a well formed sense of a modernist aesthetic, Gill managed to be both embedded in the delicate relationship with the grown nature of the stone, and develop a practice that pursued social concerns around the practical nature of using stone as a building material. Other aspects of Gill's moral universe are rightly questionable and indeed abhorrent, but this is not something to discuss here. Embedded in Gill's notions of work and materials I sense a more nuanced contemplation of Bolt's (2012) truth to materials position becomes necessary, and it is something quite specific to stone. The much broader and multi-scaled interpretation of where and when the locales of agency coalesce has to be situated in accordance with who does what, where and when. Agency, considered not as activity resident within, but operating through matter (Ingold, 2013), allows for the status of human labour and

work-based environments to resonate with the acknowledgment of more-than-human lifeworlds. The focus of my practice as a stone-worker and researcher is to outline the nexus of material potential operating on a more-than-human model, not a non-human level. In the mix are the traditions of art practice and practices of labour – a socio-political, ecological and cultural mode such as that which Bennett (2010) advocates, that acknowledges the nature of human relationships with matter as being multi-scaled. This promotes a notion of society that is not wholly anthropocentric, and is culturally porous to non-human life-systems.

iii. Towards sculpture-as-ethnography

Through the activities of sludge and the quoin in the quarry, as described in the previous chapter, I have established a deep well of granite consciousness, and registered how handling the granite in different ways sets about ways of investigating and presenting the quarry. This is a consciousness founded on a reciprocal relationship, which can be understood both in terms of my contribution at the quarry as a useful quarryman, and in terms of how the quarry has given me back a profound sense of what it means to make something in a place. This is a place of deep social significance, in terms of a contemporary working environment tied to a diverse network of economic and cultural factors, but also tied to a highly visible and ancient working of the land for sustenance and shelter. Through the everydayness that is bound up in my processing of the granite, the entire quarry's material presence has an obdurate plasticity.

As the research practice has developed, my sculpture has become a collection of forms and mediations whose structure is reliant on fluid and improvised responses to life and work, both in the quarry and beyond its formal border. The artisanal nature of my position at the quarry, in the latter stages of the research, reflects a convergence of granite working skills and sculptural practices. This position as an artisan, who offers a design-make solution for Tim's customers, became a critical placing of my skills within the research methods. This flexibility of making formats establishes a transdisciplinarity to sculpture and stone-working. In terms of the making of objects – as things, as sculptures – my concern is for how the making retains an evolving state of being within the work. Sculpture's thingliness, as in its 'coming together of material and movement' as Ingold (2013: 85) refers to Heidegger's discourse on things, is offered in my work as a conversation with the history of manual labour. The quarry has acted like a magnifying glass that concentrates the rays of the sun – concentrating the action of matter into a focussed energy and an intensification of purpose and perception. The references threaded throughout the sculptures, films and projects remain open to continual reweaving. This could be termed a methodological textile – an organic woven practice whose pattern is highly adaptive yet requires the presence of a warp and a weft to maintain the assembled components. The methodology is thus constellated; its formal attributes consist of many experiences that are mediated, reconfigured and reflected upon over a long time period. This is a methodology that works towards a concept of sculpture based on multiple agencies converging and diverging.

My methodological strategy firstly aimed to stretch the notion of where fine art sculpture might take place. Being a quarryman and learning about a material through just being a human at work, released me from the idea of making a sculpture in the quarry. This led to ways of making that gave a precedent to inviting other people to the quarry, giving tours and doing performances in different parts of the quarry. Other methodological strands became more about making actual things, where processes that involved relinquishing control of the material-in-formation could be explored in relation to traditional carving tasks more closely aligned to masonry.

The emphasis on the value of the quarry as an environment of creative research practice is now clear. What now follows is an examination of how the qualities of the quarry are entwined in a sculptural discourse that has seen sculptors confront academic pedagogies, and freed the made thing from the constraints of being bounded as an object. The modes of perception generated by Merleau-Ponty that have afforded value to material agency across human and non-human being, have provided the sculptor with a means to unite labour and creativity as a material praxis. What surprised me about my exploration of other sculptors' work, as the PhD research progressed, was the development of a relationship with the work of Barbara Hepworth. I knew of her work, but with little detail and with not much appreciation. But, through a series of unconnected coincidences which I outline shortly, I gradually found myself drawn to her work, her ways of thinking about the origin and role of sculpture, and her lifelong passion for materials. The other obvious aspect to her work was the connection she had to the Cornish landscape, and the way she drew upon place as a wellspring of sensual

knowledge that she folds into her object making. In the following section I direct attention to one piece of work at the Hepworth Museum in St Ives, thinking through it as one sculptor talking to another. I then touch upon the work of Robert Smithson, through whom I continue to configure my own stone-working-as-research trajectory. This focus on sculpture provides the basis for understanding why stone-working and geography function so fluidly, and how the quarry has become such a critical environment in which this exploratory practice has evolved. This discourse finally leads me, via 'Practices and processes: materials in tension' to the concluding chapter of the Commentary that discloses how sculpture and ethnography fully synthesise in the quarry. This is a sculptural practice whose concerns expose the form of sculpture as something physical, tangible and made, yet sees it extending or rethinking the received modernist tropes of fixity and objectivity, towards a discipline of place-based exploration and discovery.

2. Hepworth and Smithson: the fullness of empty places

i. Approaching the void

Hepworth's sculptures make space around themselves for us. Her pierced forms turn that space into space-time. Once free from the demands of the clock, we can let our minds float outwards, through the shaped openness she offers, into a place that is not fragmentation (Winterson 01/06/2003).

For an artist like Barbara Hepworth, the radical nature of her work needs to be read in the context of where she worked, and through what means her work was and is still accessed. There is a very direct thread between earlier work of Constantin Brancusi and

Hepworth, where the value of direct carving becomes a material and formal presence. The ways in which I am a product of sculptural traditions that embrace raw matter as a formal component of the work will become clearer as I consider the work of Hepworth and then situate that in relation to the work of Robert Smithson.

Tucker (1974) asserts that Rodin was the original bad-boy of sculpture, rejecting a system of expressionistic repression, and instead celebrating the chaos of the flesh. It is however, more rewarding to be able to account for conceptual imperatives from direct experience, and I will define my context from a position closer to home, and focus in on a very particular moment in the trajectory of 20th century British sculpture. In 1949, not more than thirty miles away from Trenoweth Quarry, sculptor Barbara Hepworth established her live-work base at the Trewyn Studios in St Ives (now the Tate's Hepworth Museum), where she supported the development of her work and family for nearly thirty years. I first became acquainted with Hepworth's work when, from 2010, I began to take students to the museum for a carving class run at the Newlyn School of Art. As I became more familiar with her life and work, I identified with her desire to configure the human form and the landscape as a united and merged entity, and her devotion to exploring this through sculpture, and through stone.

In 2013, I participated in a developmental seminar organised by the Tate at Tate St Ives ('Tate Research: The Studios at the Barbara Hepworth Museum and Sculpture Garden', St Ives Developmental Seminar, 20-21 May 2013), a multi-disciplinary gathering whose focus was to give direction to a long-term conservation programme at the museum.

What made this seminar so influential for me was the ways in which the processes of sculpture could host such a diversity of disciplines including fine-art conservators, geographers, curators, art historians and textile specialists. The uniqueness of Trewyn celebrated in this conference confirmed the critical nature of the relationship between place and making for me – making-places must have always been important for sculptors because of the requirements for storing and working materials and using a wide array of large tools. The Tate conference highlighted the dialogue that needed to take place about workshop spaces and the sculptures produced in them.

My contribution at the Tate conference was timely in terms of my own research, and my work evolved with greater confidence due to the significant sense of a burgeoning concern for stony sensibilities across many disciplines. My objective has thus been to make the place of making present as a formal architecture within my work, and not hidden as perhaps happens with some aspects of the consumption of art. The site of production is where the real stuff happens, as architect and social activist Sergio Ferro (Sergio Ferro, spatialagency.net, 15/12/2014) would no doubt advocate. From this point the relationship between her practice as a sculptor and my own developing sculptural practice seemed to gather pace. I will now consider how Hepworth's live-work space began to influence my thinking.

The primary consideration for me had to be where Hepworth lived and worked, and how the relationship between making and living becomes critical to a reading of the work. Her live-work studio at Trewyn, is her work. This is the space in which making and

thinking, being and doing evolved, ultimately transgressing boundaries of object-based thinking. The sculptures that she made were grown in the rich loam of this place. It allowed Hepworth to continually register and refer to the lived space in which sculptures operate, and to have the carving and sculpting spaces be part of the form-building dialogue. Trewyn was also the place where Hepworth invited people to see her work, in its place of making, in the time and space that all her species of matter shared. This resonates directly with my own concern for how the making space is the work itself, emphasising the everyday in the content of the work. Smith (2013) describes how the phenomenological project and gestalt theory, that emphasised perceptual modes of sensorial physicality, became an overriding concern for Hepworth. Even though Merleau-Ponty's Phenomenology of Perception was not translated until late on in Hepworth's career, Smith (2013) demonstrates how the continental drift away from mind-body dualism fitted so keenly with Hepworth's concern for interconnectedness. The densely physical properties of the body in the landscape and the temporal progression through zones of material essence, relate directly to the action of a person carving stone. This is a performed event in a constantly evolving present. Hepworth's enlightened concern throughout much of her career was for sculpture to be experienced (and made) in a non-gallery setting. Perception, for Hepworth, is form being generated not through imposition on a material, but is actuated in the entangling histories of the body and the material; the body's enrolment in landscape as process is consistently given consideration in Hepworth's carvings.

