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Yorke, Naudia

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Unearthing A Trace Fossil

A VISUAL-TEMPORAL EXCAVATION OF SCHAAPPLAATS ROCK SHELTER:

Unearthing A Trace Fossil

Naudia Yorke
607980

Submitted in compliance for the degree of a Master of Arts in History of Art by Course Work and Research Report
Department of History of Art
The University of the Witwatersrand, Johannesburg

University of the Witwatersrand, Johannesburg School of Art
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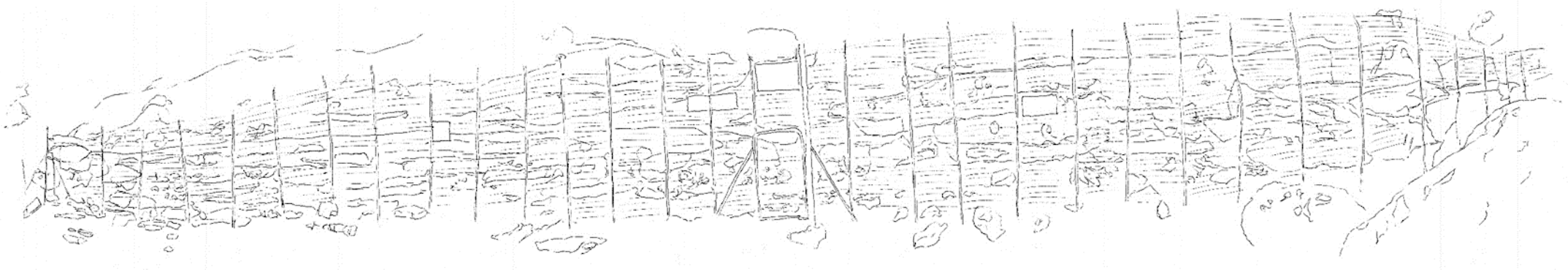
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Panoramic drawing of the interior of Schaapplaats Rock Shelter, facing towards the fence

Abstract:

In this research report, I set out to provide information about Schaapplaats rock shelter through a multi-sensory, ekphrastic approach as set out by the artist William Kentridge[1] to guide the process of looking. As such this project presents an experience of space and time compressed within a single landscape. The research foregrounds the different ways of looking and different ways of perceiving the elements in the landscape.

Schaapplaats is a farm located in the eastern Free State. A rock shelter at Schaapplaats which I examine contains a number of objects and traces that relate to various moments in time. The site is an event-loaded spatial nexus which I unpack, closely examining each object to expose the complex layering of objects and traces of events over time.

My aim in examining the site in this way is to interrogate the variety of elements in the rock shelter to understand the complicated nature of time and the reading of it in objects. My methodology involves the slow process of describing and pulling-apart the objects, fieldwork that is primarily comprised of being in the space, and visually constructing and reconstructing the space and the elements within it – with a particular focus on the trace fossil (a dinosaur footprint) present in the space.

The result is a reflective paper that considers meanings that could be drawn from a singular item, in conjunction with a number of other items within a space that is complex in its variety of traces and temporally layered.

[1] William Kentridge presented a series of lectures titled *Six Drawing Lessons* (2014) that surfaced a method that I use to unravel ways of grappling with time and space.

Chapter sediments:

Introduction _____ 9

Chapter 1:
Introduction to Schaapplaats rock shelter _____ 10

Chapter 2:
Visiting Schaapplaats rock shelter _____ 13

Chapter 3:
Thinking through the rock shelter: time and landscape, and palimpsest _____ 17

Chapter 4:
Ways of being in the rock shelter _____ 21

Chapter 5:
X pressure-point _____ 23

Chapter 6:
Objects and traces in the rock shelter _____ 24
How the different traces relate to one another _____ 34

Chapter 7:
The trace fossil _____ 38

Conclusion _____ 47

These fossils were found at a depth of less than two meters—as if in two million years, these images and traces and remains could impress themselves only two meters downward; as if a two-billion-year history could penetrate three or four kilometres.

(Kentridge 2014: 75)

Introduction:

Schaapplaats rock shelter is the site on which this research paper is based. I will explore the intersection of time and space through physical objects and traces in the site.

I came to this site through a meeting of minds in formulating the program for the 2016 Art and Science course directed by Joni Brenner and Dr Justine Wintjes. The Art and Science course explored the shared ways in which artists and scientists undertake research. They both make use of visual strategies to represent and understand their ideas and findings. Through a collaboration with Professor Jonah Choiniere in the Evolutionary Studies Institute (ESI), the course came to be centred around the time bracket of the evolution to the extinction of the dinosaurs. Because of the value that Schaapplaats rock shelter holds as a rock art and paleontological site, it formed a day trip on the excursion that was taken as part of the Art and Science course and became my primary research interest. This was my first experience of the rock shelter, and three subsequent trips followed, which I will detail in the following chapters.

My approach comprises foremost, of the use of the visual and its capacity to allow me to derive information from the site and re-interpret it in terms of the overlaps and intersections of the various objects and traces it contains. The use of sight and what is accessible in the visual plane in the rock shelter guides the ebb and flow of ekphrastic description and empirical visual evidence. In my study, I use and creatively adapt terms and concepts borrowed from archaeology and palaeontology, including 'excavation', in that I am delving into different layers of visual information and in doing so, I bring together various objects situated in a number of different temporalities. I move through the space, and by describing the objects and traces in a chronological flow, I surface the interconnected nature of time as held by the objects and traces within Schaapplaats shelter.

My research is predominantly framed by two texts which enable me to unpack, describe, reflect on and engage with Schaapplaats rock shelter. Much of my reflection draws from the manner in which Tim Ingold surfaces the interaction of landscape, with time. His seminal paper 'Temporality of the Landscape' (1993)

provides an in-depth repository for art historical, archaeological and anthropological takes on the formulation of how landscape is utilised and the way time interacts with its formation, use and preservation.

I use William Kentridge's text, *Six Drawing Lessons* (2014) which posits a wire-frame idea that is centred around how time moves, prefacing the useful zooming-in and -out of a landscape in order to describe a sense of temporality.

The tools provided by both authors have engaged my capacity to work through the site and enabled me to examine the temporalities of the traces and objects that are prevalent.

Chapter 1: Introduction to Schaapplaats rock shelter

A ridge of fossil-rich land runs throughout the Clarens area of the Free State, many expressions of which can be found in the Golden Gate Highlands National Park, South Africa. This ridge holds many fossils and other kinds of palaeontological evidence that forms a continuous line across the landscape. The evidence includes fossils and trace fossils, which are in-situ traces of animal activity that have been preserved or fossilised (Gillette & Lockley 1989: 8), and are linked to deep and expansive time. By using these terms, I am referring to types of time that reach far back, beyond the existence of humans, up to 200 million years ago, the beginning of the Jurassic period that geological formations of the Clarens landscape date to.

Within this ridge, near a valley which has tall peaks in the landscape on either side, is a recess in the face of the rock, forming a fairly deep alcove under a large rock overhang. These types of alcoves, locally known as rock shelters or caves, are common in the type of sandstone formations in the areas of the Golden Gate Highlands National Park, and the process that allows these rock shelters to develop is called cavernous weathering (Grab, Goudie, Viles and Web 2011: 8). Near to Golden Gate, off the edge of the town of Clarens, is a farm called Schaapplaats, where the rock shelter is located. In the map shown in figure 1, towards the centre right portion, Schaapplaats farm is cradled in an erosive mountainous landscape and is located just one farm away from the border with Lesotho.

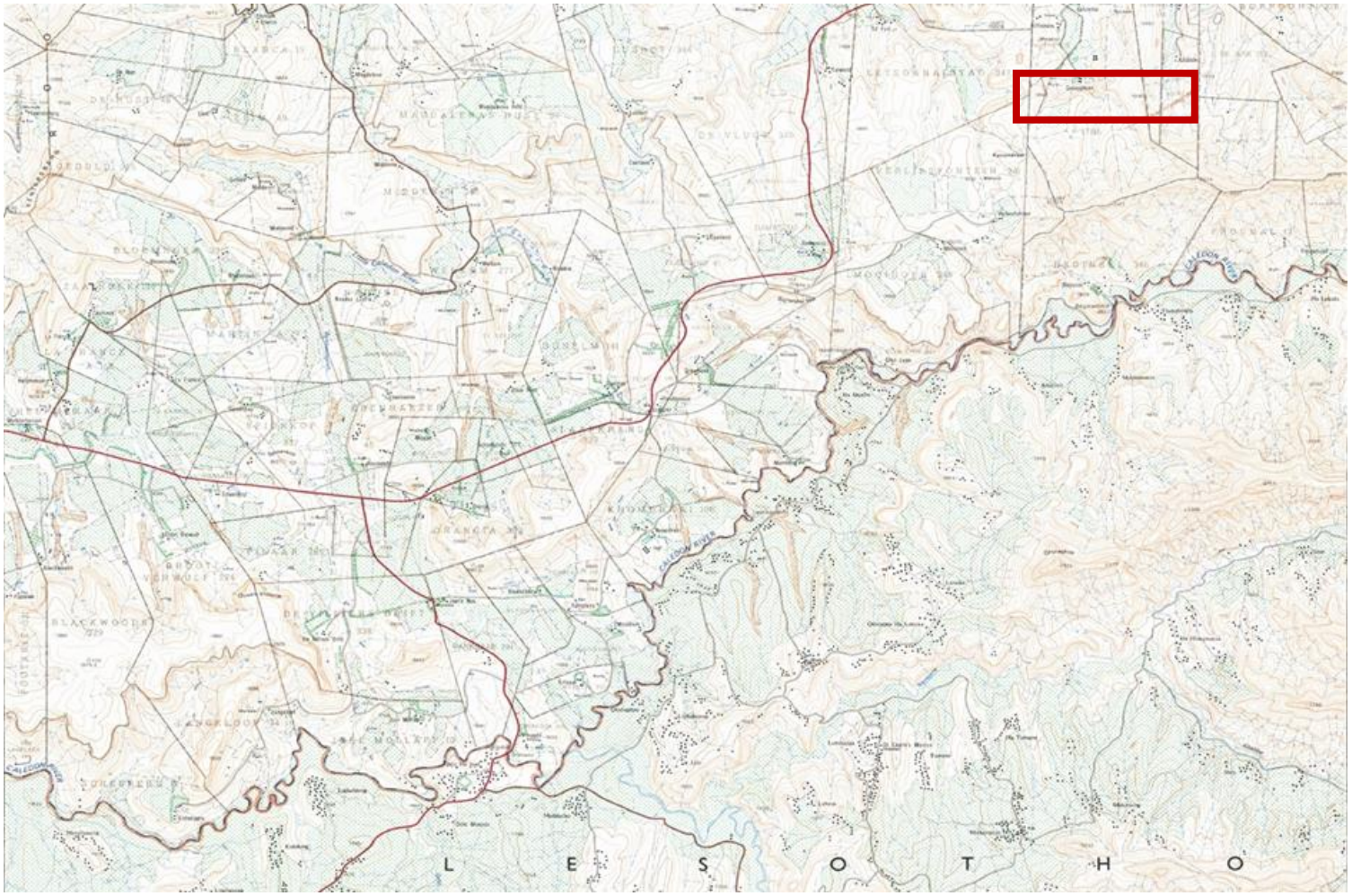




Figure 1: Map of where Schaapplaats farm is located in the eastern Free State, in the area of Clarens, bordering on Lesotho

The rock shelter contains a number of traces and objects that are from a variety of different time periods, dating from roughly 200 million years ago, to the present day. The objects and traces include a number of scratched and graffitied names, words and images, a long, wire fence, a series of warning signs, a National Monuments Council plaque, different types of rock art, including rock paintings within the shelter and a series of engravings in an exposed rock surface near to the site, a small ceramic bovine figure, stone tools or lithics, two types of dinosaur footprints or trace fossils, and compacted rock and sediment.