I find the contradictions between artistic genius and truth to materials present in her work, as discussed earlier in the chapter. Partly this is due to the period in British sculpture which she straddled – from the divisive dogma of the salons to the European development of self expression. It is the truth to materials, or perhaps more accurately the truth to place, that is a stumbling block in my relationship with her work, as she made no obvious attempt to work granite – the stone that surrounded her for the last thirty years of her life, and provided some formal inspiration to her sculptures. Sophie Bowness, Hepworth's granddaughter and trustee of her estate, confirmed to me in an email (Bowness, S. 2015, pers. comm. 18th January) that she made no granite sculptures. I find it strange that she made no attempt to connect her own sculptural trajectory with a dense history of granite working so evident in the landscape around her.

Negotiating the dialectics of sculptural form-building and the granite's instinctive structure is always a concern in my work at the quarry, although I am aware I have established some very specific perimeters for the way I make sculpture. Through relinquishing control of the formal aspects of sculpture in work such as 'Split Infinities' (DA page 23 & 24), the 'Geology of Morals' (DA page 20) and 'Fired Granites - samples and processes' (DA page 19), and formally controlling the granite at other times, such as in Tracey's Memorial (DA page 15), I tested the ways in which the granite's material conditions are entangled within differing socio-cultural requirements. When I walk round the discoloured blocks of Italian marble outside Hepworth's studio space and touch the partly carved blocks in her studio (Tate Research, 2013), floating as they

are in the culturally suspended space-time of a museum, her carving material of choice seems tethered to a certain material hierarchy inherited from the previous centuries of academic sculpture. This slippage in her work complicates the material relations of her “I, the sculptor, am the landscape” (Hepworth, 2014) proposal, in that the geological narrative of stone and place is disrupted to some extent. Granite, whose presence is so dense in the Cornish sensibility, is only used as a base in a couple of works, and not as part of any deeper conversation with the material fabric of the land around her. As Smith (2013), Curtis (1998) and Hepworth herself concur, she was not afraid of hard stone though. On the contrary, the hardness was something to celebrate and it therefore seems particularly strange for her not to have worked with the local granites:

The sculptor carves because he must. He needs the concrete form of stone and wood for the expression of his idea and experience, and when the idea forms the material is found at once. [...] I have always preferred direct carving to modelling because I like the resistance of the hard material and feel happier working that way. Carving is more adapted to the expression of the accumulative idea of experience and clay to the visual attitude. An idea for carving must be clearly formed before starting and sustained during the long process of working; also, there are all the beauties of several hundreds of different stones and woods, and the idea must be in harmony with the qualities of each one carved; that harmony comes with the discovery of the most direct way of carving each material according to its nature (Hepworth, 2014).

Carving is interrelated masses conveying an emotion; a perfect relationship between the mind and the colour, light and weight which is the stone, made by the hand which feels. It must be so essentially sculpture that it can exist in no other way, something completely the right size but which has growth, something still and yet having movement, so very quiet and yet with a real vitality (Hepworth, 2014).

The pierced form is perhaps where I find the formal presence of Hepworth's work most involving. I see this piercing as not only a response to the forms of neolithic structures evident in the Cornish landscape, such as the Men-an-Tol, but a continual attempt to allow the body of the maker, and indeed the viewer, to move through the matter of its making. This is a physical and symbolic narration of a person being of the land; where the option to be a mere spectator is not part of the deal. Vision, as matter in flux, moves through the material, drawing the elasticated body and mind through the making process.

So just to restate, I find a real connection to Hepworth's emphasis on process, material engagement and her live-work ethic; but I am intrigued as to why there is a lack of granite in her sculptural oeuvre. Formally, I am attracted to the void and the activity which takes place in this zone. The void is where the stone sculptor engages with the geologic; the void narrates the process of extraction and gives a voice to the labour of making. If I stand in the vacated space of the quarry, looking up at the sheer exposed quarry wall, I sense a rumbling granite mass rushing in to fill the void, only now this granite is infused

with an alertness only the cosmos can account for. The void is vibrant with potential, and opens a dialogue with the spectator. The void is the extraction of matter from mass, but it is by no means an empty site, and the narrative around Trenoweth Quarry is testament to that.

I will now examine the stony confluence between Barbara Hepworth and Robert Smithson built around different configurations of the void, and in turn show the geological turn to be a productive focus for research into more-than-human forms of knowledge.

ii. The void

Even a seemingly excavated and extracted space is dense with active matter, creativity and potential. Hepworth died in a fire at her studio in 1975, and her family and the Tate have preserved the garden and workshops pretty much as she left them. There remains an alluring atmosphere in the studio – a moment stopped in space, with equipment just waiting to be picked up and work reinstated on the white tooled surface of the marble. This could be considered a void, where once there was a life that worked and moved and made, there is now a museum filled with remnants and things left. Yet the Hepworth Museum is continually being remade by the histories of international visitors and by the redeposition of decaying earthly matters. Merleau-Ponty stated 'the hollow void of the future is for ever being refilled with a fresh present' (2005: 279), a future that denies any fixity of the past and a museum of possibilities.

There is a carving in the Hepworth Museum's garden called Stone Sculpture (Fugue II) 1956 carved from perhaps Kilkenny Limestone, but which is just stated as Blue Limestone (Gale/ Bowness/ Tate, 1998). The carving is situated at the end of the main path as it heads to the far side of the garden. The carving is pierced in two divergent angles, with a series of stepped ovate forms moving through the stone. The limestone sculpture sits on a fine-punched Cornish granite base. The limestone has a honed finish, and where people have touched the facet changes, it has acquired a soft sheen. It is an archetypal form for Hepworth, offering her a lifetime's worth of exploration as she states:

I have always been interested in oval or ovoid shapes. The first carvings were simple realistic oval forms of the human head or of a bird. Gradually my interest grew in more abstract values – the weight, poise, and curvature of the ovoid as a basic form. The carving and piercing of such a form seems to open up an infinite variety of continuous curves in the third dimension, changing in accordance with the contours of the original ovoid and with the degree of penetration of the material. Here is sufficient field for exploration to last a lifetime (Hepworth, 2014).

The sculpture presents a progression into the stone and back out again as a search for identity – a unified identity of person and material. I recognise that pleasure of piercing the stone block, as the little disc of light is revealed by the final punch through of the chisel. Interlocking voids are created, and these voids are resonant with a flow of air, a flow of life... like lungs even. The creation of voids in stone is a task not to be taken

lightly, involving hours of careful graft to mine the material interior of the stone without breaking the sides or outer form. The relationship between the solid and the free matter is again not about the binary of interior or exterior, but a temporal conversation maintained as one moves through the differing densities of matter. The void, for Hepworth, is active and vibrant. The time taken to dress and hone the surface is always thrilling too, as the fossil patterns in the stone are brought out. The sculpture's essence is registered by the hands working over and through the form, with the subtle changes in the smoothness of the surface only perceptible through the skin of the hands – these are two skins that merge and dissolve with expanding familiarity. This fine-tuned sensuous engagement with the stone, as it nears but never completes its material denouement as a sculpture, seems to emphasise the phenomenological project; it is about travelling with the momentum of all the senses through matter, the experience of which creates a positional confirmation of each others' existence in the same evolving space-time. Hepworth's sculptures, with their optimistic voids, are alive with potentiality. Smithson's work, on the other hand, hosts a quite different configuration of the void. Smithson (1938-1973) was an artist whose practice encompassed sculpture, ethnography, writing, film and photography. He is considered a major influence on a mode of sculpture called Land Art, that stressed process and non-gallery practice over presenting individual sculptures (www.robertsmithson.com, 28/10/2014)

Unlike Hepworth's sculptures, I haven't ever seen a physical Robert Smithson work, I have only seen reproduced images, visual documentation and film-clips; I have also analysed the artist's own texts and critical writing by other authors (Cooke and Kelly,

2005; Flam, 1996; Shapiro, 1997; www.robertsmithson.com, 28/10/2014). The documentation and collected writings in the publications and website offer a highly evocative rendition of the artist and his work. Smithson is the artist that always comes to mind when I see the sludge in the quarry, tempting me to mimic one of his rundowns.

The earthwork *Spiral Jetty* (1970) built into Great Salt Lake in Utah is an elemental assemblage of materials which fields Smithson's complex mineralogical and temporal relationships. Making, in Smithson's terms, is understood within the complex negotiations of where and how an artwork is experienced. I discuss the nature of Smithson's use of multiple sites of mediation in the introduction to Chapter Five – 'Practices and processes: materials in tension', where I elaborate on the tension between documentation and artwork. Here I am concerned with the conception and production of sculpture that Smithson evolved, demonstrating a tectonic shift in emphasis from Hepworth's carvings. The shift I speak of is where we are perspectively speaking, receiving the world through the individual with Hepworth, to Smithson's work in which we are/ he is conscious of receiving understandings through the collective ambitions of a geologically entwined life-force across dislocated sites of reference.

Stone, for Smithson is like a sheet of paper decaying in a forgotten shed, a layer of matter inscribed with knowledge of another time, gradually dispersing and intervening in disparate parts of the shed-world. Human, material, animal, atom – a coexistent jumble that seeks some recognition for just being itself. According to Smithson's own writing and other critical analysis (Shapiro, 1997) he demonstrates a mistrust of craft and

studio practice; in my view this is more a readjustment of cultural frames that asserts his concern for non-gallery practices and the development of his site and non-site works. Smithson shows us a deeply crafted engagement with stone that expands the notion of making into a more epochal dialogue between geology and humanity. Smithson looked for the disrupted space, an entropic void, in which he developed an understanding of the geo-human narrative. Smithson's void was activated by the openness to earthly activity via the dialogue between his earthworks and diagrams, photo-documentation works and films – a range of mediation that critically engaged with an expanding and all-consuming capitalist economy. Stone, for Smithson, took on a much wider cultural position too, one that was not perhaps available to Hepworth when she began her career as a sculptor in Britain. Smithson's stony legacy for sculptors does not concern the deposition of ideas within a single object; it speaks of the layers of sedimented matter, formed and eroded over millions of years, as having a sculptural vitality that all humans dwell within.

In my research I have made a case for any person engaging with stone, however diverse their route of enquiry or whatever the stone-type, to find themselves enrolled into a legacy of stone-working stretching out across millennia. Through the methods and outputs of my research I present myself as a conduit through which one (intersubjective) perspective on stone is materialised. In 2003 I visited the stonemason's yard at York Minster, and I recall being led through different parts of the buildings and yard, each hosting more complex stages of masonry. The masons seemed embedded in a flow of material processes as the stone blocks entered the work-site and moved on through to a

resting place in a wall or gothic arch – the flow of stone and skills becoming a language of growth in the cathedral lifeworld. Like the 11th century fantastical carvings on Kilpeck church in Herefordshire (Thurlby, 1999), a unique discourse grows between stone type, dwelling and gathered sculptors (and masons) that serves as a mirror for society's inclusive and exclusive rites. Stone sculptors, like cathedral masons, converse readily with stone's obduracy, culminating in a hard won edifice to their labours, which are usually shared through galleries and commissions but are now finding new theoretical and transdisciplinary outlets. The specific qualities of geological formations have always been drawn into the social sphere of people and their practical and spiritual needs, and Hepworth and Smithson are folded into this stone-working narrative too. The industrial wasteland, the pierced form, the quarry, anywhere that a void conducts itself is an entropic process where matter moves from one space and time and is deposited elsewhere. This transitional process is emotionally and creatively transformative and relational.

For Smithson, the post war scale of industrialisation in America, and the cultural exposure to travel writing and printed images (Reynolds, 2003) presented the vast stretches of land as an inexorable presence, bringing about a specific perspective on the void and the human-geologic narrative in his work. Hepworth, though, sees the void as entirely positive, a rich and growing space, full of potential (Winterson 01/06/2003). Seeking potentiality in what is absent is perhaps where the two artists are linked, yet most divergent in their approaches to working with matter. Hepworth continues the modernist trajectory towards compact thinking and condensing formal aspiration,

inscribing her own physicality in each work. Smithson allows thought and form to spread and ooze, ranging out across the plains of cultural value, his own physicality consumed in the debris of action. Yet the land becomes not a backdrop or even determinant on their work; land unites them in an arrhythmical time stream. In so doing, Smithson and Hepworth are two of many artists and artisans who draw attention to a perceptual ontology that situates the human as a coordinate in the thingyness of a rocky world.

3. Refining a sculpture-as-ethnography practice

The geological turn (Ellsworth and Kruse, 2012, Yusoff, 2013), that has seen a wide range of disciplines yolk the human to a rocky lifeworld, is a theoretically and pragmatically driven effort to situate the human in a bigger picture, demonstrating how human activity is enrolled in the action of rock building. The Anthropocene has, since Crutzen and Stoermer's naming of the term at the turn of the 21st century, become a contested and dynamic means to get the conversation going around what it means to be human. Indeed, as I write this, the Guardian newspaper reports on a gathering of scientists in Berlin, who are hoping to come to an official decision on whether or not to adopt the term as an internationally recognised definition of the current epoch (Sample, 2014).

The term anthropocene, as Yusoff examines it (2013, 2014), is an opportunity to reconfigure our ancestral human composition in relation to the laying down of rock strata. She looks at how the narratives of fossils – as fuel, as evidence of evolutionary life, as life across deep time – offers an interpretation of geo-human existence that is

distinctly political. This is a vital political agenda that aims to situate the human as geological matter, and as she states '[i]t is not a case of 'our' responsibility for the Earth, but our responsibility to forms of collaboration within geologic life' (Yusoff, 2013: 792).

Robert Smithson has featured in Yusoff's writing (Yusoff and Gabrys, 2006) and it becomes clear how his work heightens the sense of the human-geologic narrative. As shown in the previous chapter, his *Asphalt Rundowns* toy with different modes of human geo-engineering, where the *Asphalt Rundown* both acknowledges and negates the previous industrial process, adding a layer to the complex cultural activity of the period. Time, for the sculptor who works with stone, is the medium through which the softness of the self can synthesise most fluidly with the supposed hardness of rock. As Yusoff (2013) plays out a conversation between fossils of the Anthropocene and the shifting data of real human fossil records – a future history and a distant past in other words – there emerges a desire to get to know rocks, to develop a familiarity over time and to register a cooperative site of being. This could be seen as a dialectical proposition between the always present creativity of agency versus the conscious creativity of human progress.

The temporal field in which matter operates is not linear and it doesn't offer an easy relationship, it is one constructed of numerous frictions between multiple coexistent and lively places. These always present utterances were familiar to Smithson too. He understood the "jumbled museum", as Shapiro quotes him (Shapiro, 1997: 43), in which different and frictional time modes coexist. He negotiated the human exploration for

resources with a forbidding relationship to politics and activism, and by adding intervening layers into the developing human-geologic narrative, Smithson engaged with the politics of deep time. The 'rat of politics always gnaws at the cheese of art' (in Flam, 1996: 134) Smithson declared in a 1970 Artforum interview, where he voiced a speculative and perhaps spectral shadow over the human presence on earth.

In terms of a mode of perception that could identify stone's embodied liveliness, Merleau-Ponty's phenomenological model serves both Hepworth's meshing of body and land, as Smith (2013) asserts, and Smithson's analytical process and mediations of deep-time. Merleau-Ponty's emphasis on greater perceptual flexibility developed between the publication of Phenomenology of Perception in 1945 and the posthumous publication of The Visible and the Invisible in 1964 (as described in Chapter Three) does bear witness though to the differences between Hepworth and Smithson's work with stone. As Carmen states, 'Merleau-Ponty had always insisted that to stand before the world, one must be in the world; he now goes further by insisting that to be in the world, one must be of the world. One must, so to speak, be of the same flesh of the world one inhabits and perceives' (2008: 123). In terms of the practice of sculpture, Smithson essentially dealt with the political and economic as well as cultural, whilst Hepworth's work reflected a more personal dialogue with the culture of art and the politics of the body. Ultimately, though, in both Hepworth's and Smithson's work; sculpture is the output of a perceptual flow that prioritises the body's movement through space and time, sculpture is for both artists the closest representation of what it means to be living matter. Both artists' products lay down a geological footprint, a fossil record of cultivated

activity, enlivened by the tooled up desire to know what it means to be human. Both artists understood the value of place in the substrates of their works' meaning and cultural heritage. The issue of the theatricality of the work of art – a social interconnectedness that countered the modernist focus on autonomy (Kester, 2004; Flam, 1996) – seems to flow through the realm of these two very different artists who engaged with the geologic.

From my position as a quarry worker and artist-researcher in Cornwall in the 21st century, Hepworth's and Smithson's work expands notions of sculptural practice. The fleshiness of time is registered in both Smithson's and Hepworth's work through their acknowledgement of the rhythms and dynamics of place. The porosity of space is conveyed in their work through the piercing of cultural forms and disruption of received social expectations. In my own way I have also attempted some form of departure from the disciplinary borders of both sculpture and geography. The key to reading Smithson's and Hepworth's work is ultimately to do with their relationship to stone, albeit in different ways. It is evident in the work they produced that a respect for stone extends towards the notion put forward by Ellsworth and Kruse that 'we humans are all walking rocks' (2013: 17).