Figure 2: Schaapplaats rock shelter, as approached from the entry gate

The variety of traces and objects in and around the shelter makes this space notable and is the primary reason that I have chosen to examine the site (Fig. 2). Other sites in the area have a similar time-depth, but the particular configuration that Schaapplaats rock shelter presents is uncommon. My aim in examining Schaapplaats rock shelter is to allow for a close looking at the variety of elements in the rock shelter and to surface their temporal nature using visual 'excavation'. When I use the term, 'temporal', I refer to the idea that objects have the capacity to hold and represent time, as well as have a relationship with time. I also want to draw forth the ideas of the complicated nature of time and the reading of it in objects, not only as individual elements, but as objects and traces in a particular space – as well as a wider landscape. The site is a place of interest to a number of academic disciplines, including geology, palaeontology, archaeology, history and art history, and to tourists and other visitors to the area and the farm. The unique nature of the site has the potential to be explored exponentially, but I will be examining it in a selective and structured way in order to draw out particular ideas; these will be detailed further in the next chapters.

In Chapter 2, I recount my fieldwork experiences, and provide a brief description of the site.

Chapter 2: Visiting Schaapplaats rock shelter

On the farm Schaapplaats, the owner bred Ashgar ponies and horses, a variety of sheep, and had cottages available for guests. In 2019, the owner of the farm died, after which her son handled the farm affairs. The farm, including the land on which the rock shelter is, has subsequently been sold. I had visited the farm, and the rock shelter particularly, on four separate occasions – for the first time in 2016, again in 2017, over two days in 2018 and for a final time in 2019. The repetition of visits formed a deliberate part of my fieldwork methodology, in order to gain familiarity with the site through my own temporally layered set of experiences.

My first engagement with the site was through secondary re-tellings, ephemera and reproductions – through online platforms primarily, including the SARADA (African Rock Art Digital Archive) website. These reproductions don't allow the site to be seen as a whole, and it is this point that fuelled my desire to view and engage with the site as a composite, a place with many disparate elements that are able to be read separately, but also as parts of a whole, to act as the crux of my research.

The SARADA records enabled me to gain an idea of the general scale of the rock shelter, its rough form and shape, and where the rock paintings are located. The paintings are visible on several panels along the back wall of the shelter, and have to be viewed through a fence that was erected to protect them from damage. There was no suggestion of a dinosaur footprint/s on the SARADA website, but there were references to engravings that lie just a short walk beyond the site, in slabs of rock forming the bed of a tributary stream above it. I later discovered mention of a footprint in an article by Charles Helm, titled 'Preliminary Evidence for an Indigenous Palaeontology in Southern Africa' (2013), which was written about the Schaapplaats site specifically – and it directed my attention to two additional sets of footprints, only one of which we were able to locate during the 2016 site visit. The dinosaur footprints – one of which is a positive footprint located on the upper surface of a block adjacent to the rock paintings at the entrance to the shelter, and the others are negative footprints located in the underside of the overhang – became the main pivots around which I conducted my research, and the focus of my four visits to Schaapplaats rock shelter. A brief detailing of my trips follows:

The first time I went to the site was on the 3rd of September 2016, as part of the previously mentioned Art and Science course. The group of students and lecturers arrived in the Golden Gate Highlands National Park and were immediately introduced to the landscape and the surrounds, and I was particularly intrigued by what may lie beneath, between, or jutting out of these surfaces. The fossil belt through which we sifted yielded some fossils, and this experience became my first encounter with paleontological fieldwork. While not as taxing as finding and removing the large-scale fossils that the area is known to have yielded, the small fossils we found were an indication of how rich this area is with fossils. Later in the fieldtrip we visited Schaapplaats – this day trip was beneficial as a thorough introduction to the rock shelter, as the group of students and lecturers spent the entire day in one area. After moving through spaces quickly, and processing information at a pace, we slowed down for the day, and came to a rest at this site. While others explored, I attempted to engage in both a close looking and in a zooming-out in trying to understand the landscape. Although drawn to the space in general, I was particularly interested in the dinosaur footprint during this visit. I found the footprint compelling due to its visceral connection with deep time and history, the notion that it is both permanent and impermanent and that it is ultimately a trace object, yet not an object at all. It was perhaps this interest that led me to asking particular questions of the space – about deep time, complexity, layered-ness, and how the various elements that the space holds, including the footprint, could mean that I may be able to produce a 'time map', or a spatial awareness of the time that the site holds.



Figure 3: Photograph of a Diorama the author made of Schaapplaats rock shelter

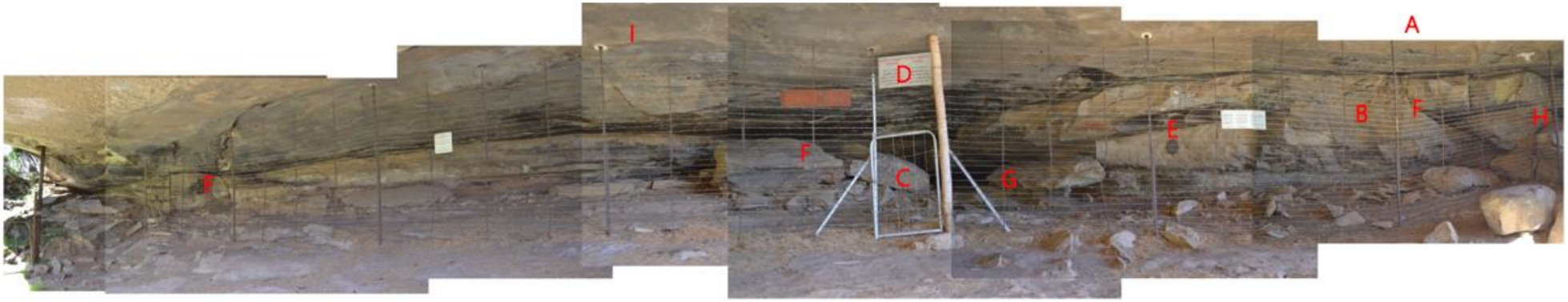


Figure 4: Panoramic Photomontage locating the Traces and Objects in Schaapplaats rock shelter

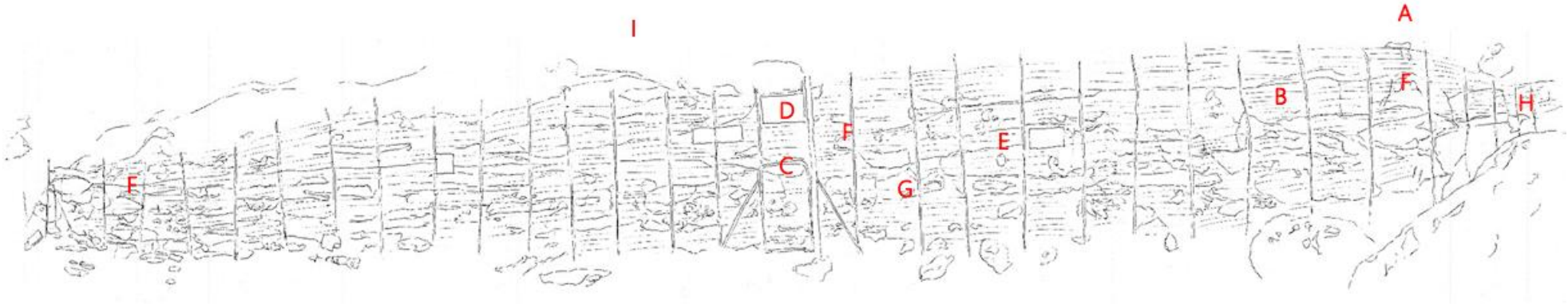


Figure 5: Panoramic Drawing locating the Traces and Objects in Schaapplaats Rock Shelter

Key	
A	Graffiti
B	Removal
C	Fence
D	Signs
E	Monument Plaque
F	Rock Paintings
G	Bovine Figure
H	*Grallator* Trace Fossil
I	Potential *Eubrontes* Trace Fossil

When visiting Schaapplaats on the 3rd of June 2017, for a second time, I was on my own and this meant I could spend a longer amount of time at the site and develop a self-directed way of collecting data. As it had rained in the previous days, more water was present at the site, and made access to some parts of the site impossible. The renewed sense of looking became apparent as I began to compare the sense of the space, the vegetation, the sounds of baboons, and the calcite run-off[2], to the previous visit. This visit – a one day trip from Johannesburg and back on the same day – had to be slightly more focused than my initial visit. I had brought an archaeology student specializing in Geo-Archaeology along, to bring a new perspective in addition to the insight previously gleaned from both palaeontologists and art historians. I set about measuring the space, with the geo-archaeologist teaching me ways in which I could demarcate a site and how to establish parameters for description. Although useful, I thought a more expansive and multi-sensory approach would be more appropriate, as I was not only collecting information about the space, but about the experience of the space and what ideas this could lead to. This trip also proffered the possibility that it might be viable to recreate the rock shelter, and here I gathered information and detailed photographs in order to produce a diorama[3], figure 3 - I found this a compact means for exploring an extrapolation of the space – or a partially re-thought and digested re-visiting of the rock shelter.

The 11th to the 12th of January 2018 saw a slightly extended visit that was taken over a weekend – where I booked accommodation at the site in one of their guest houses. Here I stayed one night, which allowed me to experience the site over a longer period of time and at different times of the day – particularly at dusk and dawn. This provided a new array of senses that were not available to me when visiting with a group or for a shorter time. This trip is one where I

[2] This calcite run-off forms the swirling white and brown patterns on the underside of the roof of the rock shelter. It is produced by the collection of layers of calcium leeched from the rock and water.

[3] The diorama is made of foam, which was covered in plaster, then painted, and wire and grass added.

allowed more space for thinking and processing, than data gathering. I began to draw out ideas about each of the elements in the space, how they worked individually, how they worked comparatively and how they worked as a whole. Here I tried to concretize the notion that the space could provoke ideas that were complicated and layered, as well as offer empirical sets of evidence that might have visible connections that could draw out tangible ideas. The physical proximity and connectedness of all of the rock shelter's elements also became more apparent, and I began to work on the different ways that meaning could be drawn through these comparisons and linkages.

The final trip on the 25th of January 2019 consolidated the sense of a panorama and a palimpsest, which I will detail below. This trip resulted in a series of photomontages (figure 4), as well as long, thin ink drawing of the site (figure 5). I also produced a number of very informal videos, simply tracking the movement from the farmstead to the rock shelter and back. The owner of the farm, having died and left the property to her son at this point, meant it was more difficult to organize this final trip, which had to take place just before the property was sold. I was viscerally aware of how entangled the rock shelter and its access was with the owner and her presence – and the question of whether the new owners would allow such free access to the site.[4]

This overview of my four trips provides a brief sense of my personal activities that led up to, were entwined with and provided information for the bulk of this research paper. While the trips could have taken any form, I was most directed to the idea of close looking, a sense of being in the space, and the vastness of time that surrounds a person when they travel the landscape and enter this small node of layered time – which in some way, may represent a microcosm of the expanse the larger landscape surrounding the rock shelter could hold.

[4] I do not necessarily utilise texts or ideas in this paper that grapple with areas concerning the power and inequality of landscape, or severe social relations concerning spaces, such as a colonial partitioning and controlling of land, industrialisation, and histories of landscapes, amongst others. While I have worked with an awareness of the importance of these wider issues, I will not be exploring these within the context and limits of this research paper. Doing so allows a focused and expanded analysis of the space of Schaapplaats rock shelter rooted in visual inquiry.

Chapter 3: Thinking through the rock shelter: time and landscape, and palimpsest

The notion of the temporal, specifically in relation to the site and its contents, can be linked in an intimate way to the manner in which land functions alongside it. In order for an object or space to hold temporality or some notion of the temporal, it requires a juxtaposition of objects or spaces from different times within a graspable and defined timeline or time-based perspective. Without a comparison, time is unable to be read, for the juxtaposition of the different ages of objects highlights the age of one, as compared to the other. Time and its physical attributions or markers (such as weathering, decay, lab-tested aging and proximity) within some of the objects at Schaapplaats are parts of the landscape that have a visual link to time. The site holds objects and traces from multiple time periods; seen in one space and at one point in time (the present) it is possible to understand or construct a broader, more complex view of the overlaps across time - although traces and objects do mean different things in conjunction/juxtaposition with one another, and when interpreted by different people or through different lenses of analysis.

A prominent theorist who deals with this conjunction of time and landscape is British anthropologist Tim Ingold. In his paper, 'Temporality of the Landscape' (1993) Ingold notes that we are often not able to understand the nature of temporality without markers, such as the span between events and the tasks that we participate in, which all contribute to our ability to imagine the past and future. In his paper, Ingold notes that social psychologist, George Herbert Mead offers the idea that every object is to be regarded as a "collapsed act" (1977[1938]: 97). This allows for the notion that the landscape then has the capacity to be comprised of a number of activities that have left markers or traces in some way. As much as I apply context and description to these markers, the markers are not necessarily filled with meaning to be interpreted, but rather are products both of their time and meaning developed with each encounter, according to their proximities in the landscape and other surrounding markers. These markers, as individual elements, also build up the site as a composite whole. They form timelines or time-webs, and act as slips and slices of time that are, most importantly to this paper, visible. They are accessible and tangible elements that are complex in their nature of being both permanent in a life span as fleeting as our own, or as temporary in the life span of the earth and the universe.

Ingold captures this particularly aptly in a vivid description:

> Imagine a film of the landscape, shot over years, centuries, even millennia. Slightly speeded up, plants appear to engage in very animal-like movements, trees flex their limbs without any prompting from the winds. Speeded up rather more, glaciers flow like rivers and even the earth begins to move. At yet greater speeds solid rock bends, buckles and flows like molten metal. The world itself begins to breathe. Thus the rhythmic pattern of human activities nests within the wider pattern of activity for all animal life, which in turn nests within the pattern of activity for all so-called living things, which nests within the life-process of the world. (1993: 164)

The landscape is altered and changed by those living in it, but those living there are equally formed by the landscape. It is an interaction and a push-and-pull relationship in the way neither are passive. In their paper 'Landscape - A Usefully Ambiguous Concept' (1994), Gosden and Head explore the idea that "the landscape is both the locus of past action and the medium within which evidence of the past is preserved or destroyed", and suggest that "it is only when the periodicity of human use of the landscape and the movement of sediments coincide that we will be left with a detailed record of the use of time and space in the past" (114-115). This is particularly important, as rather than human movement, it is animal, and particularly dinosaur movement, that produced the trace fossil or footprint, which has only been preserved due to the preservational conditions that the landscape has provided. In my last chapter, I will expand on this in detail.

The landscape is able to shape the way that a human or animal exists in a space, as much as human and animals shape the existence of a space. Ingold notes that landscape is sometimes seen as something inherently separate from lived spaces, or as spaces frequently occupied with human activity, and challenges the idea that landscape is "out there" as opposed to "in here", where humans primarily dwell (1993: 154). Landscape may always seem an object that is distant from us, both geographically and as a perception. However, through occupying a landscape, we are inherently part of the landscape, and the concept is not as removed from the internal representations we may have. For at a distance, to someone else, we are the landscape.

Landscapes have the capacity to be "pregnant with the past" (Ingold 1993: 153), where varieties of empirical evidence, traces of histories, people and animals, and markers of inhabitance are revealed and concealed, much like in the case of Schaapplaats rock shelter. Ingold says "[i]t is of course part of an archaeological training to learn to attend to those clues which the rest of us might pass over (literally, when they are below the surface), and which make it possible to tell a fuller or a richer story" (ibid). There are clues below the ground which are sets of information that we can draw, literally, out of the ground. We are able to attach a history – imagined or extrapolative – in order to make meaning from the object and allow it to have space in the span of things we understand or attach meaning to.

The temporally discrete elements of the site can be experienced simultaneously, in the present, because of their physical proximity to one another in a common space. A means of grappling with the wide span of time apparent in the traces and their entanglement, is through the idea of a palimpsest. I explore this briefly through the active role of tracing and retracing images of the site, developing photo montages and recreating the objects and traces in a diorama. An archaeologist, Geoff Bailey, explains that a "temporal palimpsest is an assemblage of materials and objects that form part of the same deposit but are of different ages and 'life' spans" (2007: 207), which is evocative for thinking about Schaapplaats rock shelter as a complex deposit and as a palimpsest. As palimpsests hold ideas around layering and erasure, the application of palimpsest to the site implies there is a capacity to experience the site simultaneously, such as the single palimpsestual piece of parchment, or through the different temporal trajectories of the traces, much like the multiple periods of erasure and inscription of the palimpsest. This expanse of time is layered in the rock shelter with a variety of timelines and time-webs intersecting all within the same space. As a kind of palimpsest, Schaapplaats provides the ability to visibly notice different periods of time in one scape, with the presence of visible and time-specific markers. The markers in the rock shelter span from around 200 million years ago, to my presence in the shelter in 2019 – where I bracket off my examination of the space for the purpose of this research paper.

The rock shelter as a nodal point of layered time in the landscape allows for ideas of the compression and decompression of time in a finite space, by looking at individual things and expanding on their time capacities and re-entering those things into the wider space and larger timelines and time-webs. The simultaneous

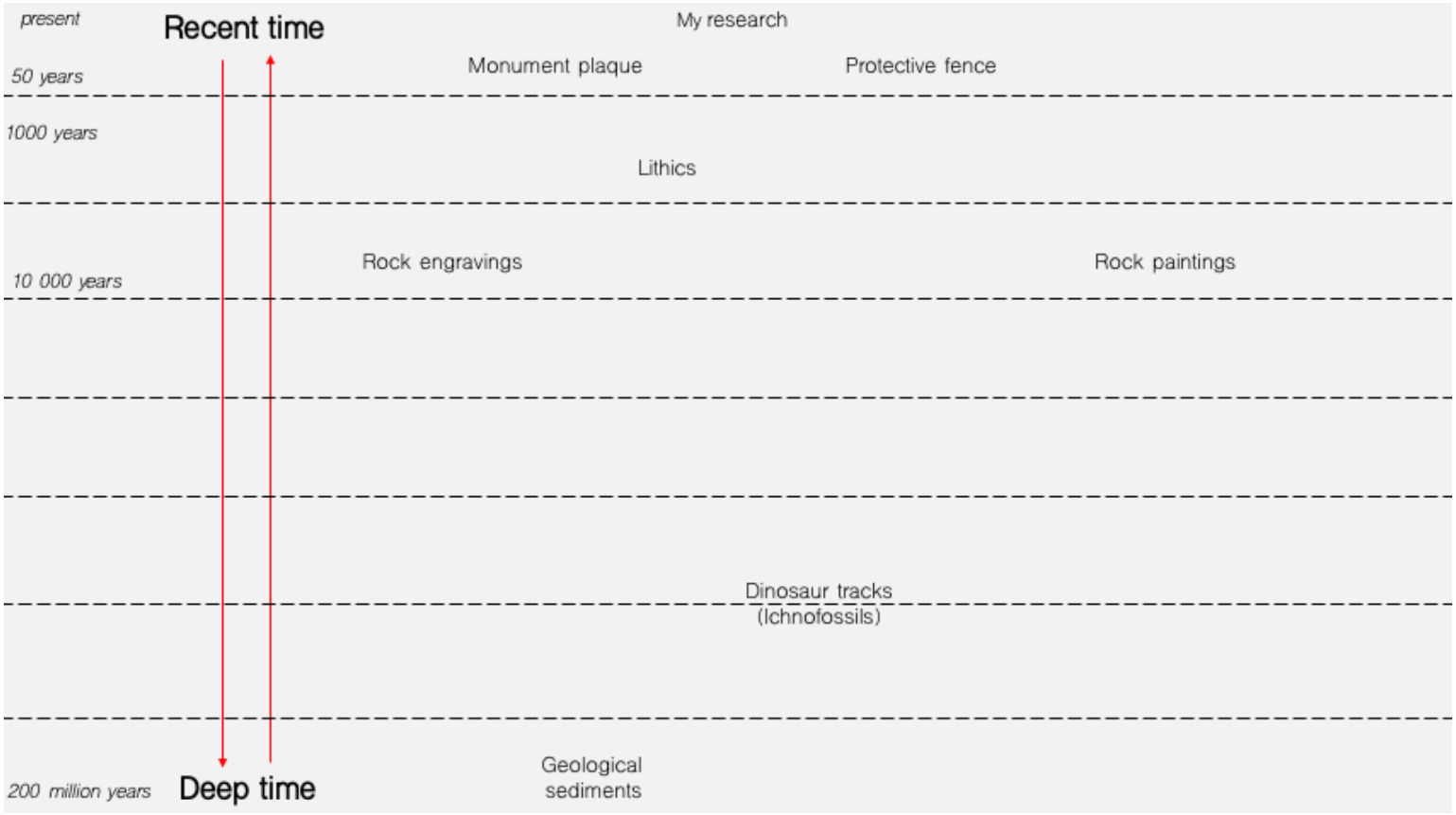


Figure 6: Timeline of Schaapplaats Rock Shelter

apprehension of time in Schaapplaats rock shelter allows for the co-existences of traces and markers of representations of time, in the way a palimpsest is never fully rid of the inscriptions that came before.

The rock shelter occupies a hierarchy of temporal cycles, structure and rhythms, applied in some way through my chronologically excavating each element in the coming chapters, but also through the naturally timed formation of the various elements in the rock shelter. This aspect links to the expansive temporal nature of this particular landscape of the eastern Free State, and to the nexus of the rock shelter. This positions the space as not only a physical palimpsest, but also a temporal palimpsest, a term adapted from Bailey. These physical attributes can be visually unpacked, and in a sense, excavated and examined through specific acts of close looking, being present in the space and attuned to the disparate and complicated nature of each element.

Chapter 4: Ways of being in the rock shelter

An immersive way of being in the site can allow for not only an experiential sense of the space and the traces and objects within it, but it can also prompt the collection of information through bodily senses. Being in your own body is the only capacity we have to practice in-situ fieldwork and informs my strategy to attune the focus of myself into a space, a site, or an experience, to allow for richer recall and more invested close looking.

Art historian, Martin Kemp writes about how, when faced with the unknown, the process of visual intuition is triggered, "I have a powerful sense that effective art and science both begin at the points where knowledge breaks down. Visual intuitions are one of the most potent tools we possess for feeling our way into the unknown" (2006: 330). This proffers how close looking can be a critical tool in unpacking a site of vast temporal scale and our experience in the site can guide the way we allow our eyes to retrieve and interpret information. Schaapplaats as a site of representation of temporality with different markers, exists only through its capacity for encounters – and it is these encounters that perform the ideas of time and space. The site comes to be 'pulled through' each instance of each encounter of the landscape that is Schaapplaats, and the organisms, past and present, and objects, current and removed. Ingold reminds us that "so accustomed are we to thinking of the landscape as a picture that we can look at, like a plate in a book or an image on a screen [...] that exchanging the painting for 'real life' is not simply a matter of increasing the scale. What is involved is a fundamental difference of orientation" (1993: 166). He goes on to quote J. Gibson, stating that "in the landscape of our dwelling, *we look around*" (emphasis in original) (1993 [1979: 203]: 166).