The material truth in Smithson's and Hepworth's work with stone contains complex relationships, and sometimes contradictions, yet ultimately evidences a tangible thread between people and the earth that broke through hard surfaces between author and spectator. Flam writes '[f]or Smithson, time is never a disembodied abstraction but

always a tangible and material reality. Time must have coordinates in space, must even be made manifest in a quite specific kind of place and thus inhabit as well as contain the material world' (Flam 1996, xix). Smithson immersed himself in a temporal scale through which he could validate his work in the greater machinations of the geologic, taking this as a route out of modernist introspection. Hepworth broke established models for the making of sculpture not only in terms of direct carving, but through the referencing of the relationship between the female body and land, home and place. Her body's progress through broader considerations of time and space are evident in much of her stone carvings; interior and exterior becoming fluid and processual, rather than segregated and static. She gave her body the right to do the thinking and the work, and celebrated the habitual reworking of a honed process. Ultimately, for both Hepworth and Smithson, process is key; process is the key to unpacking what it's like to be human in the presence of matter and time.

This chapter on sculpture, and the previous examinations of perception and material processing develop an argument for sculpture-as-ethnography. In this chapter I have described how the discipline of sculpture has traversed a complex route during the last 150 years. Sculpture has engaged critically with the everyday scale of people and place, recognised that what is under our feet and also what is absent has material, political, social and cultural value. Stone sculpture's relationship to architecture and monuments is somehow always present, and quite rightly. Yet, over the course of the 20th century an acknowledgement of the relationship between stone-worker and geology has created a more dynamic awareness of what truth to materials might actually mean, and this truth

concerns the awareness of the intersubjective agency of the term maker. I have examined the working methods employed by sculptors who work with stone in relation to places, and highlighted how process takes place as place. With Smithson's deployment of sculpture and ethnographic practice into a dynamic evolution of the interconnectedness of media, mediation and place, and Hepworth's sensorially driven rendering of form in stone, my proposal for sculpture-as-ethnography becomes tenable as a transdisciplinary and multi-mediated practice. Through my research practice I have become fully engaged with what is unseen – the dynamic void – and tuned in to what is sensible in the invisible threading of relationships between events and matter at Trenoweth Quarry. I have pushed my relationship with the granite to the point where I recognise that it is pushing back on its own terms. For the stone sculptor, the places where things are made have a temporal modality that cannot be shaken from the rocky matrix. The time spent working the granite hosts deeply sensorial memories that have embedded themselves in the work, disrupting any notions of material boundaries.

I want to conclude here with some reflections on an email and telephone conversation I had with the Scottish granite carver Ronald Rae, who carves and morphs massive rough boulders of Scottish granite into animals (Rae, R. 2015, pers. comm. 13th/ 15th January). Rae described the importance of place to making in response to a question I posed to him about his working methods. I had previously watched a number of films on YouTube of him working, and noticed how he revelled in the theatre of making, not just for the film but seemingly for his own expressive rendering of the granite carving process. Rae described how 25 years ago he asked Cramond Kirk for a space to work in. They

provided an open area of grass situated next to a regularly used footpath. He said how he had relished the opportunity to talk with passers-by about his work and granite carving over the years. He was thrilled to say how these people had become friends. The community eventually raised a substantial sum to purchase one of his carvings for a beach-side site near the village. Rae said that he loved to discuss the granite in terms of a living rock, especially with geology students who studied close by in Edinburgh. Even though Rae is 70 years old, he still never uses power tools, so all the work is done with a hammer and point. Watching the films you get a sense of the power in his strike after so many years working in this way. The thrill of carving granite seemed so urgent in his voice. Speaking to him gave me a real understanding of how a person can find themselves in rock. Rae indirectly expressed, through his sheer enthusiasm, how working in the public and sharing his knowledge and process was an integral part of his working method and again part of finding himself as an artist. The granite boulders gather the narratives of different people into the laboured landscape of the sculptures. The animals and figures that Rae carves undulate and roll like the topographies of a glaciated valley; it is almost as if he is carving the lay of the land, and, similar to a face materialising in a cloud, abstract forms become creatures and people.

Rae's workshop is a patch of ground, a piece of land in a Scottish village, but through his labouring presence the sense that time and space have a material substance becomes tangible. The process of working the granite bares witness to the collaborations of matter that usually go unnoticed, and Rae has chosen to make these connections explicitly visible. His sculpture is the process of making in a place, his working method is

a community of conversations grown within the crystal matrix of the granite. Moving back to Cornwall, but taking along thoughts of those practiced and emotive links that one develops in a place of making, I now introduce the practices and processes that have principally taken place in Trenoweth Quarry.



CHAPTER FIVE

PRACTICES AND PROCESSES: MATERIALS IN TENSION

1. Framing the Digital Archive

In the previous chapter I discussed the work of Robert Smithson, and I will return to his work shortly in order to contextualise how and why the Digital Archive has been set up. For the purposes of assessment towards a practice-based PhD I either had to hold an exhibition or create some form of archive in book or digital form. I chose to develop a Digital Archive, and this reflected aspects of the methods I employed to record the quarry with digitised still image, moving image and sound. From a critical position I also wanted to create a space that reflected the technology by presenting a related form of interface. Nearly all the sound recordings, photographs, live broadcast material and films in the Digital Archive were made using either an Apple iPhone 4 or iPhone 5c. Smartphones were a very practical way of being able to record events and practices; its handleability in terms of size and user-friendly interface added to my ability to respond quickly if something needed recording in the quarry while I was working. I quite often used a Joby Gorillapod tripod which was also a very lightweight tool and easy to set up. So, although there were issues with film and sound quality in some instances, and limited flexibility for refining and framing shots, the smartphone was an amazing tool to have in the quarry. The technology of smartphones generated an aesthetic condition

embedded within the processual content of the work. The flexibility of a Digital Archive also has future potential to become a public website in a modified form.

I chose not to hold an exhibition or gallery show at the end of my PhD partly because I wanted to move away from the final show formats of my undergraduate and graduate degrees. It is important to mention here that I did develop a gallery based work at the Newlyn Gallery in 2013 that explored how my research engaged with a gallery space. Although the week-long live installation at Newlyn was highly productive, it reinforced my position that for the purposes of presenting my work for assessment a gallery presentation was not suitable. The work for Newlyn was specifically about ideas in-process, and this worked well, but there were detectable issues based around the truncating or stagnating of the processual flow of the research. To present my work at the end of the PhD, as a complete crystallisation of my research, seemed to conflict with my whole approach. The work from Newlyn is discussed and presented in no. 27. 'Land Matters - the quarry as sculpture'. In terms of presenting work in the quarry, the 'Tilted Matter' (see no. 18) project again fell into a processual category as part of the research methodologies, rather than a completed work of art. It is within the format of a processual condition that my research best operates and where I felt the Digital Archive would best serve this criteria. There is also a semi-permanent work installed in the quarry itself titled 'A Geology of Morals' – see no. 20 below and in the Digital Archive.

The montage of imagery, sound and spoken word in Smithson's Spiral Jetty film (1970), as in the earth moving machines, dinosaurs and film material shot at other sites

(including a quarry), show how a deposition of different phases and sites of geological matter become entangled in the emotions, economics and politics of human beings. Human-geological exploits are at once destructive and productive (Shapiro,1997), cultural and social. The film had, according to Cooke (2005), a visceral materiality equal to that of the actual earthwork. Barker examines the assemblage nature of the film and earthwork with its linkages that 'operate upon and across a basis of inescapable interstices' (2005: 92) that are compatible with Bennett's confederation of matter discussed earlier. I have been inspired by the way in which Smithson generated a dense material understanding of film and photographic mediation, photographs becoming both document and artwork – such as the Spiral Jetty Film Stills from 1970 (www.robertsmithson.com, 28/10/2014). Smithson's concern with site and non-site evolved through notions of displacement and the relevance and complicity of the gallery in representing experience and material relationships at play across both places and artworks. The Digital Archive that I have created for my research also performs as documentation and artwork, within which there are further scales of evolution in terms of documentation morphing into artwork. The way in which Smithson's work expands on forms of ethnographic practice, where his sites and non-sites juxtapose and overlay each other, is as much a testament to his own experience of being an artist and making sculpture, as to the dialogue between what is present and what is not.

With Spiral Jetty, and other earthworks, Smithson was exploring ideas about the accessibility of the artwork itself and how this problematised the consumption of art within global markets. The tension between gallery and work outside the gallery

expressed not only political and economic agendas, but outlined a complex relationship between experience and interpretation. This dialectical approach layered his work with a critical inquiry into what the real experience of art might be, or indeed where the art itself took place. It is in this sense that the notion of assemblage, as presented by Bennett, also addresses issues of reality in terms of who (or what) is responsible for actions in any given model of production and consumption. Within the work that I present in the Digital Archive is a suggestion of these critical inquiries around where, when and how the real experience of the quarry might persist.

With the Digital Archive I wanted to create a space for the work that was easy to navigate, with a mix of descriptive and prose text that suggested the expanded narratives assembled within the work. I wanted to highlight the use of photography and film in bringing different forms of experience and reflection together. The material integrity of digital equipment, digital film and photographs is perhaps underestimated, and is now being seen to contribute to new forms of material culture and social assemblages. The value of the photographic, and especially filmic, forms of research in an ethnographic context are also being reassessed. As Garrett (2010) demonstrates, this emergent form of research is being allocated greater significance due to its multi-sensory properties, where a suggestion of ocular-centrism is being countered. As Barbash and Taylor (quoted in Garrett, 2010: 14-15) state, 'film is quintessentially a phenomenological medium, and it may have a different orientation to social life than . . . monographs. It has a unique capacity to evoke human experience, what it feels like to actually be-in-the-world'. I would add here that the way I employ photographic

documentation, especially in my photo-films, also promotes a multi-sensory sensibility. My photographs are not an end product, or a shorthand representation of the quarry or me as an artist and maker of things at a quarry; they form part of the process by which my experience is able to contribute to an already mobilised acknowledgement of quarrying practices.