In the same way that Ingold ekphrastically pulls-apart and examines a painting, titled *The Harvesters* (1565), by Peter Bruegel the Elder, I have examined a nodal point in a larger landscape, one that presents itself as a capsule for examination (for the purpose of this demarcated visual excavation, much the same as signalling a pit with grid lines for an archaeological excavation) all the while having an intimate awareness that Schaapplaats rock shelter does not exist in isolation, has the capacity for change, and is being read and examined through an individual's personal lens. Where Ingold sets up the act of looking, examining

a painting in a personal, subjective way, bringing the reader into the portrayal of the painting through ekphrastic description, in a similar way, I aim to bring the reader into the site, through description, guided close looking and analysis of visual signs.

Allowing for finite points of topical contact means that I am able to examine each trace as an entity, look closely, and hone my reach on each trace's visual occupation of the space. Each object and trace in the rock shelter comes with a broad history, and by sieving through the expanse of the space, I will only be able to catch and reflect on particular elements. While close looking is critical for a tangible and perceived experience of the space, it is also important not to disregard the time spans of each object and trace. In order to work through each object and trace in the following chapters, I will follow a methodology inspired by artist William Kentridge to guide the looking process, the visual excavation and allow for the tracing of how time can be organised.

Chapter 5: X pressure-point

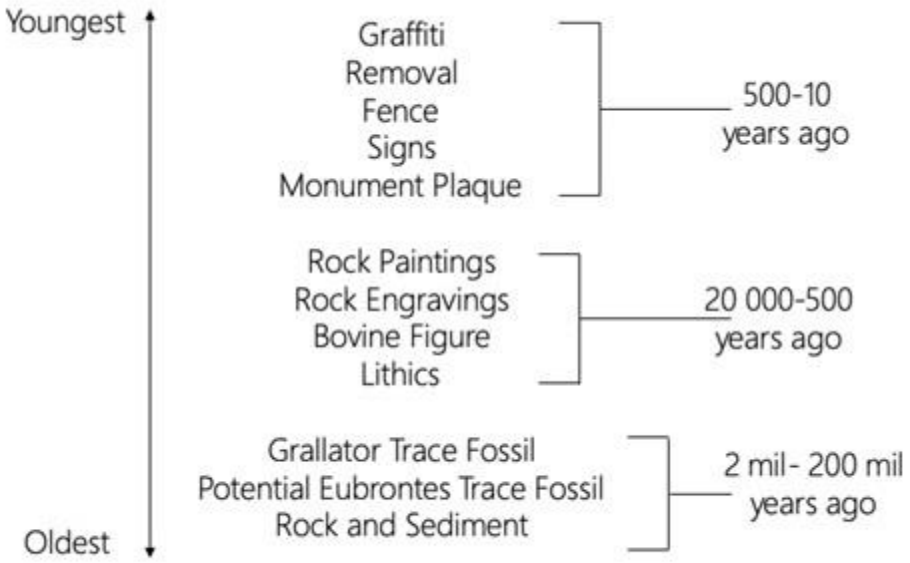


Figure 7: Diagram locating objects and traces in time

As part of the Charles Eliot Norton Lecture series in 2012 and his subsequent publication, *Six Drawing Lessons* (2014), William Kentridge expands on the power of a reflexive view of interrogation, but also the importance of situating a pin-point of presence in order to have this as a referential point. In the lecture, Kentridge traced his position in time by noting himself as the point '', a point of pressure upon which he visualises as a compression or decompression running along multiple lines, from the self-outwards, so as to trace his familial lineage or his geographic location (2014: 72). In a similar way, I will follow the tracing of the markers of time in the rock shelter, in order to move through the far-reaching depth of time that these traces and objects

span. Arranged chronologically, I am moving from the youngest element in the rock shelter – the graffiti and scratches, to the oldest element, the dinosaur footprint and the rock and sediment in which it is impressed – figure 7.

By moving through time - or in the diagram - by moving up and down the lines tracing the time, I am locating the temporal trajectory of one element – the dinosaur footprint – and in doing so, pinpointing it in its temporal location, as a starting point for mapping the time-space complexity of the site. This X pressure point held an intense moment of reflection on the idea that my, and the dinosaur's, combined existence crosses geographical locations, and holds, in different ways, slices of our temporal trajectories.

By using this mode of extrapolation, this methodology allows the representations of time in the finite space of the rock shelter to be seen not only in its singular present, but as part of a wider temporality, as well as a part of a wider landscape. With the trace fossil or dinosaur footprint established as an intentional X pressure point, this method allows me to sieve through and recognise the complex temporality in the rock shelter, how the nature of time in the space is entangled.

Schaapplaats rock shelter has no beginning or end. It does not come into existence at a singular point, and end once the viewer has left the site – it has multiple timelines that are drawn out over many encounters, iterations, readings, imaginings, and recreations.

Chapter 6: Objects and Traces in the Rock Shelter

An examination of each visual element in the rock shelter will allow for a means through which to disentangle the layered nature of time in the space, but also prompt a close looking that I experienced while at Schaapplaats rock shelter, as well as guide the reader through the space.

Keith Moxey in his seminal book, *Visual Time: The Image in History* (2013) posits that "[a]ttending to the presence of the object, being sensitive to its 'aura', respects the immediacy of its location in space and time. Interpretations that capture the specificity of such encounters betray their 'situatedness'; they reveal the unique quality of the particular process of understanding" (55). By examining each visual element in the site, I am allowing for an expansion of the markers of time from their compression within the space. Here I will detail each element of the rock shelter:

Graffiti

When facing the interior of the rock shelter, looking towards the fence, a small concentration of graffiti is visible slightly to the upper right section of the ceiling, near to where the wall meets the ceiling. A number of other places in the rock shelter also contain graffiti, as well as other kinds of marks made around and on top of the rock art. Much of these markings are engraved with a sharp item directly onto the rock face, leaving a white scrape-residue. Along with names and dates, there are also random, multi-directional scrape marks, ranging from deep into the stone, to thin and feathery. Some graffiti removal took place under the National Monuments Council from the rock surface surrounding and near to the paintings (Lewis-Williams & Blundell 1998: 131), but it appears to be an ongoing issue, despite the protection provided by the fence.

Removal of rock art

Also along the right-hand side of the shelter, there is a large, clear image of an eland encircled by marks made from a chisel and a hammer, presumably from an attempt to extract the specimen. Such an act of physical removal not only potentially damages the rock art, but decontextualises the image from the landscape, destroying the connection of painting to context and wider rock surface and losing the potential to fully understand and interpret the rock art in the context in which it was made.

Fence

A metal fence, made up of tubular poles, and thick, barbed wire, spans the entire length of the interior of the rock shelter. The fence was erected in order to prevent further destruction of the rock art and protect the rock art that remains, as well as any artefacts on the surface of the deposit behind the fence not

previously removed, and the integrity of the formation of the inner rock shelter. The fence contains a gate through which one can enter the deeper recesses of the shelter, which is heavily padlocked, and only accessible through the acquisition of a permit from the South African Heritage Resource Agency (SAHRA), successor to the National Monuments Council, as even the owners of Schaapplaats farm do not have access to the area behind the fence.

Signs

A set of four signs are attached to the fence within the rock shelter, and each sign appears to vary in age given due to the style, material and patina. The oldest sign warns against making fires in the space, which indicates that the rock shelter may have been used as a campsite for local communities and hikers or tourists. The second oldest sign indicates that the site was declared a national monument, and asks the public to not damage the space or its contents. This sign is directly above the gate. The next sign, translated into three languages, indicates that the National Monuments Council had cleaned and photographed the site, and any new damage would lead to prosecution. The last sign, again translated into three languages, was erected by the National Monuments Council too, and briefly describes the history of the site, and asks the public to be respectful towards the space, or a fine and imprisonment may follow. The National Monuments Council, which was formed during the apartheid era, no longer exists due to changes in legislation post-1994. It was replaced by SAHRA and heritage agencies at provincial level, so the NMC signs are also markers of a particular time.

Monument Plaque

A heritage bronze plaque of medium size located on the flat, central rock at the far back of the rock shelter identifies the rock shelter as a national monument, a status that fell away following changes to legislation in 1999.[5] These sorts of plaques began being implemented in 1969 when the National Monuments Act was passed, to protect and preserve important heritage and historical sites throughout South Africa. The plaque is circular, with a peak on the top, where the coat of arms protrudes. The coat of arms contains two springbuck, facing inward on their hind legs, their front legs resting on a shield shape that is subdivided into four sections. The shape on top of the shield and those within the subdivided section are difficult to make out, as they have been rounded and deformed through the bronze-casting process. Under the shield is a banner reading, "Ex Unitate Vires", meaning "from unity, strength". There is a thick band of proteas surrounds

[5] I am not certain of the site's current status, but it appears in an apparently current list of provincial heritage sites published on the SAHRA website (https://sahris.sahra.org.za/declaredsites).

the outer ring, and within is another ring of text, reading "Nasionale Gedenkwaardigheid National Monument". In the centre of the plaque is a depiction of an archway flanked by pillars, and within that is a cross evoking the Christian symbol. The plaque has been worn shiny in certain areas, apparently by touching – specifically the tips of the proteas, some text and most of the higher-relief aspects of the symbols. This forms a type of touch-map and is evidence that the plaque, and the rest of the rock shelter and rock art, as well as the trace fossil were accessible to a wider public prior to the fence being erected.

Rock Paintings

Starting on the far left of the rock shelter, when facing inwards, a faint, but large yellow serpent is depicted lying in a straight line along the ridge of a linear crevice, and then moving downward, behind the set of rocks – concealing itself at the furthest point of the rock shelter. The snake seems to have white spines or feathers flared at the point that it begins its descent behind the rocks. This may indicate that the snake is entering another kind of time-space behind the rock surface that is also part of the spatial-temporal realm of the cave – the rock face often being referred to as a kind of veil, as developed David Lewis-Williams and Thomas Dowson in their text 'Through the Veil: San Rock Paintings and the Rock Face' (1990).





Figure 8: Examples of the rock paintings

Further on to the right are two red, undefinable smears. A set of three eland images follow this, with the first barely visible, the white areas of the head, belly, and legs mostly an outline, while the back area, seemingly intended to be filled in with ochre, is not visible. The second eland looks comparatively similar to the other more rendered eland, with similar areas of white filled in, and smudges of a darker red filled in near the chest area and the hump of its back. The third eland more fully defined and recognisable, being painted in a full ochre colour, with a white head, chest, under-belly and legs, that is similar to other eland images further down to the right in the rock shelter.

A comparatively more vividly-coloured and seemingly more contemporary image of what seems to be an eland follows. Bright yellow pigment makes up the body and the tail, as well as a nearby stray mark, and a paler yellow depicts the legs, the head, and the dewlap. A set of more abstracted images are nearby, with the same bright yellow of the eland depicting an image that looks similar to a buck, as it has four lower lines that could depict limbs, a rectangular body, a fainter section where a head could be, with further protruding lines on this 'head' area that could be horns. There are however three lines on the top, and a stray line below the area that could depict hind legs. Above this there is a bright, red, more abstracted image which is close to but not touching the yellow image. This seems to be constructed from four intersecting arcs of paint, that could again refer to a four-legged animal, see figure 8. An erect line in the same red colour could represent a tail, or, like the thicker, inverted arc above the image, a stray mark. In this region, faint, but numerous scratches begin appearing on the rock surfaces, not always forming any particular image, but rather a host of intersecting pale white lines. A large red smear, that appears to have been rubbed on to the rock surface occupies a space lower down and further on the rock face.

Situated higher on the rock face than any of the preceding images, is what appears to be a hunting scene. The buck, which seem more like rhebuck in this instance, as they are slimmer, and have shorter horns, if any. The first set of images depicts a figure in ochre, hunting with a bow and arrow, the arrow depicted is white, and is secured into place and aimed directly at the buck. A long, white arrow runs through the length of the buck, protruding out the chest and the hindquarters. Three buck make up the scene, all depicted with white faces, necks, legs, underbellies, and short tails. A faint ochre smudge could depict a second figure, but this is difficult to discern.