The kinds of sites where photographs are seen has also become mobilised, moving rapidly in technological, creative and political complexity in the last twenty years (Perkins in Douglas, Haggett and Perkins, 2006), and my use of a Digital Archive is testament to that technological change. I use still and moving images to evoke the almost imperceptible subtleties of human and material intersubjectivity, where even the more straightforward documentation of say my tools, is rendered in such a way as to suggest the complex relationships of differently emplaced technologies and material properties.

Sometimes I simply take a picture of the quarry just to record the arrangement of stone in the yard. Sometimes I photograph a piece of granite I have worked on, sometimes a sculpture I have made. Sometimes I film and edit a stitch-split as a specific artwork such as the 'Stitch-Split: The Breath of the Geologic' film. All these modes of recording could be separated into different sub-genres with different intentions. Yet, there is an overarching objective to disclose a way of being with a material in a very particular place, where I see the creative value taking place within streams of the mundane and the extraordinary, to the point where I can no longer establish a difference. There is very much a material truth being enacted with the films and photographs, where the viewer

is encouraged to contribute their own history in the formation of quarrying knowledges. The confluence of photography and film is also explored in the form of photo-films (such as No. 2 - A day in the life of a sawman) – where a series of photos are stitched together in a continuous film representing the evolution of a stretch of time in the quarry. The union of Commentary text and Digital Archive not only confirms new modes of geographic research, but more dynamic and mobile forms of knowledge distribution whose material value can draw out culturally broader debates and audience participation.

Firing a block of granite in a kiln, splitting a granite block, creating a memorial, making a quoin, talking to Ernie, taking a photograph or making a film, all these activities are in and of an experience with granite in a quarry, and form a multi-dimensional absorption and dispersion of a certain life at a certain time in a certain place. So although, as the artist and researcher, I am the sense-being extracting and manipulating creative procedures, what emerges is a place of production, rather than an individual producer; as Jamie Lorrimer states ‘moving images create ‘fingery eyes’ (after Hayward), performing ‘heterogeneous infoldings of the flesh’ (after Merleau-Ponty) that trigger embodied senses of ‘response-ability’” (Lorrimer, 2008: 10).

Amongst other media, the moving image offers me outputs that entangle the multiple temporalities and spatial contexts of quarry, studio, research frameworks and arts environments. The making and dissemination of things through different media also attends to issues regarding a singular perspective delivered in one reflexive mode. My

intention was always to deliver an expanded field of sculptural practice, and achieving this is made possible by attending to different media that host alternative temporal and spatial conditions. Engaging a more-than-sculptural media also attends to the widening complexities of research outputs from non-arts disciplines. I also wanted the archive to host notions of non-site, where the quarry itself maintains a certain mystery as the assemblage of materials in the archive creates abstract rhythms of documentation and interpretation. I have aimed to show how my position in the quarry, as a worker, developed from sawman to artisanal sculptor. The progression, or rhythm, of my job at the quarry is situated in accordance with the development of more experimental sculptural practices. All forms of making in the quarry host modes of representation and are presented in the context of emergent and reflexive research methods. The Digital Archive has a rhythm; it threads through accelerating and decelerating modes of representation, creating a tension that drives the rhythm of the whole archive, and also reflects my experience in the quarry as both quarryman and artist-researcher.

The reader is now asked to read the list of contents below before proceeding to view the Digital Archive in its entirety. The list of contents below contains specific information about each piece as well as some contextual detail. Cross referencing between Digital Archive and Commentary may also be necessary during viewing. There is a rhythm to the Digital Archive, which moves through different representational modes, interspersed with short excerpts of sound and still image. The different forms of material contained within the Digital Archive are films, photo-films, slide-shows and text. The total duration of film and photo-films amounts to approximately two hours with a further hour required

for viewing the slide-shows and reading texts. Where individual photographs appear in the web pages, they can be enlarged by clicking on them. Slide-shows can be paused and forwarded/ reversed as necessary. Dates are only shown in the Digital Archive for specific events. The temporal chronology in the archive is not linear. After viewing the whole of the Digital Archive website the reader should proceed to the concluding chapter.

Photographs in the Digital Archive have been taken principally by myself, but other contributions are from Helena Bonnett, Steve Brown, Natalia Eernstman, Rose Ferraby and Misha Myers.

2. The Digital Archive:

No.1. Quarry walk-through: 11/ 06/ 2015

A photo-film of a walk around the quarry that includes a montage of sound recordings. I start at the top of the quarry by the banker sheds, and wind my way down past the saws to the quarry pit and on to the bottom yard. It suggests how my attention is caught by the sounds, forms and actions taking place in the quarry as I walk. I have used photo-films as the backdrop to presentations at conferences, seminars and public talks, letting the images role by as the visual story unfolds and interacts with the text that I read.

No.2. A day in the life of a sawman: 28/ 04/ 2010

The first short film shows the saws in action. The second photo-film – A day in the life of a sawman – was the first photo-film I made, and was shown in conjunction with my first academic paper given at the 2010 RGS IBG conference. It shows the journey to the

quarry in my car from St Just where I live, as the early morning sunlight filters through a light mist. The work day progresses and I capture my body encountering a number of tasks at the quarry, and finally ending as I approach my car ready for home. The film depicts the quarry from my visual perspective, suggesting ways in which I am learning through the repeated actions of being and doing in the quarry. Please note there is no sound in this photo-film.

No.3. A day in the life of an artisan quarryman: 28/ 04/ 2015

A short text and film describing a day at the quarry in the very latter stages of the PhD, showing how my working day has developed since I worked as a sawman. The text also features some details of a miner's memorial in progress.

No.4. The Quarry - audio: 10/ 03/ 2014

A short audio-visual piece recorded at the quarry face.

No.5. Quarry folk: 2009 - 2014

Throughout the research I have taken photos of people while they work and rest. When I started the PhD everyone working at the quarry was made aware that I was carrying out research, and that this would involve recording events and people.

No.6. My tools: 2009 - 2015

A photographic inventory of the tools I use regularly in the quarry.

No.7. 'Footprint: The soul of the geologic': 20/ 11/ 2011

Photos and prose text that work in conjunction with Section ii 'Footprint: the Soul of the Geologic' in Chapter Three. On a day when I am not officially working at the quarry for Tim, I make my way towards the sludge deposit in an attempt to make a footprint. The

experience not only articulates the density of human-geologic narratives, but also provides another perspective on the quarry itself.

No.8. 'Making a quoin': 2012/ 2013

The photographs, with their accompanying texts, explore the affective threads and relations that are distributed throughout the making of a quoin. The film shows the labouring of a stone-metal-flesh dialogue in action. This visual and textual presentation of making a quoin works in accordance with the Section ii of Chapter Three – 'Thinking through a Quoin'.

No.9. The rhythm of the point – audio: 2015

A short audio-visual piece of Ernie beating waste on a bullied (rounded) quoin.

No.10. Can you carve a face? The Pilgrim: 2011

A photographic and textual account of how I came to carve a seven foot high figure. The textual description, taken from diary notes covering several months, describes how the carving of a face brought about a sharing of knowledge between myself and the granite, and between co-workers and myself.

No.11. Can you carve a face? Version 2 - New tools: 2013

A photographic and textual account of how I came to carve a second figurative piece. This time I explored a range of new tools, and pushed the granite's potential for fine work even further.

No.12. 'Tykydew': 2012

Alyson Hallett was appointed as poet in residence to the Geography department at the University of Exeter's Cornwall Campus in 2011. Our mutual interest in stone became the foundation for a collaborative project where a set of words were carved into

carefully chosen stones. The four stones were sited as a permanent installation on the University of Exeter's Penryn Campus.

No.13. The Jubilee Stone, Constantine: 2013

I was invited by a community group from the village of Constantine to inscribe a large boulder from the local Bosahan Quarry. The boulder was to host a map of the village and the inscription 'Queen Elizabeth II Diamond Jubilee MMXII'.

No.14. Rumbling - using a tool for something it wasn't designed to do: 2013

Rumbling is the quarry's own term for ageing our cropped granite setts. A short film of the cement mixer doing what it shouldn't be doing, down in the bottom of the quarry.

No.15. Tracey's Memorial (drawings and process): 2013

Here, I present the process of creating a bespoke memorial, starting with drawings and then the working of the granite and slate, and finally showing the completed memorial in the cemetery.

No.16. Trenoweth Quarry's artisanal service: 2015

In 2014 Trenoweth Quarry was commissioned by Falmouth University to carry out much of the granite work for the new entrance for their Woodlane Campus. Tim asked me to design the lettering for the repositioned Victorian gateposts, along with new sculptural capping stones in the form of stacked books. New steps and posts were made by Ernie and Charles.

No.17. My Place: 2015

Late in 2014 Tim decided it was time for me to have my own workspace. Part of the logic of this related to the amount of dust and noise I produced when using the grinders. As I began to make more carved pieces, it became obvious that doing this kind of work next

to the other masons was not safe, or indeed particularly friendly. Included in this page are photographs of my banker shed being set up and getting established.

No.18. 'Tilted Matter': 07-08/ 06/ 2012 and Rock Jam: 05/ 04/ 2013

In 2011 I was introduced to Natalia Ernstman, another PhD researcher from Falmouth University. She was working with a community group from Constantine who were keen to develop the closed Bosahan Quarry on the outskirts of the village. An aspect of Natalia's research looked at how the quarry's position in the memory landscape of local people had shifted over generations, and was now being reinterpreted for future use. Although our research focus was very different, we realised there was potential for a collaborative project that focussed on inviting people to experience our respective quarry sites through the optic of our own creative practices. 'Tilted Matter' became the title for an art project that would firstly take people on an audio tour of the woodland around Bosahan Quarry, followed by a bus ride to Trenoweth Quarry where I led a walk, read aloud a number of texts at specific points, and guided people to a final film and performance at the quarry face.

Rock Jam - In 2013 Natalia Ernstman, Andy Whall and myself held a short one day seminar based at Bosahan Quarry in Constantine in the morning, and at the Performance Centre at the Penryn Campus in the afternoon. The participants were invited to come to the quarry to see the results of the previous day's work by the three artist-researchers. The afternoon seminar also included performances and poetry readings. The archive has photographs documenting both events and a short film from my performance readings during 'Tilted Matter'.

No.19. Fired Granites - samples and processes: 2012 - 2015

Towards a Geology of Morals - The Fired Granite series started with a firing of granite dust in a foundry, and developed into a long term investigation of the granite under different high temperature conditions. It has become one of the more important strands of material research, and one which has much potential to be developed after the PhD. Images and further descriptive texts are presented in the Digital Archive of different experimental firings. The experimental work shown here led to the installation of the semi-permanent work 'Geology of Morals' in the quarry.

No.20. 'Geology of Morals': 2015

Geology of Morals, whose title is taken from DeLanda's 1996 paper, is an installation on the quarried face of one of the benches. Using a horizontal fault that almost appears as a sedimented layer, the blocks of kiln-fired granites are fixed into the fault using hammered in steel plugs. The work is a synthesis of the stitch-splitting work and fired granites. Each stack of fired granite is a combination of differently configured and fused 100mm setts from geographically disparate granites. Each stack suggests some form of hybrid sedimentation. The installation is, like Smithson's Spiral Jetty (1970), hard to find and accessible only through negotiations with the quarry. 'Geology of Morals' addresses aspects of site and non-site, and also the economies and socio-cultural values of granite.

No.21. 'Stitch-Split: The breath of the geologic': 2014

The film 'Stitch-Split: The Breath of the Geologic' accompanied a paper that I presented at an architectural conference in Newcastle in November 2014. The conference addressed the lack of a creative discourse around sites of production and labour within

architectural practice. Please note the sound in the latter part of the film is deliberately out of sync. Audio levels are high in parts of the film.

No.22. Stitch-Split - audio: 15/ 06/ 2014

A short audio-visual recording of arcing, as the pressure from the plugs and feathers brings about the splitting of the granite.

No.23. 'Split Infinities' at Tate St Ives: 21-22/ 06/ 2014

On June 21st 2014 Tate Research held an open seminar titled 'Materials, Movements, Encounters: Modernist Art Networks and St Ives' at Porthmeor Studios in St Ives. During the midday break of the seminar I broadcast a stitch-split live from the quarry. An extract from the live broadcast is presented here (which need not be viewed in full), along with a photograph that shows how the film was presented in the seminar space. Another photograph shows me reading an extract from The Living Stones (Colquhoun, 1957) at the Men-An-Tol near Zennor during a field trip on the day following the seminar.

No.24. 'Split Infinities' at CAST: 28/ 03/ 2014

I have presented small splittings at various talks and presentations. At this event in the Cornubian Arts and Science Trust in Helston, I gave a talk about my work and invited an audience member to come and split a small boulder with me. Carrying out demonstrations during talks has become a part of my practice, a part of making sculpture that could be termed performance lectures. These performance lectures are about bringing the making-in-the-quarry out of the quarry and into different situations.

No.25. Stone splitting workshop at The Royal College of Art: 28/ 11/ 2013

I was invited to give a guest lecture at the Royal College of Art and run a stone splitting workshop with students from the sculpture department.

No.26. 'Chisel Nocturnes': 2012

Two versions of a short film recorded at night in the middle banker shed at the quarry. The films show the ignition of the granite when it is being beaten with a hammer and point. During the day, the sparks are simply not visible.

No.27. 'Land Matters - the quarry as sculpture': 19-23/ 11/ 2013

'Land Matters' formed in 2013 as a small group of artists and researchers who all, in different capacities, engaged with the materialities, politics and ecologies of landscape. The artists were Jane Bailey, Natalia Ernstman, Veronica Vickery, Andy Whall and myself. We were successful in applying to the Newlyn Art Gallery for a week long experimental residency at the gallery. The programme which we were involved with at Newlyn was titled Transitions, a scheme that offers artists and artists' groups the opportunity to try out ideas and new work in the gallery, with the process publicly accessible throughout.



CHAPTER SIX

CONCLUDING A SCULPTURE-AS-ETHNOGRAPHY PRACTICE

I once carved a whole sculpture in a farmyard situated next to a public footpath. A three tonne block of Portland limestone arrived in the yard by lorry, and over the course of six months I carved it into a full size still-life of some stairs with part of a door, a curtain, books, door keys, a tin of paint and a brush. Essentially I carved a small corner of a house being decorated. What happened over the course of the six months was a build up of people and their lives gradually being folded into the narrative of the sculpture. I can relate to the comments by sculptor Ronald Rae, mentioned at the end of Chapter Four, who said ‘...it is a mutual sharing – the community of Cramond and beyond often stop to ask me questions and I in turn find out about them when working in the grounds of a church’ (Rae, R. 2015, pers. comm. 15th January). A real intimacy built up around my sculpture; friendships bloomed and [life]skills were shared. During this time I absorbed the rhythms of the farm into my own work rhythm; I became aware of how the weather dictated other rhythms for the plants, animals, buildings and farming work. Carving seemed to induce a hyper-receptivity to the machinations of the world around the stone. This kind of experience has been the foundation for my PhD research, where an acute absorption into one process opens up the self to the details of a much broader and constellated ensemble of activity.

In this concluding chapter I draw upon the strands of ideas and practices discussed in previous chapters to establish what sculpture and stone-working offer in terms of a place-based investigative practice: a sculpture-as-ethnography. I firstly assemble the theories and methods that formed the basis for this sculpture-as-ethnography practice. I go on to outline how I have evolved the practice of ethnography for my research purposes. Then, in relation to my research, I offer further thoughts on the emergent studio properties of the quarry, that in turn suggest how the quarry becomes sculpture.

1. Assembling the assemblage

I have talked previously of making a living; it is a material immersion, an emotive physicality that (if registered as an assemblage of work and creativity) can change human understandings of matter. Bennett advocates just such a positional shift in human perception towards a complicit gathering of matter:

Instead of a formative power detachable from matter, artisans (and mechanics, cooks, builders, cleaners, and anyone else intimate with things) encounter a creative materiality with incipient tendencies and propensities, which are variably enacted depending on the other forces, affects, or bodies with which they come into close contact (Bennett: 56).

The possible effect of doing a job well could mean being coerced into a repetitive condition that feeds an economy of consumption. Any deviation from this linear progression would signify a loss of monetary flow as the economies of consumption

lead to the inevitable top of a hierarchical system. As Rahtz (2012) pointed out, the artisan that built the machines that powered the industrial revolution ultimately erased herself or himself from the kind of making a living described above.

Reimagining the artisan not as a someone, but as process might at first glance seem cold and dispassionate. Yet it asserts an altogether more dynamic and sense-oriented mode of making whose goal is not to make a thing well, but to see it made within other things and in relation to other processes. Therefore the complicity of each element within an assembled form effectively renders it too well connected to be consumed in bite size chunks. The artisan himself or herself becomes a site of negotiation that assembles ever more relations over time. The artisan is active like DeLanda's 'meshwork' (1995), a meshwork whose properties are analogous to a granitic matrix. This means that the made thing has value beyond supply and demand and suggests that making a living, in the sense of an assemblage, negates any neoliberal agenda or even, conversely, disrupts notions of merely surviving. Making a living becomes something of a way of connecting through associations and re-associations; it acknowledges Bennett's confederation of material knowledges that are transferred through more-than-human networks. These rhythmical and arrhythmical flows between matters become self-organising, or even self-randomising, knowledges.