In the centre, a group of four therianthrope figures are depicted walking towards the left of the rock shelter. Each has an elongated face, two sharp ears on the back of their heads, white heads, lower neck and shoulders, arms and legs, and ochre, triangular torsos. David Lewis-Williams and Geoffrey Blundell note that the representations of therianthropes were initially thought to represent Phoenicians, but later, through ethnographic studies, it was found that they represent shamans who are transformed through their participation in a trance dance (1998: 133).

Over and above the different areas and themes sketched out above, the paintings are layered and show a range of styles and colours, and might be looked at anew, especially since there are figures like the yellow snake that aren't captured in the published descriptions.

Rock Engravings

A spread-out set of geometric engravings are found about a 3-minute walk from the rock shelter, following the path up the valley. The engravings, in some ways graphically similar to those found at the famous Driekopseiland in the Northern Cape, are also situated next to a body of water. At Schaapplaats the associated water is from the stream that runs from the higher area of the valley and accumulates in a rock pool in front of the shelter. This small stream is perennial and during the rainy season, covers these engravings, making them invisible, inaccessible, and speeding up the degradation process. The engravings would have had to be produced during the drier season, when both the water, and the nearby vegetation had receded from the flat rock surface.

The engravings seem to be pecked, and form mostly triangular shapes, with additional intersecting lines within them. There are a few circles, with similarly intersecting lines. Due to the compacted, exfoliating nature of the stream's ground surface, the top layer of stone is separating and falling away. This means many of the engravings have been eroded or damaged, leaving a few scattered near the growth-edge of the reeds and further upstream, where the stream seems to be shallower and the current much gentler. In some instances, moss has started to grow in the exact engraving surface, rendering portions of the image a luminous green.

Benjamin Smith and Sven Ouzman, in their paper, 'Taking Stock Identifying Khoekhoen Herder Rock Art in Southern Africa', note that this type of rock art is typical to Khoekhoen Herder or San people (2004: 503). They also link this type of rock art to entopic imagery—that is imagery that originates from the eye, or is produced by the eye—as well as to a number of other phenomena, including initiation rites and astronomy (Smith & Ouzman 2004: 504-5). The nature and meaning of these engravings, as well as the similar Driekopseiland imagery is speculative, and open to interpretation.

Ceramic bovine figure

The three-dimensional figure, easily identified as bovine, or cow figure, is a dark grey, fairly smooth to touch, with softly rounded edges. The figure has a cylindrical body, with rounded flanks and rump, four small, undefined legs, a protruding snout area, and blunt, curved horns. The figure is slightly smaller than palm-sized and was observed by Justine Wintjes on the sandy surface of the deposit in the middle of the shelter towards the back. It is the only surface artefact that we noticed in the shelter at the time. Exposed artefacts in shelters with high foot-traffic like Schaapplaats tend to be dispersed or picked up by visitors (even though the collection of artefacts without a permit is illegal). Although difficult to assess, the cow figure could possibly be of an Iron Age or historical date (Phillipson 2005: 214). This period is anywhere from 1500 years ago to fairly recent times (ibid).

Lithics

The presence of lithics or stone artefacts in the rock shelter observed by other visitors at previous times (e.g. Ouzman 2000: 27) signifies the dwelling capacity, in the sense that the occupants spent a period of time there, that the shelter provided – whether fully or semi-permanent, or an ephemeral space of multiple uses. A nearby site, Twin Caves, is also located on Schaapplaats farm, and contains a number of archaeological features that may have been present at Schaapplaats rock shelter too (Harper 1997: 96). The Twin Caves site contains Iron Age stone walling, and bone fragments, pottery, and early Middle Stone Age lithics which were excavated from a fairly large excavation pit (Harper 1997: 96). Schaapplaats rock shelter, while an important archaeological site, has not been excavated by archaeologists.

Grallator *Trace Fossil*

The geological formations of the landscape in which the rock shelter is located form part of the Karoo Supergroup, and the Clarens area sits within the Karoo Basin (McCarthy & Rubidge 2005: 16). This means the area was initially covered with water, first with an inland sea, when there existed a supercontinent called Pangea, and later with meandering rivers, lakes, and sometimes ephemeral pans, at the point the landmass became what we know as Gondwanaland. The Schaapplaats area, which has a stream present still, would have probably featured a much shallower valley and a larger body of water, at the point that the trace fossils were produced. The combination of water and sandstone during the Jurassic period, meant that the conditions were excellent for a footprint or trackway to be preserved (McCarthy & Rubidge 2005: 208).

The set of trace fossils consists of two, small, three-toed footprints, which are found on the far right of the rock shelter, when one is facing inward. The trace fossils are on the smooth, flat side of a large sandstone slab, that had previously been attached to the roof of the rock shelter. The place the boulder may have fallen from is visible, and the ceiling portion where the boulder fell from is easily visible. This layer can be assumed to be part of the Clarens formation, dating to the lower Jurassic period, around 200 million years ago, as this coincides with the geological sediment stratigraphy of the surrounding valley and cliffs and the geological time period when similar fossils of the *Grallator* ichnogenus were prevalent (Butler 2005: 176).

The trackway points in a south-westerly direction, and each trace fossil is around 10cm in length, with a roughly 25cm gap between them, indicating the dinosaur's stride pattern. The *Grallator* ichnogenus typically has a small footprint size of 5cm to 20cm in length, and three (or more) toes, often ending in claws (Milan et al. 2006: 353). This kind of trace fossil is a "vertebrate track [that] is a complex structure resulting from dynamic contact between a track maker and the sediment upon which it treads", and this interaction means that we are able to determine both the type of ichnogenus that the trackmaker belonged to, as well as the trackmaker's type of walking movement (Milan et al. 2006: 352). Helm speculates in an article titled, 'Preliminary Evidence for an Indigenous Palaeontology in Southern Africa' published in the South African Archaeological Society newsletter, *The Digging Stick*, that this set of trace fossils may belong to *Lesothosaurus* (Helm 2013: 16). This is a viable interpretation, due to its location and typifying characteristics, but is difficult to determine diagnostically, like most trace fossil tracks, due to the faded and blunt quality of the fossils.

It is interesting to note the smooth, shiny texture of the footprints (particularly the one closest to the fence) in relation to the rest of the rock surface. The pamphlet given to hikers in Schaapplaats encourages people to poke their finger through the fence and touch the dinosaur footprint. This creates an interaction that is noticeable when examining the footprints, and also has the effect of wearing down the detail – making it more difficult to identify the specific species of dinosaur that may have left the tracks. This 'touch-map' transforms the dinosaur footprint from being merely a fossil in the landscape to an interactive and desirable object that people seek out during their hikes (and even sometimes hike on Schaapplaats farm specifically to interact with it). This perhaps links to the dinosaur within the imagination, due to popular culture, as well as the rarity with which an individual would usually encounter such a phenomenon, which prolific art writer, and professor, William J. T. Mitchell notes in his book *The Last Dinosaur: The Life and Times of a Cultural Icon* (1998).

Potential Eubrontes *Trace Fossil*

In the previously mentioned article by Helm, he identifies a possible set of three larger, but less clear *Massospondylus* footprints (2013: 16). During our 2016 excursion to Schaapplaats, myself and a group of History of Art and ESI lecturers and students were unable to locate these footprints. We, however, made contact while at the shelter via email with Helm, who resides in Canada, and he responded in time to guide us to the location of the putative footprints. We found that these footprints are particularly difficult to identify as tracks made by dinosaurs, let alone to describe as *Massospondylus* specimens.

The location of the tracks is to the centre-left of the rock shelter (when one faces into the shelter), about four or five meters backwards from the fence, and coincides with a drip-pattern and mottling of the sediment from continual leaching of water. The section of the roof is also visibly pock-marked, and the surface undulates in the area surrounding the putative tracks. These factors contribute to heavy distortion, and a very tentative interpretation of certain patterns in the ceiling as trace fossils.

If these are indeed trace fossils they would have been produced, like the previously mentioned potential *Grallator* tracks, due to the presence of water and sandstone. These trace fossils are however in reverse – more like negative footprints, where there is an actually jutting-out of the footprint rather than the

typical impressed shape. The substrate into which the feet made an impression has fallen away, and the substrate above it preserves a mould of the footprints. The sediment in which the trace fossils are located, like the *Grallator* tracks, also places them in the Jurassic period (McCarthy & Rubidge 2005: 16). The size of the trace fossils could potentially identify them as belonging to the larger and heavier *Eubrontes* ichnogenus, which is representative of a larger Sauropod dinosaur, also with three toes, ending in claws (Wilson 2005: 400).

Rock and Sediment

The wider Clarens landscape is predominantly made up of sandstone that is yellow or muted gold colour, sometime interspersed with black vertical striations – which is where water exits the stone, leaving a dark, depositional residue. While there is not much greenery in the area, valleys much like the one that Schaapplaats rock shelter is found in harbour most of the trees and shrubbery. Here, trees and shrubs are able to stay shaded and removed from most of the cold and wind, and are nearer to a water source. In the Schaapplaats valley, there is a small stream that undulates from higher ground, coalescing in a plane of water over flat, black rocks, near the base of the rock shelter. From a distance, the wide overhang of Schaapplaats rock shelter is of the typical yellow, Clarens sandstone, with black, vertical lines running downwards, tinting most of the face of the overhang, and under the roof of the rock shelter.

Inside the rock shelter, the roof area and most of the rocks and floor consist of the same pale yellow-grey sandstone typical of the Clarens region. The black, water-run from the outer rock face continues onto the roof of the rock shelter, forming a number of different patterns in the rock – some at the lip of the roof, others extended much further towards the back of the shelter. In most of these runs, there seems to be a level of calcification, which tints the drip patterns with a brighter yellow and white swirls and hues. Large rocks, as well as a number of shards, have visibly fallen from the roof of the inner areas of the rock shelter. Sandstone is an excellent sediment for preserving body fossils and trace fossils, and one particular fallen rock at the end of the rock shelter holds a set of two trace fossils. A particular section of a thick band of depositional-run meets with a dappled surface in the roof area, which Charles Helm speculates may represent a set of Jurassic-period trace fossils (Helm 2013: 16).

How the different traces relate to one another

In an attempt to understand the complicated nature of the space of the rock shelter, and how various timelines and time-webs may interact, I discuss pairs of sets of traces and objects that may draw forth different ideas that they may not have offered in isolation. While in the previous section there is a singularisation, and that served the purpose of a close examination of each element in the rock shelter, this pairing hints at the dialogical nature of the reading, interpretation, or examination of the overall site.

Paintings and Engravings

These two sets of rock art are similar in that they are a visual output from groups of people, with the intention to represent something, and to do so through the matrix of the landscape. They are, however, very different in their form of representation. Their means of production also differ vastly, with the engravings, particularly these pecked engravings, being constrained by the material medium and not conducive to representations other than linear-based shapes. Painting, however, has an expanded field of opportunities for representation, where colour, multiple surfaces, and multiple tools are able to be used with varying results.

Something to note is that the rock paintings at Schaapplaats rock shelter seem to be classified as more historically important, through their protection behind a locked and publicly inaccessible fence, and the awarding of heritage monument status to the space. The engravings, on the other hand, have been left open to the elements and to visitors, are not noted on the current hand-out given to the public entering the space, and are slowly eroding away through water and vegetation damage. The openness of the engravings means that they are available for the public to interact with, which allows for touching, tracing, and even walking over, in a way that the rock paintings aren't currently.

In both cases, the producers of the rock art may not have necessarily been attempting to produce art in the sense that we know it currently, but rather recording, displaying, marking, copying, or writing these images, in some way. The rock art may essentially have the capacity to be some form of visual

interaction with the landscape, and this combination of visuality, the inclusion and utilisation of landscape, and the varying points of time that the works were produced, interests me greatly.