As soon as I took on the job in the quarry, the aim of my research took on a whole other agenda, one that profoundly changed my idea of what it meant to be a maker. Anything that I made suddenly took on multiple roles, and became part of a transdisciplinary and

economically vibrant conversation. I had to find ways that showed my time in the quarry as not only an embodied experience, but beyond that, where my body was pre-mobilised to see and produce through having already encountered quarryness and granitiness. Ingold (2011), informed by Merleau-Ponty's elemental looking with a sky, a sky that has already been absorbed and affects the looking, talks of a presensualised body. For me in the quarry this meant that as I began to mediate my experience through creative interpretations, I was in fact translating what was already mobilised within me.

Merleau-Ponty's bodies moving through the fleshy threads of things (1997) held a particular significance in relation to my work/ life existence. The fatigue of physical work and the continual need to interpret my experience in a research context had a profound effect on my relationship with sculpture. The degree of reflection that I was familiar with as an artist seemed acutely intensified in the context of quarryman-researcher, exerting an emotive and political order to sculptural practice. The new knowledge that resulted from the research became a shared knowledge through the different acts of engagement with people in quarries and lecture halls, and within the cultures of matter.

New materialism's political motivation is reflected in this widening of practices and knowledge-sharing environments as Pitt (2015) discloses, with objectives that sought even greater synthesis between space and time. Where once space might have been narrated through a patriarchal or colonial voice, new materialism re-genders the network of relations and de-colonises notions of dwelling. Space becomes a mutliplicitous trajectory (Massey, 2005) through which slow-time could generate more

truthful relationships, and where learning could occur at the threshold of experience and interpretation. This threshold hosts a very productive tension that artist Robert Smithson was only too aware of. His site and non-site dialectic has as much to say about artists' practices and their modes of production in the digital age as it did in the 1970s. My adaptation of one of Smithson's central tropes becomes an examination of the weave of meaning threaded through working the saws, masoning, carving, writing photographing, filming and live performance. All of the material assembled in the Digital Archive asserts a working knowledge of Trenoweth Quarry as much as it is a representation of the quarry. As an artisan I am compelled to narrate my skill at understanding the material from within the material, and share that knowledge without a schismatic tension. My emphasis is on a tension whose divergent projections depend upon each other entirely. The progression of the Digital Archive also suggests how my relationship with the quarry has grown over time. Like Hepworth's garden, where both a professional mediation of her practice and the intimate knowledge of making took place in a unified space-time, the Digital Archive performs multiple tasks for me as a quarryman and researcher. All the roles and titles that I have worked under involve sustained interaction and reflection in order to make well, and to make good my living. I will now explain in detail how and why my practice has evolved into sculpture-as-ethnography by way of some further contextualisation of ethnographic research practices before concluding with how and why the quarry might be sculpture.

2. The ethnographic turn

'...one must bear in mind the fact that ethnography is from beginning to end enmeshed in writing' (Clifford, 1983: 120).

Clifford's (1983) treatise on the progress of ethnography places the authorial and textual position as the central focus of his account of ethnographic practice. Pausing at participant observation, Clifford affords respect to authors' tacit use of text to convey people and place through a deep empathy with the other. He presents further developments in ethnographic practice, where the noting of discrete events is developed into an interpretation as a whole text. Here the act of writing on site is given a second, third or fourth life; in other words it is interpreted at other locations, which in effect sets all participants at a level of one who has experienced in that place in a constructed present. This interpretive mode, when read, begins to register a distributed mode of representation informed by the activity of all the participants, creating a culturally porous position along with an emergent critical perspective. The temporal placings of textual investigation, and of the art of writing in general, affords the reader different interpretations of an experience or cultural assemblage, to piece together in accordance with their own experiences. Culture is not written upon or invested in the text, but emergent from play within its structure and content (Fortun, 2010).

Clifford (1983) examines the materiality of text in relation to states of being-in-the-world. Ethnography's complicity with textual representation will always, one way or another, introduce a socio-cultural position at temporal and spatial odds to that being researched. This is fine, for it is the exchanges between the times and spaces of knowledge that bring about productive discourse and cultural flux. What I believe researchers such as Marchand (2008, 2010, 2014), whose fieldwork is embedded in the practices of apprenticeships, have made explicit is that an even more fundamental and tacit material condition can take place prior to any written work or discourse. Thus my working of the granite, and my development of skills around the granite and quarry, become a form of notation of events that materialise within different media. In other words, through a more-than-embodied working of the granite, I have generated a textual account through a stone-metal-flesh dialogue. The granite and the quarry, occurring as material and cultural conditions prior to the moment of being worked by me, have already anticipated my bodily progress. The formation of granite, through to its worked state, preempted any written interpretation; as such you could say my experience at the quarry was written in the granite 400 million years ago. In this scenario writing is not only words, but the non-linear narrative of body, matter and world intruded, punched, ground, sawn and smashed through the granite and now residing in the homes, things and structures around Cornwall and the UK.

The authorship of the account presented in this PhD research comes from the exchange between the granite and myself. As a researcher, it is only from the point of the worked

granite that I am able to present the quarry from my own perspective. Complicit within this textual account is an expanse of material agency bursting at the seams and faults of the quarry face. In this sense the granite can be understood as alive and an agent of its own representation. I am not reliant on presenting an experience as a participant observer, but on a journey of exchange that offers an interpretation in a number of cultural modes. Clifford says that '[w]e operate on many levels, waking and dreaming, as we make our way through a topic; but then we foreshorten the whole process in the service of a consistent, conclusive, voice or genre. I wanted to resist that bit' (Coles and Clifford: 71). With that I would concur.

Clifford's statement adds further valuable complexity to any cultural origins in a written text, or indeed art work. My intention in this research has been to move through a number of ways of working the granite. By reflecting and recording and re-reflecting upon my activities in relation to the granite and the working life of the quarry, an accumulative array of materials in tension evidences Trenoweth Quarry almost by default. A recoding of the being of matter is enacted through the mode of sculpture and the practice of labour. I have expanded the field of writing within ethnographic practices to encompass the physical production of things with their own worldly trajectories. The archive, as a multi-mediated textual document, evidences these made things as both an account of my experience, and as an examination of the reworked conditions of ethnographic practice.

The work in the Digital Archive seen in isolation might seem to be highly authored artworks or documentary evidence, but registering the work in the archive as a whole prompts a more temporal examination of content, whose configuration can be constructed in multiple ways through multiple persons at any time. The assembled works are a textual form, in that there are indicators and signs that build Trenoweth Quarry as a place of people and ordinary life where I feature as a thread through many platforms of activity. The doing and the making in the quarry (and beyond) qualify as methodologies, and also as the first instances of creating a text of my experience. I present the archive as an assemblage of encounters with the granite, where films are both a form of documentation as much as art work, and photographs of made things are also both documentation and form in their own right, and all are ripe for relational analysis. The Commentary adds another different textual mode to this analysis, which confronts and conforms to the culture of research, building an identity for the work and the researcher in some form of rationalised trajectory. My theoretical and methodological qualifying of the research practice instigates cultural tropes, and further analysis of my work will structure further cultural flurries. In this sense I am entering a version of Trenoweth Quarry into a constellation of versions that have occurred and will always occur.

The perceptual position given to moving bodies emphasised by Merleau-Ponty's Phenomenology of Perception (2005) provides an embedded armature to the unpacking and representation of a place. The ethnographer, as with any perceptual

being, is always present within this critical imperative. I have utilised the essential components of making sculpture, and being a sculptor, in order to experience and represent the quarry. I have approached the quarry as if it were a block of stone, working it from every direction, in every possible dimension; where the development of skill and physical stamina are as critical to working granite in a quarry as to constructing new knowledge. My apprenticeship gave me that way of being. Recognising within the research practice that the apprenticeship was also tied to my overall living conditions, registers further critical imperatives related to the written mode of ethnography. This involves not only how I am embedded in the text as the researcher, but programmes in a further social requirement where I have to be at the quarry at 8 o'clock in the morning. The textual outcomes are scored with an everyday necessity of work, and this extends the porosity of the authorship and erodes any sense of observation, and any sense of interior or exterior. I am a participant in the working of granite, and any textual productions are a result of the invisible thread of material activity occurring through the working world. Again, as Marchand (2008, 2010, 2014) has so consistently articulated, making things with people is a portal into the soul of a place and the essence of knowledge. Sculpture, as a discipline, is ideally suited to the delicate reading of a place, where matter – as a confluence of people and place – is experienced as a synthesis of lifeforms.

A concern within anthropology, as one of a number of disciplines for which ethnography is central, has been the fear of an aesthetic or poetic resonance to serious research

outputs. Experimentation, seen previously as a weakness within the focus of research and examination, is given full recognition from a number of perspectives by Schneider and Wright (2010). They site new sense based practices and phenomenological perspectives that not only produce exciting configurations of practice based research, but form a critical topos within the academic landscape. Schneider and Wright's publication draws out an emergent collaborative state between art and anthropology, and celebrates the value of open structures and incomplete representations. A critique of the written and visual form of anthropology offers a timely critical discourse that is prevalent across many other areas of the social sciences. You could say there has been an attempt to attend to a rootedness that predates human culture; this is what is being framed as the geological turn (Ellsworth and Kruse, 2012). It is inevitable that artists, who are seeking to adopt a more thorough discourse around people and place, will not only co-opt methods of research from other disciplines, but will seek to critique them from within, adding ferment to wider debates in the humanities. This has value for the humanities, as the artist by default will never quite dispense with their visual and aesthetic judgements, and thus the written form and the textual output will be given greater plasticity through being mediated in multiple formats. Robert Smithson's writing is an exemplary form of this manoeuvring of the value of language and words within a visual medium.