The different spaces used for each form of rock art are specific to the intention of the makers. The rock paintings, like a large portion of rock paintings elsewhere, have been produced under shelter, on generally flat, often vertical surfaces of rock. Through the iconography of the paintings, this rock shelter has links to some sort of San shaman/s (Lewis-Williams & Blundell 1998: 130), which indicates that some element of the shelter may have had more importance, whether for safety, food, healing, or other traditional importance, to elevate its use beyond the other shelters in the vicinity – of which there are at least two others with no form of rock art (Wadley Twin Caves and Adullam cave [Wadley & Laue 2000: 1]). The rock engravings are produced specifically near water—and are often covered by water during the rainy months. The similarity of the images and positioning is comparable to Driekopseiland in the Northern Cape, where Archaeologist David Morris notes that the proximity of water to these sorts of engravings is important to understanding why they were produced (Morris 2016). Morris goes on to explain how typically women from KhoeKoen communities would engrave these images in areas that are near, or will be covered by water as part of a ceremony that accompanies a young girl's menstruation (Morris 2016).

Both painting and engraving as acts, are an embodied experience. The practice of producing an image, whether geometric or representational, is a manifestation of some sort of mental visual imagery through a person, and their interaction with a tool, paint, surface, or other medium. In both cases, the painted images and the rock engravings encapsulate this interaction and serve as evidence for comprehensive and complex thought and representative skills.

The surface, which is in both cases a medium that makes up part of the landscape is complicated through its positioning in the space that is termed 'landscape'.

Fencing and Rock Art

The protective fence is located deep within Schaapplaats rock shelter. The fence protects the rock paintings by preventing the public from entering and vandalising the space.

This fence is unique in that it spans the entirety of the rock shelter, preventing any access, thus allowing the public to examine the rock paintings without an accompanying rock art official. With the requirement of a small payment needed for trail maintenance, with the fence in place at Schaapplaats shelter, the public are free to interact with the rock shelter and the surrounds. This is something that is not usually afforded to the public, as rock art visits are usually scheduled, timed, and observed – also often requiring valid research reasons and permissions from the relevant heritage bodies, landowners, and primary archaeologists in the area. Self-guided interaction is a privilege in this space, as it allows for leisurely interaction with the rock art, at a pace set by the viewer. One is able to photograph the site at one's own pace, and can draw or sketch at will in the presence of the rock art.

While a level of accessibility is afforded to the site and the rock paintings, the fence does prevent the in-depth interaction that is optimal for close looking at the images and the rock on which they are painted. Close photography, tracings, and touching the rock art in any way is prohibited, which protects the rock art for future viewing and research but does not allow one who would like to conduct individual research to do so on a detailed, intimate level.

Rock Art and People

The interaction between the rock art on the site and people that did, and still do interact with the site is vast, and it seems a large variety of interactions has taken place, with some interactions leaving traces, and other not.

Initial contact with the rock art would have been made by people local in the area. Due to its faded appearance, it is tempting to imagine that the oldest rock art in the rock shelter is the feathered serpent concealed at the far end of the shelter. Due to the paintings being protected from weathering, the most faded is likely to be the oldest, however, it could also be due to the type of material used as paint, and whether it fades as quickly compared to the other materials used in the same or accompanying images. Another factor is the graffiti that was found covering some of the painted images, which had to be cleaned by the National Monuments Council.

There appear to be at least four sets of different types of engravings on the rock surface, perhaps more, ranging from simple pecks in the ground to more elaborate squares, circles and mostly triangles. This indicates at least four sets of people, although some may be the same person/group returned at a later stage, that visited or occupied the site at different points in time. These are visits or occupations that left traces through individuals painting on the rock surface – countless other groups or individuals may have visited the site without leaving any sort of trace, painted or otherwise.

Visible Footprints and Paintings

The combination of trace fossils and the rock paintings within the same space are something that makes this rock shelter unique. This combination is interesting both visually, but also for two discrete disciplines within the sciences – these being archaeology and palaeontology, but also to some extent art history and anthropology.

The trace fossils are located underneath some well-preserved rock paintings of eland. Due to the rock paintings being located directly above the block whose upper surface features the potential *Lesothosaurus* tracks, it seems likely that the painters would have seen, or at least been aware of the dinosaur tracks at the time of painting the eland. While we cannot know for sure whether these tracks were of any importance, or even above peripheral notice to the rock painters, palaeontological writer, Charles Helm, speculates that the painters may indeed have been conscious of the existence of the trace fossils (2013: 15).

Helm notes that there is an area in archaeology that focused on fossil-related art within the span of archaeological time and archaeological cultural interpretation – called geomythology, pioneered by Adrienne Mayor (2000). This theory states that ancient humans may have had a similarly palaeontological sense of the tracks and bones left behind by dinosaurs and interpreted these with an awareness of these predecessors (Helm 2013: 15).
Helm goes on to speculate that in the rock shelter, the trace fossil near a panel he has termed 'the enigma', has a "lower red figure [that] lends itself to possible prosauropod or theropod interpretations" (2013: 15). Although highly speculative, he suggests a possible link between the trace fossils and the painted imagery, and even allows for a level of creative interpretation on the part of the artists, who belonged to communities of hunter-gatherers with highly developed track-decoding knowledge.

A site, with a similar context to Schaapplaats rock shelter is Mokhali cave, in Leribe, Lesotho. In this cave, which is fairly close in location to Schaapplaats, which cusps the Lesotho border, a rock painting of a large footprint, similar in size and shape to the dinosaur tracks found in the nearby region (Helm et al. 2012: 7). The footprint "resembling that of an ornithopod", was also accompanied by potential images of the track makers (ibid) - three, upright, birdlike creatures, which Paul Ellenberger traced during a 1930 visit to the site (ibid).

Important to note when attempting to decode or decipher rock art that seems at first to link innately with a palaeontological past, is our present knowledge, and our desire to read into these images our own interpretations. Geomythology, while a branch of archaeology that is interesting, must be pursued with caution and checked against rock art resources, and one's own desire to read a past into these images.



Figure 9: Two trace fossils forming a track way

Chapter 7: The trace fossil

The dinosaur footprint is the X pressure point on which I will come to rest in this paper, and which I will spend some time on – figure 9. The nature of trace fossils is aptly described by Berger and Hilton-Barber:

> Eve's footprints elicited within me a response that differed from my usual reaction to fossils. There was always a level of excitement, of dealing with life as part of a bigger universe, with whatever remnant from the deep past I came across. But these footprints somehow were more real, more tenuous, more poignant. Finding fossil bones indicates that someone had to die. Eve's footprints were an image or a snapshot of a *moment* of life. When I first saw them embedded in the sandstone, I instinctively closed my eyes and conjured an image of Eve beyond the traces of fragmented fossilized bone or a row of statistically significant numeric images on a geneticist's spreadsheet… (emphasis in original) (2000: 12)

Science historians have separated the scientific origins of trace fossils and body fossil palaeontology; the birth of body fossil palaeontology is attributed to the Renaissance, whereas the beginnings of the study of trace fossils are placed in the 19th century (Baucon 2010: 361). Leonardo da Vinci, however, encountered and recorded trace fossils during his lifetime. His recording of these types of fossils makes present the relationship of bodies to a host sediment or a matrix in the earth, as well as the shift from organism to organic matter to a structure in the sediment, much like the imprint of the dinosaur footprint. The ways of recording the insubstantial nature of trace fossils in a recognisable and substantial way, as well as learning to differentiate and read these traces in the landscape is something I found incredibly difficult. In two ways I have grappled with the difficulty in reproducing the dinosaur trace fossil as a cast – figure 10 – and as a photogrammetry model – figure 9 – assisted and guided by Jonah Choiniere.

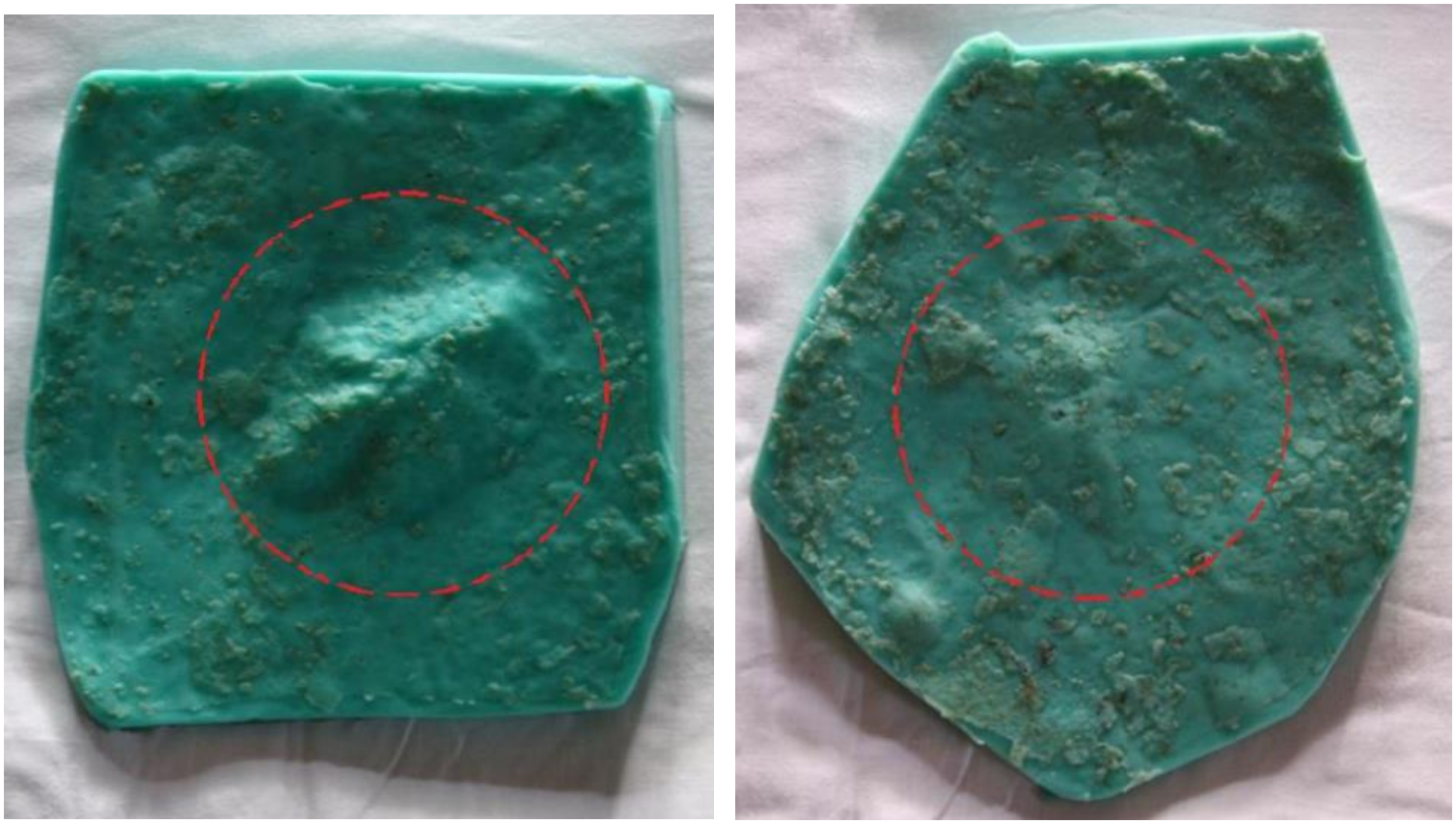


Figure 10: Trace fossil cast of the two prints in the track way

Trace fossils, due to their process of preservation, are as not as easy to use as markers of a specific type of dinosaur. Trace fossils do not provide the animal for us, but rather a moment that requires the imagination of the animal – an imprint that promotes a reconstructive desire. Tracks as a particular kind of trace fossil also provide peripheral information not necessarily inherent in the bones of the animal itself – like its gait, walking preferences, and places we know the animal to have occupied: "important information on morphology gait, speed, dinosaur paleoecology, and habitat zonation" (Gillette & Lockley 1989: 9). Tracks provide a proof of a moment of the animal, rather than the consequential remains of an animal's death. These kinds of fossils are both the trace of the living dinosaur and its mode of movement – the instance of the meeting of earth and organism (where one factor depends on the other for the existence of fossil), and through this, creates a space to be understood as the "inversion" (to a degree) of the living dinosaur.

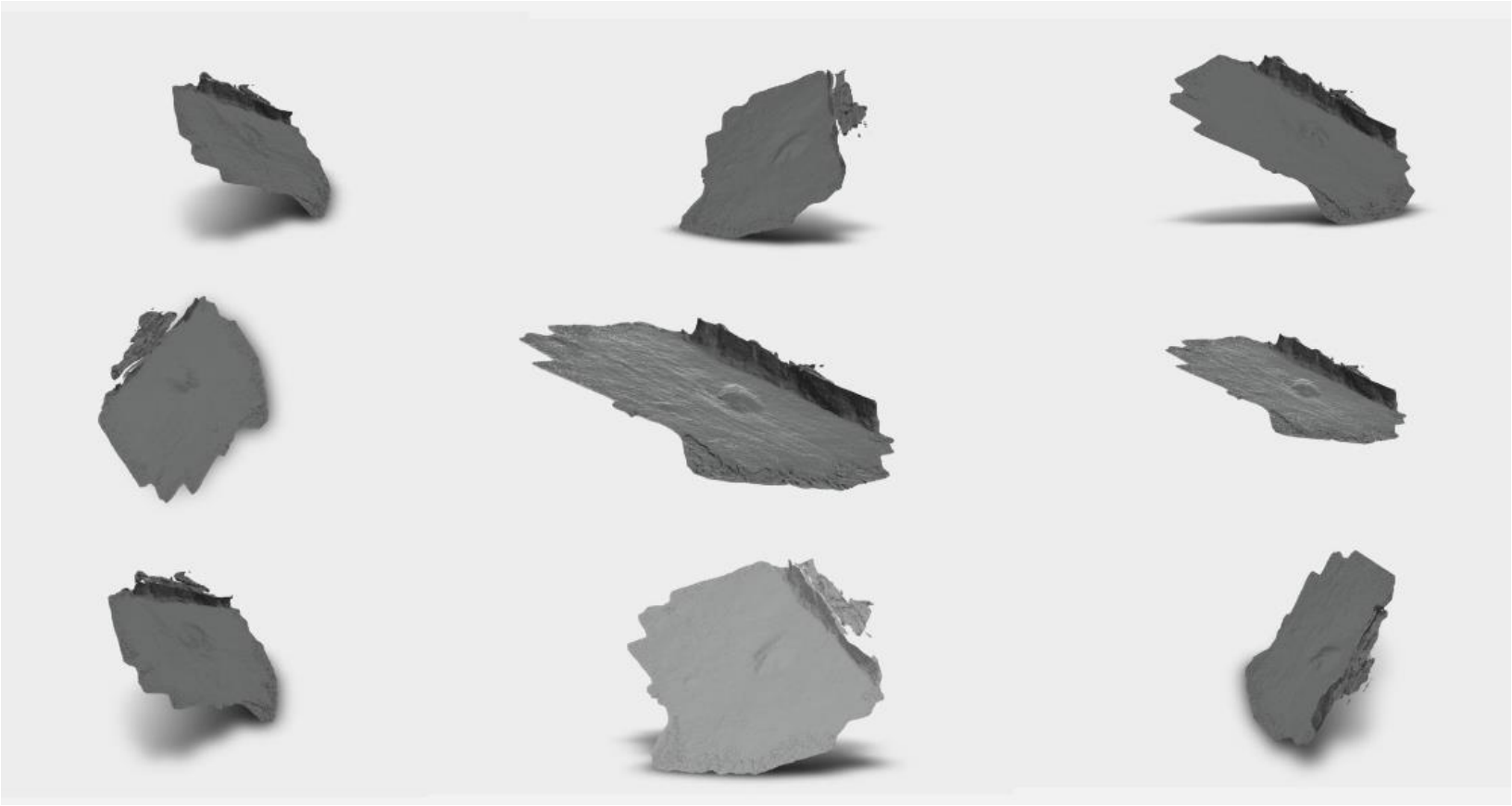


Figure 11: Various angles of the dinosaur footprint from the Photogrammetry model

"Trace fossils (except coprolites and fecal pellets) exist only by virtue of the soft or hard substrate on or in which they formed and which preserves them [...] They are an integral part of the substrate and cannot readily be transported. Therefore, with few (and obvious) exceptions, trace fossils were made at the location where they are found" (Crimes & Droser 1992: 340). This leads to the recognition of the necessity of foregrounding the presence of the landscape, as much as the trace fossils within the landscape. The alterations, interventions, shifts, moments, meetings, residues, traces, records are *in* the land, part of, and inherently make up the landscape. The landscape makes present that which was concealed within its own material. Ingold explains that the "landscape is a plenum (ie. a space completely filled with matter, or the whole of space so regarded), there are no holes in it that remain to be filled in, so that every infill is in reality a reworking" (1993: 154).

Track-making also opens up avenues for exploring walkways and movement, where timelines and time-webs are able to viscerally intersect – where there are multiple tracks and a crossing over of a meeting of species can occur in an imagined temporal over-lapping – but also in our own 'discovery' of and intersection with the tracks. The captured movement of trace fossils indicates that the "tracks are the unequivocal evidence of posture and locomotion of the trackmaker." (Gillette & Lockley 1989: 6). The interaction of the animal and landscape is pivotal to trace fossil's creation. Dinosaur trace fossils at Schaapplaats (including the potential *Massospondylus* trackway) interacts with the substrate in three phases: "touch-down, weight-bearing and kick-off." (Gillette & Lockley 1989: 51). Footprints become punctums within the landscape, where they are pinpointed, located and made important through their unique occupation in the surface of the land.

The nature of fossil trackways relies on the knowledge that the negative spaces produced by the footprint can be linked to and 'filled-in' by the knowledge that a specific animal presence was in the landscape, at a specific moment. This knowledge, however, results in a sense of 'indirectness' in the fossilized traces, where the imaging of, and initial encounter is much more removed from the source animal, than if it were the actual animal remains.

Fossil trackways come to act as punctures in both the landscape and in time, where the print is seemingly pushed-into the sediment, where it remains a marker, and a hole in the ground – in coming upon this hole, there is a shift in one's encounter of time, merging the present moment, and the moment the footprint was produced. This suspension of the imprint in the landscape, in the sediment, and in time complicates the reading of the trace fossil. The nature of excavation of palaeontology is also complicated, where trace fossils cannot always be excavated, due to their dependence and inherent occupation the landscape. Even when tracks are excavated, the shift in reading, and the removed landscape, itself, becomes the fossil, along with all the adjoining and peripheral land matter.

"Translation is, for example, the means by which temporalities interact with each other" (Moxey 2013: 1). Translation, through excavation, encounter, casting, and remaking are pivotal to understanding the way we are able to make present the trace fossil, away from the site, and the animal from which the fossil was produced. The mediated forms of casting and reconstruction are often the only available forms of presence of the fossil, because they cannot appear outside of a medium, there exists a dependence on medium for the existence of the footprint. In media theory, representational absence becomes a form of presence,

much like the depended presence and resultant absence of the dinosaur to produce a trace fossil. Absence and presence have an innate relationship to copies, casts, and reconstructions, where there is a surfacing of the real and absent object, with every making of a copy or cast. Ideas around the real versus representation come into the fore, where the footprint becomes a representation, an image of the dinosaur, in a sense, and can act in place of and allude to the body and animal.

The notion of the footprint additionally calls up ideas around metonymy, or the idea of a referent. The footprint reflects both the dinosaur's body, as well as the specific presence of the dinosaur at a specific moment. "[M]etonymy is a 'presence in absence' not just in the sense that it presents something that isn't there, but also in the sense that in the absence (or at least the radical inconspicuousness) that is there, the thing that isn't there is still present" (Frank Ankersmit in Moxey 2013: 57). Interestingly, Hans Belting explains that:

> Images traditionally live from the body's absence, which is either temporary (that is, spatial) or, in the case of death, final. This absence does not mean that images revoke absent bodies and make them return. Rather, they replace the body's absence with a different kind of presence. Iconic presence still maintains a body's absence and turns it into what must be called visible absence. Images live from the paradox that they perform the presence of an absence or vice versa. (in Moxey 2013: 64)

The making and remaking of traces, as well as the acknowledgement that a trace is innately linked to something more substantial, also links with the adherence to and/or the remaking of time. The original track links to the time in which it was produced, it holds the span of time throughout its fossilisation, is made present at the specific time of its discovery and naming, and continues to exist in multiple materials and moments each time it is remade, described, reconstructed and expanded upon. Trace fossils point towards ideas of inflection, trace, impermanence, and a moment in time where the conditions for preservation are so slight, and the continued preservation for our moment of encounter with them even more so, that idea of temporality in these instances is incredibly ephemeral. The tenuous survival of tracks and traces, as well as their sensitive conditions for exposure and preservation mean that the very existence

of trace fossils is dependent on specific moments in time of the dinosaur's life, as well as the landscape and conditions in which the moment of imprint occurred.

Lee Berger describes this sense of encountering a moment, and the specificity of time within the encounter: "Fossils can speak to us. As new technological and philosophical horizons are traversed, the boundaries between the living and the dead are being redefined. To an untrained eye, an inanimate piece of bone or stone is lifeless, an echo of primordial abstraction held in awe in the palm of the hand. But in fact, as messengers from a moment in the past, these pieces represent a reality that once existed." (Berger & Hilton-Barber 2000: 16)

Footprints indicate the absence, trace, missed-presence, or residue of a body. They come to represent that which is not there, the lack of the body, or a body which has passed. While we are constantly creating and erasing footprints, the preservation and the time imbued in trace fossils shifts their knowledge-generating importance. The sediment in which a trace is preserved highlights the print, through the absence or shifting of sediment in that region. It is the material that *is* the print, it cannot exist without this matrix.

Intention and the lack thereof, when organisms produce trace fossils, allows them to be seen as peripheral to, or proof of, a trace and residue of the organisms functioning, movement and occupation of space. Trace fossils are the result of an activity, that through ideal time and conditions, is preserved and through more ideal timing, is 'found'. In being found, the trace of activity moves into object-hood, where it is looked at closely, named, and incorporated into other examinable objects in the scientific realm. Trace fossils reside between ideas of production and accident, intention and incident, where after a specificity is placed upon them, and they are reproduced, the trace becomes an object.

Materiality and non-materiality is highlighted through acknowledging that nature of the fossil as a trace, and footprints are the absence of a material (animal), but the presence of sediment in which this specific moment of absence is preserved. They become, in a sense, preserved 'shadows', where the animal passes over the land, and an unintentionally-left print, one that is often fleeting, and usually not recorded, is preserved in an expansive period of time.

Trace fossils, specifically footprints, have the capacity to act as writing, in a sense. Footprints are not necessarily the actual thing itself (like body fossils), unless cast inversely in a material,, but an inscribed moment, and this is descriptive of the animal and its movement in time. The tracks are made visible each time the light touches them, bringing forth their reliefs and their hollows. The recess is made by a lack which, like a vessel (of a creature past) is filled up with the substance of light and shadow.

The footprint sits between specificity and generality. We innately know the process of making footprints, and make them ourselves, but we cannot anticipate the specificity of type and time, without being trained to look closely. Close looking becomes pivotal to encountering traces and footprints, and we are able to make sense of them through the generality of footprints (perhaps such as in the case of the enigma panel, as surfaced by Helm, where there might be an imaginative representation of the footprint-makers), but the ability to identify and draw up a specific presence of the trace-maker requires an intimate knowledge of the landscape and the species that frequented that area.