There are many artists working across disciplinary boundaries, and these are well catered for in some of the texts and books I refer to. I would say there are none that place themselves at the mercy of materials, or granite, at such a fundamental and brutal

level as I do. It is through the granite that my way of working has manifested itself. The films, things, photos, texts, and work practices will never replace what it feels like (for me, or anyone) to actually work the stuff. What is presented here is a measured account of an experience delivered through a multi-textual format that is ripe for interpretation and where plenty remains unsaid. As for stone sculpture as the discipline best placed to initiate an investigation of a quarry, the relationship is obvious; and yet many research practitioners with diverse skill-sets could find ways to generate a deep empathy with the quarry. My approach to stone sculpture as the best discipline through which to unpack the quarry, has been reinvented through the job at the quarry. Being a stone sculptor now means something very different than it did before my PhD research. To apprehend its value as a methodological form does not weaken its disciplinary strengths, but broadens the models by which we understand making something in stone with our hands, and with our whole being.

In the modernist tradition the time and place of a work of art are often required to be static; in terms of culture, the work was given an unquestionable set of relations and the artist fixed the provenance of its making and dissemination. Both Hepworth and Smithson, in their respective ways, opened a dialogue with non-human agency through an acknowledgement of how people operate within complex fields of matter. In relation to their different artistic contexts, and through formal and anarchic consideration of landscape, they shifted the nature of sculpture from the object to a thing, and from a thing to being. I chose to write about these two well known and quite obvious artists as much for the way they wrote and spoke about their work, as for their actual sculptural

output. Smithson, especially, had a way of skirting the obvious to let the truth of his work have its own life.

What then of the site of sculptural practice? Neither Smithson or Hepworth conformed to traditions of practice; they forged their own path through cultural and material conditions. The Trewyn studio was, for Hepworth, home; and the sculptures evolved through a relationship to the life of that home. For Smithson, it seemed the studio was in effect the time of rocks. But I would like to spin out another speculative studio narrative that I encountered at the Tate conference ('Tate Research: The Studios at the Barbara Hepworth Museum and Sculpture Garden', St Ives Developmental Seminar, 20-21 May 2013) on Hepworth's studio. This timely and valuable event prompted many thoughts around what the studio meant as a sculptural form in its own right. Constantin Brancusi's now demolished Paris studio, where it can be suggested that a hybrid and more profound sculpturality grew, evidenced the studio itself as his sculpture.

The conceptual artist Daniel Buren (whose article 'The function of the studio' (1971) was presented during the conference) sheds light on the politicisation and socialisation of made things (matter) as the work of art is grown and witnessed in its site of production. It is the case of my work at the quarry that a democratisation of the artful thing disrupts hierarchical structures, as it is here that I am enrolled in a transdisciplinary pursuit that bears witness to material agency through the creative assemblage of made things. As Albrecht Barthel (2006) suggests during the discussions around the relocation of Brancusi's live-work studio after his death in 1957, the curatorial framework 'failed to

recognise that Brancusi had lived and worked within the studio for nearly thirty years, exposing himself and his creations to the building's decay. Therefore, its very substance was an integral part of the works of art that had taken shape within its confines. The building also contained manifold information that, apart from historiographic interest, bore immediate witness to the artist's everyday life' (Barthel, 2006: 37). That suggestion of the meshing of life and work elevates a sense of the aliveness of the things within the space, and of the space itself, through time. The notion that they might not hold such a life-force once disentangled from the studio is a difficult motion to push. This would render the entire art economy rudderless. But it does suggest how much of the making process is inherent to the meaning of the work. It is almost as if the shifting ensemble of work by the artist over time confirms the integral nature of the work space, and continually responds to those conditions of formation. Those collected sculptural productions become a written material form and generative discourse, that is ultimately invested in the sculptures.

3. The quarry as sculpture

What I have proposed thus far is that the processes of sculpture, and of making with granite, become not only a textual account of that very making, but an account of the place in which the work was made too. This making-place ultimately folds in the richness of the lived experiences of all that passes during the making process. The nature of sculpture, and of working granite, can be dynamically mediated, and need not be entirely resident within a single object. Sculpture, as I now understand it, encompasses a diverse practice of historicised, politicised and multi-disciplinary actions. This is

sculpture-as-ethnography. So at what point could we say that the quarry is sculpture? Well, in phenomenological terms, my developing relationship with the quarry over time builds multiple perspectives on the lifeworld of the granite and the made things of the quarry. These fluctuating and rhythmical things accumulate, disperse and are overwritten; they take up residence in the fibres of my own body and consequently disturb the air around me according to this new shape, and then reverberate through the world newly sequenced.

A worked piece of granite is a working piece of granite; it doesn't stop working in the world, no matter how finely carved, or left to slump in a kiln, or split in the arc of a sun ray. It emanates the evidence of its making and remaking over time and in the flux of space. The same principles are sustained within an understanding of place in flux as for a worked piece of granite. The site of the quarry has seen a magnitude of change over the past four hundred million years or so, as the molten granite intruded even older rocks, and gradually moved north across the globe, was smashed and weathered, broken up by people and their machines, and will eventually be subsumed into the mantle of the earth. I have advocated throughout my research that when I make something out of granite, it is not just me that is making; my body distributes an entanglement of affective productions accrued over the years. Creativity, agency, textility, social, lifeworld, perception, being; these are just some of the words that go some way to articulating the activity of the world and the things in it. Words are alive, they are matter as much as the granite. Matter and its infinite presences is what hosts the

machinations of the universe. But the critical imperative is the doing, the actual times and spaces in which response and reflexivity cease to be words or accountable actions.

Being in the moment, as it were, is where life occurs, the ever present present. This is what sculpture is about, and this is what place is about. The quarry is not just a carved-out chunk of granite bedrock; it is being made over and over through the reciprocating makings of material processes, of which we humans are a component. The work presented in this Commentary and Digital Archive is an incident; the doing that resonates through it reverberates forever through the matter of the world. My work is infinite in its interpretable content, but in respect of the requirements of research, identifies with a position in time and space. Like a granite sculpture is a record of its own grown properties, and like the work presented here is processually in flux, so the quarry will shift and be viewed from yet another perspective at some given point. That granite sculpture can be articulated as a mode of investigation, so the quarry can be a mode of investigation too. This research is defiantly not a fixed statement, and the things I have made as an artist or artisan and that are discussed and presented, are mere signs and indicators of what they in fact involve or might evolve into. Perhaps then I should say for the purposes of this PhD research that the quarry is not just sculpture, it is my sculpture, because I have made it as it has made me.

4. Sculpture-as-ethnography, the way ahead

So what needs to be celebrated here – that sculpture can be a working quarry, or that stone sculpture has functions beyond the object? Or is it that I am relieved to have

survived intact with all ten fingers and toes, after five years working in a rough and wild granite quarry in Cornwall? Now that I am close to finishing my research there, what will it become to me? Will the quarry cease to be sculpture, and become just another quarry, amongst the many quarries of the world? I now have my very own banker shed at the quarry, and thus I will be keeping my relationship with Tim and the quarry very much alive. Will I carry all this research with me as I continue to work there? In practical terms, my every move at the quarry will have less reflexive content. But as for what I believe, and what I have said in the PhD, this will continue to have a profound influence on what I think sculpting is about.

My practice will always be artisanal in nature, as I continue to address the relationship between art and labour. The ways in which I plan to carry these ideas forward is already registered in further academic research. In light of a raft of interest throughout the humanities around transdisciplinarity and the Anthropocene, I have been involved in a post-doctoral research application through my geography department titled 'Cultural Geology - Following, Working and Shaping Stone'. Strands of this project acknowledge the deep relationship I have built up with the quarry, whilst forging new cultural agendas through different research practices and collaborations. I have also established a research project working with the National Trust titled 'Creative interpretation of granite building conservation and restoration methods at Godolphin House, Cornwall', which will begin in February 2016 and is being funded through the University of Exeter and the AHRC's Cultural Engagement Fund. The shape and range of my practice, having very different properties than before my PhD, will continue to develop and hopefully

fold in other quarries, other kinds of spaces. In terms of sculpture-as-ethnography I consider this to be a fundamental and non-negotiable presence within making sculpture and stone-working, and the methodologies I have employed for this research will continue. I have specific plans to develop the fired granite series and stone splitting regardless, and they are also a registered part of the 'Cultural Geology' project. Working stone has been, and always will be a part of who I am and what I do. My four year old son, Elliot, has already been to the quarry, as I had by that age to my father's quarries. He has driven Tim's lorries and seen films of me splitting granite, and has begun to talk about being a sculptor of stone to his friends and teachers at school. Whether stone-working becomes a part of Elliot's way of life is simply an unknown trajectory, but stone will always be with him, and he of it.

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