Footprints can be seen as 'proof', as they are intimate indications of the maker's presence. The footprint can, too, be an icon, even an incidental icon, able to be recognised for what it is and what sort of process it holds. Footprints are an example of indexical representation. W. J. T. Mitchell states that the process of representation occurs in three forms: iconic, symbolic and indexical (1994: 14). Iconic representation stresses resemblance by association (ibid). A symbolic representation is more of an agreed upon, arbitrary and associative stipulation; no resemblance is specified. An indexical representation stands for an absent object. In terms of cause and effect, the existence of the index indicates the presence of the absent object (ibid). A great example is a footprint. The footprint is an index of the passing foot, illustrating the existence of the absent object (Mitchell 1994: 69-74). The footprint is, in Charles Sanders Peirce's classification of signs, an index, like the photographic image or the film image (Liszka 1996: 90).

There is a desire for visual interpretation of the past, and a continued desire for a different 'way of seeing' academic and factual texts on dinosaurs. The creative and scientific imagination in relation to ichnofossils relies on an even more expanded imagination, and one that is even more slippery, than when an actual

bone-fossil is utilised for reconstruction. Berger notes that the reconstruction of surface appearances is produced by "blending our ideas with facts" (Berger & Hilton-Barber 2000: 214). Moxey asks:

> Can we ever see around the imaginative work of interpretation to glimpse the object that occasioned it? Does description translate the visual into the verbal or simply replace an image with more images? Inadequate as the verbal may appear in the act of transforming the visual into sense and meaning, translation serves as a metaphor for the work of historical interpretation. (2013: 6)

The act of casting the Schaapplaats tracks, and the nature of the cast relative to the actual track produces complex and important knowledge, that relies on the peripheral and singular production of the track. By exploring the idea of the cast as an impression of time translated, transposed, and in a sense, inflected into a contemporary medium, we can surface the moment where an imprint becomes an object for extended examination. Casts point towards the notion of reproduction and multiples, but also to the pivotal importance of the 'matrices' (the actual trace fossil), much like in artistic print-making. This could also extend into ideas around the original and cast, and what each allows for and inhibits, in terms of examination and reconstruction.

A difference in approach exists between body fossils and trace fossils as palaeontological objects, but also how they are rendered, re-rendered and exist in the imagination. There is an inherent difference in fleshing out the structure of bones, to the expanding upon the singularity of a footprint. The re-imagining of footprints relies in the capacity for a trajectorial expansion, from the ground, up, of the animal to emerge in reconstruction. We encounter the surface of the animal, rather than a structure that guides the reconstructive direction – in this way, one must work from the bottom to the top, and from the outside, in.

Keith Moxey notes that there exists a transfiguration of objects through and into different roles, and this is apparent through casting, remaking and reconstructing footprints (Moxey 2013: 57). The making of a cast of the trace in order to reproduce the trace, creates fictive spaces of presence. The trace is made substantial through its shifts and movements in material by casting, re-creating or drawing, and assists with the reconstruction and ways of envisioning the track-maker. Descriptions of footprints hold an importance as an act of remaking, as there was a difficulty in showing tracks to others in its specific location,

as it could not always easily be removed. The casting of tracks is relatively contemporary and shift the moveability of these seemingly immoveable and specifically-positioned fossils. The preserved footstep "the footstep in rock" in folklore, myths and re-imaginings are also interesting descriptive tools, and means for reconstructing track-makers in the imagination.

Conclusion:

Returning to the Art and Science course excursion, I would like to reflect on the rich encounters with both fossilised life-forms, and fossilised instances within the lives of these forms. The landscape opened itself in new and expansive ways through the guided methods of close looking, and a recognition of the avenues of time, compressed and folded in the sediments of mountains and outcrops. The entire excursion was a consistent flux of looking up and outward at the expanse and awe of the landscape, and our place in it; and being bent forward, looking downward and closely at the shards and pieces of ancient organisms pushing up from this same landscape.

Experiencing other sites in and around Golden Gate both informed and extended the way I looked at Schaapplaats as a site, a land formation, a body of evidence, and a space that holds the footprints I am examining particularly in this project. The recognition that this site is one of many within the present landscape, and holds only a small number of footprints that are present in the surface of the landscape, and within the sandwiched layers of rock and sediment, means that I had to be decisive in my choice of site and actively engage in close looking within a specific bracket of space. The footprints in the space, specifically the more visible *Lesothosaurus* tracks, reflect the notion of 'points of intersectionality' through their existence in an area that exhibits multiple interactions with the landscape. Schaapplaats rock shelter held, and still holds a number of artefacts, evidence of presences, and descriptive markers, that contribute to both the shelter's complexity, and the unique position of dinosaur footprints in it.

There was multiplicity of encounters in time throughout the excursions – where we engaged with ancient fossils and landforms, and our 'temporal trajectories', in that moment, intersected with those of the objects and the land. This intersecting, particularly at Schaapplaats rock shelter, is particularly evident due to the large number of objects and traces of organisms that stem from their moment of production, and shift with each encounter.

To return to the pressure point X, I would like to note that it is also present temporally, where our only capacity to reflexively situate ourselves is in the present, and in this project, to situate myself in what was a 'previously present' encounter with the footprint. The meeting of future and past collides in an imagination and interpretation of both, but is neither as wholly recognisable or reconstruct-able as it is in the present experience.

This notion of presence can, too, be disrupted, in recognising that multiple presences exist through the multiple encounters with the same object. The object thus holds these presences in its existence and within its own 'temporal trajectory'. Making a cast or model of the footprint, however does not sever, but rather, expands beyond this, where it captures and holds this presence, attempts an exact replication, and thereafter exists as an object that makes and maintains its own presences, pasts and futures, while referring inherently to the original footprint and the original sense of 'presence'.

The excursion allowed me to both reconstruct the footprint, and also the digital experience, where I had collated and formed a pre-experience of the site and the footprint, and in doing so anticipated particular moments of interaction. The experience of the space and the actual trace fossil was much more intense and even poignant, pre- and post-digitisation of the space and the fossil.

Representing the fossil speaks back to the reconstruction of a presence, and acts in a similar way to the cast. Multiple layers of representation and intersection occurred through my own re-representing of the fossil, but also through the interaction with Charles Helm, his reliving of the space and his guided looking for the *Massospondylus* trackway in the ceiling of the rock shelter. Re-imaging the fossil, much like casting the footprint, sets up my own pin-point of 'X' in the presence of the moment, but refers, through comparison to Helm's own presence and situation in the space.

The *Lesothosaurus*' reconstruction, and the specific footprint at Schaapplaats is understood through our own positioning alongside it, and through own, similar, re-performance of making footprints. The nature of the animal and our desire for its reconstruction – through recognising the proof that a footprint provides, and an imaging of the animal, sits alongside our own sense of existence and need for relate-ability.

The process of casting the footprint fills-in, to a degree, the space that the animal occupied, and its space of existence. The cast has the capacity to thereafter mimic the moment and the movement of the animal in multiple surfaces, where it is able to be inserted into various temporalities, surfaces and landscapes, while continually referencing the source. A cast inherently holds in it its point-of-contact with the surface, and the replication of the point-of-contact that the animal had with the original surface. The footprints at Schaapplaats, particularly the second *Lesothosaurus* footprint and the *Massospondylus* trackway, as well as a number of the others we visited, hold a sense of mis-recognition, and spaces for slippages and maybes. Casting the potential second *Lesothosaurus* footprint has held this sense of desire for looking, identifying, and interpreting, that is present in both art and science.

Materiality and non-materiality is highlighted through acknowledging the nature of the fossil as a trace, and that footprints are the absence of a material and the animal, but are rather the presence of sediment in which this specific moment of absence is preserved. Casting counteracts this, to a degree, where that instant is preserved in a material substance, and has the capacity to be reproduced, potentially lasting longer than the original. Cast footprints, holds their discovery and subsequential encounters within it, piercing through both past and present landscape, and layers of time, and existing outside of these realms, while inherently holding them reflexively and reflectively.

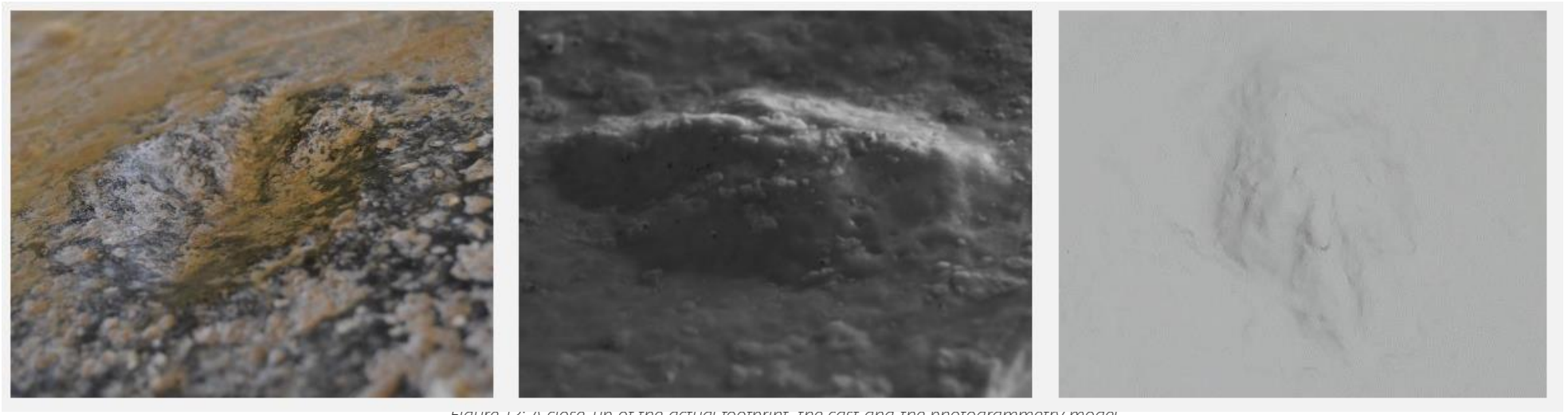


Figure 12: A close-up of the actual footprint, the cast and the photogrammetry model

Remaking a footprint is also a move towards mimesis, and through re-rendering and reconstruction, the original has the ability to be lost, or even forfeited in favour of the accessibility and immediacy of a cast – figure 12.

Figure 12: Movement of the trace fossil from the site, into a cast and into a Photogrammetry model

Rendering the footprint on a digital platform contributes to the notion of mimesis, as well as the immediacy of interaction and continued preservation. While the footprint exists in singularity, this insertion onto a digital platform infinitely expands the avenues for interaction, presences and time, but replaces the spatial means of interaction. This sense of 'digital distance', works against locating the pin-point 'X', but expands the capacity for multiple intersections of the cast or reconstructed object. The movement of the footprint, through material and digital translation, shifts and reconfigures the way the footprint is encountered, but complicates and expands its ability to intersect with other times, spaces, and presences.

The close examination of the disparate elements within the rock shelter have formed a timeline or time-web where the histories of these objects and traces can be examined in isolation – but critical to the overall understanding of the space, is a zooming-out and relooking at the site as a whole and the individual elements as relational.

The pulling-apart of the rock shelter had provided me with the ability understand each element in isolation, where I then surface some comparisons, similarities, and information that these various elements might bring to the fore when in conjunction with each other. The slow re-examination of the site as a single entity is complex, but can ultimately yield a more complex and nuanced understanding of time, space and their multiple intersections..

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Figures:

Figure 1: https://www.avenzamaps.com/maps/409940/2828cb-clarens, accessed 17 April 2021
https://www.worldometers.info/maps/south-africa-road-map-full, accessed 9 August 2021

Figures 2 – 12: All photographs and diagrams by the author